

TKSCT

# FITTINGS

Weld Fittings / Metal Face Seal Fittings



## *Weld Fittings / Metal Face Seal Fittings*

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# TKSCT SUPER CLEAN TECHNOLOGY

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**MICRO WELD FITTINGS**

**FORGED WELD FITTINGS**

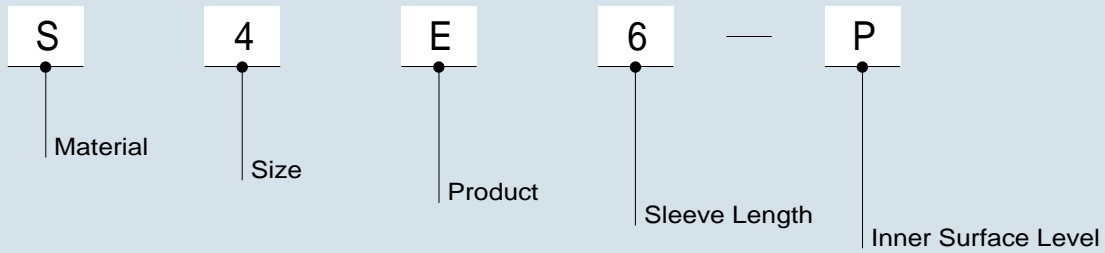
**METAL FACE SEAL FITTINGS**



# TBW and Metal Face Seal Fittings

components are ordered by product code as listed in this catalogue














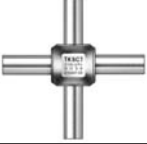






















## DESIGNATIONS PART NUMBER SYSTEM



























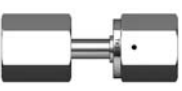




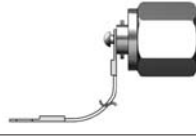





| Material           | Size                     | Sleeve Length | Inner Surface Level             |
|--------------------|--------------------------|---------------|---------------------------------|
| S : Single Melting | 4 : 1/4"                 | 6 : 6.35mm    | BLANK : BA                      |
| D : Double Melting | 6 : 3/8"                 | 10 : 10mm     | P : EP                          |
|                    | 8 : 1/2"                 | 19 : 19.05mm  |                                 |
|                    | 12 : 3/4"                |               |                                 |
|                    | 16 : 1"                  |               |                                 |
| Product            |                          |               |                                 |
| E                  | Elbow                    | BLG           | Blind Gland                     |
| T                  | Tee                      | MG            | Male Weld Gland                 |
| CT                 | Cross                    | TA            | Tube Adapter                    |
| TB                 | Tribow                   | BH            | Bulkhead Union                  |
| R                  | Reducer                  | UC            | Union Cross                     |
| FN                 | Female Nut               | MC            | Male Connector                  |
| MN                 | Male Nut                 | FC            | Female Connector                |
| CP                 | Cap                      | ME            | Male Elbow                      |
| PG                 | Plug                     | UT            | Union Tee                       |
| GT                 | Gasket                   | MU            | Double Male Union               |
| GB                 | Blind Gasket             | FU            | Double Female Union             |
| GR                 | Gasket Retainer Assembly | UE            | Union Elbow                     |
| SG                 | Female Gland             | MCK           | Tube Fitting Connector          |
| ASG                | Automatic Female Gland   | BHCK          | Tube Fitting Bulkhead Connector |
| SWSG               | Socket Weld Short Gland  | BHC           | Male Bulkhead Connector         |
| LG                 | Male Gland               | CG            | Coupling                        |
| ALG                | Automatic Male Gland     | RA            | Reducing Adapter                |
| SWLG               | Socket Weld Long Gland   | RB            | Reducing Bushing                |
| HLG                | H-MFS Male Gland         | HBY           | H-MFS Tbw Body                  |
| HFN                | H-MFS Female Nut         | HABY          | H-MFS Abw Body                  |
| HMN                | H-MFS Male Nut           | HBHY          | H-MFS Bulkhead Connector        |



# WELD FITTINGS & METAL FACE SEAL FITTINGS

|   |                               |   |   |                         |    |   |                                 |    |
|---|-------------------------------|---|---|-------------------------|----|---|---------------------------------|----|
|    | Micro Reducer                 | 7 |    | 90° Elbow               | 9  |    | Socket Weld Reducing Long Gland | 13 |
|    | Micro Reducing 90° Elbow      | 7 |    | Reducing 90° Elbow      | 9  |    | Blind Gland                     | 13 |
|    | Micro 90° Elbow               | 7 |    | Tee                     | 9  |    | Male Weld Gland                 | 13 |
|    | Micro Extended Leg 90° Elbow  | 7 |    | Reducing Tee            | 10 |    | Tube Adapter                    | 13 |
|    | Micro 45° Elbow               | 7 |   | Cross Tee               | 10 |    | Double Male Union               | 14 |
|  | Micro Tee                     | 8 |  | Reducer                 | 10 |  | Double Male Reducing Union      | 14 |
|  | Micro Reducing Tee            | 8 |  | Female Gland            | 12 |  | Bulkhead Union                  | 14 |
|  | Micro Cross                   | 8 |  | Male Gland              | 12 |  | TBW Body                        | 14 |
|  | Micro Tribow                  | 8 |  | ATW Female Long Gland   | 12 |  | TBW Bulkhead Connector          | 14 |
|  | Micro Extended Run Leg Tee    | 8 |  | ATW Male Long Gland     | 12 |  | Coupling                        | 14 |
|  | Micro Extended Branch Leg Tee | 9 |  | Socket Weld Short Gland | 13 |  | Double Female Reducing Union    | 15 |
|  | Micro Extended Leg 90° Elbow  | 9 |  | Socket Weld Long Gland  | 13 |  | Reducing Adapter                | 15 |

|   |                                       |   |                                |   |                                    |
|---|---------------------------------------|---|--------------------------------|---|------------------------------------|
|    | Reducing Bushing<br>15                |    | Female Connector(PT)<br>18     |    | HMFS Male Nut<br>20                |
|    | Male Elbow (PT)<br>15                 |    | Female Connector(NPT)<br>18    |    | HMFS Long Gland<br>20              |
|    | Male Elbow (NPT)<br>15                |    | Gasket Retainer Assembly<br>18 |    | HMFS TBW Body<br>20                |
|    | Union Elbow<br>16                     |    | Gasket<br>18                   |    | HMFS ATW Body<br>21                |
|    | Union Tee<br>16                       |    | Blind Gasket<br>18             |    | HMFS Bulkhead Connector<br>21      |
|  | Union Cross<br>16                     |  | Female Nut<br>19               |  | Welded Male Connector(PT)<br>21    |
|  | Tube Fitting Connector<br>16          |  | Male Nut<br>19                 |  | Welded Male Connector(NPT)<br>21   |
|  | Tube Fitting Bulkhead Connector<br>17 |  | Plug<br>19                     |  | Welded Female Connector(PT)<br>21  |
|  | Male Bulkhead Connector(NPT)<br>17    |  | Cap<br>19                      |  | Welded Female Connector(NPT)<br>22 |
|  | Male Connector(PT)<br>17              |  | Plug(Cable Type)<br>20         |  | Welded Lok Connector<br>22         |
|  | Male Connector(NPT)<br>17             |  | Cap(Cable Type)<br>20          |  | Welded Female Union<br>22          |
|  | Male Connector(ST)<br>17              |  | HMFS Female Nut<br>20          |   |                                    |

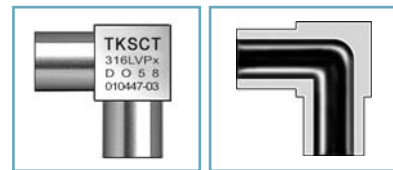


# WELD FITTINGS

- Micro Weld Fittings
- Forged Weld Fittings

## Features

- 316L E ·F+RH+VAR(Double Melt) Material
- Permanently Heat code marked; traceable to original mill certificate of test.
- Electropolished components permanently marked with designator on cube(P or PX)
- Critical surfaces are 100% visually inspected using magnification and lighting.



## Materials

316L E ·F+RH+VAR(Double Melt) Material complies with ASTM A276 and ASME SA479. Recommended tubing specifications include ASME SA213, ASTM A213, ASTM A249, ASTM A269, MIL T8504, MIL T8506 and JIS G4303.

## Specifications

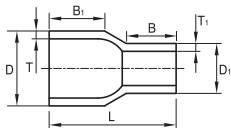
- **Pressure Ratings** will be governed by the tubing selected for a particular application. Working Pressures are calculated below for tubing using maximum allowable stress levels in accordance with ASME/ANSI B31.3, at ambient temperature.
- **Dimensions** are for reference only and are subject to change.
- **Internal Surface Finishes:** Standard finish Micro Fittings have an internal Surface Roughness of 3.0  $\mu\text{m}$  Ry. Electropolished Micro Fittings have an internal Surface Roughness of 0.7  $\mu\text{m}$  Ry.

| Tube O.D. | Pressure Rating |                       | Normal Wall Thickness |
|-----------|-----------------|-----------------------|-----------------------|
|           | psig            | kgf / cm <sup>2</sup> |                       |
| 1/4in.    | 5100            | 358                   | 1mm                   |
| 3/8in.    | 3300            | 232                   | 1mm                   |
| 1/2in.    | 3500            | 246                   | 1.24mm                |

| Designator | Surface Finish(Ry) | Surface Finish(Ra) |
|------------|--------------------|--------------------|
|            | Maximum            | Maximum            |
| EP         | 0.7 $\mu\text{m}$  | 5 $\mu\text{in}$   |
| BA         | 3.0 $\mu\text{m}$  | 10 $\mu\text{in}$  |

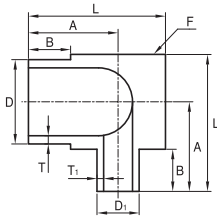
## MICRO WELD FITTINGS

## Micro Weld Fittings



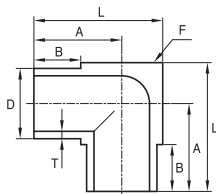
## Micro Reducer

| Size (OD) | Size (OD <sub>1</sub> ) | Ordering Number | D     | D <sub>1</sub> | T    | T <sub>1</sub> | B    | B <sub>1</sub> | L    |
|-----------|-------------------------|-----------------|-------|----------------|------|----------------|------|----------------|------|
| 3/8"      | 1/4"                    | □6×4R6          | 9.53  | 6.35           | 1.00 | 1.00           | 6.35 | 10.4           | 19.1 |
| 1/2"      | 1/4"                    | □8×4R6          | 12.70 | 6.35           | 1.24 | 1.00           | 6.35 | 10.4           | 19.1 |
| 1/2"      | 3/8"                    | □8×6R6          | 12.70 | 9.53           | 1.24 | 1.00           | 6.35 | 10.4           | 19.1 |
| 3/4"      | 1/4"                    | □12×4R6         | 19.05 | 6.35           | 1.65 | 1.00           | 6.35 | 10.4           | 19.1 |
| 3/4"      | 3/8"                    | □12×6R6         | 19.05 | 9.53           | 1.65 | 1.00           | 6.35 | 10.4           | 19.1 |
| 3/4"      | 1/2"                    | □12×8R6         | 19.05 | 12.70          | 1.65 | 1.24           | 6.35 | 10.4           | 19.1 |



