



## GPI Tube Fittings



# MAJOR PRODUCTS



- **Gaugeability**

**GPI** tube fittings are produced in accordance with the exact and tight tolerance. Without such close tolerance, the interaction of the nut, the ferrules and the body would not be interacted properly.

- **Corrosion Resistance**

**GPI** ferrules have the strongest corrosion resistance by our own special hardening process. It has been proved in various 22of industrial areas for some decades.

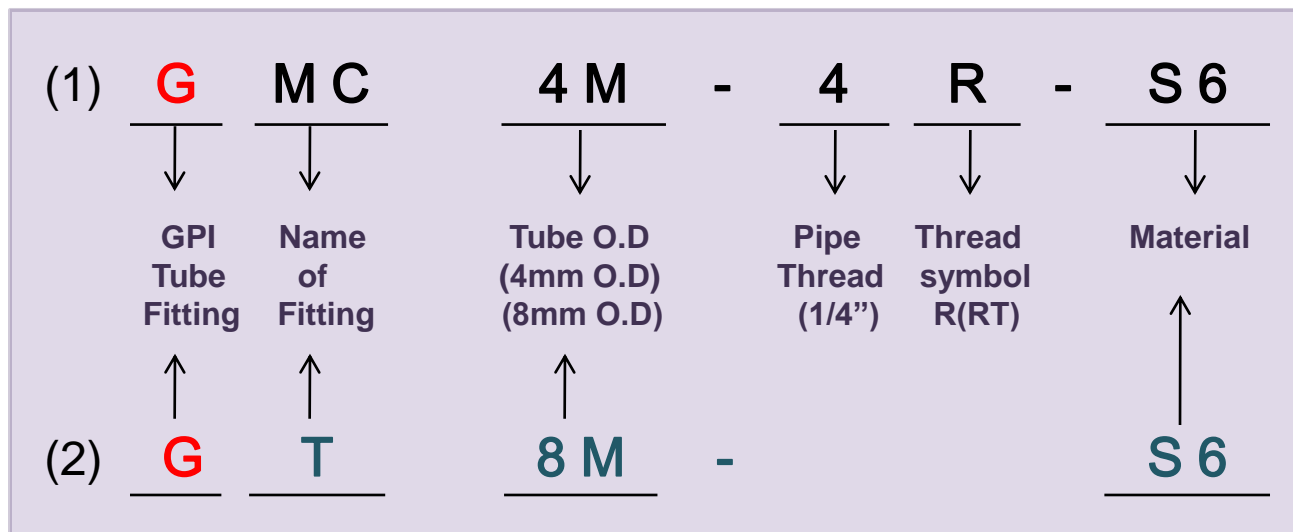
- **Interchangeability**

**GPI** tube fittings can be interchanged with the tube fittings which are manufactured by the international standard.

- **Less Torque and Anti Distortion**

When the nut is tightened, both ferrules are driven forward between the nut and the body. This axial movement doesn't transfer any torque from the fitting to the tubing when original tubing's mechanical properties are maintained.

# HOW TO ORDER



## • Tube O.D Designator

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

## • Pipe Thread Size Designator

| Nom. Size | Identifier |
|-----------|------------|
| 1/8"      | 2          |
| 1/4"      | 4          |
| 3/8"      | 6          |
| 1/2"      | 8          |
| 3/4"      | 12         |
| 1         | 16         |
| 1-1/4"    | 20         |
| 1-1/2"    | 24         |
| 2         | 32         |

## • Fitting Material Designator





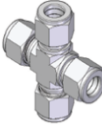

| Material | Identifier |
|----------|------------|
| SS316    | S6         |
| SS316L   | 6L         |
| SS304    | S4         |

## • Pipe Thread Symbol







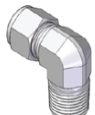


| Type          | Taper Threads                              |                   | Parallel Threads                      |                                         |
|---------------|--------------------------------------------|-------------------|---------------------------------------|-----------------------------------------|
| symbol        | R                                          | N                 | G                                     | U                                       |
| Specification | ISO7/1, BS21(BSPT), JIS B0203(PT), DIN2999 | ANIS B1.20.1(NPT) | ISO228/1, BS2779(BSPP), JIS B0202(PF) | American Standard Unified Screw Threads |

# Visual Index

## Tube to Tube Union

|                                                                                                                                                       |                                                                                                                                                         |                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Union<br/><b>GU</b></p>  <p style="text-align: right;">6</p>      | <p>Union Elbow<br/><b>GL</b></p>  <p style="text-align: right;">7</p>  | <p>Reducing Union<br/><b>GRU</b></p>  <p style="text-align: right;">8,9</p> |
| <p>Union Tee<br/><b>GT</b></p>  <p style="text-align: right;">10</p> | <p>Union Cross<br/><b>GX</b></p>  <p style="text-align: right;">11</p> | <p>Bulkhead Union<br/><b>GBU</b></p>  <p style="text-align: right;">12</p>  |





## Tube to Male Pipe

|                                                                                                                                                                                     |                                                                                                                                                                           |                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Male Connector<br/><b>GMC-N</b></p>  <p style="text-align: right;">13</p>                       | <p>Male Connector<br/><b>GMC-R</b></p>  <p style="text-align: right;">14</p>             | <p>Male Connector<br/>for Bonded Seal<br/><b>GMC-G</b></p>  <p style="text-align: right;">15,16</p> |
| <p>Male Connector<br/>for Metal Gasket<br/><b>GMO</b></p>  <p style="text-align: right;">17,18</p> | <p>Bulkhead<br/>Male Connector<br/><b>GBMC</b></p>  <p style="text-align: right;">19</p> | <p>45° Male Elbow<br/><b>GMBL</b></p>  <p style="text-align: right;">19</p>                         |
| <p>Male Elbow<br/><b>GML</b></p>  <p style="text-align: right;">20,21</p>                        | <p>Male Run Tee<br/><b>GMRT</b></p>  <p style="text-align: right;">22,23</p>           | <p>Male Branch Tee<br/><b>GBMT</b></p>  <p style="text-align: right;">24,25</p>                   |

## Tube to Female Pipe

|                                                                                                                                                                    |                                                                                                                                                                |                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Female Connector<br/><b>GFC</b></p>  <p style="text-align: right;">26,27</p> | <p>Gauge Connector<br/><b>GGC</b></p>  <p style="text-align: right;">28</p> | <p>Bulkhead<br/>Female Connector<br/><b>GBFC</b></p>  <p style="text-align: right;">29</p> |
| <p>Female Elbow<br/><b>GFL</b></p>  <p style="text-align: right;">30</p>        | <p>Female Run Tee<br/><b>GFRT</b></p>  <p style="text-align: right;">31</p> | <p>Female Branch Tee<br/><b>GFBT</b></p>  <p style="text-align: right;">32</p>             |

## Stub Tube Connector

|                                                                                                                                                               |                                                                                                                                                                |                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Reducer<br/><b>GR</b></p>  <p style="text-align: right;">33-35</p>      | <p>Male Adapter<br/><b>GMA</b></p>  <p style="text-align: right;">36,37</p> | <p>Female Adapter<br/><b>GFA</b></p>  <p style="text-align: right;">38</p> |
| <p>Port Connector<br/><b>GPC</b></p>  <p style="text-align: right;">39</p> |                                                                                                                                                                |                                                                                                                                                                 |

# Visual Index

## Tube to AN Tube

AN Union  
**GAU**



40

AN Bulkhead Union  
**GABU**



40

AN Adapter  
**GAA**



41

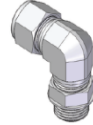
## Tube to SAE/MS, O-Ring Seal

SAE/MS Male Connector  
**GSMC**



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SAE/MS Male Elbow  
**GSML**



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SAE/MS 45° Male Elbow  
**GSMBL**



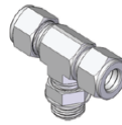
44

SAE/MS Male Run Tee  
**GSMRT**



44

SAE/MS Male Branch Tee  
**GSMBT**



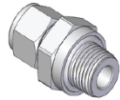
44

O-Seal Straight Thread Connector  
**GOSTC**



45

O-Seal Pipe Thread Connector  
**GOPTC**



45

## Tube to Welded End

Male Pipe Weld Connector  
**GMPWC**



46,47

Male Pipe Weld Elbow  
**GMPWL**



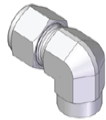
48

Tube Socket Weld Connector  
**GTSWC**



48

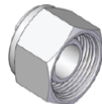
Tube Socket Weld Elbow  
**GTSWL**



48

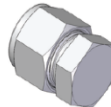
## Plug/Cap/Others

Tube Plug  
**GP**



49

Tube Cap  
**GC**



50

## Spare Parts

Tube Insert  
**GI**



51

Nut  
**GN**



51

Front Ferrule  
**GFF**



52

Back Ferrule  
**GBF**



52

Ferrule Set  
**GFS**



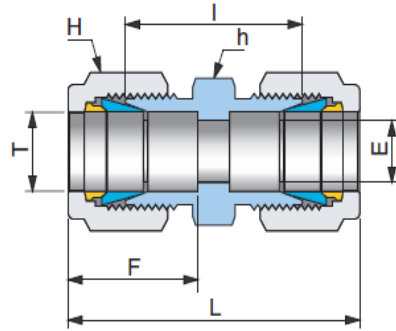
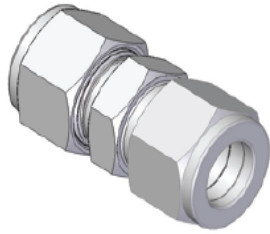
53

Ferrule & Nut Set  
**GFNS**



53

Union  
**GU**



**Connects fractional tube**

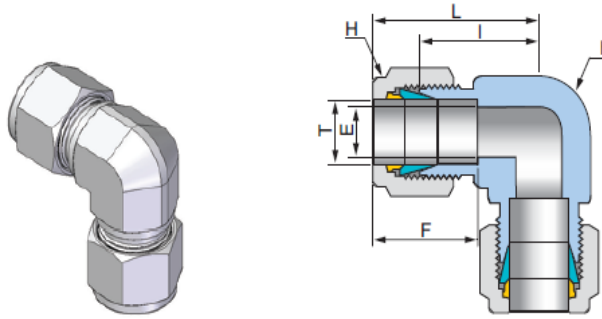
| Part No. | Tube O.D |       | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | L      |
|----------|----------|-------|-----------|-------------------|-------|-------|-------|-------|-------|-------|--------|
|          | D        |       |           | h                 |       | H     |       |       |       |       |        |
|          | in       | mm    |           | in                | mm    | in    | mm    |       |       |       |        |
| GU-1     | 1/16     | 1.59  | 1.27      | 5/16              | 7.93  | 5/16  | 7.93  | 8.63  | 10.92 | 17.50 | 25.15  |
| GU-2     | 1/8      | 3.17  | 2.28      | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 22.35 | 35.56  |
| GU-3     | 3/16     | 4.76  | 3.04      | 7/16              | 11.11 | 1/2   | 12.70 | 13.71 | 16.00 | 24.13 | 37.33  |
| GU-4     | 1/4      | 6.35  | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 26.16 | 40.89  |
| GU-5     | 5/16     | 7.93  | 6.35      | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 28.19 | 42.92  |
| GU-6     | 3/8      | 9.52  | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 30.22 | 44.95  |
| GU-8     | 1/2      | 12.70 | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 30.98 | 51.30  |
| GU-10    | 5/8      | 15.87 | 12.70     | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 31.75 | 52.07  |
| GU-12    | 3/4      | 19.05 | 15.74     | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 33.27 | 53.59  |
| GU-14    | 7/8      | 22.22 | 18.28     | 1-3/16            | 30.16 | 1-1/4 | 31.75 | 25.90 | 21.84 | 35.05 | 55.37  |
| GU-16    | 1        | 25.40 | 22.35     | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 40.38 | 64.77  |
| GU-20    | 1-1/4    | 31.75 | 27.68     | 1-3/4             | 44.45 | 1-7/8 | 47.63 | 41.14 | 38.86 | 48.00 | 92.20  |
| GU-24    | 1-1/2    | 38.10 | 34.03     | 2-1/8             | 53.97 | 2-1/4 | 57.15 | 50.03 | 45.21 | 53.60 | 107.95 |
| GU-32    | 2        | 50.80 | 45.97     | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 74.70 | 149.35 |

**Connects metric tube**

| Part No. | Tube O.D | E<br>Min. | Width across flat |    | A    | B    | ℓ    | L     |
|----------|----------|-----------|-------------------|----|------|------|------|-------|
|          | D        |           | h                 | H  |      |      |      |       |
| GU-2M    | 2        | 1.7       | 12                | 12 | 12.9 | 15.3 | 22.4 | 35.6  |
| GU-3M    | 3        | 2.4       | 12                | 12 | 12.9 | 15.3 | 22.1 | 35.3  |
| GU-4M    | 4        | 2.4       | 12                | 12 | 13.7 | 16.1 | 24.1 | 37.3  |
| GU-6M    | 6        | 4.8       | 12                | 14 | 15.3 | 17.7 | 26.2 | 41.0  |
| GU-8M    | 8        | 6.4       | 12                | 16 | 16.2 | 18.6 | 28.2 | 43.2  |
| GU-10M   | 10       | 7.9       | 12                | 19 | 17.2 | 19.5 | 31.0 | 46.2  |
| GU-12M   | 12       | 9.5       | 12                | 22 | 22.8 | 22.0 | 31.0 | 51.2  |
| GU-15M   | 15       | 11.9      | 12                | 25 | 24.4 | 22.0 | 31.8 | 52.0  |
| GU-16M   | 16       | 12.7      | 12                | 25 | 24.4 | 22.0 | 31.8 | 52.0  |
| GU-18M   | 18       | 15.1      | 12                | 30 | 24.4 | 22.0 | 33.3 | 53.5  |
| GU-20M   | 20       | 15.9      | 12                | 32 | 26.0 | 22.0 | 34.8 | 55.0  |
| GU-22M   | 22       | 18.3      | 12                | 32 | 26.0 | 22.0 | 34.8 | 55.0  |
| GU-25M   | 25       | 21.8      | 12                | 38 | 31.3 | 26.5 | 40.4 | 65.0  |
| GU-28M   | 28       | 21.8      | 12                | 46 | 36.6 | 36.6 | 43.4 | 85.0  |
| GU-32M   | 32       | 28.6      | 12                | 50 | 42.0 | 41.6 | 51.3 | 97.3  |
| GU-38M   | 38       | 33.7      | 55                | 60 | 49.4 | 47.9 | 58.4 | 113.6 |

Union Elbow

**GL**



**Connects fractional tube**

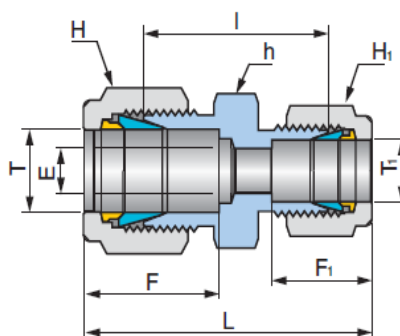
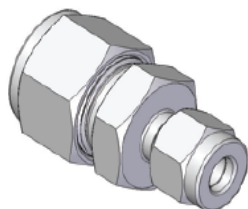
| Part No. | Tube O.D |       | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | L      |
|----------|----------|-------|-----------|-------------------|-------|-------|-------|-------|-------|-------|--------|
|          | D        |       |           | h                 |       | H     |       |       |       |       |        |
|          | in       | mm    |           | in                | mm    | in    | mm    |       |       |       |        |
| GL-1     | 1/16     | 1.59  | 1.27      | 3/8               | 9.52  | 5/16  | 7.93  | 8.63  | 10.92 | 14.00 | 17.88  |
| GL-2     | 1/8      | 3.17  | 2.28      | 3/8               | 9.52  | 7/16  | 11.11 | 12.70 | 15.24 | 15.74 | 22.35  |
| GL-3     | 3/16     | 4.76  | 3.04      | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 17.78 | 24.38  |
| GL-4     | 1/4      | 6.35  | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.92  |
| GL-5     | 5/16     | 7.93  | 6.35      | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 21.33 | 28.70  |
| GL-6     | 3/8      | 9.52  | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48  |
| GL-8     | 1/2      | 12.70 | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  |
| GL-10    | 5/8      | 15.87 | 12.70     | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 28.70 | 38.80  |
| GL-12    | 3/4      | 19.05 | 15.74     | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87  |
| GL-14    | 7/8      | 22.22 | 18.28     | 1-1/4             | 31.75 | 1-1/4 | 31.75 | 25.90 | 21.84 | 34.54 | 44.70  |
| GL-16    | 1        | 25.40 | 22.35     | 1-27/64           | 36.12 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  |
| GL-20    | 1-1/4    | 31.75 | 27.68     | 1-11/16           | 42.86 | 1-7/8 | 47.63 | 41.14 | 38.86 | 44.50 | 66.54  |
| GL-24    | 1-1/2    | 38.10 | 34.03     | 2                 | 50.80 | 2-1/4 | 57.15 | 50.03 | 45.21 | 50.80 | 77.97  |
| GL-32    | 2        | 50.80 | 45.97     | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 69.80 | 107.18 |