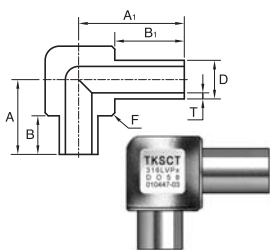
## Micro Reducing 90° Elbow

| Size (OD) | Size (OD <sub>1</sub> ) | Ordering Number | D     | D <sub>1</sub> | T    | T <sub>1</sub> | A     | B    | F Body Cube | L     |
|-----------|-------------------------|-----------------|-------|----------------|------|----------------|-------|------|-------------|-------|
| 3/8"      | 1/4"                    | □6×4E6          | 9.53  | 6.35           | 1.00 | 1.00           | 11.91 | 6.35 | 11.11       | 17.46 |
| 1/2"      | 1/4"                    | □8×4E6          | 12.70 | 6.35           | 1.24 | 1.00           | 13.50 | 6.35 | 14.29       | 20.64 |
| 1/2"      | 3/8"                    | □8×6E6          | 12.70 | 9.53           | 1.24 | 1.00           | 13.50 | 6.35 | 14.29       | 20.64 |
| 3/4"      | 1/4"                    | □12×4E6         | 19.05 | 6.35           | 1.65 | 1.00           | 16.68 | 6.35 | 20.65       | 27.00 |
| 3/4"      | 3/8"                    | □12×6E6         | 19.05 | 9.53           | 1.65 | 1.00           | 16.68 | 6.35 | 20.65       | 27.00 |
| 3/4"      | 1/2"                    | □12×8E6         | 19.05 | 12.70          | 1.65 | 1.24           | 16.68 | 6.35 | 20.65       | 27.00 |



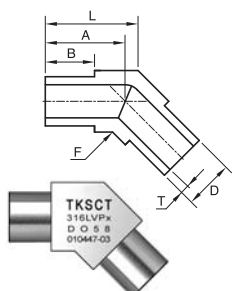
## Micro 90° Elbow

| Size (OD) | Ordering Number | D     | T    | A     | B    | F Body Cube | L     |
|-----------|-----------------|-------|------|-------|------|-------------|-------|
| 1/4"      | □4E6            | 6.35  | 1.00 | 10.32 | 6.35 | 7.94        | 14.29 |
| 3/8"      | □6E6            | 9.53  | 1.00 | 11.91 | 6.35 | 11.11       | 17.46 |
| 1/2"      | □8E6            | 12.70 | 1.24 | 13.50 | 6.35 | 14.29       | 20.64 |
| 3/4"      | □12E6           | 19.05 | 1.65 | 16.68 | 6.35 | 20.65       | 27.00 |



## Micro Extended Leg 90° Elbow

| Size (OD) | Ordering Number | D    | T    | A     | A <sub>1</sub> | B    | B <sub>1</sub> | F Body Cube |
|-----------|-----------------|------|------|-------|----------------|------|----------------|-------------|
| 1/4"      | □4EX11          | 6.35 | 1.00 | 12.30 | 17.38          | 6.35 | 11.43          | 11.11       |



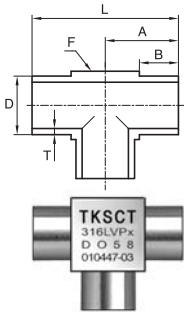
## Micro 45° Elbow

| Size (OD) | Ordering Number | D     | T    | A     | B    | F Body Cube | L     |
|-----------|-----------------|-------|------|-------|------|-------------|-------|
| 1/4"      | □4HE6           | 6.35  | 1.00 | 10.32 | 6.35 | 7.94        | 11.96 |
| 3/8"      | □6HE6           | 9.53  | 1.00 | 11.91 | 6.35 | 11.11       | 14.21 |
| 1/2"      | □8HE6           | 12.70 | 1.24 | 13.50 | 6.35 | 14.29       | 16.46 |
| 3/4"      | □12HE6          | 19.05 | 1.65 | 16.68 | 6.35 | 20.65       | 20.95 |

• Dimensions are for reference only and are subject to change.

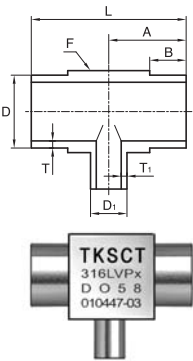
# WELD FITTINGS

## Dimensions / Ordering Information



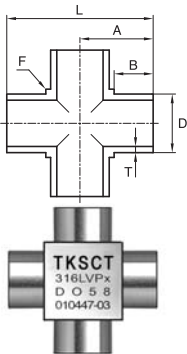
### Micro Tee

| Size (OD) | Ordering Number | D     | T    | A     | B    | F Body Cube | L     |
|-----------|-----------------|-------|------|-------|------|-------------|-------|
| 1/4"      | □4T6            | 6.35  | 1.00 | 10.32 | 6.35 | 7.94        | 20.64 |
| 3/8"      | □6T6            | 9.53  | 1.00 | 11.91 | 6.35 | 11.11       | 23.81 |
| 1/2"      | □8T6            | 12.70 | 1.24 | 13.50 | 6.35 | 14.29       | 26.99 |
| 3/4"      | □12T6           | 19.05 | 1.65 | 16.68 | 6.35 | 20.65       | 33.35 |



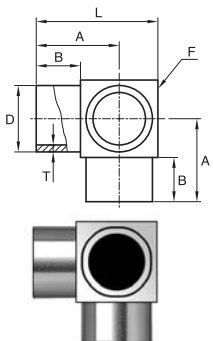
### Micro Reducing Tee

| Size (OD) | Size (OD <sub>1</sub> ) | Ordering Number | D     | D <sub>1</sub> | T    | T <sub>1</sub> | A     | B    | F Body Cube | L     |
|-----------|-------------------------|-----------------|-------|----------------|------|----------------|-------|------|-------------|-------|
| 3/8"      | 1/4"                    | □6 ×4T6         | 9.53  | 6.35           | 1.00 | 1.00           | 11.91 | 6.35 | 11.11       | 23.81 |
| 1/2"      | 1/4"                    | □8 ×4T6         | 12.70 | 6.35           | 1.24 | 1.00           | 13.50 | 6.35 | 14.29       | 26.99 |
| 1/2"      | 3/8"                    | □8 ×6T6         | 12.70 | 9.53           | 1.24 | 1.00           | 13.50 | 6.35 | 14.29       | 26.99 |
| 3/4"      | 1/4"                    | □12 ×4T6        | 19.05 | 6.35           | 1.65 | 1.00           | 16.68 | 6.35 | 20.65       | 27.00 |
| 3/4"      | 3/8"                    | □12 ×6T6        | 19.05 | 9.53           | 1.65 | 1.00           | 16.68 | 6.35 | 20.65       | 27.00 |
| 3/4"      | 1/2"                    | □12 ×8T6        | 19.05 | 12.70          | 1.65 | 1.24           | 16.68 | 6.35 | 20.65       | 27.00 |



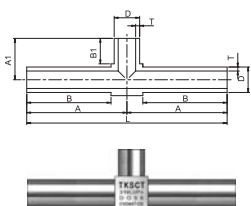
### Micro Cross

| Size (OD) | Ordering Number | D     | T    | A     | B    | F Body Cube | L     |
|-----------|-----------------|-------|------|-------|------|-------------|-------|
| 1/4"      | □4CT6           | 6.35  | 1.00 | 10.32 | 6.35 | 7.94        | 20.64 |
| 3/8"      | □6CT6           | 9.53  | 1.00 | 11.91 | 6.35 | 11.11       | 23.81 |
| 1/2"      | □8CT6           | 12.70 | 1.24 | 13.50 | 6.35 | 14.29       | 26.99 |
| 3/4"      | □12CT6          | 19.05 | 1.65 | 16.68 | 6.35 | 20.65       | 33.35 |



### Micro Tribow

| Size (OD) | Ordering Number | D     | T    | A     | B    | F Body Cube | L     |
|-----------|-----------------|-------|------|-------|------|-------------|-------|
| 1/4"      | □4TB6           | 6.35  | 1.00 | 10.32 | 6.35 | 7.94        | 14.29 |
| 3/8"      | □6TB6           | 9.53  | 1.00 | 11.91 | 6.35 | 11.11       | 17.46 |
| 1/2"      | □8TB6           | 12.70 | 1.24 | 13.50 | 6.35 | 14.29       | 20.64 |
| 3/4"      | □12TB6          | 19.05 | 1.65 | 16.68 | 6.35 | 20.65       | 27.00 |



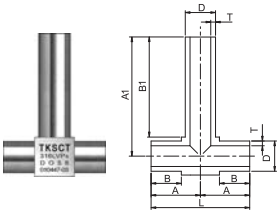
### Micro Extended Run Tee

| Size (OD) | Ordering Number | D    | T    | B     | A     | L     | B1   | A1    | F Body Cube |
|-----------|-----------------|------|------|-------|-------|-------|------|-------|-------------|
| 1/4"      | □EXT50          | 6.35 | 1.00 | 21.05 | 25.00 | 50.00 | 6.35 | 10.32 | 7.94        |

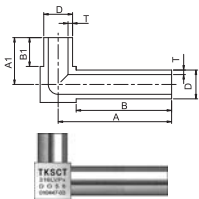
• Dimensions are for reference only and are subject to change.



# MICRO WELD FITTINGS

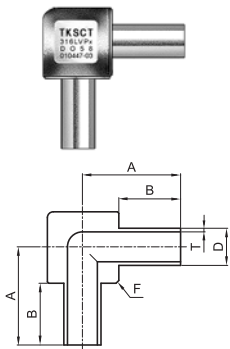


| Micro Extended Branch Leg Tee |                 |      |      |      |       |       |       |       |             |
|-------------------------------|-----------------|------|------|------|-------|-------|-------|-------|-------------|
| Size (OD)                     | Ordering Number | D    | T    | B    | A     | L     | B1    | A1    | F Body Cube |
| 1/4"                          | □EXT25          | 6.35 | 1.00 | 6.35 | 10.35 | 20.70 | 21.00 | 25.00 | 7.94        |

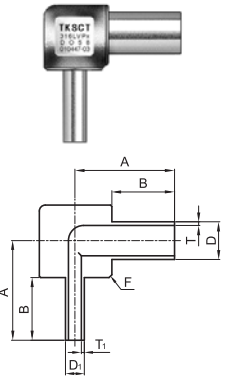


| Micro Extended Leg 90° Elbow |                 |      |      |       |       |      |       |             |  |
|------------------------------|-----------------|------|------|-------|-------|------|-------|-------------|--|
| Size (OD)                    | Ordering Number | D    | T    | B     | A     | B1   | A1    | F Body Cube |  |
| 1/4"                         | □EXE29          | 6.35 | 1.00 | 21.05 | 25.00 | 6.35 | 10.32 | 7.94        |  |