**Connects metric tube**

| Part No. | Tube O.D | E<br>Min. | Width across flat |    | A    | B    | ℓ    | L    |
|----------|----------|-----------|-------------------|----|------|------|------|------|
|          | D        |           | h                 | H  |      |      |      |      |
| GL-2M    | 2        | 1.7       | 9.5               | 12 | 12.9 | 15.3 | 15.7 | 22.3 |
| GL-3M    | 3        | 2.4       | 9.5               | 12 | 12.9 | 15.3 | 15.7 | 22.3 |
| GL-4M    | 4        | 2.4       | 12.7              | 12 | 13.7 | 16.4 | 18.8 | 25.4 |
| GL-6M    | 6        | 4.8       | 12.7              | 14 | 15.3 | 17.7 | 19.6 | 27.0 |
| GL-8M    | 8        | 6.4       | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 |
| GL-10M   | 10       | 7.9       | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 |
| GL-12M   | 12       | 9.5       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 |
| GL-15M   | 15       | 11.9      | 25.4              | 25 | 24.4 | 22.0 | 28.7 | 38.8 |
| GL-16M   | 16       | 12.7      | 25.4              | 25 | 24.4 | 22.0 | 28.7 | 38.8 |
| GL-18M   | 18       | 15.1      | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 |
| GL-20M   | 20       | 15.9      | 31.8              | 32 | 26.0 | 22.0 | 32.5 | 42.6 |
| GL-22M   | 22       | 18.3      | 31.8              | 32 | 26.0 | 22.0 | 32.5 | 42.6 |
| GL-25M   | 25       | 21.8      | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 |
| GL-28M   | 28       | 21.8      | 41.0              | 46 | 36.6 | 36.6 | 43.2 | 64.0 |
| GL-32M   | 32       | 28.6      | 46.0              | 50 | 42.0 | 41.6 | 49.3 | 72.3 |
| GL-38M   | 38       | 33.7      | 55.0              | 60 | 49.4 | 47.9 | 56.4 | 84.0 |

Reducing Union

# GRU



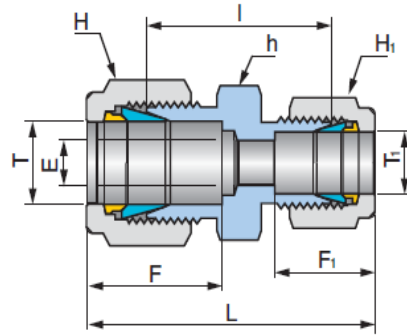
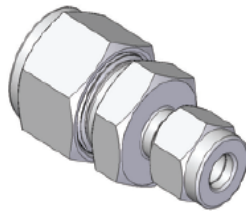
**Connects fractional tube**

| Part No.  | Tube O.D |       |                |       | E     | Width across flat |       |       |       |                |       | A     | A1    | B     | B1    | ℓ     | L     |
|-----------|----------|-------|----------------|-------|-------|-------------------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|-------|
|           | D        |       | D <sub>1</sub> |       |       | h                 |       | H     |       | H <sub>1</sub> |       |       |       |       |       |       |       |
|           | in       | mm    | in             | mm    |       | in                | mm    | in    | mm    | in             | mm    |       |       |       |       |       |       |
| GRU 2-1   | 1/8      | 3.18  | 1/16           | 1.59  | 1.27  | 7/16              | 11.11 | 7/16  | 11.11 | 5/16           | 7.93  | 12.70 | 8.63  | 15.24 | 10.92 | 20.60 | 30.91 |
| GRU 3-1   | 3/16     | 4.76  | 1/16           | 1.59  | 1.27  | 7/16              | 11.11 | 1/2   | 12.70 | 5/16           | 7.93  | 13.71 | 8.63  | 16.00 | 10.92 | 21.84 | 32.25 |
| GRU 3-2   | 3/16     | 4.76  | 1/8            | 3.17  | 2.28  | 7/16              | 11.11 | 1/2   | 12.70 | 7/16           | 11.11 | 13.71 | 12.70 | 16.00 | 15.24 | 23.36 | 36.57 |
| GRU 4-1   | 1/4      | 6.35  | 1/16           | 1.59  | 1.27  | 1/2               | 12.70 | 9/16  | 14.28 | 5/16           | 7.93  | 15.24 | 8.63  | 17.78 | 10.92 | 23.11 | 34.29 |
| GRU 4-2   | 1/4      | 6.35  | 1/8            | 3.17  | 2.28  | 1/2               | 12.70 | 9/16  | 14.28 | 7/16           | 11.11 | 15.24 | 12.70 | 17.78 | 15.24 | 24.63 | 38.60 |
| GRU 4-3   | 1/4      | 6.35  | 3/16           | 4.76  | 3.04  | 1/2               | 12.70 | 9/16  | 14.28 | 1/2            | 12.70 | 15.24 | 13.71 | 17.78 | 16.00 | 25.40 | 39.37 |
| GRU 5-2   | 5/16     | 7.93  | 1/8            | 3.17  | 2.28  | 9/16              | 14.28 | 5/8   | 15.87 | 7/16           | 11.11 | 16.25 | 12.70 | 18.54 | 15.24 | 25.90 | 39.87 |
| GRU 5-4   | 5/16     | 7.93  | 1/4            | 6.35  | 4.82  | 9/16              | 14.28 | 5/8   | 15.87 | 9/16           | 14.28 | 16.25 | 15.24 | 18.54 | 17.78 | 27.43 | 42.16 |
| GRU 6-1   | 3/8      | 9.52  | 1/16           | 1.59  | 1.27  | 5/8               | 15.87 | 11/16 | 17.46 | 5/16           | 7.93  | 16.76 | 8.63  | 19.30 | 10.92 | 25.40 | 36.57 |
| GRU 6-2   | 3/8      | 9.52  | 1/8            | 3.17  | 2.28  | 5/8               | 15.87 | 11/16 | 17.46 | 7/16           | 11.11 | 16.76 | 12.70 | 19.30 | 15.24 | 26.92 | 40.89 |
| GRU 6-4   | 3/8      | 9.52  | 1/4            | 6.35  | 4.82  | 5/8               | 15.87 | 11/16 | 17.46 | 9/16           | 14.28 | 16.76 | 15.24 | 19.30 | 17.78 | 28.44 | 43.18 |
| GRU 6-5   | 3/8      | 9.52  | 5/16           | 7.93  | 6.35  | 5/8               | 15.87 | 11/16 | 17.46 | 5/8            | 15.87 | 16.76 | 16.25 | 19.30 | 18.54 | 29.46 | 44.19 |
| GRU 8-2   | 1/2      | 12.70 | 1/8            | 3.17  | 2.28  | 13/16             | 20.64 | 7/8   | 22.22 | 7/16           | 11.11 | 22.86 | 12.70 | 21.84 | 15.24 | 28.44 | 45.21 |
| GRU 8-4   | 1/2      | 12.70 | 1/4            | 6.35  | 4.82  | 13/16             | 20.64 | 7/8   | 22.22 | 9/16           | 14.28 | 22.86 | 15.24 | 21.84 | 17.78 | 29.46 | 46.99 |
| GRU 8-6   | 1/2      | 12.70 | 3/8            | 9.52  | 7.11  | 13/16             | 20.64 | 7/8   | 22.22 | 11/16          | 17.46 | 22.86 | 16.76 | 21.84 | 19.30 | 30.98 | 48.51 |
| GRU 10-6  | 5/8      | 15.87 | 3/8            | 9.52  | 7.11  | 15/16             | 23.81 | 1     | 25.40 | 11/16          | 17.46 | 24.38 | 16.76 | 21.84 | 19.30 | 31.75 | 49.27 |
| GRU 10-8  | 5/8      | 15.87 | 1/2            | 12.70 | 10.41 | 15/16             | 23.81 | 1     | 25.40 | 7/8            | 22.22 | 24.38 | 22.86 | 21.84 | 21.84 | 31.75 | 52.07 |
| GRU 12-4  | 3/4      | 19.05 | 1/4            | 6.35  | 4.82  | 1-1/16            | 23.81 | 1-1/8 | 28.57 | 9/16           | 14.48 | 24.38 | 15.24 | 21.84 | 17.78 | 31.75 | 49.27 |
| GRU 12-6  | 3/4      | 19.05 | 3/8            | 9.52  | 7.11  | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 11/16          | 17.46 | 24.38 | 16.76 | 21.84 | 19.30 | 33.27 | 50.80 |
| GRU 12-8  | 3/4      | 19.05 | 1/2            | 12.70 | 10.41 | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 7/8            | 22.22 | 24.38 | 22.86 | 21.84 | 21.84 | 33.27 | 53.59 |
| GRU 12-10 | 3/4      | 19.05 | 5/8            | 15.87 | 12.70 | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 1              | 25.40 | 24.38 | 24.38 | 21.84 | 21.84 | 33.27 | 53.59 |
| GRU 16-8  | 1        | 25.40 | 1/2            | 12.70 | 10.41 | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 7/8            | 22.22 | 31.24 | 22.86 | 26.41 | 21.84 | 40.89 | 63.24 |
| GRU 16-12 | 1        | 25.40 | 3/4            | 19.05 | 15.74 | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 1-1/8          | 28.58 | 31.24 | 24.38 | 26.41 | 21.84 | 40.38 | 62.73 |



Reducing Union

# GRU



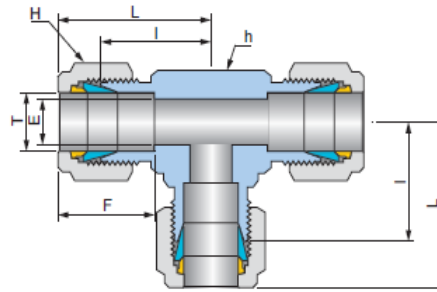
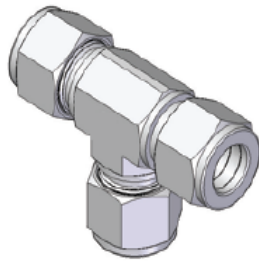
**Connects metric tube**

| Part No.    | Tube O.D |    | E<br>Min. | Width across flat |    |    | A    | A1   | B    | B1   | ℓ    | L    |
|-------------|----------|----|-----------|-------------------|----|----|------|------|------|------|------|------|
|             | D        | D1 |           | h                 | H  | H1 |      |      |      |      |      |      |
| GRU 3M-2M   | 3        | 2  | 1.7       | 12                | 12 | 12 | 12.9 | 12.9 | 15.3 | 15.3 | 22.1 | 35.3 |
| GRU 6M-2M   | 6        | 2  | 1.7       | 14                | 14 | 12 | 15.3 | 12.9 | 17.7 | 15.3 | 24.6 | 38.6 |
| GRU 6M-3M   | 6        | 3  | 2.4       | 14                | 14 | 12 | 15.3 | 12.9 | 17.7 | 15.3 | 24.6 | 38.6 |
| GRU 6M-4M   | 6        | 4  | 2.4       | 14                | 14 | 12 | 15.3 | 13.7 | 17.7 | 16.1 | 25.4 | 39.4 |
| GRU 8M-6M   | 8        | 6  | 4.8       | 15                | 16 | 14 | 16.2 | 15.3 | 18.6 | 17.7 | 27.4 | 42.3 |
| GRU 10M-6M  | 10       | 6  | 4.8       | 18                | 19 | 14 | 17.2 | 15.3 | 19.5 | 17.7 | 29.5 | 44.5 |
| GRU 10M-8M  | 10       | 8  | 6.4       | 18                | 19 | 16 | 17.2 | 16.2 | 19.5 | 18.6 | 30.0 | 45.1 |
| GRU 12M-6M  | 12       | 6  | 4.8       | 22                | 22 | 14 | 22.8 | 15.3 | 22.0 | 17.7 | 29.5 | 47.0 |
| GRU 12M-8M  | 12       | 8  | 6.4       | 22                | 22 | 16 | 22.8 | 16.2 | 22.0 | 18.6 | 30.2 | 47.8 |
| GRU 12M-10M | 12       | 10 | 7.9       | 22                | 22 | 19 | 22.8 | 17.2 | 22.0 | 19.5 | 31.0 | 48.7 |
| GRU 16M-10M | 16       | 10 | 7.9       | 24                | 25 | 19 | 24.4 | 17.2 | 22.0 | 19.5 | 31.8 | 49.5 |
| GRU 16M-12M | 16       | 12 | 9.5       | 24                | 25 | 22 | 24.4 | 22.8 | 22.0 | 22.0 | 31.8 | 52.0 |
| GRU 18M-12M | 18       | 12 | 9.5       | 27                | 30 | 22 | 24.4 | 22.8 | 22.0 | 22.0 | 33.3 | 53.5 |
| GRU 25M-18M | 25       | 18 | 15.1      | 35                | 38 | 30 | 31.3 | 24.4 | 26.5 | 22.0 | 38.6 | 61.0 |
| GRU 25M-20M | 25       | 20 | 15.9      | 35                | 38 | 32 | 31.3 | 26.0 | 26.5 | 22.0 | 39.9 | 62.3 |

**Connects metric tube to fractional tube**

| Part No.   | Tube O.D |      | E<br>Min. | Width across flat |      |    | A    | A1   | B    | B1   | ℓ    | L    |      |
|------------|----------|------|-----------|-------------------|------|----|------|------|------|------|------|------|------|
|            | D        | D1   |           | h                 | H    | H1 |      |      |      |      |      |      |      |
|            |          | in   |           |                   |      |    |      |      |      |      |      |      | mm   |
| GRU 3M-2   | 3        | 1/8  | 3.17      | 2.4               | 12   | 12 | 11.1 | 12.9 | 12.8 | 15.3 | 15.2 | 22.1 | 35.2 |
| GRU 4M-2   | 4        | 1/8  | 3.17      | 2.4               | 12   | 12 | 11.1 | 13.7 | 12.8 | 16.1 | 15.2 | 23.4 | 36.5 |
| GRU 4M-4   | 4        | 1/4  | 6.35      | 2.4               | 14   | 12 | 14.3 | 13.7 | 15.3 | 16.1 | 17.7 | 25.4 | 39.4 |
| GRU 6M-2   | 6        | 1/8  | 3.17      | 2.4               | 14   | 14 | 11.1 | 15.3 | 12.8 | 17.7 | 15.2 | 24.6 | 38.5 |
| GRU 6M-4   | 6        | 1/4  | 6.35      | 4.8               | 14   | 14 | 14.3 | 15.3 | 15.8 | 17.7 | 17.7 | 26.2 | 41.0 |
| GRU 6M-5   | 6        | 5/16 | 7.93      | 4.8               | 14   | 14 | 15.9 | 15.3 | 16.2 | 17.7 | 18.6 | 27.4 | 42.3 |
| GRU 8M-4   | 8        | 1/4  | 6.35      | 4.8               | 15   | 16 | 14.3 | 16.2 | 15.3 | 18.6 | 17.7 | 27.4 | 42.3 |
| GRU 10M-2  | 10       | 1/8  | 3.17      | 2.4               | 18   | 19 | 11.1 | 17.2 | 12.8 | 19.5 | 15.2 | 27.7 | 41.8 |
| GRU 10M-4  | 10       | 1/4  | 6.35      | 4.8               | 18   | 19 | 14.3 | 17.2 | 15.3 | 19.5 | 17.7 | 29.5 | 44.5 |
| GRU 10M-5  | 10       | 5/16 | 7.93      | 6.4               | 18   | 19 | 15.9 | 17.2 | 16.2 | 19.5 | 18.6 | 30.3 | 45.1 |
| GRU 10M-6  | 10       | 3/8  | 9.52      | 7.1               | 18   | 19 | 17.5 | 17.2 | 16.9 | 19.5 | 18.6 | 31.0 | 45.9 |
| GRU 12M-5  | 12       | 5/16 | 7.93      | 6.4               | 22   | 22 | 15.9 | 22.8 | 16.2 | 22.0 | 18.6 | 30.2 | 47.8 |
| GRU 12M-6  | 12       | 3/8  | 9.52      | 7.1               | 22   | 22 | 17.5 | 22.8 | 16.9 | 22.0 | 19.2 | 31.0 | 48.4 |
| GRU 12M-8  | 12       | 1/2  | 12.70     | 9.5               | 22   | 22 | 22.2 | 22.8 | 22.8 | 22.0 | 22.0 | 31.0 | 51.2 |
| GRU 15M-8  | 15       | 1/2  | 12.70     | 10.3              | 24   | 25 | 22.0 | 24.4 | 22.8 | 22.0 | 22.0 | 31.8 | 52.0 |
| GRU 16M-10 | 16       | 5/8  | 15.87     | 12.7              | 24   | 25 | 25.4 | 24.4 | 24.4 | 22.0 | 22.0 | 31.8 | 52.0 |
| GRU 18M-12 | 18       | 3/4  | 19.05     | 15.1              | 27   | 30 | 28.6 | 24.4 | 24.4 | 22.0 | 22.0 | 33.3 | 53.5 |
| GRU 20M-12 | 20       | 3/4  | 19.05     | 15.9              | 30   | 32 | 28.6 | 26.0 | 24.4 | 22.0 | 22.0 | 34.8 | 54.9 |
| GRU 20M-16 | 20       | 1    | 25.40     | 15.9              | 34.9 | 32 | 38.1 | 26.0 | 31.2 | 22.0 | 26.4 | 38.0 | 60.3 |
| GRU 22M-16 | 22       | 1    | 25.40     | 18.3              | 34.9 | 32 | 38.1 | 26.0 | 31.2 | 22.0 | 26.4 | 38.2 | 60.3 |