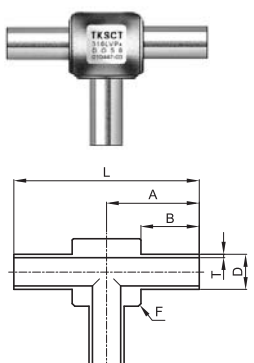
## Forged Weld Fittings



| 90° Elbow |                 |       |      |      |       |             |
|-----------|-----------------|-------|------|------|-------|-------------|
| Size (OD) | Ordering Number | D     | T    | A    | B     | F Body Cube |
| 1/4"      | □4E19           | 6.35  | 1.00 | 25.0 | 19.05 | 11.1        |
| 3/8"      | □6E19           | 9.53  | 1.00 | 25.0 | 19.05 | 11.1        |
| 1/2"      | □8E19           | 12.70 | 1.24 | 29.0 | 19.05 | 17          |
| 1/4"      | □4E10           | 6.35  | 1.00 | 15.9 | 10.00 | 11.1        |
| 3/8"      | □6E10           | 9.53  | 1.00 | 15.9 | 10.00 | 11.1        |
| 1/2"      | □8E10           | 12.70 | 1.24 | 19.9 | 10.00 | 17          |
| 3/4"      | □12E10          | 19.05 | 1.65 | 22.4 | 10.00 | 25.0        |
| 3/4"      | □12E22          | 19.05 | 1.65 | 33.5 | 22.5  | 25.0        |
| 1"        | □16E23          | 25.4  | 1.65 | 38.5 | 23.3  | 30.0        |



| Reducing 90° Elbow |            |                 |       |      |      |      |       |      |             |
|--------------------|------------|-----------------|-------|------|------|------|-------|------|-------------|
| Size (OD)          | Size (OD1) | Ordering Number | D     | D1   | T    | T1   | B     | A    | F Body Cube |
| 3/8"               | 1/4"       | □6×4E19         | 9.53  | 6.35 | 1.00 | 1.00 | 19.05 | 25   | 11.1        |
| 1/2"               | 1/4"       | □8×4E19         | 12.70 | 6.35 | 1.24 | 1.00 | 19.05 | 29   | 17          |
| 1/2"               | 3/8"       | □8×6E19         | 12.70 | 9.53 | 1.24 | 1.00 | 19.05 | 29   | 17          |
| 3/4"               | 1/4"       | □12×4E22        | 19.05 | 6.35 | 1.65 | 1.00 | 22.5  | 34   | 25.0        |
| 1"                 | 1/2"       | □16×8E23        | 25.4  | 12.7 | 1.65 | 1.24 | 23.3  | 38.3 | 30.0        |

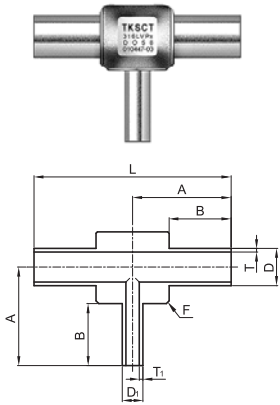


| Tee       |                 |       |      |      |       |             |      |
|-----------|-----------------|-------|------|------|-------|-------------|------|
| Size (OD) | Ordering Number | D     | T    | A    | B     | F Body Cube | L    |
| 1/4"      | □4T19           | 6.35  | 1.00 | 25.0 | 19.05 | 11.1        | 50.0 |
| 3/8"      | □6T19           | 9.53  | 1.00 | 25.0 | 19.05 | 11.1        | 50.0 |
| 1/2"      | □8T19           | 12.70 | 1.24 | 29.0 | 19.05 | 17          | 58.0 |
| 1/4"      | □4T10           | 6.35  | 1.00 | 15.9 | 10.00 | 11.1        | 31.8 |
| 3/8"      | □6T10           | 9.53  | 1.00 | 15.9 | 10.00 | 11.1        | 31.8 |
| 1/2"      | □8T10           | 12.70 | 1.24 | 19.9 | 10.00 | 17          | 39.8 |
| 3/4"      | □12T10          | 19.05 | 1.65 | 22.4 | 10.00 | 25.0        | 44.8 |
| 3/4"      | □12T22          | 19.05 | 1.65 | 33.5 | 22.5  | 25.0        | 67   |
| 1"        | □16T23          | 25.4  | 1.65 | 38.3 | 23.3  | 30.0        | 76.6 |

• Dimensions are for reference only and are subject to change.

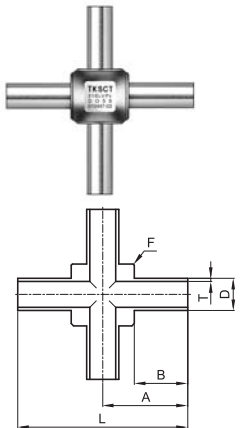
# WELD FITTINGS

## Dimensions / Ordering Information



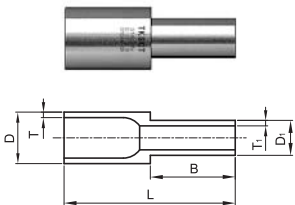
### Reducing Tee

| Size (OD) | Size (OD <sub>1</sub> ) | Ordering Number | D     | D <sub>1</sub> | T    | T <sub>1</sub> | A    | B     | F Body Cube | L    |
|-----------|-------------------------|-----------------|-------|----------------|------|----------------|------|-------|-------------|------|
| 3/8"      | 1/4"                    | □6 × 4T19       | 9.53  | 6.35           | 1.00 | 1.00           | 25.0 | 19.05 | 11.1        | 50.0 |
| 1/2"      | 1/4"                    | □8 × 4T19       | 12.70 | 6.35           | 1.24 | 1.00           | 29.0 | 19.05 | 17          | 58.0 |
| 1/2"      | 3/8"                    | □8 × 6T19       | 12.70 | 9.53           | 1.24 | 1.00           | 29.0 | 19.05 | 17          | 58.0 |
| 3/4"      | 1/4"                    | □12 × 4T22      | 19.05 | 6.35           | 1.65 | 1.00           | 33.5 | 22.5  | 25          | 67   |
| 3/4"      | 3/8"                    | □12 × 6T22      | 19.05 | 9.53           | 1.65 | 1.00           | 33.5 | 22.5  | 25          | 67   |
| 3/4"      | 1/2"                    | □12 × 8T22      | 19.05 | 12.7           | 1.65 | 1.24           | 33.5 | 22.5  | 25          | 67   |
| 1"        | 1/4"                    | □16 × 4T23      | 25.4  | 6.35           | 1.65 | 1.00           | 38.3 | 23.3  | 30          | 76.6 |
| 1"        | 1/2"                    | □16 × 8T23      | 25.4  | 12.7           | 1.65 | 1.24           | 38.3 | 23.3  | 30          | 76.6 |
| 3/8"      | 1/4"                    | □6 × 4T10       | 9.53  | 6.35           | 1.00 | 1.00           | 15.9 | 10.00 | 11.1        | 31.8 |
| 1/2"      | 1/4"                    | □8 × 4T10       | 12.70 | 6.35           | 1.24 | 1.00           | 19.9 | 10.00 | 17          | 39.8 |
| 1/2"      | 3/8"                    | □8 × 6T10       | 12.70 | 9.53           | 1.24 | 1.00           | 19.9 | 10.00 | 17          | 39.8 |
| 3/4"      | 1/4"                    | □12 × 4T10      | 19.05 | 6.35           | 1.65 | 1.00           | 22.4 | 10.00 | 25.0        | 44.8 |
| 3/4"      | 3/8"                    | □12 × 6T10      | 19.05 | 9.53           | 1.65 | 1.00           | 22.4 | 10.00 | 25.0        | 44.8 |



### Cross Tee

| Size (OD) | Ordering Number | D     | T    | A    | B     | F Body Cube | L    |
|-----------|-----------------|-------|------|------|-------|-------------|------|
| 1/4"      | □4CT19          | 6.35  | 1.00 | 25.0 | 19.05 | 11.1        | 50.0 |
| 3/8"      | □6CT19          | 9.53  | 1.00 | 25.0 | 19.05 | 11.1        | 50.0 |
| 1/2"      | □8CT19          | 12.70 | 1.24 | 29.0 | 19.05 | 17          | 58.0 |
| 3/4"      | □12CT19         | 19.05 | 1.65 | 31.5 | 19.05 | 25.0        | 63.0 |
| 1/4"      | □4CT10          | 6.35  | 1.00 | 15.9 | 10.00 | 11.1        | 31.8 |
| 3/8"      | □6CT10          | 9.53  | 1.00 | 15.9 | 10.00 | 11.1        | 31.8 |
| 1/2"      | □8CT10          | 12.70 | 1.24 | 19.9 | 10.00 | 17          | 39.8 |
| 3/4"      | □12CT10         | 19.05 | 1.65 | 22.4 | 10.00 | 25.0        | 44.8 |



### Reducer

| Size (OD) | Size (OD <sub>1</sub> ) | Ordering Number | D     | D <sub>1</sub> | T    | T <sub>1</sub> | B     | L    |
|-----------|-------------------------|-----------------|-------|----------------|------|----------------|-------|------|
| 3/8"      | 1/4"                    | □6 × 4R19       | 9.53  | 6.35           | 1.00 | 1.00           | 19.05 | 38.1 |
| 1/2"      | 1/4"                    | □8 × 4R19       | 12.70 | 6.35           | 1.24 | 1.00           | 19.05 | 38.1 |
| 1/2"      | 3/8"                    | □8 × 6R19       | 12.70 | 9.53           | 1.24 | 1.00           | 19.05 | 38.1 |
| 3/4"      | 1/4"                    | □12 × 4R19      | 19.05 | 6.35           | 1.65 | 1.00           | 19.05 | 42.9 |
| 3/4"      | 3/8"                    | □12 × 6R19      | 19.05 | 9.53           | 1.65 | 1.00           | 19.05 | 42.9 |
| 3/4"      | 1/2"                    | □12 × 8R19      | 19.05 | 12.70          | 1.65 | 1.24           | 19.05 | 42.9 |
| 3/8"      | 1/4"                    | □6 × 4R10       | 9.53  | 6.35           | 1.00 | 1.00           | 10.00 | 20.0 |
| 1/2"      | 1/4"                    | □8 × 4R10       | 12.70 | 6.35           | 1.24 | 1.00           | 10.00 | 20.0 |
| 1/2"      | 3/8"                    | □8 × 6R10       | 12.70 | 9.53           | 1.24 | 1.00           | 10.00 | 20.0 |
| 3/4"      | 1/4"                    | □12 × 4R10      | 19.05 | 6.35           | 1.65 | 1.00           | 10.00 | 20.0 |
| 3/4"      | 3/8"                    | □12 × 6R10      | 19.05 | 9.53           | 1.65 | 1.00           | 10.00 | 20.0 |
| 3/4"      | 1/2"                    | □12 × 8R10      | 19.05 | 12.70          | 1.65 | 1.24           | 10.00 | 20.0 |

• Dimensions are for reference only and are subject to change.



# METAL FACE SEAL FITTINGS

- Glands
- Welded Assemblies
- Gaskets
- Nuts, Caps and Plugs
- High-Flow Connections - "H" Type

- **High-Purity Nickel and Hastelloy C-22** glands for extremely corrosive applications.
- **Non-Rotational Female Nut** to prevent transmission of torque during make-up and therefore minimize twist of component which causes stress concentration.