Union Tee  
**GT**



**Connects fractional tube**

| Part No. | Tube O.D |       | E     | Width across flat |       |       |       | A     | B     | ℓ     | L      |
|----------|----------|-------|-------|-------------------|-------|-------|-------|-------|-------|-------|--------|
|          | D        |       |       | h                 |       | H     |       |       |       |       |        |
|          | in       | mm    |       | in                | mm    | in    | mm    |       |       |       |        |
| GT-1     | 1/16     | 1.59  | 1.27  | 3/8               | 9.52  | 5/16  | 7.93  | 8.63  | 10.92 | 14.00 | 17.88  |
| GT-2     | 1/8      | 3.17  | 2.28  | 3/8               | 9.52  | 7/16  | 11.11 | 12.70 | 15.24 | 15.74 | 22.35  |
| GT-3     | 3/16     | 4.76  | 3.04  | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 17.78 | 24.38  |
| GT-4     | 1/4      | 6.35  | 4.82  | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.92  |
| GT-5     | 5/16     | 7.93  | 6.35  | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 21.33 | 28.70  |
| GT-6     | 3/8      | 9.52  | 7.11  | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48  |
| GT-8     | 1/2      | 12.70 | 10.41 | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  |
| GT-10    | 5/8      | 15.87 | 12.70 | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 28.70 | 38.80  |
| GT-12    | 3/4      | 19.05 | 15.74 | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87  |
| GT-14    | 7/8      | 22.22 | 18.28 | 1-1/4             | 31.75 | 1-1/4 | 31.75 | 25.90 | 21.84 | 34.54 | 44.70  |
| GT-16    | 1        | 25.40 | 22.35 | 1-27/64           | 36.12 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  |
| GT-20    | 1-1/4    | 31.75 | 27.68 | 1-11/16           | 42.86 | 1-7/8 | 47.63 | 41.14 | 38.86 | 44.50 | 66.54  |
| GT-24    | 1-1/2    | 38.10 | 34.03 | 2                 | 50.80 | 2-1/4 | 57.15 | 50.03 | 45.21 | 50.80 | 77.97  |
| GT-32    | 2        | 50.80 | 45.97 | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 69.80 | 107.18 |

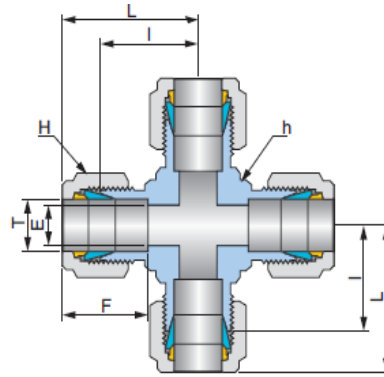
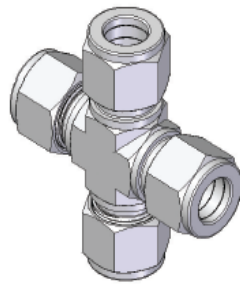
**Connects metric tube**

| Part No. | Tube O.D | E    | Width across flat |    | A    | B    | ℓ    | L    |
|----------|----------|------|-------------------|----|------|------|------|------|
|          | D        |      | Min.              | h  |      |      |      |      |
| GT-2M    | 2        | 1.7  | 9.5               | 12 | 12.9 | 15.3 | 15.7 | 22.3 |
| GT-3M    | 3        | 2.4  | 9.5               | 12 | 12.9 | 15.3 | 15.7 | 22.3 |
| GT-4M    | 4        | 2.4  | 12.7              | 12 | 13.7 | 16.1 | 18.8 | 25.4 |
| GT-6M    | 6        | 4.8  | 12.7              | 14 | 15.3 | 17.7 | 19.6 | 27.0 |
| GT-8M    | 8        | 6.4  | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 |
| GT-10M   | 10       | 7.9  | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 |
| GT-12M   | 12       | 9.5  | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 |
| GT-15M   | 15       | 11.9 | 25.4              | 25 | 24.4 | 22.0 | 28.7 | 38.8 |
| GT-16M   | 16       | 12.7 | 25.4              | 25 | 24.4 | 22.0 | 28.7 | 38.8 |
| GT-18M   | 18       | 15.1 | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 |
| GT-20M   | 20       | 15.9 | 31.8              | 32 | 26.0 | 22.0 | 32.5 | 42.6 |
| GT-22M   | 22       | 18.3 | 31.8              | 32 | 26.0 | 22.0 | 32.5 | 42.6 |
| GT-25M   | 25       | 21.8 | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 |
| GT-28M   | 28       | 21.8 | 41.0              | 46 | 36.6 | 36.6 | 43.2 | 64.0 |
| GT-32M   | 32       | 28.6 | 46.0              | 50 | 42.0 | 41.6 | 49.3 | 72.3 |
| GT-38M   | 38       | 33.7 | 55.0              | 60 | 49.4 | 47.9 | 56.4 | 84.0 |

Union Cross

# GX

Note : Cross may be made from plate stock



**Connects fractional tube**

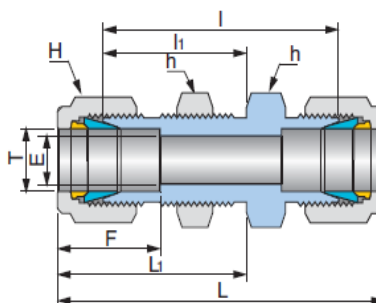
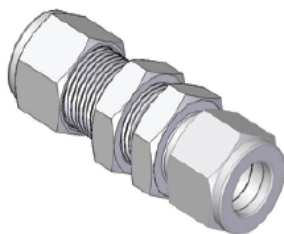
| Part No. | Tube O.D |       | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | L      |
|----------|----------|-------|-----------|-------------------|-------|-------|-------|-------|-------|-------|--------|
|          | D        |       |           | h                 |       | H     |       |       |       |       |        |
|          | in       | mm    |           | in                | mm    | in    | mm    |       |       |       |        |
| GX-1     | 1/16     | 1.59  | 1.27      | 3/8               | 9.52  | 5/16  | 7.93  | 8.63  | 10.92 | 14.00 | 17.88  |
| GX-2     | 1/8      | 3.17  | 2.28      | 3/8               | 9.52  | 7/16  | 11.11 | 12.70 | 15.24 | 15.74 | 22.35  |
| GX-3     | 3/16     | 4.76  | 3.04      | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 17.78 | 24.38  |
| GX-4     | 1/4      | 6.35  | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.92  |
| GX-5     | 5/16     | 7.93  | 6.35      | 1/2               | 12.70 | 5/8   | 15.87 | 16.25 | 18.54 | 21.33 | 28.70  |
| GX-6     | 3/8      | 9.52  | 7.11      | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48  |
| GX-8     | 1/2      | 12.70 | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  |
| GX-10    | 5/8      | 15.87 | 12.70     | 13/16             | 20.64 | 1     | 25.40 | 24.38 | 21.84 | 28.70 | 38.80  |
| GX-12    | 3/4      | 19.05 | 15.74     | 1                 | 25.40 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87  |
| GX-14    | 7/8      | 22.22 | 18.28     | 1-1/4             | 31.75 | 1-1/4 | 31.75 | 25.90 | 21.84 | 34.54 | 44.70  |
| GX-16    | 1        | 25.40 | 22.35     | 1-27/64           | 36.12 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  |
| GX-20    | 1-1/4    | 31.75 | 27.68     | 1-11/16           | 42.86 | 1-7/8 | 47.63 | 41.14 | 38.86 | 44.50 | 66.54  |
| GX-24    | 1-1/2    | 38.10 | 34.03     | 2                 | 50.80 | 2-1/4 | 57.15 | 50.03 | 45.21 | 50.80 | 77.97  |
| GX-32    | 2        | 50.80 | 45.97     | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 69.80 | 107.18 |

**Connects metric tube**

| Part No. | Tube O.D | E<br>Min. | Width across flat |    | A    | B    | ℓ    | L    |
|----------|----------|-----------|-------------------|----|------|------|------|------|
|          | D        |           | h                 | H  |      |      |      |      |
| GX-3M    | 3        | 2.4       | 9.5               | 12 | 12.9 | 15.3 | 15.7 | 22.3 |
| GX-4M    | 4        | 2.4       | 12.7              | 12 | 13.7 | 16.1 | 18.8 | 25.4 |
| GX-6M    | 6        | 4.8       | 12.7              | 14 | 15.3 | 17.7 | 19.6 | 27.0 |
| GX-8M    | 8        | 6.4       | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 |
| GX-10M   | 10       | 7.9       | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 |
| GX-12M   | 12       | 9.5       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 |
| GX-15M   | 15       | 11.9      | 25.4              | 25 | 24.4 | 22.0 | 28.7 | 38.8 |
| GX-16M   | 16       | 12.7      | 25.4              | 25 | 24.4 | 22.0 | 28.7 | 38.8 |
| GX-18M   | 18       | 15.1      | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 |
| GX-20M   | 20       | 15.9      | 31.8              | 32 | 26.0 | 22.0 | 32.5 | 42.6 |
| GX-22M   | 22       | 18.3      | 31.8              | 32 | 26.0 | 22.0 | 32.5 | 42.6 |
| GX-25M   | 25       | 21.8      | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 |
| GX-28M   | 28       | 21.8      | 41.0              | 46 | 36.6 | 36.6 | 43.2 | 64.0 |
| GX-32M   | 32       | 28.6      | 46.0              | 50 | 42.0 | 41.6 | 49.3 | 72.3 |
| GX-38M   | 38       | 33.7      | 55.0              | 60 | 49.4 | 47.9 | 56.4 | 84.0 |

Bulkhead Union

# GBU



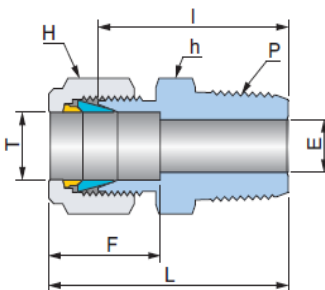
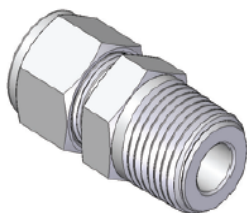
### Connects fractional tube

| Part No. | Tube O.D |       | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ      | ℓ1    | L      | L1    | Panel Hole Drill size | Panel Max Thickness |
|----------|----------|-------|-----------|-------------------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-----------------------|---------------------|
|          | D        |       |           | h                 |       | H     |       |       |       |        |       |        |       |                       |                     |
|          | in       | mm    |           | in                | mm    | in    | mm    |       |       |        |       |        |       |                       |                     |
| GBU-1    | 1/16     | 1.59  | 1.27      | 5/16              | 7.93  | 5/16  | 7.93  | 8.63  | 10.92 | 23.87  | 13.46 | 31.50  | 17.27 | 5.16                  | 3.05                |
| GBU-2    | 1/8      | 3.17  | 2.28      | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 38.10  | 24.63 | 51.30  | 31.24 | 8.33                  | 12.70               |
| GBU-3    | 3/16     | 4.76  | 3.04      | 9/16              | 14.28 | 1/2   | 12.70 | 13.71 | 16.00 | 40.38  | 25.40 | 53.59  | 32.00 | 9.92                  | 12.70               |
| GBU-4    | 1/4      | 6.35  | 4.82      | 5/8               | 15.87 | 9/16  | 14.28 | 15.24 | 17.78 | 42.92  | 26.16 | 57.65  | 33.52 | 11.50                 | 10.16               |
| GBU-5    | 5/16     | 7.93  | 6.35      | 11/16             | 17.46 | 5/8   | 15.87 | 16.25 | 18.54 | 45.97  | 28.44 | 60.70  | 35.81 | 13.09                 | 11.17               |
| GBU-6    | 3/8      | 9.52  | 7.11      | 3/4               | 19.05 | 11/16 | 17.46 | 16.76 | 19.30 | 47.49  | 29.46 | 62.23  | 36.83 | 14.68                 | 11.17               |
| GBU-8    | 1/2      | 12.70 | 10.41     | 15/16             | 23.81 | 7/8   | 22.22 | 22.86 | 21.84 | 50.80  | 31.75 | 71.12  | 41.91 | 19.44                 | 12.70               |
| GBU-10   | 5/8      | 15.87 | 12.70     | 1-1/16            | 26.98 | 1     | 25.40 | 24.38 | 21.84 | 52.32  | 32.51 | 72.64  | 42.67 | 22.62                 | 12.70               |
| GBU-12   | 3/4      | 19.05 | 15.74     | 1-3/16            | 30.16 | 1-1/8 | 28.58 | 24.38 | 21.84 | 58.67  | 37.33 | 78.99  | 47.49 | 25.79                 | 16.76               |
| GBU-14   | 7/8      | 22.22 | 18.28     | 1-3/8             | 34.92 | 1-1/4 | 31.75 | 25.90 | 21.84 | 64.26  | 42.92 | 84.58  | 53.08 | 28.97                 | 19.05               |
| GBU-16   | 1        | 25.40 | 22.35     | 1-5/8             | 41.27 | 1-1/2 | 38.10 | 31.24 | 26.41 | 71.37  | 45.21 | 95.75  | 57.40 | 33.73                 | 19.05               |
| GBU-20   | 1-1/4    | 31.75 | 27.68     | 1-7/8             | 47.63 | 1-7/8 | 47.63 | 41.14 | 38.86 | 78.99  | 47.75 | 123.19 | 69.85 | 41.67                 | 19.05               |
| GBU-24   | 1-1/2    | 38.10 | 34.03     | 2-1/4             | 57.15 | 2-1/4 | 57.15 | 50.03 | 45.21 | 84.83  | 49.27 | 139.19 | 76.45 | 49.61                 | 19.05               |
| GBU-32   | 2        | 50.80 | 45.97     | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 105.66 | 56.38 | 180.34 | 93.72 | 57.94                 | 19.05               |

### Connects metric tube

| Part No. | Tube O.D<br>D | E<br>Min. | Width across flat |    | A    | B    | ℓ    | ℓ1   | L     | L1   | Panel Hole Drill size | Panel Max Thickness |
|----------|---------------|-----------|-------------------|----|------|------|------|------|-------|------|-----------------------|---------------------|
|          |               |           | h                 | H  |      |      |      |      |       |      |                       |                     |
| GBU-3M   | 3             | 2.4       | 14                | 12 | 12.9 | 15.3 | 38.1 | 24.6 | 51.3  | 31.2 | 8.3                   | 12.7                |
| GBU-4M   | 4             | 2.4       | 14                | 12 | 13.7 | 16.1 | 40.4 | 25.4 | 53.6  | 32.0 | 9.9                   | 12.7                |
| GBU-6M   | 6             | 4.8       | 16                | 14 | 15.3 | 17.7 | 42.9 | 26.2 | 57.7  | 33.6 | 11.5                  | 10.2                |
| GBU-8M   | 8             | 6.4       | 18                | 16 | 16.2 | 18.6 | 46.0 | 28.6 | 61.0  | 36.1 | 13.1                  | 11.2                |
| GBU-10M  | 10            | 7.9       | 22                | 19 | 17.2 | 19.5 | 48.5 | 29.4 | 63.7  | 37.0 | 16.2                  | 11.2                |
| GBU-12M  | 12            | 9.5       | 24                | 22 | 22.8 | 22.0 | 50.8 | 31.8 | 71.0  | 41.9 | 19.5                  | 12.7                |
| GBU-15M  | 15            | 11.9      | 27                | 25 | 24.4 | 22.0 | 52.3 | 32.5 | 72.5  | 42.6 | 22.8                  | 12.7                |
| GBU-16M  | 16            | 12.7      | 27                | 25 | 24.4 | 22.0 | 52.3 | 32.5 | 72.5  | 42.6 | 22.8                  | 12.7                |
| GBU-18M  | 18            | 15.1      | 30                | 30 | 24.4 | 22.0 | 58.7 | 37.3 | 78.9  | 47.4 | 26.0                  | 16.8                |
| GBU-20M  | 20            | 15.9      | 35                | 32 | 26.0 | 22.0 | 64.3 | 42.9 | 84.5  | 53.0 | 29.0                  | 17.0                |
| GBU-22M  | 22            | 18.3      | 35                | 32 | 26.0 | 22.0 | 64.3 | 42.9 | 84.5  | 53.0 | 29.0                  | 19.1                |
| GBU-25M  | 25            | 21.8      | 41.3              | 38 | 31.3 | 26.5 | 71.4 | 45.2 | 95.9  | 57.5 | 33.7                  | 19.1                |
| GBU-32M  | 32            | 28.6      | 50                | 50 | 42.0 | 41.6 | 82.3 | 49.5 | 128.3 | 72.5 | 42.5                  | 19.0                |
| GBU-38M  | 38            | 33.7      | 60                | 60 | 49.4 | 47.9 | 89.4 | 51.5 | 144.6 | 79.1 | 50.5                  | 19.0                |

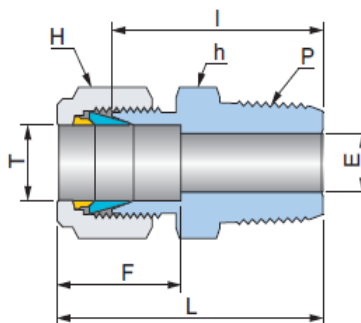
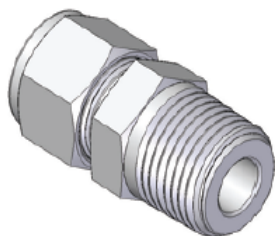
Male Connector  
**GMC-N**



**Connects fractional tube to female NPT thread**

| Part No.   | Tube O.D |       | T<br>(NPT) | E<br>(Min.) | Width across flat |       |       |       | A     | B     | ℓ     | L      |
|------------|----------|-------|------------|-------------|-------------------|-------|-------|-------|-------|-------|-------|--------|
|            | D        |       |            |             | h                 |       | H     |       |       |       |       |        |
|            | in       | mm    |            |             | in                | mm    | in    | mm    |       |       |       |        |
| GMC 1-1N   | 1/16     | 1.59  | 1/16       | 1.27        | 5/16              | 7.93  | 5/16  | 7.93  | 8.63  | 10.92 | 20.00 | 23.83  |
| GMC 1-2N   | 1/16     | 1.59  | 1/8        | 1.27        | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 22.35 | 26.23  |
| GMC 1-4N   | 1/16     | 1.59  | 1/4        | 1.27        | 9/16              | 14.28 | 5/16  | 7.93  | 8.63  | 10.92 | 27.17 | 30.98  |
| GMC 2-1N   | 1/8      | 3.17  | 1/16       | 2.28        | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 23.11 | 29.71  |
| GMC 2-2N   | 1/8      | 3.17  | 1/8        | 2.28        | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 23.87 | 30.48  |
| GMC 2-4N   | 1/8      | 3.17  | 1/4        | 2.28        | 9/16              | 14.28 | 7/16  | 11.11 | 12.70 | 15.20 | 28.95 | 35.56  |
| GMC 2-6N   | 1/8      | 3.17  | 3/8        | 2.28        | 11/16             | 17.46 | 7/16  | 11.11 | 12.70 | 15.24 | 29.21 | 35.81  |
| GMC 2-8N   | 1/8      | 3.17  | 1/2        | 2.28        | 7/8               | 22.22 | 7/16  | 11.11 | 12.70 | 15.24 | 35.56 | 42.16  |
| GMC 3-2N   | 3/16     | 4.76  | 1/8        | 3.04        | 7/16              | 11.11 | 1/2   | 12.70 | 13.71 | 16.00 | 24.63 | 31.24  |
| GMC 3-4N   | 3/16     | 4.76  | 1/4        | 3.04        | 9/16              | 14.28 | 1/2   | 12.70 | 13.71 | 16.00 | 29.71 | 36.32  |
| GMC 4-1N   | 1/4      | 6.35  | 1/16       | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 25.40 | 32.76  |
| GMC 4-2N   | 1/4      | 6.35  | 1/8        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 25.40 | 32.76  |
| GMC 4-4N   | 1/4      | 6.35  | 1/4        | 4.82        | 9/16              | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 30.48 | 37.84  |
| GMC 4-6N   | 1/4      | 6.35  | 3/8        | 4.82        | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 30.98 | 38.35  |
| GMC 4-8N   | 1/4      | 6.35  | 1/2        | 4.82        | 7/8               | 22.22 | 9/16  | 14.28 | 15.24 | 17.78 | 37.33 | 44.70  |
| GMC 4-12N  | 1/4      | 6.35  | 3/4        | 4.82        | 1-1/16            | 26.98 | 9/16  | 14.28 | 15.24 | 17.78 | 38.86 | 46.22  |
| GMC 5-2N   | 5/16     | 7.93  | 1/8        | 4.82        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 26.67 | 34.03  |
| GMC 5-4N   | 5/16     | 7.93  | 1/4        | 6.35        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 31.24 | 38.60  |
| GMC 5-6N   | 5/16     | 7.93  | 3/8        | 6.35        | 11/16             | 17.46 | 5/8   | 15.87 | 16.25 | 18.54 | 31.75 | 39.11  |
| GMC 5-8N   | 5/16     | 7.93  | 1/2        | 6.35        | 7/8               | 22.22 | 5/8   | 15.87 | 16.25 | 18.54 | 38.11 | 45.60  |
| GMC 6-2N   | 3/8      | 9.52  | 1/8        | 4.82        | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 27.94 | 35.30  |
| GMC 6-4N   | 3/8      | 9.52  | 1/4        | 7.11        | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 32.51 | 39.87  |
| GMC 6-6N   | 3/8      | 9.52  | 3/8        | 7.11        | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 32.51 | 39.87  |
| GMC 6-8N   | 3/8      | 9.52  | 1/2        | 7.11        | 7/8               | 22.22 | 11/16 | 17.46 | 16.76 | 19.30 | 38.86 | 46.22  |
| GMC 6-12N  | 3/8      | 9.52  | 3/4        | 7.11        | 1-1/16            | 26.98 | 11/16 | 17.46 | 16.76 | 19.30 | 40.38 | 47.75  |
| GMC 8-2N   | 1/2      | 12.70 | 1/8        | 4.82        | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 28.70 | 38.86  |
| GMC 8-4N   | 1/2      | 12.70 | 1/4        | 7.11        | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 33.27 | 43.43  |
| GMC 8-6N   | 1/2      | 12.70 | 3/8        | 9.65        | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 33.27 | 43.43  |
| GMC 8-8N   | 1/2      | 12.70 | 1/2        | 10.41       | 7/8               | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 38.86 | 49.02  |
| GMC 8-12N  | 1/2      | 12.70 | 3/4        | 10.41       | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 40.38 | 50.54  |
| GMC 8-16N  | 1/2      | 12.70 | 1          | 10.41       | 1-3/8             | 34.92 | 7/8   | 22.22 | 22.86 | 21.84 | 46.99 | 57.15  |
| GMC 10-6N  | 5/8      | 15.87 | 3/8        | 9.65        | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 34.03 | 44.19  |
| GMC 10-8N  | 5/8      | 15.87 | 1/2        | 11.93       | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 38.86 | 49.02  |
| GMC 10-12N | 5/8      | 15.87 | 3/4        | 12.70       | 1-1/16            | 26.98 | 1     | 25.40 | 24.38 | 21.84 | 40.38 | 50.54  |
| GMC 12-8N  | 3/4      | 19.05 | 1/2        | 11.93       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 40.38 | 50.54  |
| GMC 12-12N | 3/4      | 19.05 | 3/4        | 15.74       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 40.38 | 50.54  |
| GMC 12-16N | 3/4      | 19.05 | 1          | 15.74       | 1-3/8             | 34.92 | 1-1/8 | 28.58 | 24.38 | 21.84 | 46.99 | 57.15  |
| GMC 14-12N | 7/8      | 22.22 | 3/4        | 15.74       | 1-3/16            | 30.16 | 1-1/4 | 31.75 | 25.90 | 21.84 | 40.38 | 50.54  |
| GMC 14-16N | 7/8      | 22.22 | 1          | 18.28       | 1-3/8             | 34.92 | 1-1/4 | 31.75 | 25.90 | 21.84 | 46.99 | 57.15  |
| GMC 16-8N  | 1        | 25.40 | 1/2        | 11.93       | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 45.21 | 57.40  |
| GMC 16-12N | 1        | 25.40 | 3/4        | 15.74       | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 45.21 | 57.40  |
| GMC 16-16N | 1        | 25.40 | 1          | 22.35       | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 50.03 | 62.23  |
| GMC 20-16N | 1-1/4    | 31.75 | 1          | 22.35       | 1-3/4             | 44.45 | 1-7/8 | 47.63 | 41.14 | 38.86 | 55.11 | 77.21  |
| GMC 20-20N | 1-1/4    | 31.75 | 1-1/4      | 27.68       | 1-3/4             | 44.45 | 1-7/8 | 47.63 | 41.14 | 38.86 | 55.11 | 77.21  |
| GMC 20-24N | 1-1/4    | 31.75 | 1-1/2      | 27.68       | 1-3/4             | 44.45 | 1-7/8 | 47.63 | 41.14 | 38.86 | 60.54 | 82.64  |
| GMC 24-20N | 1-1/2    | 38.10 | 1-1/4      | 27.68       | 2-1/8             | 53.98 | 2-1/4 | 57.15 | 50.03 | 45.21 | 59.42 | 86.60  |
| GMC 24-24N | 1-1/2    | 38.10 | 1-1/2      | 34.03       | 2-1/8             | 53.98 | 2-1/4 | 57.15 | 50.03 | 45.21 | 61.72 | 88.90  |
| GMC 24-32N | 1-1/2    | 38.10 | 2          | 34.03       | 2-3/4             | 69.85 | 2-1/4 | 57.15 | 50.03 | 45.21 | 62.42 | 99.75  |
| GMC 32-8N  | 2        | 50.80 | 1/2        | 11.93       | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 68.40 | 105.73 |
| GMC 32-20N | 2        | 50.80 | 1-1/4      | 45.97       | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 71.40 | 108.73 |
| GMC 32-24N | 2        | 50.80 | 1-1/2      | 45.97       | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 75.50 | 112.83 |
| GMC 32-32N | 2        | 50.80 | 2          | 45.97       | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 76.20 | 113.53 |

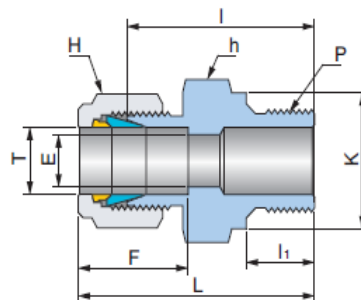
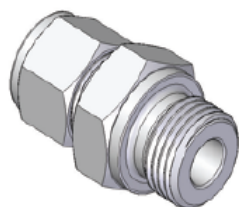
Male Connector

**GMC-R****Connects metric tube to female ISO tapered thread**

| Part No.    | Tube O.D | T<br>R(PT) | E<br>Min. | Width across flat |    |      |      |      |      |
|-------------|----------|------------|-----------|-------------------|----|------|------|------|------|
|             | D        |            |           | h                 | H  | A    | B    | ℓ    | L    |
| GMC 2M-2R   | 2        | 1/8        | 1.7       | 12                | 12 | 12.9 | 15.3 | 23.9 | 30.5 |
| GMC 3M-2R   | 3        | 1/8        | 2.4       | 12                | 12 | 12.9 | 15.3 | 23.1 | 29.7 |
| GMC 3M-4R   | 3        | 1/4        | 2.4       | 14                | 12 | 12.9 | 15.3 | 29.0 | 35.6 |
| GMC 4M-2R   | 4        | 1/8        | 2.4       | 12                | 12 | 13.7 | 16.1 | 24.6 | 31.2 |
| GMC 4M-4R   | 4        | 1/4        | 2.4       | 14                | 12 | 13.7 | 16.1 | 29.7 | 36.3 |
| GMC 6M-2R   | 6        | 1/8        | 4.8       | 14                | 14 | 15.3 | 17.7 | 25.4 | 32.8 |
| GMC 6M-4R   | 6        | 1/4        | 4.8       | 14                | 14 | 15.3 | 17.7 | 30.2 | 37.6 |
| GMC 6M-6R   | 6        | 3/8        | 4.8       | 18                | 14 | 15.3 | 17.7 | 31.0 | 38.4 |
| GMC 6M-8R   | 6        | 1/2        | 4.8       | 22                | 14 | 15.3 | 17.7 | 36.6 | 44.0 |
| GMC 8M-2R   | 8        | 1/8        | 4.8       | 15                | 16 | 16.2 | 18.6 | 26.7 | 34.2 |
| GMC 8M-4R   | 8        | 1/4        | 6.4       | 15                | 16 | 16.2 | 18.6 | 31.2 | 38.7 |
| GMC 8M-6R   | 8        | 3/8        | 6.4       | 18                | 16 | 16.2 | 18.6 | 31.8 | 39.2 |
| GMC 8M-8R   | 8        | 1/2        | 6.4       | 22                | 16 | 16.2 | 18.6 | 37.3 | 44.8 |
| GMC 10M-2R  | 10       | 1/8        | 4.8       | 18                | 19 | 17.2 | 19.5 | 28.7 | 36.3 |
| GMC 10M-4R  | 10       | 1/4        | 7.1       | 18                | 19 | 17.2 | 19.5 | 33.3 | 40.9 |
| GMC 10M-6R  | 10       | 3/8        | 7.9       | 18                | 19 | 17.2 | 19.5 | 33.3 | 40.9 |
| GMC 10M-8R  | 10       | 1/2        | 7.9       | 22                | 19 | 17.2 | 19.5 | 38.1 | 45.7 |
| GMC 12M-4R  | 12       | 1/4        | 7.1       | 22                | 22 | 22.8 | 22.0 | 33.3 | 43.4 |
| GMC 12M-6R  | 12       | 3/8        | 9.5       | 22                | 22 | 22.8 | 22.0 | 33.3 | 43.4 |
| GMC 12M-8R  | 12       | 1/2        | 9.5       | 22                | 22 | 22.8 | 22.0 | 38.1 | 48.2 |
| GMC 12M-12R | 12       | 3/4        | 9.5       | 27                | 22 | 22.8 | 22.0 | 38.9 | 49.0 |
| GMC 15M-8R  | 15       | 1/2        | 11.9      | 24                | 25 | 24.4 | 22.0 | 38.9 | 49.0 |
| GMC 16M-4R  | 16       | 1/4        | 7.1       | 24                | 25 | 24.4 | 22.0 | 34.0 | 44.1 |
| GMC 16M-6R  | 16       | 3/8        | 9.5       | 24                | 25 | 24.4 | 22.0 | 34.0 | 44.1 |
| GMC 16M-8R  | 16       | 1/2        | 11.9      | 24                | 25 | 24.4 | 22.0 | 38.9 | 49.0 |
| GMC 16M-12R | 16       | 3/4        | 12.7      | 27                | 25 | 24.4 | 22.0 | 38.9 | 49.0 |
| GMC 18M-8R  | 18       | 1/2        | 11.9      | 27                | 30 | 24.4 | 22.0 | 40.4 | 50.5 |
| GMC 18M-12R | 18       | 3/4        | 15.1      | 27                | 30 | 24.4 | 22.0 | 40.4 | 50.5 |
| GMC 20M-8R  | 20       | 1/2        | 11.9      | 30                | 32 | 26.0 | 22.0 | 42.2 | 52.3 |
| GMC 20M-12R | 20       | 3/4        | 15.9      | 30                | 32 | 26.0 | 22.0 | 42.2 | 52.3 |
| GMC 22M-12R | 22       | 3/4        | 15.9      | 30                | 32 | 26.0 | 22.0 | 42.2 | 52.3 |
| GMC 22M-16R | 22       | 1          | 18.3      | 35                | 32 | 26.0 | 22.0 | 47.8 | 57.9 |
| GMC 25M-12R | 25       | 3/4        | 15.9      | 35                | 38 | 31.3 | 26.5 | 45.2 | 57.5 |
| GMC 25M-16R | 25       | 1          | 21.8      | 35                | 38 | 31.3 | 26.5 | 50.0 | 62.3 |
| GMC 28M-16R | 28       | 1          | 21.8      | 41                | 46 | 36.6 | 36.6 | 51.6 | 72.4 |
| GMC 28M-20R | 28       | 1-1/4      | 21.8      | 46                | 46 | 36.6 | 36.6 | 52.3 | 73.1 |
| GMC 32M-20R | 32       | 1-1/4      | 28.6      | 46                | 50 | 42.0 | 41.6 | 56.6 | 79.6 |
| GMC 38M-24R | 38       | 1-1/2      | 33.7      | 55                | 60 | 49.4 | 47.9 | 64.0 | 91.6 |

Male Connector  
for Bonded Seal

# GMC-G

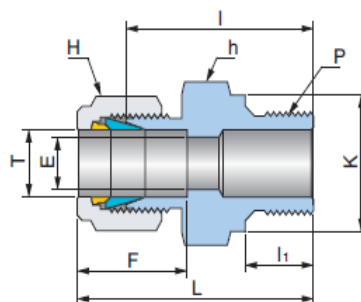
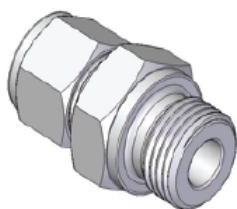