## Materials

| Glands, Bodies  |                            |   |
|---|----------------------------|---|
| Material  | Ordering Number Designator | Applicable Specification                                  |
| 316L stainless steel Single Melt                        | S                          | bar stock : ASME SA479, ASTM A276<br>forgings : ASTM A182 |
| 316L VAR(Vacuum Arc Remelt) stainless steel Double Melt | D                          | bar stock : ASME SA479, ASTM A276<br>forgings : ASTM A182 |

## Some Configuration

| Gaskets                            |                            |                          |
|------------------------------------|----------------------------|--------------------------|
| Material                           | Ordering Number Designator | Applicable Specification |
| Nickel                             | UN                         | ASTM B162                |
| Silver plated nickel               | SN                         | ASTM B162                |
| 316L stainless steel               | US                         | ASTM A167                |
| Silver plated 316L stainless steel | SS                         | ASTM A167                |

## Specifications

- **Pressure Ratings** are based upon tests conducted using MFS assemblies. All ratings comply with calculations per ANSI Code for Pressure Piping B31.3.
- **Working Pressures** are rated at ambient temperature and are based on a 4 to 1 design factor. To determine pressure ratings in accordance with ANSI B31.1 multiply **Working Pressures** by 0.94.
- **Temperature Ratings**  
Fittings: Stainless Steel 316, 316L 1000°F(537°C)  
Gaskets: High-Purity Nickel 600°F(315°C)  
Stainless Steel 1000°F(537°C)
- **Dimensions** are for reference only and are subject to change
- **Plating** Female nuts are silver plated. Avoid chemical processes used for cleaning, electropolishing, and passivation that will remove plating. If the plating is damage or removed, thread galling may occur, damaging fitting components and preventing a proper seal.

- **Testing** products are rated to a Helium leak rate of  $1 \times 10^{-9}$  atm cc/sec.
- **Internal Surface Finishes:** components are available with controlled surface finishes and electropolished internal surfaces.
- **Cleaning and Packaging:** Ultra-High Purity cleaning and packaging in a Class 100 Clean Room environment validated per Federal Standard 209E, is standard for all electropolished components.

| Designator | Surface Finish(Ry) | Surface Finish(Ra) |
|------------|--------------------|--------------------|
|            | Maximum            | Maximum            |
| EP         | 0.7 $\mu\text{m}$  | 5 $\mu\text{in}$   |
| BA         | 3.0 $\mu\text{m}$  | 10 $\mu\text{in}$  |

## Typical Face Seal Fittings



Female Nut



Gland



Gasket



Gland

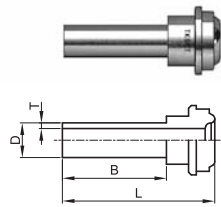


Male Nut

# METAL FACE SEAL FITTINGS

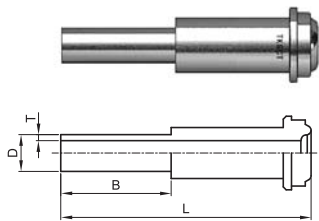
## Dimensions / Ordering Information

### Glands



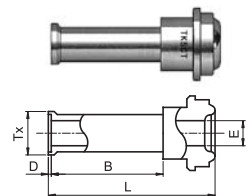
| Female Gland |           |                 |       |      |       |       |            |
|--------------|-----------|-----------------|-------|------|-------|-------|------------|
| Tube Size    | Head Size | Ordering Number | D     | T    | B     | L     | ANS (Inch) |
| 1/8"         | 1/8"      | □2SG19          | 3.18  | 0.70 | 19.05 | 27.40 | 1/8        |
| 1/4"         | 1/4"      | □4SG6           | 6.35  | 1.00 | 6.35  | 15.24 | 1/4        |
| 1/4"         | 1/4"      | □4SG10          | 6.35  | 1.00 | 10.00 | 18.89 | 1/4        |
| 1/4"         | 1/4"      | □4SG19          | 6.35  | 1.00 | 19.05 | 27.94 | 1/4        |
| 3/8"         | 1/2"      | □6SG6           | 9.53  | 1.00 | 6.35  | 15.75 | 1/2        |
| 3/8"         | 1/2"      | □6SG10          | 9.53  | 1.00 | 10.00 | 19.40 | 1/2        |
| 3/8"         | 1/2"      | □6SG19          | 9.53  | 1.00 | 19.05 | 28.45 | 1/2        |
| 1/2"         | 1/2"      | □8SG6           | 12.70 | 1.24 | 6.35  | 15.75 | 1/2        |
| 1/2"         | 1/2"      | □8SG10          | 12.70 | 1.24 | 10.00 | 19.40 | 1/2        |
| 1/2"         | 1/2"      | □8SG19          | 12.70 | 1.24 | 19.05 | 28.45 | 1/2        |
| 3/4"         | 3/4"      | □12SG19         | 19.05 | 1.65 | 19.05 | 34.50 | 3/4        |
| 1"           | 1"        | □16SG19         | 25.40 | 1.65 | 19.05 | 38.60 | 1          |
| 1/4"         | 1/2"      | □8 × 4SG6       | 6.35  | 1.00 | 6.35  | 15.75 | 1/2        |
| 1/4"         | 1/2"      | □8 × 4SG10      | 6.35  | 1.00 | 10.00 | 19.40 | 1/2        |
| 1/4"         | 1/2"      | □8 × 4SG19      | 6.35  | 1.00 | 19.05 | 28.45 | 1/2        |

ANS : AVAILABLE NUT SIZE



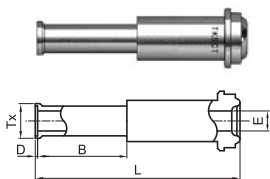
| Male Gland |           |                 |       |      |       |       |            |
|------------|-----------|-----------------|-------|------|-------|-------|------------|
| Tube Size  | Head Size | Ordering Number | D     | T    | B     | L     | ANS (Inch) |
| 1/8"       | 1/8"      | □2SG19          | 3.18  | 0.70 | 19.05 | 36.00 | 1/8        |
| 1/4"       | 1/4"      | □4LG6           | 6.35  | 1.00 | 6.35  | 30.48 | 1/4        |
| 1/4"       | 1/4"      | □4LG10          | 6.35  | 1.00 | 10.00 | 34.13 | 1/4        |
| 1/4"       | 1/4"      | □4LG19          | 6.35  | 1.00 | 19.05 | 43.18 | 1/4        |
| 3/8"       | 1/2"      | □6LG6           | 9.53  | 1.00 | 6.35  | 32.77 | 1/2        |
| 3/8"       | 1/2"      | □6LG10          | 9.53  | 1.00 | 10.00 | 36.42 | 1/2        |
| 3/8"       | 1/2"      | □6LG19          | 9.53  | 1.00 | 19.05 | 45.47 | 1/2        |
| 1/2"       | 1/2"      | □8LG6           | 12.70 | 1.24 | 6.35  | 32.77 | 1/2        |
| 1/2"       | 1/2"      | □8LG10          | 12.70 | 1.24 | 10.00 | 36.42 | 1/2        |
| 1/2"       | 1/2"      | □8LG19          | 12.70 | 1.24 | 19.05 | 45.47 | 1/2        |
| 3/4"       | 3/4"      | □12LG19         | 19.05 | 1.65 | 19.05 | 51.56 | 3/4        |
| 1"         | 1"        | □16LG19         | 25.40 | 1.65 | 19.05 | 58.93 | 1          |
| 1/4"       | 1/2"      | □8 × 4LG6       | 6.35  | 1.00 | 6.35  | 32.77 | 1/2        |
| 1/4"       | 1/2"      | □8 × 4LG10      | 6.35  | 1.00 | 10.00 | 36.42 | 1/2        |
| 1/4"       | 1/2"      | □8 × 4LG19      | 6.35  | 1.00 | 19.05 | 45.47 | 1/2        |

ANS : AVAILABLE NUT SIZE



| ATW Female Long Gland |           |                 |       |     |      |      |      |
|-----------------------|-----------|-----------------|-------|-----|------|------|------|
| Tube Size             | Head Size | Ordering Number | B     | D   | E    | L    | Tx   |
| 1/4"                  | 1/4"      | □4ASG19         | 19.05 | 0.5 | 4.6  | 28.4 | 7.4  |
| 3/8"                  | 1/2"      | □6ASG19         | 19.05 | 0.8 | 7.9  | 29.2 | 10.4 |
| 1/2"                  | 1/2"      | □8ASG19         | 19.05 | 1.0 | 10.2 | 29.5 | 14.0 |
| 1/4"                  | 1/2"      | □8 × 4ASG19     | 19.05 | 0.5 | 10.2 | 29.5 | 7.4  |

ANS : AVAILABLE NUT SIZE



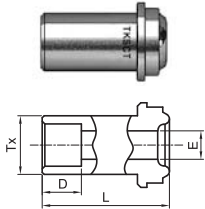
| ATW Male Long Gland |           |                 |       |     |      |      |      |
|---------------------|-----------|-----------------|-------|-----|------|------|------|
| Tube Size           | Head Size | Ordering Number | B     | D   | E    | L    | Tx   |
| 1/4"                | 1/4"      | □4ALG19         | 19.05 | 0.5 | 4.6  | 43.7 | 7.4  |
| 3/8"                | 1/2"      | □6ALG19         | 19.05 | 0.8 | 7.9  | 46.2 | 10.4 |
| 1/2"                | 1/2"      | □8ALG19         | 19.05 | 1.0 | 10.2 | 46.5 | 14.0 |
| 3/4"                | 3/4"      | □12ALG19        | 19.05 | 1.0 | 16.5 | 52.6 | 20.3 |
| 1"                  | 1"        | □16ALG19        | 24.40 | 1.0 | 22.1 | 65.3 | 26.9 |
| 1/4"                | 1/2"      | □8 × 4ALG19     | 19.05 | 0.5 | 10.2 | 46.5 | 7.4  |

ANS : AVAILABLE NUT SIZE

• Dimensions are for reference only and are subject to change.