Connects fractional tube to female ISO parallel thread

| Part No.   | Tube O.D |       | T<br>(PF) | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L     | K     |
|------------|----------|-------|-----------|-----------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | D        |       |           |           | h                 |       | H     |       |       |       |       |       |       |       |
|            | in       | mm    |           |           | in                | mm    | in    | mm    |       |       |       |       |       |       |
| GMC 2-2G   | 1/8      | 3.17  | 1/8       | 2.28      | 9/16              | 14.28 | 7/16  | 11.11 | 12.70 | 15.24 | 23.37 | 7.11  | 29.97 | 13.72 |
| GMC 2-4G   | 1/8      | 3.17  | 1/4       | 2.28      | 3/4               | 19.05 | 7/16  | 11.11 | 12.70 | 15.24 | 28.70 | 11.18 | 35.31 | 18.03 |
| GMC 2-6G   | 1/8      | 3.17  | 3/8       | 2.28      | 7/8               | 22.22 | 7/16  | 11.11 | 12.70 | 15.24 | 29.72 | 11.18 | 36.21 | 21.84 |
| GMC 4-2G   | 1/4      | 6.35  | 1/8       | 2.28      | 9/16              | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 24.89 | 7.11  | 32.26 | 13.72 |
| GMC 4-4G   | 1/4      | 6.35  | 1/4       | 4.82      | 3/4               | 19.05 | 9/16  | 14.28 | 15.24 | 17.78 | 30.23 | 11.18 | 37.59 | 18.03 |
| GMC 4-6G   | 1/4      | 6.35  | 3/8       | 4.82      | 7/8               | 22.22 | 9/16  | 14.28 | 15.24 | 17.78 | 31.50 | 11.18 | 38.86 | 21.84 |
| GMC 4-8G   | 1/4      | 6.35  | 1/2       | 4.82      | 1-1/16            | 26.98 | 9/16  | 14.28 | 15.24 | 17.78 | 37.34 | 14.22 | 44.70 | 25.91 |
| GMC 6-4G   | 3/8      | 9.53  | 1/4       | 4.82      | 3/4               | 19.05 | 11/16 | 17.46 | 16.76 | 17.78 | 31.75 | 11.18 | 39.12 | 18.03 |
| GMC 6-6G   | 3/8      | 9.53  | 3/8       | 7.11      | 7/8               | 22.22 | 11/16 | 17.46 | 16.76 | 19.30 | 33.02 | 11.18 | 40.39 | 21.84 |
| GMC 6-8G   | 3/8      | 9.53  | 1/2       | 7.11      | 7-1/16            | 26.98 | 11/16 | 17.46 | 16.76 | 19.30 | 38.86 | 14.22 | 46.23 | 25.91 |
| GMC 8-4G   | 1/2      | 12.70 | 1/4       | 7.11      | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 19.30 | 32.51 | 11.18 | 42.67 | 18.03 |
| GMC 8-6G   | 1/2      | 12.70 | 3/8       | 9.65      | 7/8               | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 33.02 | 11.18 | 43.18 | 21.84 |
| GMC 8-8G   | 1/2      | 12.70 | 1/2       | 10.41     | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 38.86 | 14.22 | 49.02 | 25.91 |
| GMC 12-8G  | 3/4      | 19.05 | 1/2       | 11.93     | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 38.86 | 14.22 | 49.02 | 25.91 |
| GMC 12-12G | 3/4      | 19.05 | 3/4       | 15.74     | 1-5/16            | 33.33 | 1-1/8 | 28.58 | 24.38 | 21.84 | 42.67 | 15.75 | 52.83 | 32.00 |
| GMC 16-8G  | 1        | 25.40 | 1/2       | 11.93     | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 43.69 | 14.22 | 55.88 | 25.91 |
| GMC 16-16G | 1        | 25.40 | 1         | 22.35     | 1-5/8             | 41.27 | 1-1/2 | 38.10 | 31.24 | 26.41 | 47.75 | 18.29 | 59.94 | 39.12 |
| GMC 20-20G | 1-1/4    | 31.75 | 1-1/4     | 27.68     | 2                 | 50.80 | 1-7/8 | 47.63 | 41.14 | 38.86 | 51.16 | 20.00 | 73.26 | 49.00 |
| GMC 24-24G | 1-1/2    | 38.10 | 1-1/2     | 34.03     | 2-1/4             | 57.15 | 2-1/4 | 57.15 | 50.03 | 45.21 | 57.57 | 22.00 | 84.75 | 55.00 |

Male Connector  
for Bonded Seal

## GMC-G



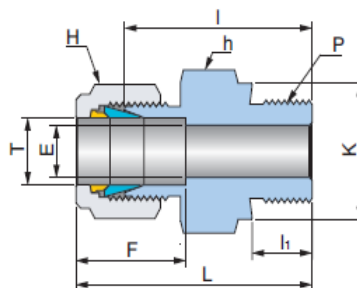
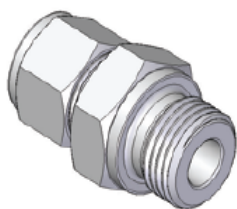
Connects metric tube to female ISO parallel thread

| Part No.    | Tube O.D<br>D | T<br>G(PF) | E<br>Min. | Width across flat |    | A    | B    | ℓ    | ℓ1   | L    | L1   |
|-------------|---------------|------------|-----------|-------------------|----|------|------|------|------|------|------|
|             |               |            |           | h                 | H  |      |      |      |      |      |      |
| GMC 2M-2G   | 2             | 1/8        | 1.7       | 14                | 12 | 12.9 | 15.3 | 23.4 | 7.1  | 30.0 | 13.8 |
| GMC 3M-2G   | 3             | 1/8        | 2.4       | 14                | 12 | 12.9 | 15.3 | 23.4 | 7.1  | 30.0 | 13.8 |
| GMC 3M-4G   | 3             | 1/4        | 2.4       | 19                | 12 | 12.9 | 15.3 | 28.7 | 11.2 | 35.3 | 18.0 |
| GMC 4M-2G   | 4             | 1/8        | 2.4       | 14                | 12 | 13.7 | 16.1 | 24.1 | 7.1  | 30.7 | 13.8 |
| GMC 4M-4G   | 4             | 1/4        | 2.4       | 19                | 12 | 13.7 | 16.1 | 29.4 | 11.2 | 36.0 | 18.0 |
| GMC 6M-2G   | 6             | 1/8        | 4.0       | 14                | 14 | 15.3 | 17.7 | 24.9 | 7.1  | 32.3 | 13.8 |
| GMC 6M-4G   | 6             | 1/4        | 4.8       | 19                | 14 | 15.3 | 17.7 | 30.2 | 11.2 | 37.6 | 18.0 |
| GMC 6M-6G   | 6             | 3/8        | 4.8       | 22                | 14 | 15.3 | 17.7 | 31.5 | 11.2 | 38.9 | 21.8 |
| GMC 6M-8G   | 6             | 1/2        | 4.8       | 27                | 14 | 15.3 | 17.7 | 37.3 | 14.2 | 44.7 | 26.0 |
| GMC 8M-2G   | 8             | 1/8        | 4.0       | 15                | 16 | 16.2 | 18.6 | 25.7 | 7.1  | 33.2 | 13.8 |
| GMC 8M-4G   | 8             | 1/4        | 6.4       | 19                | 16 | 16.2 | 18.6 | 31.0 | 11.2 | 38.5 | 13.8 |
| GMC 8M-6G   | 8             | 3/8        | 6.4       | 22                | 16 | 16.2 | 18.6 | 32.3 | 11.2 | 39.8 | 21.8 |
| GMC 8M-8G   | 8             | 1/2        | 6.4       | 27                | 16 | 16.2 | 18.6 | 38.1 | 14.2 | 45.6 | 26.0 |
| GMC 10M-4G  | 10            | 1/4        | 6.4       | 19                | 19 | 17.2 | 19.5 | 31.8 | 11.2 | 39.4 | 18.0 |
| GMC 10M-6G  | 10            | 3/8        | 7.9       | 22                | 19 | 17.2 | 19.5 | 33.0 | 11.2 | 40.6 | 21.8 |
| GMC 10M-8G  | 10            | 1/2        | 7.9       | 27                | 19 | 17.2 | 19.5 | 38.9 | 14.2 | 46.5 | 26.0 |
| GMC 12M-4G  | 12            | 1/4        | 5.9       | 22                | 22 | 22.8 | 22.0 | 32.5 | 11.2 | 42.6 | 18.0 |
| GMC 12M-6G  | 12            | 3/8        | 7.9       | 22                | 22 | 22.8 | 22.0 | 33.0 | 11.2 | 43.1 | 21.8 |
| GMC 12M-8G  | 12            | 1/2        | 9.5       | 27                | 22 | 22.8 | 22.0 | 38.9 | 14.2 | 49.0 | 26.0 |
| GMC 12M-12G | 12            | 3/4        | 9.5       | 32                | 22 | 22.8 | 22.0 | 42.7 | 15.7 | 52.8 | 32.0 |
| GMC 16M-6G  | 16            | 3/8        | 7.9       | 24                | 25 | 24.4 | 22.0 | 33.8 | 11.2 | 43.9 | 21.8 |
| GMC 16M-8G  | 16            | 1/2        | 11.9      | 27                | 25 | 24.4 | 22.0 | 38.9 | 14.2 | 49.0 | 26.0 |
| GMC 18M-8G  | 18            | 1/2        | 11.9      | 27                | 30 | 24.4 | 22.0 | 38.9 | 14.2 | 49.0 | 26.0 |
| GMC 18M-12G | 18            | 3/4        | 15.1      | 35                | 30 | 24.4 | 22.0 | 42.7 | 15.7 | 52.8 | 32.0 |
| GMC 20M-8G  | 20            | 1/2        | 11.9      | 30                | 32 | 26.0 | 22.0 | 40.4 | 14.2 | 50.5 | 26.0 |
| GMC 20M-12G | 20            | 3/4        | 15.9      | 35                | 32 | 26.0 | 22.0 | 42.7 | 15.7 | 52.8 | 32.0 |
| GMC 22M-12G | 22            | 3/4        | 15.9      | 35                | 32 | 26.0 | 22.0 | 42.7 | 15.7 | 52.8 | 32.0 |
| GMC 22M-16G | 22            | 1          | 18.3      | 41                | 32 | 26.0 | 22.0 | 45.2 | 18.3 | 55.3 | 39.0 |
| GMC 25M-12G | 25            | 3/4        | 15.9      | 35                | 38 | 31.3 | 26.5 | 45.2 | 15.7 | 57.5 | 32.0 |
| GMC 25M-16G | 25            | 1          | 19.8      | 41                | 38 | 31.3 | 26.5 | 47.8 | 18.3 | 60.1 | 39.0 |
| GMC 28M-16G | 28            | 1          | 19.8      | 41                | 46 | 36.6 | 36.6 | 49.3 | 18.3 | 70.1 | 39.0 |
| GMC 28M-20G | 28            | 1-1/4      | 21.8      | 50                | 46 | 36.6 | 36.6 | 53.1 | 19.8 | 73.9 | 49.0 |
| GMC 32M-20G | 32            | 1-1/4      | 25.0      | 50                | 50 | 42.0 | 41.6 | 55.9 | 19.8 | 78.9 | 49.0 |
| GMC 38M-24G | 38            | 1-1/2      | 31.8      | 55                | 60 | 49.4 | 47.9 | 63.2 | 22.1 | 90.8 | 54.7 |



Male Connector  
for Metal Gasket

**GMO**

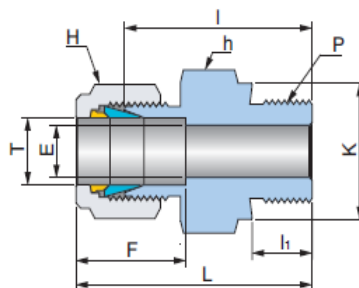
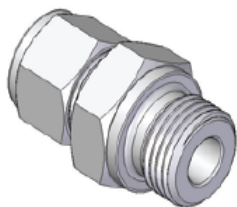


**Connects fractional tube to female ISO parallel thread**

| Part No.   | Tube O.D |       | T<br>(PF) | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L     | K     |
|------------|----------|-------|-----------|-----------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | C        |       |           |           | h                 |       | F     |       |       |       |       |       |       |       |
|            | in       | mm    |           |           | in                | mm    | in    | mm    |       |       |       |       |       |       |
| GMO 2-2G   | 1/8      | 3.17  | 1/8       | 2.28      | 9/16              | 14.28 | 7/16  | 11.11 | 12.70 | 15.24 | 23.37 | 7.11  | 29.97 | 13.72 |
| GMO 2-4G   | 1/8      | 3.17  | 1/4       | 2.28      | 3/4               | 19.05 | 7/16  | 11.11 | 12.70 | 15.24 | 28.70 | 11.18 | 35.31 | 18.03 |
| GMO 2-6G   | 1/8      | 3.17  | 3/8       | 2.28      | 7/8               | 22.22 | 7/16  | 11.11 | 12.70 | 15.24 | 29.72 | 11.18 | 36.21 | 21.84 |
| GMO 4-2G   | 1/4      | 6.35  | 1/8       | 2.28      | 9/16              | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 24.89 | 7.11  | 32.26 | 13.72 |
| GMO 4-4G   | 1/4      | 6.35  | 1/4       | 4.82      | 3/4               | 19.05 | 9/16  | 14.28 | 15.24 | 17.78 | 30.23 | 11.18 | 37.59 | 18.03 |
| GMO 4-6G   | 1/4      | 6.35  | 3/8       | 4.82      | 7/8               | 22.22 | 9/16  | 14.28 | 15.24 | 17.78 | 31.50 | 11.18 | 38.86 | 21.84 |
| GMO 4-8G   | 1/4      | 6.35  | 1/2       | 4.82      | 1-1/16            | 26.98 | 9/16  | 14.28 | 15.24 | 17.78 | 37.34 | 14.22 | 44.70 | 25.91 |
| GMO 6-4G   | 3/8      | 9.53  | 1/4       | 4.82      | 3/4               | 19.05 | 11/16 | 17.46 | 16.76 | 19.30 | 31.75 | 11.18 | 39.12 | 18.03 |
| GMO 6-6G   | 3/8      | 9.53  | 3/8       | 7.11      | 7/8               | 22.22 | 11/16 | 17.46 | 16.76 | 19.30 | 33.02 | 11.18 | 40.39 | 21.84 |
| GMO 6-8G   | 3/8      | 9.53  | 1/2       | 7.11      | 1-1/16            | 26.98 | 11/16 | 17.46 | 16.76 | 19.30 | 38.86 | 14.22 | 46.23 | 25.91 |
| GMO 8-4G   | 1/2      | 12.70 | 1/4       | 7.11      | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 32.51 | 11.18 | 42.67 | 18.03 |
| GMO 8-6G   | 1/2      | 12.70 | 3/8       | 9.65      | 7/8               | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 33.02 | 11.18 | 43.18 | 21.84 |
| GMO 8-8G   | 1/2      | 12.70 | 1/2       | 10.41     | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 38.86 | 14.22 | 49.02 | 25.91 |
| GMO 12-8G  | 3/4      | 19.05 | 1/2       | 11.93     | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 38.86 | 14.22 | 49.02 | 25.91 |
| GMO 12-12G | 3/4      | 19.05 | 3/4       | 15.74     | 1-5/16            | 33.33 | 1-1/8 | 28.58 | 24.38 | 21.84 | 42.67 | 15.75 | 52.83 | 32.00 |
| GMO 16-8G  | 1        | 25.40 | 1/2       | 11.93     | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 43.69 | 14.22 | 55.88 | 25.91 |
| GMO 16-16G | 1        | 25.40 | 1         | 22.35     | 1-5/8             | 41.27 | 1-1/2 | 38.10 | 31.24 | 26.41 | 47.75 | 18.29 | 59.94 | 39.12 |
| GMO 20-20G | 1-1/4    | 31.75 | 1-1/4     | 27.68     | 2                 | 50.80 | 1-7/8 | 47.63 | 41.14 | 38.86 | 51.16 | 20.00 | 73.26 | 49.00 |
| GMO 24-24G | 1-1/2    | 38.10 | 1-1/2     | 34.03     | 2-1/4             | 57.15 | 2-1/4 | 57.15 | 50.03 | 45.21 | 57.57 | 20.00 | 84.75 | 55.00 |

Male Connector  
for Metal Gasket

**GMO**

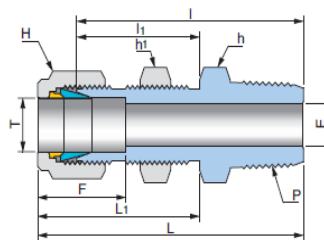
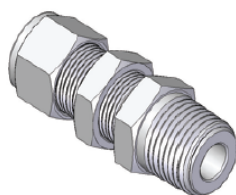