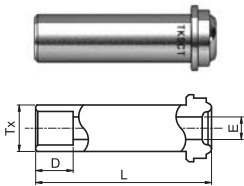


# METAL FACE SEAL FITTINGS



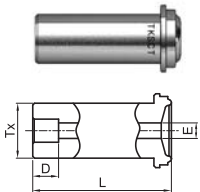
### Socket Weld Short Gland

| Socket Size | Head Size | Ordering Number | D   | E   | L    | Tx  |
|-------------|-----------|-----------------|-----|-----|------|-----|
| 1/4"        | 1/4"      | □4SWSG          | 7.1 | 4.6 | 12.7 | 8.9 |



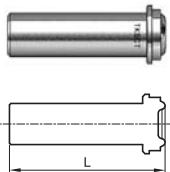
### Socket Weld Long Gland

| Socket Size | Head Size | Ordering Number | D    | E    | L    | Tx   |
|-------------|-----------|-----------------|------|------|------|------|
| 1/8"        | 1/8"      | □2SWLG          | 2.5  | 2.3  | 17.8 | 5.1  |
| 1/4"        | 1/4"      | □4SWLG          | 7.1  | 4.6  | 33.3 | 8.9  |
| 3/8"        | 1/2"      | □6SWLG          | 7.9  | 7.1  | 38.1 | 15.2 |
| 1/2"        | 1/2"      | □8SWLG          | 9.6  | 10.2 | 38.1 | 15.2 |
| 3/4"        | 3/4"      | □12SWLG         | 11.2 | 15.7 | 50.8 | 22.4 |
| 1"          | 1"        | □16SWLG         | 15.7 | 22.1 | 56.4 | 30.2 |



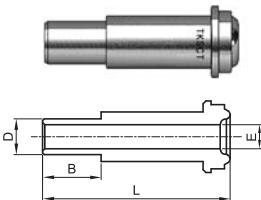
### Socket Weld Reducing Long Gland

| Socket Size | Head Size | Ordering Number | D   | E   | L    | Tx   |
|-------------|-----------|-----------------|-----|-----|------|------|
| 1/8"        | 1/4"      | □4×2SWLG        | 2.5 | 2.3 | 33.3 | 8.9  |
| 1/4"        | 1/2"      | □8×4SWLG        | 7.1 | 4.6 | 38.1 | 15.2 |



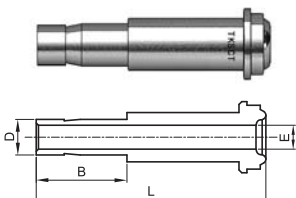
### Blind Gland

| Head Size | Ordering Number | L    | Head Size | Ordering Number | L    |
|-----------|-----------------|------|-----------|-----------------|------|
| 1/8"      | □2BLG           | 17.8 | 3/4"      | □12BLG          | 50.8 |
| 1/4"      | □4BLG           | 33.3 | 1"        | □16BLG          | 56.4 |
| 1/2"      | □8BLG           | 38.1 |           |                 |      |



### Male Weld Gland

| Tube Size | Head Size | Ordering Number | D     | E    | B    | L    | ANS (Inch) |
|-----------|-----------|-----------------|-------|------|------|------|------------|
| 1/8"      | 1/8"      | □2MG            | 3.18  | 1.5  | 7.1  | 17.8 | 1/8        |
| 1/4"      | 1/4"      | □4MG            | 6.35  | 3.0  | 10.4 | 33.3 | 1/4        |
| 3/8"      | 1/2"      | □6MG            | 9.53  | 7.1  | 10.4 | 38.1 | 3/8        |
| 1/2"      | 1/2"      | □8MG            | 12.70 | 10.2 | 12.7 | 38.1 | 1/2        |

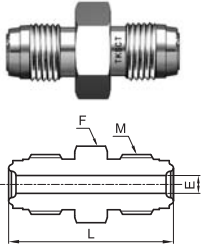


### Tube Adapter

| Tube Size | Head Size | Ordering Number | D     | E   | B    | L    | ANS (Inch) |
|-----------|-----------|-----------------|-------|-----|------|------|------------|
| 1/4"      | 1/4"      | □4TA            | 6.35  | 4.3 | 16.2 | 41   | 1/4        |
| 3/8"      | 1/2"      | □6TA            | 9.53  | 6.8 | 17.8 | 46   | 3/8        |
| 1/2"      | 1/2"      | □8TA            | 12.70 | 9.4 | 24.4 | 49.3 | 1/2        |

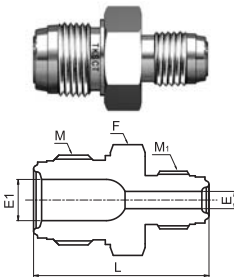
# METAL FACE SEAL FITTINGS

## Dimensions / Ordering Information



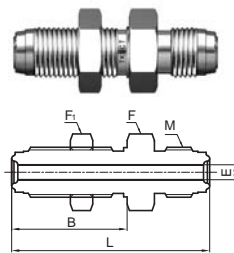
### Double Male Union

| Head Size | Ordering Number | E     | L     | F Hex Flat | M              |
|-----------|-----------------|-------|-------|------------|----------------|
| 1/8"      | □2MU            | 2.30  | 28.70 | 9.52       | 5/16-24 UNF    |
| 1/4"      | □4MU            | 4.35  | 39.37 | 15.88      | 9/16-18 UNF    |
| 1/2"      | □8MU            | 10.22 | 46.74 | 23.81      | 7/8-14 UNF     |
| 3/4"      | □12MU           | 15.75 | 61.98 | 33.34      | 1 1/4 -18 UNEF |
| 1"        | □16MU           | 22.10 | 65.79 | 41.28      | 1 1/2-20 UN    |



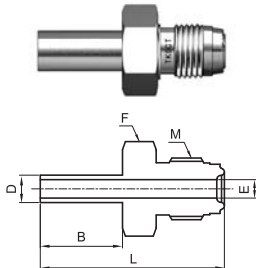
### Double Male Reducing Union

| Head Size | Head Size | Ordering Number | E    | E <sub>1</sub> | F Hex Flat | L    | M           | M <sub>1</sub> |
|-----------|-----------|-----------------|------|----------------|------------|------|-------------|----------------|
| 1/4"      | 1/8"      | □4 × 2MU        | 2.30 | 4.35           | 15.88      | 34.8 | 9/16-18 UNF | 5/16-24 UNF    |
| 1/2"      | 1/4"      | □8 × 4MU        | 4.35 | 10.20          | 23.81      | 43.4 | 7/8-14 UNF  | 9/16-18 UNF    |



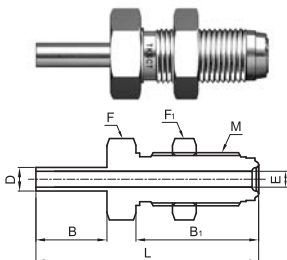
### Bulkhead Union

| Head Size | Ordering Number | E     | B     | L     | F Hex Flat | F <sub>1</sub> Hex Flat | M              |
|-----------|-----------------|-------|-------|-------|------------|-------------------------|----------------|
| 1/4"      | □4BH            | 4.35  | 33.00 | 56.60 | 19.05      | 15.88                   | 9/16-18 UNF    |
| 1/2"      | □8BH            | 10.22 | 37.60 | 65.25 | 26.90      | 23.81                   | 7/8-14 UNF     |
| 3/4"      | □12BH           | 15.75 | 43.40 | 79.00 | 38.10      | 33.34                   | 1 1/4 -18 UNEF |
| 1"        | □16BH           | 22.10 | 47.10 | 86.00 | 44.40      | 41.28                   | 1 1/2-20 UN    |



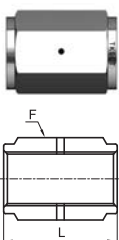
### TBW Body

| Tube Size | Ordering Number | D     | B     | E     | L     | F Hex Flat | M              |
|-----------|-----------------|-------|-------|-------|-------|------------|----------------|
| 1/4"      | □4BY19          | 6.35  | 19.05 | 4.35  | 42.65 | 15.88      | 9/16-18 UNF    |
| 3/8"      | □6BY19          | 9.53  | 19.05 | 10.22 | 46.70 | 23.81      | 7/8-14 UNF     |
| 1/2"      | □8BY19          | 12.70 | 19.05 | 10.22 | 46.70 | 23.81      | 7/8-14 UNF     |
| 3/4"      | □12BY19         | 19.05 | 19.05 | 15.75 | 55.55 | 33.34      | 1 1/4 -18 UNEF |



### TBW Bulkhead Connector

| Tube Size | Ordering Number | D     | E     | B     | B <sub>1</sub> | L     | F Body Cube | F <sub>1</sub> Body Cube | M             |
|-----------|-----------------|-------|-------|-------|----------------|-------|-------------|--------------------------|---------------|
| 1/4"      | □ 4BHY          | 6.35  | 4.35  | 19.05 | 33.00          | 59.85 | 19.05       | 15.88                    | 9/16-18 UNF   |
| 1/2"      | □ 8BHY          | 12.70 | 10.22 | 19.05 | 37.60          | 65.25 | 26.90       | 23.81                    | 7/8-14 UNF    |
| 3/4"      | □12BHY          | 19.05 | 15.75 | 19.05 | 43.25          | 71.30 | 38.10       | 33.34                    | 1 1/4-18 UNEF |

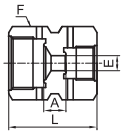


### Coupling

| Head Size | Ordering Number | F Hex Flat | L    | Head Size | Ordering Number | F Hex Flat | L    |
|-----------|-----------------|------------|------|-----------|-----------------|------------|------|
| 1/8"      | □2CG            | 11.11      | 16.8 | 3/4"      | □12CG           | 38.10      | 42.7 |
| 1/4"      | □4CG            | 19.05      | 30.2 | 1"        | □16CG           | 44.45      | 51.8 |
| 1/2"      | □8CG            | 26.98      | 33.3 |           |                 |            |      |

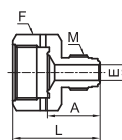
• Dimensions are for reference only and are subject to change.

# METAL FACE SEAL FITTINGS



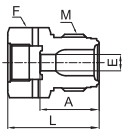
## Double Female Reducing Union

| Head Size | Head Size | Ordering Number | E   | F Hex Flat | A   | L    |
|-----------|-----------|-----------------|-----|------------|-----|------|
| 1/2"      | 1/4"      | □8 x4FU         | 6.4 | 26.98      | 8.9 | 35.8 |



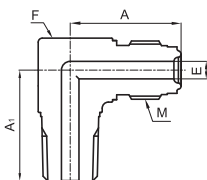
## Reducing Adapter

| Head Size | Head Size | Ordering Number | E   | F Hex Flat | A    | L    | M           |
|-----------|-----------|-----------------|-----|------------|------|------|-------------|
| 1/8"      | 1/4"      | □2 x4RA         | 2.3 | 19.05      | 17.5 | 30.2 | 5/16-24 UNF |
| 1/4"      | 1/2"      | □4 x8RA         | 4.6 | 26.98      | 21.6 | 35.8 | 9/16-18 UNF |



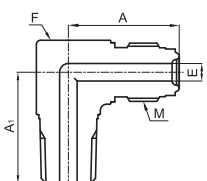
## Reducing Bushing

| Head Size | Head Size | Ordering Number | E   | F Hex Flat | A    | L    | M           |
|-----------|-----------|-----------------|-----|------------|------|------|-------------|
| 1/4"      | 1/8"      | □4 x2RB         | 3.3 | 19.05      | 19.3 | 26.9 | 9/16-18 UNF |
| 1/2"      | 1/4"      | □8 x4RB         | 6.4 | 23.81      | 23.1 | 35.8 | 7/8-14 UNF  |



## Male Elbow (PT)

| Head Size | PT SIZE | Ordering Number | E     | A     | A <sub>1</sub> | F Body Cube | M             |
|-----------|---------|-----------------|-------|-------|----------------|-------------|---------------|
| 1/4"      | 1/4"    | □4ME-X32        | 4.35  | 27.18 | 27.18          | 15.9        | 9/16-18 UNF   |
| 1/2"      | 3/8"    | □6ME-X32        | 10.22 | 36.83 | 32.00          | 23.8        | 7/8-14 UNF    |
| 1/2"      | 1/2"    | □8ME-X32        | 10.22 | 36.83 | 36.83          | 23.8        | 7/8-14 UNF    |
| 3/4"      | 3/4"    | □12ME-X32       | 15.75 | 48.80 | 43.50          | 33.3        | 1 1/4-18 UNEF |



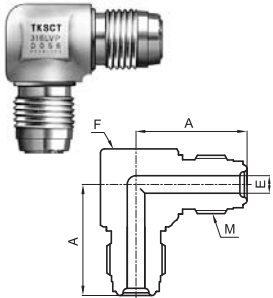
## Male Elbow (NPT)

| Head Size | NPT SIZE | Ordering Number | E     | A     | A <sub>1</sub> | F Body Cube | M             |
|-----------|----------|-----------------|-------|-------|----------------|-------------|---------------|
| 1/4"      | 1/4"     | □4ME            | 4.35  | 27.18 | 27.18          | 15.9        | 9/16-18 UNF   |
| 1/2"      | 3/8"     | □6ME            | 10.22 | 36.83 | 32.00          | 23.8        | 7/8-14 UNF    |
| 1/2"      | 1/2"     | □8ME            | 10.22 | 36.83 | 36.83          | 23.8        | 7/8-14 UNF    |
| 3/4"      | 3/4"     | □12ME           | 15.75 | 48.80 | 43.50          | 33.3        | 1 1/4-18 UNEF |

• Dimensions are for reference only and are subject to change.