**Connects metric tube to female ISO parallel thread**

| Part No.    | Tube O.D<br>D | T<br>G(PT) | E<br>Min. | Width across flat |    | A    | B    | ℓ    | ℓ1   | L    | K    |
|-------------|---------------|------------|-----------|-------------------|----|------|------|------|------|------|------|
|             |               |            |           | h                 | H  |      |      |      |      |      |      |
| GMO 3M-2G   | 3             | 1/8        | 2.4       | 14                | 12 | 12.9 | 15.3 | 23.4 | 7.1  | 30.0 | 13.8 |
| GMO 3M-4G   | 3             | 1/4        | 2.4       | 19                | 12 | 12.9 | 15.3 | 28.7 | 11.2 | 35.3 | 18.0 |
| GMO 4M-2G   | 4             | 1/8        | 2.4       | 14                | 12 | 13.7 | 16.1 | 24.1 | 7.1  | 30.7 | 13.8 |
| GMO 6M-2G   | 6             | 1/8        | 4.0       | 14                | 14 | 15.3 | 17.7 | 24.9 | 7.1  | 32.3 | 13.8 |
| GMO 6M-4G   | 6             | 1/4        | 4.8       | 19                | 14 | 15.3 | 17.7 | 30.2 | 11.2 | 37.6 | 18.0 |
| GMO 6M-6G   | 6             | 3/8        | 4.8       | 22                | 14 | 15.3 | 17.7 | 31.5 | 11.2 | 38.9 | 21.8 |
| GMO 6M-8G   | 6             | 1/2        | 4.8       | 27                | 14 | 15.3 | 17.7 | 37.3 | 14.2 | 44.7 | 26.0 |
| GMO 8M-2G   | 8             | 1/8        | 4.0       | 15                | 16 | 16.2 | 18.6 | 25.7 | 7.1  | 33.2 | 13.8 |
| GMO 8M-4G   | 8             | 1/4        | 6.4       | 19                | 16 | 16.2 | 18.6 | 31.0 | 11.2 | 38.5 | 13.8 |
| GMO 8M-6G   | 8             | 3/8        | 6.4       | 22                | 16 | 16.2 | 18.6 | 32.3 | 11.2 | 39.8 | 21.8 |
| GMO 8M-8G   | 8             | 1/2        | 6.4       | 27                | 16 | 16.2 | 18.6 | 38.1 | 14.2 | 45.6 | 26.0 |
| GMO 10M-4G  | 10            | 1/4        | 5.9       | 19                | 19 | 17.2 | 19.5 | 31.8 | 11.2 | 39.4 | 18.0 |
| GMO 10M-6G  | 10            | 3/8        | 7.9       | 22                | 19 | 17.2 | 19.5 | 33.0 | 11.2 | 40.6 | 21.8 |
| GMO 10M-8G  | 10            | 1/2        | 7.9       | 27                | 19 | 17.2 | 19.5 | 38.9 | 14.2 | 46.5 | 26.0 |
| GMO 12M-4G  | 12            | 1/4        | 5.9       | 22                | 22 | 22.8 | 22.0 | 32.5 | 11.2 | 42.6 | 18.0 |
| GMO 12M-6G  | 12            | 3/8        | 7.9       | 22                | 22 | 22.8 | 22.0 | 33.0 | 11.2 | 43.1 | 21.8 |
| GMO 12M-8G  | 12            | 1/2        | 9.5       | 27                | 22 | 22.8 | 22.0 | 38.9 | 14.2 | 49.0 | 26.0 |
| GMO 12M-12G | 12            | 3/4        | 9.5       | 32                | 22 | 22.8 | 22.0 | 42.7 | 15.7 | 52.8 | 32.0 |
| GMO 15M-8G  | 15            | 1/2        | 11.9      | 27                | 25 | 24.4 | 22.0 | 33.9 | 14.2 | 49.0 | 26.0 |
| GMO 16M-6G  | 16            | 3/8        | 7.9       | 24                | 25 | 24.4 | 22.0 | 33.8 | 11.2 | 43.9 | 21.8 |
| GMO 16M-8G  | 16            | 1/2        | 11.9      | 27                | 25 | 24.4 | 22.0 | 38.9 | 14.2 | 49.0 | 26.0 |
| GMO 18M-8G  | 18            | 1/2        | 11.9      | 27                | 30 | 24.4 | 22.0 | 38.9 | 14.2 | 49.0 | 26.0 |
| GMO 18M-12G | 18            | 3/4        | 15.1      | 35                | 30 | 24.4 | 22.0 | 42.7 | 15.7 | 52.8 | 32.0 |
| GMO 20M-8G  | 20            | 1/2        | 11.9      | 30                | 32 | 26.0 | 22.0 | 40.4 | 14.2 | 50.5 | 26.0 |
| GMO 20M-12G | 20            | 3/4        | 15.9      | 35                | 32 | 26.0 | 22.0 | 42.7 | 15.7 | 52.8 | 32.0 |
| GMO 20M-12G | 22            | 3/4        | 15.9      | 35                | 32 | 26.0 | 22.0 | 42.7 | 15.7 | 52.8 | 32.0 |
| GMO 22M-16G | 22            | 1          | 18.3      | 41                | 32 | 26.0 | 22.0 | 45.2 | 18.3 | 55.3 | 39.0 |
| GMO 25M-12G | 25            | 3/4        | 15.9      | 35                | 38 | 31.3 | 26.5 | 45.2 | 15.7 | 57.5 | 32.0 |
| GMO 25M-16G | 25            | 1          | 19.8      | 41                | 38 | 31.3 | 26.5 | 47.8 | 18.3 | 60.1 | 39.0 |
| GMO 28M-16G | 28            | 1          | 19.8      | 41                | 46 | 36.6 | 36.6 | 49.3 | 18.3 | 70.1 | 39.0 |
| GMO 28M-20G | 28            | 1-1/4      | 21.8      | 50                | 46 | 36.6 | 36.6 | 53.1 | 19.8 | 73.9 | 49.0 |
| GMO 32M-20G | 32            | 1-1/4      | 28.6      | 50                | 50 | 42.0 | 41.6 | 55.9 | 19.8 | 78.9 | 49.0 |
| GMO 38M-24G | 38            | 1-1/2      | 31.8      | 55                | 60 | 49.4 | 47.9 | 61.7 | 20.6 | 89.3 | 54.7 |

Bulkhead Male Connector

# GBMC

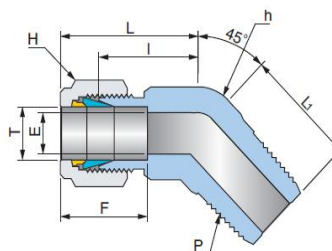
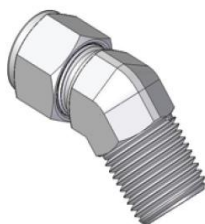


**Connects fractional tube to female NPT thread**

| Part No.    | Tube O.D |       | T<br>(NPT<br>) | E<br>Min. | Width across flat |       |        |       |       |       | A     | ℓ      | ℓ1    | L      | L1    | Panel<br>Hole<br>Drill<br>size | Panel<br>Max<br>Thick<br>ness |
|-------------|----------|-------|----------------|-----------|-------------------|-------|--------|-------|-------|-------|-------|--------|-------|--------|-------|--------------------------------|-------------------------------|
|             | C        |       |                |           | h                 | h     | t      |       |       |       |       |        |       |        |       |                                |                               |
|             | in       | mm    |                |           | in                | mm    | in     | mm    |       |       |       |        |       |        |       |                                |                               |
| GBMC 2-2N   | 1/8      | 3.17  | 1/8            | 2.28      | 1/2               | 12.70 | 1/2    | 12.70 | 7/16  | 11.11 | 12.70 | 39.87  | 24.63 | 46.48  | 31.24 | 8.33                           | 12.70                         |
| GBMC 4-2N   | 1/4      | 6.35  | 1/8            | 4.82      | 5/8               | 15.87 | 5/8    | 15.87 | 9/16  | 14.28 | 15.24 | 42.16  | 26.16 | 49.53  | 33.52 | 11.50                          | 10.16                         |
| GBMC 4-4N   | 1/4      | 6.35  | 1/4            | 4.82      | 5/8               | 15.87 | 5/8    | 15.87 | 9/16  | 14.28 | 15.24 | 45.97  | 26.16 | 53.34  | 33.52 | 11.50                          | 10.16                         |
| GBMC 6-4N   | 3/8      | 9.52  | 1/4            | 7.11      | 3/4               | 19.05 | 3/4    | 19.05 | 11/16 | 17.46 | 16.76 | 50.03  | 29.46 | 57.40  | 36.83 | 14.68                          | 11.17                         |
| GBMC 6-6N   | 3/8      | 9.52  | 3/8            | 7.11      | 3/4               | 19.05 | 3/4    | 19.05 | 11/16 | 17.46 | 16.76 | 50.03  | 29.46 | 57.40  | 36.83 | 14.68                          | 11.17                         |
| GBMC 6-8N   | 3/8      | 9.52  | 1/2            | 7.11      | 7/8               | 22.22 | 3/4    | 19.05 | 11/16 | 17.46 | 16.76 | 56.38  | 29.46 | 63.75  | 36.83 | 14.68                          | 11.17                         |
| GBMC 8-6N   | 1/2      | 12.70 | 3/8            | 9.39      | 15/16             | 23.81 | 15/16  | 23.81 | 7/8   | 22.22 | 22.86 | 53.08  | 31.75 | 63.24  | 41.91 | 19.44                          | 12.70                         |
| GBMC 8-8N   | 1/2      | 12.70 | 1/2            | 10.41     | 15/16             | 23.81 | 15/16  | 23.81 | 7/8   | 22.22 | 22.86 | 58.67  | 31.75 | 68.83  | 41.91 | 19.44                          | 12.70                         |
| GBMC 12-12N | 3/4      | 19.05 | 3/4            | 15.74     | 1-3/16            | 30.16 | 1-3/16 | 30.16 | 1-1/8 | 28.58 | 24.38 | 66.04  | 37.33 | 76.20  | 47.49 | 25.76                          | 16.76                         |
| GBMC 16-16N | 1        | 25.40 | 1              | 22.35     | 1-5/8             | 41.28 | 1-5/8  | 41.28 | 1-1/2 | 38.10 | 31.24 | 81.02  | 45.21 | 93.21  | 57.40 | 33.73                          | 19.05                         |
| GBMC 20-20N | 1-1/4    | 31.75 | 1-1/4          | 27.68     | 1-7/8             | 47.63 | 1-7/8  | 47.63 | 1-7/8 | 47.63 | 41.14 | 85.97  | 47.75 | 108.07 | 69.85 | 41.67                          | 19.05                         |
| GBMC 24-24N | 1-1/2    | 38.10 | 1-1/2          | 34.03     | 2-1/4             | 57.15 | 2-1/4  | 57.15 | 2-1/4 | 57.15 | 50.03 | 93.03  | 49.27 | 120.21 | 76.45 | 49.61                          | 19.05                         |
| GBMC 32-32N | 2        | 50.80 | 2              | 45.97     | 2-3/4             | 69.85 | 2-3/4  | 69.85 | 3     | 76.20 | 67.56 | 107.29 | 56.38 | 144.62 | 93.71 | 16.27                          | 19.05                         |

45° Male Elbow

# GMBL

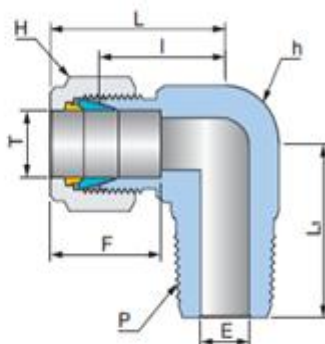


**Connects fractional tube to female NPT thread**

| Part No.    | Tube O.D. |       | T<br>(NPT<br>) | E<br>Min. | With across flat |       |       |       | A     | B     | ℓ     | L     | L1    |
|-------------|-----------|-------|----------------|-----------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | D         |       |                |           | h                | H     |       |       |       |       |       |       |       |
|             | in        | mm    |                |           | in               | mm    | in    | mm    |       |       |       |       |       |
| GMBL 4-2N   | 1/4       | 6.35  | 1/8            | 4.82      | 1/2              | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 17.27 | 24.63 | 16.51 |
| GMBL 4-4N   | 1/4       | 6.35  | 1/4            | 4.82      | 1/2              | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 17.27 | 24.63 | 21.08 |
| GMBL 6-2N   | 3/8       | 9.52  | 1/8            | 4.82      | 5/8              | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 20.57 | 27.94 | 18.28 |
| GMBL 6-4N   | 3/8       | 9.52  | 1/4            | 7.11      | 5/8              | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 20.57 | 27.94 | 22.86 |
| GMBL 6-6N   | 3/8       | 9.52  | 3/8            | 7.11      | 13/16            | 20.64 | 11/16 | 17.46 | 16.76 | 19.30 | 21.84 | 29.21 | 24.13 |
| GMBL 8-6N   | 1/2       | 12.70 | 3/8            | 9.65      | 13/16            | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 21.84 | 32.00 | 24.13 |
| GMBL 8-8N   | 1/2       | 12.70 | 1/2            | 10.41     | 13/16            | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 21.84 | 32.00 | 28.95 |
| GMBL 12-12N | 3/4       | 19.05 | 3/4            | 15.74     | 1-1/8            | 28.58 | 1-1/8 | 28.58 | 24.38 | 21.84 | 23.87 | 34.03 | 30.98 |
| GMBL 16-16N | 1         | 25.40 | 1              | 22.35     | 1-3/8            | 34.93 | 1-1/2 | 38.10 | 31.24 | 26.41 | 28.19 | 40.38 | 37.84 |

Male Elbow

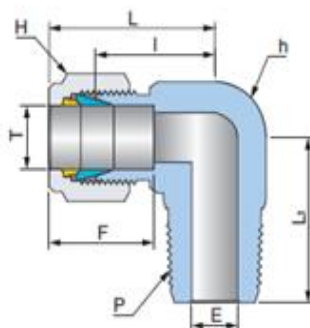
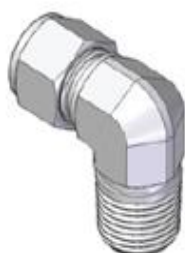
**GML**



**Connects fractional tube to female NPT thread**

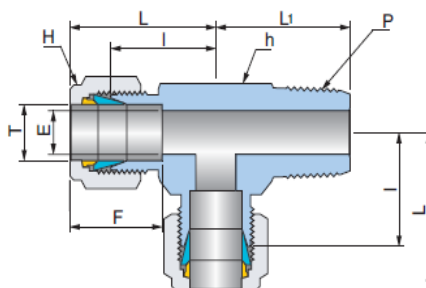
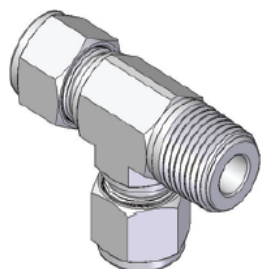
| Part No.   | Tube O.D |       | T<br>(NPT) | E<br>(Min.) | Width across flat |       |       |       | A     | B     | ℓ     | L      | L1    |
|------------|----------|-------|------------|-------------|-------------------|-------|-------|-------|-------|-------|-------|--------|-------|
|            | D        |       |            |             | h                 |       | H     |       |       |       |       |        |       |
|            | in       | mm    |            |             | in                | mm    | in    | mm    |       |       |       |        |       |
| GML 1-1N   | 1/16     | 1.59  | 1/16       | 1.27        | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 15.24 | 19.05  | 17.78 |
| GML 1-2N   | 1/16     | 1.59  | 1/8        | 1.27        | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 15.24 | 19.05  | 17.78 |
| GML 2-2N   | 1/8      | 3.17  | 1/8        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.30 | 24.91  | 18.90 |
| GML 2-4N   | 1/8      | 3.17  | 1/4        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.30 | 24.91  | 23.36 |
| GML 3-2N   | 3/16     | 4.76  | 1/8        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 25.40  | 18.79 |
| GML 3-4N   | 3/16     | 4.76  | 1/4        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 25.40  | 23.36 |
| GML 4-1N   | 1/4      | 6.35  | 1/16       | 3.04        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.90  | 18.79 |
| GML 4-2N   | 1/4      | 6.35  | 1/8        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.10 | 26.47  | 19.10 |
| GML 4-4N   | 1/4      | 6.35  | 1/4        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.81 | 27.18  | 23.87 |
| GML 4-6N   | 1/4      | 6.35  | 3/8        | 4.82        | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 22.35 | 29.71  | 26.20 |
| GML 4-8N   | 1/4      | 6.35  | 1/2        | 4.82        | 13/16             | 20.64 | 9/16  | 14.28 | 15.24 | 17.78 | 24.60 | 31.97  | 33.02 |
| GML 5-2N   | 5/16     | 7.93  | 1/8        | 4.82        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 21.33 | 28.70  | 19.81 |
| GML 5-4N   | 5/16     | 7.93  | 1/4        | 6.35        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 21.33 | 29.77  | 24.50 |
| GML 5-6N   | 5/16     | 7.93  | 3/8        | 6.35        | 11/16             | 17.46 | 5/8   | 15.87 | 16.25 | 18.54 | 23.11 | 30.48  | 26.20 |
| GML 6-2N   | 3/8      | 9.52  | 1/8        | 4.82        | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48  | 20.60 |
| GML 6-4N   | 3/8      | 9.52  | 1/4        | 7.11        | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48  | 25.40 |
| GML 6-6N   | 3/8      | 9.52  | 3/8        | 7.11        | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 23.87 | 31.24  | 26.20 |
| GML 6-8N   | 3/8      | 9.52  | 1/2        | 7.11        | 13/16             | 20.64 | 11/16 | 17.46 | 16.76 | 19.30 | 25.90 | 31.42  | 33.02 |
| GML 6-12N  | 3/8      | 9.52  | 3/4        | 7.11        | 1-1/16            | 26.98 | 11/16 | 17.46 | 16.76 | 19.30 | 29.71 | 37.08  | 36.83 |
| GML 8-4N   | 1/2      | 12.70 | 1/4        | 7.11        | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 28.30 |
| GML 8-6N   | 1/2      | 12.70 | 3/8        | 9.65        | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 28.30 |
| GML 8-8N   | 1/2      | 12.70 | 1/2        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 33.02 |
| GML 8-12N  | 1/2      | 12.70 | 3/4        | 10.41       | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 29.71 | 39.87  | 36.83 |
| GML 10-6N  | 5/8      | 15.87 | 3/8        | 9.65        | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 28.00 | 37.06  | 30.22 |
| GML 10-8N  | 5/8      | 15.87 | 1/2        | 11.93       | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 28.00 | 37.06  | 35.10 |
| GML 10-12N | 5/8      | 15.87 | 3/4        | 12.70       | 1-1/16            | 26.98 | 1     | 25.40 | 24.38 | 21.84 | 29.71 | 39.87  | 36.83 |
| GML 12-8N  | 3/4      | 19.05 | 1/2        | 11.93       | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 24.38 | 21.84 | 29.71 | 39.87  | 37.00 |
| GML 12-12N | 3/4      | 19.05 | 3/4        | 15.74       | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 24.38 | 21.84 | 29.71 | 39.87  | 36.83 |
| GML 14-12N | 7/8      | 22.22 | 3/4        | 15.74       | 1-1/4             | 31.75 | 1-1/4 | 31.75 | 25.90 | 21.84 | 34.54 | 44.70  | 41.65 |
| GML 16-12N | 1        | 25.40 | 3/4        | 15.74       | 1-27-64           | 36.00 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  | 42.20 |
| GML 16-16N | 1        | 25.40 | 1          | 22.35       | 1-27-64           | 36.00 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  | 46.70 |
| GML 20-20N | 1-1/4    | 31.75 | 1-1/4      | 27.68       | 1-11/16           | 42.86 | 1-7/8 | 47.63 | 41.14 | 38.86 | 44.50 | 66.54  | 47.75 |
| GML 24-24N | 1-1/2    | 38.10 | 1-1/2      | 34.03       | 2                 | 50.80 | 2-1/4 | 57.15 | 50.03 | 45.21 | 50.80 | 77.97  | 60.45 |
| GML 32-32N | 2        | 50.80 | 2          | 45.97       | 2-3/4             | 69.85 | 3     | 76.20 | 62.73 | 63.73 | 69.80 | 107.18 | 70.61 |