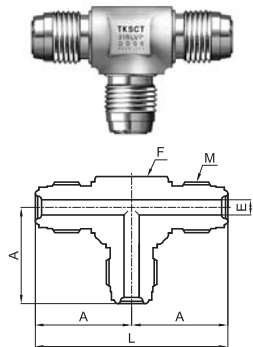
# METAL FACE SEAL FITTINGS

## Dimensions / Ordering Information



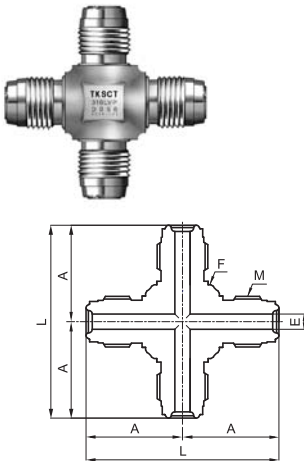
### Union Elbow

| Head Size | Ordering Number | E     | A     | F Body Cube | M             |
|-----------|-----------------|-------|-------|-------------|---------------|
| 1/4"      | □4UE            | 4.35  | 27.18 | 15.9        | 9/16-18 UNF   |
| 1/2"      | □8UE            | 10.22 | 36.83 | 23.8        | 7/8-14 UNF    |
| 3/4"      | □12UE           | 15.75 | 48.77 | 33.3        | 1 1/4-18 UNEF |
| 1"        | □16UE           | 22.10 | 50.80 | 42.2        | 1 1/2-20 UN   |



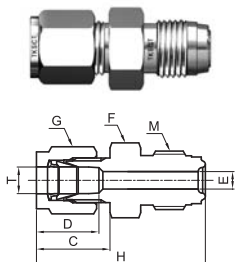
### Union Tee

| Head Size | Ordering Number | E     | A     | L      | F Body Cube | M             |
|-----------|-----------------|-------|-------|--------|-------------|---------------|
| 1/4"      | □4UT            | 4.35  | 27.18 | 54.36  | 15.9        | 9/16-18 UNF   |
| 1/2"      | □8UT            | 10.22 | 36.83 | 73.66  | 23.8        | 7/8-14 UNF    |
| 3/4"      | □12UT           | 15.75 | 48.77 | 97.54  | 33.3        | 1 1/4-18 UNEF |
| 1"        | □16UT           | 22.10 | 50.80 | 101.60 | 42.2        | 1 1/2-20 UN   |



### Union Cross

| Head Size | Ordering Number | E     | A     | L      | F Body Cube | M             |
|-----------|-----------------|-------|-------|--------|-------------|---------------|
| 1/4"      | □4UC            | 4.35  | 27.18 | 54.36  | 15.9        | 9/16-18 UNF   |
| 1/2"      | □8UC            | 10.22 | 36.83 | 73.66  | 23.8        | 7/8-14 UNF    |
| 3/4"      | □12UC           | 15.75 | 48.77 | 97.54  | 33.3        | 1 1/4-18 UNEF |
| 1"        | □16UC           | 22.10 | 50.80 | 101.60 | 42.2        | 1 1/2-20 UN   |



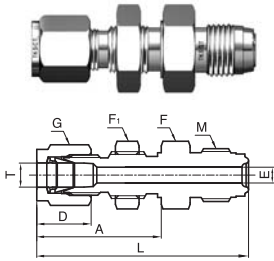
### Tube Fitting Connector

| Tube Size | Head Size | Ordering Number | C     | D     | E     | F Hex Flat | G Hex Flat | H    | T    | M           |
|-----------|-----------|-----------------|-------|-------|-------|------------|------------|------|------|-------------|
| 1/4"      | 1/4"      | □4MCK           | 17.80 | 15.20 | 4.35  | 15.90      | 14.29      | 41.1 | 1/4" | 9/16-18 UNF |
| 3/8"      | 1/2"      | □6MCK           | 19.30 | 16.80 | 10.22 | 23.81      | 17.46      | 46.7 | 3/8" | 7/8-14 UNF  |
| 1/2"      | 1/2"      | □8MCK           | 21.80 | 22.90 | 10.22 | 23.81      | 22.23      | 49.5 | 1/2" | 7/8-14 UNF  |

• Dimensions are for reference only and are subject to change.

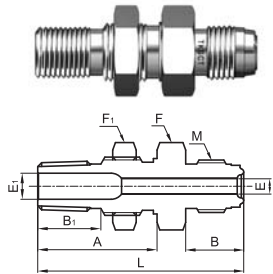


# METAL FACE SEAL FITTINGS



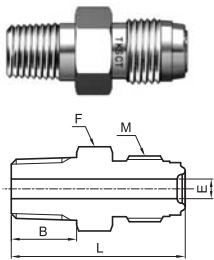
## Tube Fitting Bulkhead Connector

| Tube Size | Head Size | Ordering Number | A    | D     | E    | F Hex Flat | F <sub>1</sub> Hex Flat | G Hex Flat | L    | T    | M           |
|-----------|-----------|-----------------|------|-------|------|------------|-------------------------|------------|------|------|-------------|
| 1/4"      | 1/4"      | □4BHCK          | 33.5 | 15.20 | 4.6  | 15.87      | 15.87                   | 14.28      | 57.2 | 1/4" | 9/16-18 UNF |
| 3/8"      | 1/2"      | □6BHCK          | 36.8 | 16.80 | 7.1  | 23.81      | 19.05                   | 17.46      | 64.5 | 3/8" | 7/8-14 UNF  |
| 1/2"      | 1/2"      | □8BHCK          | 41.9 | 22.90 | 10.2 | 23.81      | 23.81                   | 22.22      | 69.6 | 1/2" | 7/8-14 UNF  |



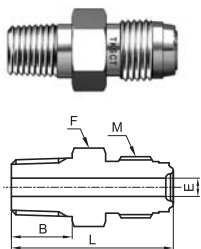
## Male Bulkhead Connector(NPT)

| Head Size | NPT SIZE | Ordering Number | B    | B <sub>1</sub> | E    | E <sub>1</sub> | F Hex Flat | F <sub>1</sub> Hex Flat | A    | L    | M           |
|-----------|----------|-----------------|------|----------------|------|----------------|------------|-------------------------|------|------|-------------|
| 1/4"      | 1/4"     | □4BHC           | 15.7 | 14.2           | 4.6  | 7.1            | 20.63      | 20.63                   | 31.5 | 56.1 | 9/16-18 UNF |
| 1/2"      | 1/4"     | □8×4BHC         | 19.1 | 14.2           | 10.2 | 7.1            | 23.81      | 20.63                   | 31.5 | 59.4 | 7/8-14 UNF  |



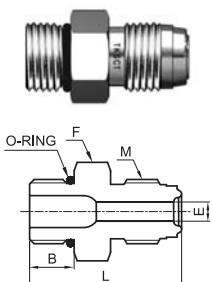
## Male Connector(PT)

| Head Size | PT SIZE | Ordering Number | E     | B     | L     | F Hex Flat | M             |
|-----------|---------|-----------------|-------|-------|-------|------------|---------------|
| 1/8"      | 1/8"    | □2MC-X32        | 2.30  | 9.60  | 27.20 | 11.11      | 5/16-24 UNF   |
| 1/4"      | 1/4"    | □4MC-X32        | 4.35  | 14.22 | 37.84 | 15.90      | 9/16-18 UNF   |
| 1/2"      | 3/8"    | □6MC-X32        | 7.44  | 14.22 | 41.87 | 23.80      | 7/8-14 UNF    |
| 1/2"      | 1/2"    | □8MC-X32        | 10.22 | 19.05 | 46.74 | 23.80      | 7/8-14 UNF    |
| 3/4"      | 3/4"    | □12MC-X32       | 15.75 | 19.05 | 55.63 | 33.30      | 1 1/4-18 UNEF |
| 1"        | 1"      | □16MC-X32       | 22.10 | 23.88 | 62.74 | 42.20      | 1 1/2-20 UN   |



## Male Connector(NPT)

| Head Size | NPT SIZE | Ordering Number | E     | B     | L     | F Hex Flat | M             |
|-----------|----------|-----------------|-------|-------|-------|------------|---------------|
| 1/8"      | 1/8"     | □2MC            | 2.30  | 9.60  | 27.20 | 11.11      | 5/16-24 UNF   |
| 1/4"      | 1/4"     | □4MC            | 4.35  | 14.22 | 37.84 | 15.90      | 9/16-18 UNF   |
| 1/2"      | 3/8"     | □6MC            | 7.44  | 14.22 | 41.87 | 23.80      | 7/8-14 UNF    |
| 1/2"      | 1/2"     | □8MC            | 10.22 | 19.05 | 46.74 | 23.80      | 7/8-14 UNF    |
| 3/4"      | 3/4"     | □12MC           | 15.75 | 19.05 | 55.63 | 33.30      | 1 1/4-18 UNEF |
| 1"        | 1"       | □16MC           | 22.10 | 23.88 | 62.74 | 42.20      | 1 1/2-20 UN   |



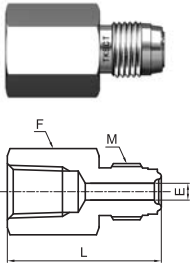
## Male Connector(ST)

| Head Size | ST SIZE      | Ordering Number | E     | B    | L    | F Hex Flat | M             | UNIFORM O-Ring Size |
|-----------|--------------|-----------------|-------|------|------|------------|---------------|---------------------|
| 1/4"      | 9/16-18 UNF  | □4MCS           | 4.35  | 9.9  | 33.8 | 19.05      | 9/16-18 UNF   | F-906               |
| 1/2"      | 7/8-14 UNF   | □8MCS           | 10.22 | 12.7 | 42.2 | 25.40      | 7/8-14 UNF    | F-910               |
| 3/4"      | 13/16-12 UNF | □12MCS          | 15.75 | 15.0 | 51.5 | 34.90      | 1 1/4-18 UNEF | F-912               |

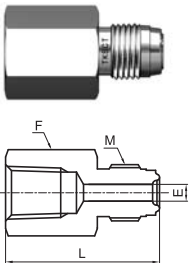
• Dimensions are for reference only and are subject to change.

# METAL FACE SEAL FITTINGS

## Dimensions / Ordering Information

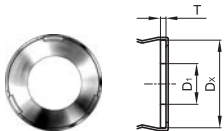


| Female Connector(PT) |         |                 |       |            |      |               |
|----------------------|---------|-----------------|-------|------------|------|---------------|
| Head Size            | PT SIZE | Ordering Number | E     | F Hex Flat | L    | M             |
| 1/8"                 | 1/8"    | □2FC-X32        | 2.30  | 14.28      | 30.2 | 5/16-24 UNF   |
| 1/4"                 | 1/4"    | □4FC-X32        | 4.35  | 19.05      | 39.1 | 9/16-18 UNF   |
| 1/2"                 | 3/8"    | □6FC-X32        | 7.44  | 23.81      | 44.7 | 7/8-14 UNF    |
| 1/2"                 | 1/2"    | □8FC-X32        | 10.22 | 26.98      | 50.5 | 7/8-14 UNF    |
| 3/4"                 | 3/4"    | □12FC-X32       | 15.75 | 33.33      | 59.9 | 1 1/4-18 UNEF |
| 1"                   | 1"      | □16FC-X32       | 22.10 | 41.27      | 63.8 | 1 1/2-20 UN   |



| Female Connector(NPT) |          |                 |       |            |      |               |
|-----------------------|----------|-----------------|-------|------------|------|---------------|
| Head Size             | NPT SIZE | Ordering Number | E     | F Hex Flat | L    | M             |
| 1/8"                  | 1/8"     | □2FC            | 2.30  | 14.28      | 30.2 | 5/16-24 UNF   |
| 1/4"                  | 1/4"     | □4FC            | 4.35  | 19.05      | 39.1 | 9/16-18 UNF   |
| 1/2"                  | 3/8"     | □6FC            | 7.44  | 23.81      | 44.7 | 7/8-14 UNF    |
| 1/2"                  | 1/2"     | □8FC            | 10.22 | 26.98      | 50.5 | 7/8-14 UNF    |
| 3/4"                  | 3/4"     | □12FC           | 15.75 | 33.33      | 59.9 | 1 1/4-18 UNEF |
| 1"                    | 1"       | □16FC           | 22.10 | 41.27      | 63.8 | 1 1/2-20 UN   |

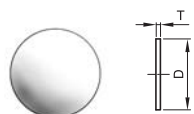
## Gaskets



| Gasket Retainer Assembly |                 |     |      |       |
|--------------------------|-----------------|-----|------|-------|
| Head Size                | Ordering Number | T   | D1   | Dx    |
| 1/4"                     | □4GR            | 0.8 | 5.6  | 11.85 |
| 1/2"                     | □8GR            | 0.8 | 11.2 | 19.27 |
| 3/4"                     | □12GR           | 0.8 | 16.7 | 27.90 |
| 1"                       | □16GR           | 0.8 | 22.6 | 34.20 |



| Gasket    |                 |     |      |      |
|-----------|-----------------|-----|------|------|
| Head Size | Ordering Number | T   | D1   | Dx   |
| 1/8"      | □2GT            | 0.8 | 2.3  | 6.6  |
| 1/4"      | □4GT            | 0.8 | 5.6  | 12.7 |
| 1/2"      | □8GT            | 0.8 | 11.2 | 19.8 |
| 3/4"      | □12GT           | 0.8 | 16.7 | 29.0 |
| 1"        | □16GT           | 0.8 | 22.6 | 35.8 |

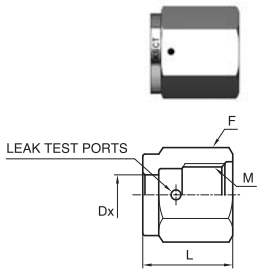


| Blind Gasket |                 |      |     |
|--------------|-----------------|------|-----|
| Head Size    | Ordering Number | D    | T   |
| 1/8"         | □2GB            | 6.6  | 0.8 |
| 1/4"         | □4GB            | 11.9 | 0.8 |
| 1/2"         | □8GB            | 19.8 | 0.8 |
| 3/4"         | □12GB           | 28.9 | 0.8 |
| 1"           | □16GB           | 35.5 | 0.8 |

• Dimensions are for reference only and are subject to change.

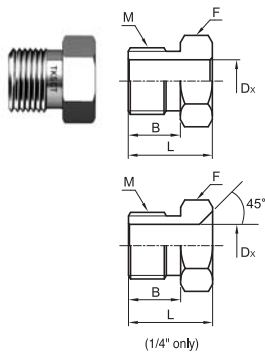
# METAL FACE SEAL FITTINGS

## Nuts, Caps, and Plugs



| Female Nut |                 |      |            |       |               |
|------------|-----------------|------|------------|-------|---------------|
| Head Size  | Ordering Number | L    | F Hex Flat | Dx    | M             |
| 1/8"       | □2FN            | 13.5 | 11.11      | 5.30  | 5/16-24 UNF   |
| 1/4"       | □4FN            | 20.5 | 19.05      | 9.10  | 9/16-18 UNF   |
| 1/2"       | □8FN            | 22.3 | 26.99      | 15.50 | 7/8-14 UNF    |
| 3/4"       | □12FN           | 28.4 | 38.10      | 22.60 | 1 1/4-18 UNEF |
| 1"         | □16FN           | 34.0 | 44.45      | 30.50 | 1 1/2-20 UN   |

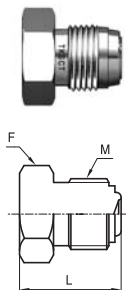
\* Material - S: 316L Stainless Steel SS: 316 Stainless Steel



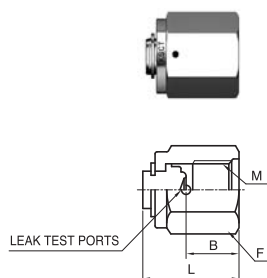
| Male Nut  |                 |      |      |            |       |               |
|-----------|-----------------|------|------|------------|-------|---------------|
| Head Size | Ordering Number | L    | B    | F Hex Flat | Dx    | M             |
| 1/8"      | □2MN            | 12.7 | 8.2  | 9.52       | 5.30  | 5/16-24 UNF   |
| 1/4"      | □4MN            | 18.0 | 11.0 | 15.88      | 9.10  | 9/16-18 UNF   |
| 1/4"      | □4MNS           | 13.7 | 11.0 | 15.88      | 9.10  | 9/16-18 UNF   |
| 1/2"      | □8MN            | 20.5 | 12.7 | 23.81      | 15.50 | 7/8-14 UNF    |
| 3/4"      | □12MN           | 25.4 | 16.0 | 33.34      | 22.60 | 1 1/4-18 UNEF |
| 1"        | □16MN           | 30.2 | 20.0 | 41.28      | 30.50 | 1 1/2-20 UN   |

\* 4MNS : Short Male Nut 1/4" Only

\* Material - S: 316L Stainless Steel SS: 316 Stainless Steel



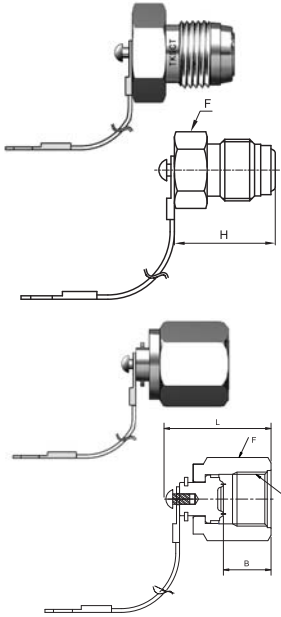
| Plug      |                 |       |            |                |
|-----------|-----------------|-------|------------|----------------|
| Head Size | Ordering Number | L     | F Hex Flat | M              |
| 1/8"      | □2PG            | 17.30 | 9.52       | 5/16-24 UNF    |
| 1/4"      | □4PG            | 23.37 | 15.88      | 9/16-18 UNF    |
| 1/2"      | □8PG            | 27.43 | 23.81      | 7/8-14 UNF     |
| 3/4"      | □12PG           | 36.32 | 33.34      | 1 1/4 -18 UNEF |
| 1"        | □16PG           | 38.61 | 41.28      | 1 1/2-20 UN    |



| Cap       |                 |       |       |            |               |
|-----------|-----------------|-------|-------|------------|---------------|
| Head Size | Ordering Number | L     | B     | F Hex Flat | M             |
| 1/8"      | □2CP            | 16.00 | 7.60  | 11.11      | 5/16-24 UNF   |
| 1/4"      | □4CP            | 24.20 | 11.18 | 19.05      | 9/16-18 UNF   |
| 1/2"      | □8CP            | 25.50 | 11.43 | 26.99      | 7/8-14 UNF    |
| 3/4"      | □12CP           | 32.77 | 13.72 | 38.10      | 1 1/4-18 UNEF |
| 1"        | □16CP           | 39.12 | 16.00 | 44.45      | 1 1/2-20 UN   |

# METAL FACE SEAL FITTINGS

## Dimensions / Ordering Information



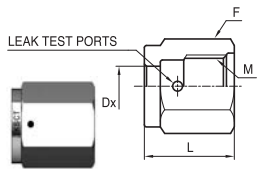
### PLUG (CABLE TYPE)

| Head Size | Ordering Number | F     | H     | Cable Length |
|-----------|-----------------|-------|-------|--------------|
| 1/4"      | □4PG-C          | 15.88 | 23.37 | 260          |
| 1/2"      | □8PG-C          | 23.81 | 27.43 | 260          |

### CAP (CABLE TYPE)

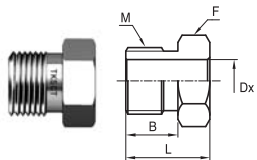
| Head Size | Ordering Number | L    | B     | F Hex Flat | M             | Cable Length |
|-----------|-----------------|------|-------|------------|---------------|--------------|
| 1/4"      | □4CP-C          | 27.8 | 11.18 | 19.05      | 9/16 - 18 UNF | 260          |
| 1/2"      | □8CP-C          | 29.0 | 11.43 | 26.90      | 7/8 - 14 UNF  | 260          |

## High-Flow Connection - "H" Type



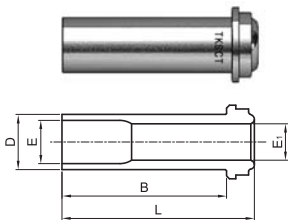
### HMFS Female Nut

| Head Size | Ordering Number | L     | F Hex Flat | Dx   | M           |
|-----------|-----------------|-------|------------|------|-------------|
| 1/4"      | □4HFN           | 20.57 | 19.05      | 9.90 | 9/16-18 UNF |



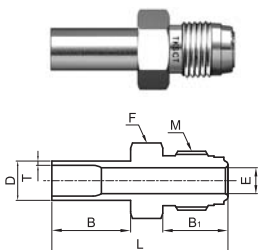
### HMFS Male Nut

| Head Size | Ordering Number | B    | L     | F Hex Flat | Dx  | M           |
|-----------|-----------------|------|-------|------------|-----|-------------|
| 1/4"      | □4HMN           | 11.0 | 18.03 | 15.88      | 9.9 | 9/16-18 UNF |



### HMFS Long Gland

| Tube Size | Head Size | Ordering Number | D    | B    | L    | E   | E <sub>1</sub> |
|-----------|-----------|-----------------|------|------|------|-----|----------------|
| 3/8"      | 1/4"      | □6 x4HLG        | 9.53 | 28.4 | 33.2 | 7.5 | 6.28           |



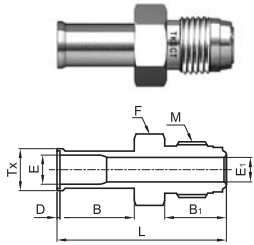
### HMFS TBW Body

| Head Size | Tube Size | Ordering Number | D    | T    | E   | B     | B <sub>1</sub> | F Hex Flat | L    | M           |
|-----------|-----------|-----------------|------|------|-----|-------|----------------|------------|------|-------------|
| 1/4"      | 3/8"      | □4 x6HBY        | 9.53 | 1.00 | 6.4 | 19.05 | 15.7           | 15.87      | 42.7 | 9/16-18 UNF |

• Dimensions are for reference only and are subject to change.