## Male Elbow

**GML****Connects metric tube to female ISO tapered thread**

| Part No.    | Tube O.D | T     | E    | Width across flat |    | A    | B    | ℓ    | L    | L1   |
|-------------|----------|-------|------|-------------------|----|------|------|------|------|------|
|             | D        | R(PT) | Min. | h                 | H  |      |      |      |      |      |
| GML 3M-2R   | 3        | 1/8   | 2.4  | 12.7              | 12 | 12.9 | 15.3 | 17.0 | 23.6 | 17.8 |
| GML 3M-4R   | 3        | 1/4   | 2.4  | 12.7              | 12 | 12.9 | 15.3 | 18.0 | 24.6 | 23.4 |
| GML 4M-2R   | 4        | 1/8   | 2.4  | 12.7              | 12 | 13.7 | 16.1 | 18.8 | 25.4 | 18.8 |
| GML 4M-4R   | 4        | 1/4   | 2.4  | 12.7              | 12 | 13.7 | 16.1 | 18.8 | 25.4 | 23.4 |
| GML 6M-2R   | 6        | 1/8   | 4.8  | 12.7              | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 18.8 |
| GML 6M-4R   | 6        | 1/4   | 4.8  | 12.7              | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 23.4 |
| GML 6M-6R   | 6        | 3/8   | 4.8  | 17.5              | 14 | 15.3 | 17.7 | 22.4 | 29.8 | 26.2 |
| GML 6M-8R   | 6        | 1/2   | 4.8  | 20.6              | 14 | 15.3 | 17.7 | 24.4 | 31.8 | 33.0 |
| GML 8M-2R   | 8        | 1/8   | 4.8  | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 | 19.8 |
| GML 8M-4R   | 8        | 1/4   | 6.4  | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 | 24.4 |
| GML 8M-6R   | 8        | 3/8   | 6.4  | 17.5              | 16 | 16.2 | 18.6 | 23.1 | 30.6 | 26.2 |
| GML 8M-8R   | 8        | 1/2   | 6.4  | 20.6              | 16 | 16.2 | 18.6 | 25.1 | 32.6 | 33.0 |
| GML 10M-2R  | 10       | 1/8   | 4.8  | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 23.6 |
| GML 10M-4R  | 10       | 1/4   | 7.1  | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 26.2 |
| GML 10M-6R  | 10       | 3/8   | 7.9  | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 26.2 |
| GML 10M-8R  | 10       | 1/2   | 7.9  | 20.6              | 19 | 17.2 | 19.5 | 25.9 | 33.5 | 33.0 |
| GML 12M-2R  | 12       | 1/8   | 4.8  | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 23.6 |
| GML 12M-4R  | 12       | 1/4   | 7.1  | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 28.2 |
| GML 12M-6R  | 12       | 3/8   | 9.5  | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 28.2 |
| GML 12M-8R  | 12       | 1/2   | 9.5  | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 33.0 |
| GML 12M-12R | 12       | 3/4   | 9.5  | 27.0              | 22 | 22.8 | 22.0 | 29.7 | 39.8 | 36.8 |
| GML 16M-6R  | 16       | 3/8   | 9.5  | 25.4              | 25 | 24.4 | 22.0 | 27.9 | 38.0 | 30.2 |
| GML 16M-8R  | 16       | 1/2   | 11.9 | 25.4              | 25 | 24.4 | 22.0 | 27.9 | 38.0 | 35.1 |
| GML 16M-12R | 16       | 3/4   | 12.7 | 27.0              | 25 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GML 18M-8R  | 18       | 1/2   | 11.9 | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GML 18M-12R | 18       | 3/4   | 15.1 | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GML 20M-8R  | 20       | 1/2   | 11.9 | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GML 20M-12R | 20       | 3/4   | 15.9 | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GML 22M-12R | 22       | 3/4   | 15.9 | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GML 22M-16R | 22       | 1     | 18.3 | 36.0              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 46.5 |
| GML 25M-12R | 25       | 3/4   | 15.9 | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 | 41.7 |
| GML 25M-16R | 25       | 1     | 21.8 | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 | 46.5 |

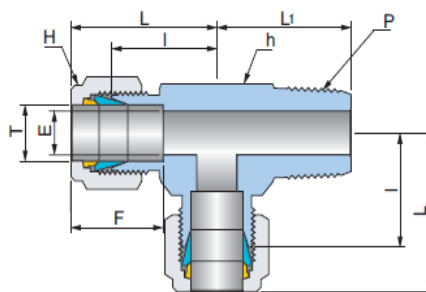
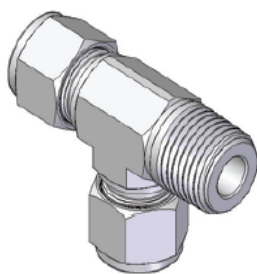
Male Run Tee  
**GMRT**



**Connects fractional tube to female NPT thread**

| Part No.    | Tube O.D |       | T<br>(NPT) | E<br>(Min.) | Width across flat |       |       |       | A     | B     | ℓ     | L      | L1    |
|-------------|----------|-------|------------|-------------|-------------------|-------|-------|-------|-------|-------|-------|--------|-------|
|             | D        |       |            |             | h                 |       | H     |       |       |       |       |        |       |
|             | in       | mm    |            |             | in                | mm    | in    | mm    |       |       |       |        |       |
| GMRT 1-1N   | 1/16     | 1.59  | 1/16       | 1.27        | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 15.24 | 19.05  | 17.78 |
| GMRT 1-2N   | 1/16     | 1.59  | 1/8        | 1.27        | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 15.24 | 19.05  | 17.78 |
| GMRT 2-2N   | 1/8      | 3.17  | 1/8        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.30 | 24.91  | 18.90 |
| GMRT 2-4N   | 1/8      | 3.17  | 1/4        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.30 | 24.91  | 23.36 |
| GMRT 3-2N   | 3/16     | 4.76  | 1/8        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 24.38  | 18.79 |
| GMRT 3-4N   | 3/16     | 4.76  | 1/4        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 25.40  | 23.36 |
| GMRT 4-1N   | 1/4      | 6.35  | 1/16       | 3.04        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.90  | 18.79 |
| GMRT 4-2N   | 1/4      | 6.35  | 1/8        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.92  | 18.79 |
| GMRT 4-4N   | 1/4      | 6.35  | 1/4        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 27.08  | 23.87 |
| GMRT 4-6N   | 1/4      | 6.35  | 3/8        | 4.82        | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 22.35 | 29.71  | 28.40 |
| GMRT 4-8N   | 1/4      | 6.35  | 1/2        | 4.82        | 13/16             | 20.64 | 9/16  | 14.28 | 15.24 | 17.78 | 24.60 | 31.97  | 35.10 |
| GMRT 5-2N   | 5/16     | 7.93  | 1/8        | 4.82        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 22.35 | 29.71  | 19.81 |
| GMRT 5-4N   | 5/16     | 7.94  | 1/4        | 6.35        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 22.35 | 29.77  | 24.50 |
| GMRT 5-6N   | 5/16     | 7.94  | 3/8        | 6.35        | 11/16             | 17.46 | 5/8   | 15.87 | 16.25 | 18.54 | 23.11 | 30.48  | 28.40 |
| GMRT 6-4N   | 3/8      | 9.52  | 1/4        | 7.11        | 5/8               | 15.87 | 1/16  | 17.46 | 16.76 | 19.30 | 23.11 | 30.48  | 25.40 |
| GMRT 6-6N   | 3/8      | 9.52  | 3/8        | 7.11        | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 23.87 | 31.24  | 28.44 |
| GMRT 6-8N   | 3/8      | 9.52  | 1/2        | 7.11        | 13/16             | 20.64 | 11/16 | 17.46 | 16.76 | 19.30 | 25.90 | 33.27  | 33.02 |
| GMRT 6-12N  | 3/8      | 9.52  | 3/4        | 7.11        | 1-1/16            | 26.98 | 11/16 | 17.46 | 16.76 | 19.30 | 29.71 | 37.08  | 36.83 |
| GMRT 8-4N   | 1/2      | 12.70 | 1/4        | 7.11        | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 28.30 |
| GMRT 8-6N   | 1/2      | 12.70 | 3/8        | 9.65        | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 28.30 |
| GMRT 8-8N   | 1/2      | 12.70 | 1/2        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 33.02 |
| GMRT 8-12N  | 1/2      | 12.70 | 3/4        | 10.41       | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 29.71 | 39.84  | 36.83 |
| GMRT 10-6N  | 5/8      | 15.87 | 3/8        | 9.65        | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 27.90 | 38.10  | 29.40 |
| GMRT 10-8N  | 5/8      | 15.87 | 1/2        | 11.93       | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 27.90 | 38.10  | 34.00 |
| GMRT 10-12N | 5/8      | 15.87 | 3/4        | 12.70       | 1-1/16            | 26.98 | 1     | 25.40 | 24.38 | 21.84 | 29.71 | 39.87  | 36.83 |
| GMRT 12-8N  | 3/4      | 19.05 | 1/2        | 11.93       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87  | 37.00 |
| GMRT 12-12N | 3/4      | 19.05 | 3/4        | 15.74       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.81  | 36.83 |
| GMRT 14-12N | 7/8      | 22.23 | 3/4        | 15.74       | 1-1/16            | 26.98 | 1-1/4 | 31.75 | 25.90 | 21.84 | 34.54 | 44.70  | 41.65 |
| GMRT 16-12N | 1        | 25.40 | 3/4        | 15.74       | 1-1/4             | 31.75 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  | 42.20 |
| GMRT 16-16N | 1        | 25.40 | 1          | 22.35       | 1-27/64           | 36.12 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  | 46.70 |
| GMRT 20-20N | 1-1/4    | 31.75 | 1-1/4      | 27.68       | 1-27/64           | 36.12 | 1-7/8 | 47.63 | 41.14 | 38.86 | 44.50 | 66.54  | 47.75 |
| GMRT 24-24N | 1-1/2    | 38.10 | 1-1/2      | 34.03       | 2                 | 50.80 | 2-1/4 | 57.15 | 50.03 | 45.21 | 50.80 | 77.97  | 60.45 |
| GMRT 32-32N | 2        | 50.80 | 2          | 45.97       | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 69.80 | 107.18 | 70.61 |

## Male Run Tee GMRT

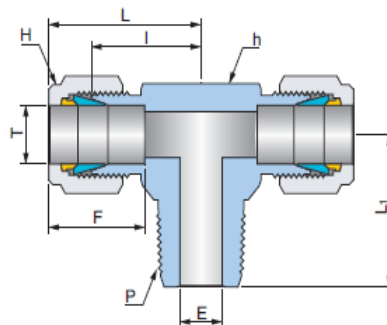
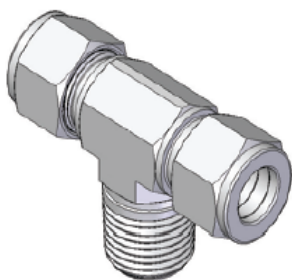


### Connects metric tube to female ISO tapered thread

| Part No.     | Tube O.D<br>D | T<br>R(PT) | E<br>Min. | Width across flat |    | A    | B    | ℓ    | L    | L1   |
|--------------|---------------|------------|-----------|-------------------|----|------|------|------|------|------|
|              |               |            |           | h                 | H  |      |      |      |      |      |
| GMRT 3M-2R   | 3             | 1/8        | 2.4       | 12.7              | 12 | 12.9 | 15.3 | 17.0 | 23.6 | 17.8 |
| GMRT 3M-4R   | 3             | 1/4        | 2.4       | 12.7              | 12 | 12.9 | 15.3 | 18.0 | 24.6 | 23.4 |
| GMRT 4M-2R   | 4             | 1/8        | 2.4       | 12.7              | 12 | 13.7 | 16.1 | 18.8 | 25.4 | 18.8 |
| GMRT 4M-4R   | 4             | 1/4        | 2.4       | 12.7              | 12 | 13.7 | 16.1 | 18.8 | 25.4 | 23.4 |
| GMRT 6M-2R   | 6             | 1/8        | 4.8       | 12.7              | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 18.8 |
| GMRT 6M-4R   | 6             | 1/4        | 4.8       | 14.2              | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 23.4 |
| GMRT 6M-6R   | 6             | 3/8        | 4.8       | 17.5              | 14 | 15.3 | 17.7 | 22.4 | 29.8 | 26.2 |
| GMRT 6M-8R   | 6             | 1/2        | 4.8       | 20.6              | 14 | 15.3 | 17.7 | 24.4 | 31.8 | 33.0 |
| GMRT 8M-2R   | 8             | 1/8        | 4.8       | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 | 19.8 |
| GMRT 8M-4R   | 8             | 1/4        | 6.4       | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 | 24.4 |
| GMRT 8M-6R   | 8             | 3/8        | 6.4       | 17.5              | 16 | 16.2 | 18.6 | 23.1 | 30.6 | 26.2 |
| GMRT 8M-8R   | 8             | 1/2        | 6.4       | 20.6              | 16 | 16.2 | 18.6 | 25.1 | 32.6 | 33.0 |
| GMRT 10M-2R  | 10            | 1/8        | 4.8       | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 23.6 |
| GMRT 10M-4R  | 10            | 1/4        | 7.1       | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 26.2 |
| GMRT 10M-6R  | 10            | 3/8        | 7.9       | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 26.2 |
| GMRT 10M-8R  | 10            | 1/2        | 7.9       | 20.6              | 19 | 17.2 | 19.5 | 25.9 | 33.5 | 33.0 |
| GMRT 12M-2R  | 12            | 1/8        | 4.8       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 23.6 |
| GMRT 12M-4R  | 12            | 1/4        | 7.1       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 28.2 |
| GMRT 12M-6R  | 12            | 3/8        | 9.5       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 28.2 |
| GMRT 12M-8R  | 12            | 1/2        | 9.5       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 33.0 |
| GMRT 12M-12R | 12            | 3/4        | 9.5       | 27.0              | 22 | 22.8 | 22.0 | 29.7 | 39.8 | 36.8 |
| GMRT 16M-6R  | 16            | 3/8        | 9.5       | 25.4              | 25 | 24.4 | 22.0 | 27.9 | 38.0 | 30.2 |
| GMRT 16M-8R  | 16            | 1/2        | 11.9      | 25.4              | 25 | 24.4 | 22.0 | 27.9 | 38.0 | 35.1 |
| GMRT 16M-12R | 16            | 3/4        | 12.7      | 27.0              | 25 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GMRT 18M-8R  | 18            | 1/2        | 11.9      | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GMRT 18M-12R | 18            | 3/4        | 15.1      | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GMRT 20M-8R  | 20            | 1/2        | 11.9      | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GMRT 20M-12R | 20            | 3/4        | 15.9      | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GMRT 22M-12R | 22            | 3/4        | 15.9      | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GMRT 22M-16R | 22            | 1          | 18.3      | 36.0              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 46.5 |
| GMRT 25M-12R | 25            | 3/4        | 15.9      | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 | 41.7 |
| GMRT 25M-16R | 25            | 1          | 21.8      | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 | 46.5 |