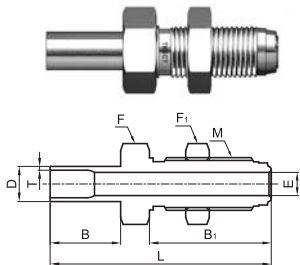


# METAL FACE SEAL FITTINGS



**HMFS ATW Body**

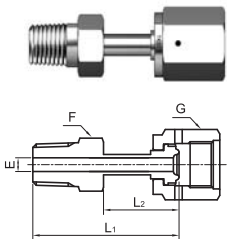
| Head Size(T) | Tube Size | Ordering Number | B     | B <sub>1</sub> | D   | E   | E <sub>1</sub> | F Hex Flat | L    | Tx   | M           |
|--------------|-----------|-----------------|-------|----------------|-----|-----|----------------|------------|------|------|-------------|
| 1/4"         | 3/8"      | □4×6HABY        | 19.05 | 15.7           | 0.8 | 6.4 | 7.9            | 15.87      | 43.4 | 10.4 | 9/16-18 UNF |



**HMFS Bulkhead Connector**

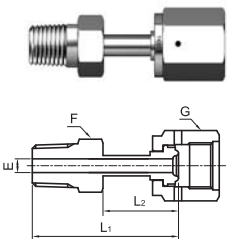
| Head Size | Tube Size | Ordering Number | D    | T    | B     | B <sub>1</sub> | E   | F Hex Flat | F <sub>1</sub> Hex Flat | L    | M           |
|-----------|-----------|-----------------|------|------|-------|----------------|-----|------------|-------------------------|------|-------------|
| 1/4"      | 3/8"      | □4×6HBHY        | 9.53 | 1.00 | 19.05 | 33.0           | 6.4 | 19.05      | 19.05                   | 59.9 | 9/16-18 UNF |

## Welded Assemblies



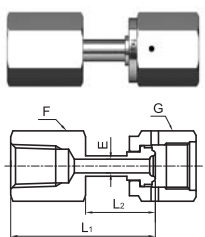
**Welded Male Connector(PT)**

| Head Size | PT SIZE | Ordering Number | E     | F Hex Flat | G Hex Flat | L <sub>1</sub> | L <sub>2</sub> |
|-----------|---------|-----------------|-------|------------|------------|----------------|----------------|
| 1/4"      | 1/4"    | □4WMC-X32       | 4.35  | 14.29      | 19.05      | 45.5           | 23.4           |
| 1/2"      | 3/8"    | □6WMC-X32       | 10.22 | 17.46      | 26.99      | 48.0           | 25.4           |
| 1/2"      | 1/2"    | □8WMC-X32       | 10.22 | 22.23      | 26.99      | 53.1           | 25.6           |



**Welded Male Connector(NPT)**

| Head Size | NPT SIZE | Ordering Number | E     | F Hex Flat | G Hex Flat | L <sub>1</sub> | L <sub>2</sub> |
|-----------|----------|-----------------|-------|------------|------------|----------------|----------------|
| 1/4"      | 1/4"     | □4WMC           | 4.35  | 14.29      | 19.05      | 45.5           | 23.4           |
| 1/2"      | 3/8"     | □6WMC           | 10.22 | 17.46      | 26.99      | 48.0           | 25.4           |
| 1/2"      | 1/2"     | □8WMC           | 10.22 | 22.23      | 26.99      | 53.1           | 25.6           |



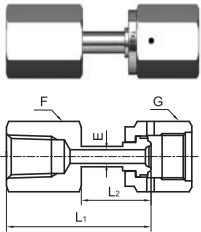
**Welded Female Connector(PT)**

| Head Size | PT SIZE | Ordering Number | E     | F Hex Flat | G Hex Flat | L <sub>1</sub> | L <sub>2</sub> |
|-----------|---------|-----------------|-------|------------|------------|----------------|----------------|
| 1/4"      | 1/4"    | □4FMC-X32       | 4.35  | 19.05      | 19.05      | 45.0           | 23.4           |
| 1/2"      | 3/8"    | □6FMC-X32       | 7.44  | 22.23      | 26.99      | 49.5           | 26.9           |
| 1/2"      | 1/2"    | □8FMC-X32       | 10.22 | 26.99      | 26.99      | 55.4           | 26.4           |

• Dimensions are for reference only and are subject to change.

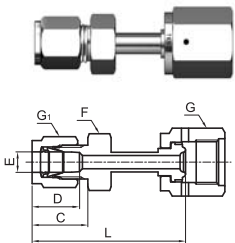
# METAL FACE SEAL FITTINGS

## Dimensions / Ordering Information



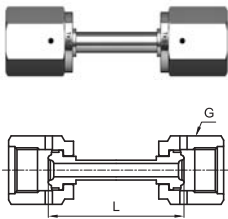
### Welded Female Connector(NPT)

| Head Size | NPT SIZE | Ordering Number | E     | F Hex Flat | G Hex Flat | L <sub>1</sub> | L <sub>2</sub> |
|-----------|----------|-----------------|-------|------------|------------|----------------|----------------|
| 1/4"      | 1/4"     | □4FMC           | 4.35  | 19.05      | 19.05      | 45.0           | 23.4           |
| 1/2"      | 3/8"     | □6FMC           | 7.44  | 22.23      | 26.99      | 49.5           | 26.9           |
| 1/2"      | 1/2"     | □8FMC           | 10.22 | 26.99      | 26.99      | 55.4           | 26.4           |



### Welded Lok Connector

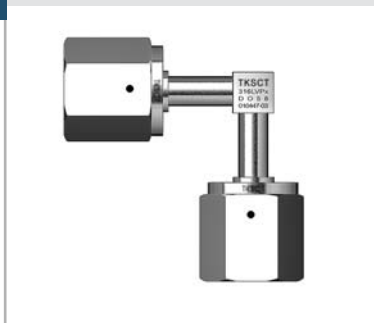
| Tube Size | Head Size | Ordering Number | C     | D     | E     | F Hex Flat | G Hex Flat | G <sub>1</sub> Hex Flat | L     |
|-----------|-----------|-----------------|-------|-------|-------|------------|------------|-------------------------|-------|
| 1/4"      | 1/4"      | □4WTC           | 17.78 | 15.24 | 4.35  | 12.70      | 19         | 17                      | 49.28 |
| 3/8"      | 1/2"      | □6WTC           | 19.30 | 16.76 | 7.44  | 15.88      | 19         | 19                      | 50.04 |
| 1/2"      | 1/2"      | □8WTC           | 21.84 | 22.86 | 10.22 | 20.64      | 26         | 19                      | 56.64 |



### Welded Female Union

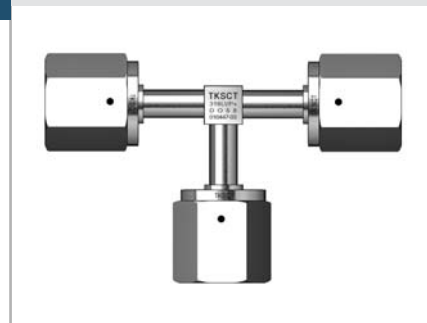
| Head Size | Ordering Number | L    | G Hex Flat |
|-----------|-----------------|------|------------|
| 1/4"      | □4WFU           | 43.4 | 19.05      |
| 1/2"      | □8WFU           | 46.7 | 26.99      |

### Female Elbow Union Welded Assembly

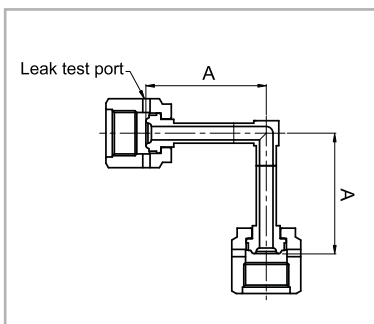


Ordering Number / □ - 4UEW

### Female Tee Union Welded Assembly

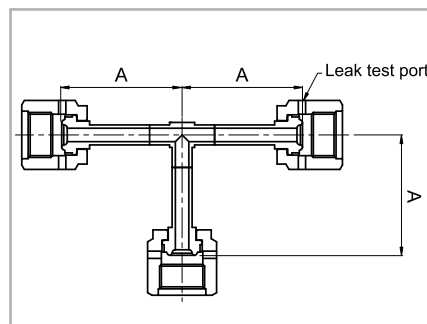


Ordering Number / □ - 4UTW



### Female Elbow Union Welded Assembly

| Size (OD) | Ordering Number | A    |
|-----------|-----------------|------|
| 1/4"      | □4EUW-X497      | 25.4 |
| 1/4"      | □4EUW           | 38.3 |



### Female Tee Union Welded Assembly

| Size (OD) | Ordering Number | A    |
|-----------|-----------------|------|
| 1/4"      | □4UTW-X497      | 25.4 |
| 1/4"      | □4UTW           | 38.3 |

• Dimensions are for reference only and are subject to change.

Damage to the sealing beads may affect the fitting performance. A protective cap is placed on all Metal Face Seal Fitting sealing beads to prevent nicks or scratches. Keep this cap in place during storage and handling and only remove prior to assembly.

## Retainer Assembly



### Step 1

When using a gasket retainer assembly, axially press the assembly onto the gland as shown. The retainer assembly will locate the gasket over the bead and hold it in place. Be careful not to scratch or nick the bead as this may affect fitting performance.

### Proceed to Step 2

## Non - Retainer Assembly



### Step 1

Place gasket into female nut.



### Step 2

Assemble components and snug to fingertight.



### Step 3

Scribe the hex flat of both the male and female



### Step 4

Holding the backup wrench stationary, tighten the female nut 1/8 turn past fingertight.

**Warning:** Extreme over tightening will damage toroid surface and cause potential leakage.

## Non - Retainer Assembly



### Protective Cap

Removing Face Seal in an assembled system requires minimal clearance. To disassemble a face seal connection, hold the male nut or body hex stationary with a backup wrench and loosen the female nut. After removing the components, be sure to protect the sealing beads with protective caps or gasket retainer assemblies.

# TKSCT FITTINGS

*Challenging most critical industry requirement with most reliable and cost-effective solution is our business.*



 TKSCT corporation

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E-mail: [tkscf@tkscf.com](mailto:tkscf@tkscf.com)  
<http://www.tkscf.com>