Male Branch Tee

# GMBT



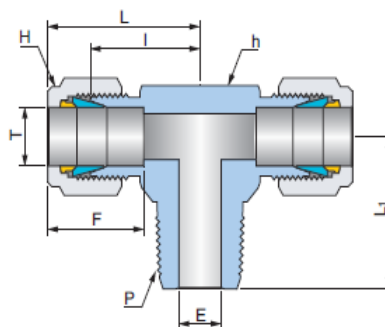
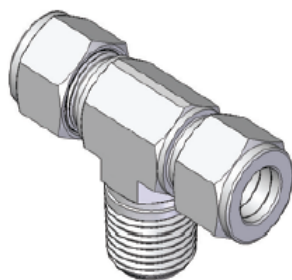
**Connects fractional tube to female NPT thread**

| Part No.    | Tube O.D |       | T<br>(NPT) | E<br>(Min.) | Width across flat |       |       |       | A     | B     | ℓ     | L      | L1    |
|-------------|----------|-------|------------|-------------|-------------------|-------|-------|-------|-------|-------|-------|--------|-------|
|             | D        |       |            |             | h                 |       | t     |       |       |       |       |        |       |
|             | in       | mm    |            |             | in                | mm    | in    | mm    |       |       |       |        |       |
| GMBT 1-1N   | 1/16     | 1.59  | 1/16       | 1.27        | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 15.24 | 19.05  | 17.78 |
| GMBT 1-2N   | 1/16     | 1.59  | 1/8        | 1.27        | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 15.24 | 19.05  | 17.78 |
| GMBT 2-2N   | 1/8      | 3.17  | 1/8        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.30 | 24.91  | 18.90 |
| GMBT 2-4N   | 1/8      | 3.17  | 1/4        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.30 | 24.91  | 23.36 |
| GMBT 3-2N   | 3/16     | 4.76  | 1/8        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 24.38  | 18.79 |
| GMBT 3-4N   | 3/16     | 4.76  | 1/4        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 25.40  | 23.36 |
| GMBT 4-1N   | 1/4      | 6.35  | 1/16       | 3.04        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.90  | 18.79 |
| GMBT 4-2N   | 1/4      | 6.35  | 1/8        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.92  | 19.10 |
| GMBT 4-4N   | 1/4      | 6.35  | 1/4        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 27.08  | 23.87 |
| GMBT 4-6N   | 1/4      | 6.35  | 3/8        | 4.82        | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 22.35 | 29.71  | 28.40 |
| GMBT 4-8N   | 1/4      | 6.35  | 1/2        | 4.82        | 13/16             | 20.64 | 9/16  | 14.28 | 15.24 | 17.78 | 24.60 | 31.97  | 35.10 |
| GMBT 5-2N   | 5/16     | 7.93  | 1/8        | 4.82        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 22.35 | 29.71  | 19.81 |
| GMBT 5-4N   | 5/16     | 7.93  | 1/4        | 6.35        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 22.35 | 29.77  | 24.50 |
| GMBT 5-6N   | 5/16     | 7.93  | 3/8        | 6.35        | 11/16             | 17.46 | 5/8   | 15.87 | 16.25 | 18.54 | 23.11 | 30.48  | 28.40 |
| GMBT 6-4N   | 3/8      | 9.52  | 1/4        | 7.11        | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48  | 25.40 |
| GMBT 6-6N   | 3/8      | 9.52  | 3/8        | 7.11        | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 23.87 | 31.24  | 28.44 |
| GMBT 6-8N   | 3/8      | 9.52  | 1/2        | 7.11        | 13/16             | 20.64 | 11/16 | 17.46 | 16.76 | 19.30 | 25.90 | 33.27  | 33.02 |
| GMBT 6-12N  | 3/8      | 9.52  | 3/4        | 7.11        | 1-1/16            | 26.98 | 11/16 | 17.46 | 16.76 | 19.30 | 29.71 | 37.08  | 36.83 |
| GMBT 8-4N   | 1/2      | 12.70 | 1/4        | 7.11        | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 28.30 |
| GMBT 8-6N   | 1/2      | 12.70 | 3/8        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 28.30 |
| GMBT 8-8N   | 1/2      | 12.70 | 1/2        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06  | 33.02 |
| GMBT 8-12N  | 1/2      | 12.70 | 3/4        | 10.41       | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 29.71 | 39.87  | 36.83 |
| GMBT 10-6N  | 5/8      | 15.87 | 3/8        | 9.65        | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 27.90 | 38.10  | 29.40 |
| GMBT 10-8N  | 5/8      | 15.87 | 1/2        | 11.93       | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 27.90 | 38.10  | 34.00 |
| GMBT 10-12N | 5/8      | 15.87 | 3/4        | 12.70       | 1-1/16            | 26.98 | 1     | 25.40 | 24.38 | 21.84 | 29.71 | 39.87  | 36.83 |
| GMBT 12-8N  | 3/4      | 19.05 | 1/2        | 11.93       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87  | 37.00 |
| GMBT 12-12N | 3/4      | 19.05 | 3/4        | 15.74       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87  | 36.83 |
| GMBT 14-12N | 7/8      | 22.22 | 3/4        | 15.74       | 1-1/16            | 26.98 | 1-1/4 | 31.75 | 25.90 | 21.84 | 34.54 | 44.70  | 41.65 |
| GMBT 16-12N | 1        | 25.40 | 3/4        | 15.74       | 1-1/4             | 31.75 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  | 42.20 |
| GMBT 16-16N | 1        | 25.40 | 1          | 22.35       | 1-27/64           | 36.12 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02  | 46.70 |
| GMBT 20-20N | 1-1/4    | 31.75 | 1-1/4      | 27.68       | 1-27/64           | 36.12 | 1-7/8 | 47.63 | 41.14 | 38.86 | 44.50 | 66.54  | 47.75 |
| GMBT 24-24N | 1-1/2    | 38.10 | 1-1/2      | 34.03       | 2                 | 50.80 | 2-1/4 | 57.15 | 50.03 | 45.21 | 50.80 | 77.97  | 60.45 |
| GMBT 32-32N | 2        | 50.80 | 2          | 45.97       | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 69.80 | 107.18 | 70.61 |



## Male Branch Tee

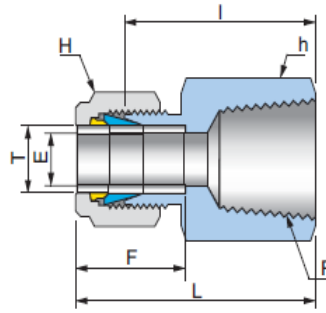
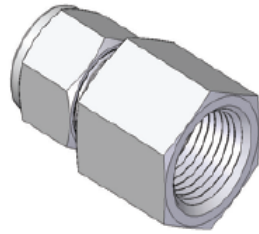
# GMBT



### Connects metric tube to female ISO tapered thread

| Part No.     | Tube O.D |            | E<br>Min. | Width across flat |    | A    | B    | ℓ    | L    | L1   |
|--------------|----------|------------|-----------|-------------------|----|------|------|------|------|------|
|              | D        | T<br>R(PT) |           | h                 | H  |      |      |      |      |      |
| GMBT 3M-2R   | 3        | 1/8        | 2.4       | 12.7              | 12 | 12.9 | 15.3 | 17.0 | 23.6 | 17.8 |
| GMBT 3M-4R   | 3        | 1/4        | 2.4       | 12.7              | 12 | 12.9 | 15.3 | 18.0 | 24.6 | 23.4 |
| GMBT 4M-2R   | 4        | 1/8        | 2.4       | 12.7              | 12 | 13.7 | 16.1 | 18.8 | 25.4 | 18.8 |
| GMBT 4M-4R   | 4        | 1/4        | 2.4       | 12.7              | 12 | 13.7 | 16.1 | 18.8 | 25.4 | 23.4 |
| GMBT 6M-2R   | 6        | 1/8        | 4.8       | 12.7              | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 18.8 |
| GMBT 6M-4R   | 6        | 1/4        | 4.8       | 14.2              | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 23.4 |
| GMBT 6M-6R   | 6        | 3/8        | 4.8       | 17.5              | 14 | 15.3 | 17.7 | 22.4 | 29.8 | 26.2 |
| GMBT 6M-8R   | 6        | 1/2        | 4.8       | 20.6              | 14 | 15.3 | 17.7 | 24.4 | 31.8 | 33.0 |
| GMBT 8M-2R   | 8        | 1/8        | 4.8       | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 | 19.8 |
| GMBT 8M-4R   | 8        | 1/4        | 6.4       | 14.3              | 16 | 16.2 | 18.6 | 21.3 | 28.8 | 24.4 |
| GMBT 8M-6R   | 8        | 3/8        | 6.4       | 17.5              | 16 | 16.2 | 18.6 | 23.1 | 30.6 | 26.2 |
| GMBT 8M-8R   | 8        | 1/2        | 6.4       | 20.6              | 16 | 16.2 | 18.6 | 25.1 | 32.6 | 33.0 |
| GMBT 10M-2R  | 10       | 1/8        | 4.8       | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 23.6 |
| GMBT 10M-4R  | 10       | 1/4        | 7.1       | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 26.2 |
| GMBT 10M-6R  | 10       | 3/8        | 7.9       | 17.5              | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 26.2 |
| GMBT 10M-8R  | 10       | 1/2        | 7.9       | 20.6              | 19 | 17.2 | 19.5 | 25.9 | 33.5 | 33.0 |
| GMBT 12M-2R  | 12       | 1/8        | 4.8       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 23.6 |
| GMBT 12M-4R  | 12       | 1/4        | 7.1       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 28.2 |
| GMBT 12M-6R  | 12       | 3/8        | 9.5       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 28.2 |
| GMBT 12M-8R  | 12       | 1/2        | 9.5       | 20.6              | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 33.0 |
| GMBT 12M-12R | 12       | 3/4        | 9.5       | 27.0              | 22 | 22.8 | 22.0 | 29.7 | 39.8 | 36.8 |
| GMBT 16M-6R  | 16       | 3/8        | 9.5       | 25.4              | 25 | 24.4 | 22.0 | 27.9 | 38.0 | 30.2 |
| GMBT 16M-8R  | 16       | 1/2        | 11.9      | 25.4              | 25 | 24.4 | 22.0 | 27.9 | 38.0 | 35.1 |
| GMBT 16M-12R | 16       | 3/4        | 12.7      | 27.0              | 25 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GMBT 18M-8R  | 18       | 1/2        | 11.9      | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GMBT 18M-12R | 18       | 3/4        | 15.1      | 27.0              | 30 | 24.4 | 22.0 | 29.7 | 39.8 | 36.8 |
| GMBT 20M-8R  | 20       | 1/2        | 11.9      | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GMBT 20M-12R | 20       | 3/4        | 15.9      | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GMBT 22M-12R | 22       | 3/4        | 15.9      | 31.8              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 41.7 |
| GMBT 22M-16R | 22       | 1          | 18.3      | 36.0              | 32 | 26.0 | 22.0 | 34.5 | 44.6 | 46.5 |
| GMBT 25M-12R | 25       | 3/4        | 15.9      | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 | 41.7 |
| GMBT 25M-16R | 25       | 1          | 21.8      | 36.0              | 38 | 31.3 | 26.5 | 36.8 | 49.1 | 46.5 |

Female  
Connector  
**GFC**

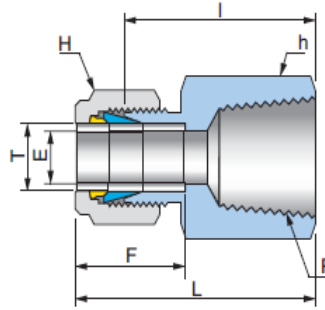
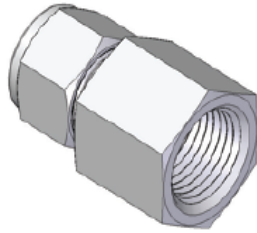


**Connects fractional tube to male NPT thread**

| Part No.   | Tube O.D |       | T<br>(NPT) | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | L      |
|------------|----------|-------|------------|-----------|-------------------|-------|-------|-------|-------|-------|-------|--------|
|            | D        |       |            |           | h                 | H     |       |       |       |       |       |        |
|            | in       | mm    |            |           |                   |       | in    | mm    |       |       |       |        |
| GFC 1-1N   | 1/16     | 1.59  | 1/16       | 1.27      | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 19.81 | 23.62  |
| GFC 1-2N   | 1/16     | 1.59  | 1/8        | 1.27      | 9/16              | 14.28 | 5/16  | 7.93  | 8.63  | 10.92 | 20.57 | 24.38  |
| GFC 2-2N   | 1/8      | 3.17  | 1/8        | 2.28      | 9/16              | 14.28 | 7/16  | 11.11 | 12.70 | 15.24 | 22.09 | 28.70  |
| GFC 2-4N   | 1/8      | 3.17  | 1/4        | 2.28      | 3/4               | 19.05 | 7/16  | 11.11 | 12.70 | 15.24 | 26.92 | 33.52  |
| GFC 3-2N   | 3/16     | 4.76  | 1/8        | 3.04      | 9/16              | 14.28 | 1/2   | 12.70 | 13.71 | 16.00 | 23.11 | 29.71  |
| GFC 4-2N   | 1/4      | 6.35  | 1/8        | 4.82      | 9/16              | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 23.87 | 31.24  |
| GFC 4-4N   | 1/4      | 6.35  | 1/4        | 4.82      | 3/4               | 19.05 | 9/16  | 14.28 | 15.24 | 17.78 | 28.44 | 35.81  |
| GFC 4-6N   | 1/4      | 6.35  | 3/8        | 4.82      | 7/8               | 22.22 | 9/16  | 14.28 | 15.24 | 17.78 | 30.22 | 37.59  |
| GFC 4-8N   | 1/4      | 6.35  | 1/2        | 4.82      | 1-1/16            | 26.98 | 9/16  | 14.28 | 15.24 | 17.78 | 35.05 | 42.41  |
| GFC 5-2N   | 5/16     | 7.93  | 1/8        | 6.35      | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 24.63 | 32.00  |
| GFC 5-4N   | 5/16     | 7.93  | 1/4        | 6.35      | 3/4               | 19.05 | 5/8   | 15.87 | 16.25 | 18.54 | 29.46 | 36.83  |
| GFC 6-2N   | 3/8      | 9.52  | 1/8        | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 25.40 | 32.76  |
| GFC 6-4N   | 3/8      | 9.52  | 1/4        | 7.11      | 3/4               | 19.05 | 11/16 | 17.46 | 16.76 | 19.30 | 30.22 | 37.59  |
| GFC 6-6N   | 3/8      | 9.52  | 3/8        | 7.11      | 7/8               | 22.22 | 11/16 | 17.46 | 16.76 | 19.30 | 31.75 | 39.11  |
| GFC 6-8N   | 3/8      | 9.52  | 1/2        | 7.11      | 1-1/16            | 26.98 | 11/16 | 17.46 | 16.76 | 19.30 | 36.57 | 43.94  |
| GFC 6-12N  | 3/8      | 9.52  | 3/4        | 7.11      | 1-5/16            | 33.33 | 11/16 | 17.46 | 16.76 | 19.30 | 40.38 | 47.75  |
| GFC 8-4N   | 1/2      | 12.70 | 1/4        | 10.41     | 1-3/16            | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 30.22 | 40.38  |
| GFC 8-6N   | 1/2      | 12.70 | 3/8        | 10.41     | 7/8               | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 31.75 | 41.91  |
| GFC 8-8N   | 1/2      | 12.70 | 1/2        | 10.41     | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 36.57 | 46.73  |
| GFC 8-12N  | 1/2      | 12.70 | 3/4        | 10.41     | 1-5/16            | 33.33 | 7/8   | 22.22 | 22.86 | 21.84 | 38.10 | 48.26  |
| GFC 10-6N  | 5/8      | 15.87 | 3/8        | 12.70     | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 31.75 | 41.91  |
| GFC 10-8N  | 5/8      | 15.87 | 1/2        | 12.70     | 1-1/16            | 26.98 | 1     | 25.40 | 24.38 | 21.84 | 36.57 | 46.73  |
| GFC 10-12N | 5/8      | 15.87 | 3/4        | 12.70     | 1-5/16            | 33.33 | 1     | 25.40 | 24.38 | 21.84 | 38.10 | 48.26  |
| GFC 12-8N  | 3/4      | 19.05 | 1/2        | 15.74     | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 36.57 | 46.73  |
| GFC 12-12N | 3/4      | 19.05 | 3/4        | 15.74     | 1-5/16            | 33.33 | 1-1/8 | 28.58 | 24.38 | 21.84 | 38.10 | 48.26  |
| GFC 14-12N | 7/8      | 22.22 | 3/4        | 18.28     | 1-5/16            | 33.33 | 1-1/4 | 31.75 | 25.90 | 21.84 | 39.62 | 49.78  |
| GFC 16-12N | 1        | 25.40 | 3/4        | 22.35     | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 41.14 | 53.34  |
| GFC 16-16N | 1        | 25.40 | 1          | 22.35     | 1-5/8             | 41.27 | 1-1/2 | 38.10 | 31.24 | 26.41 | 50.03 | 62.23  |
| GFC 20-20N | 1-1/4    | 31.75 | 1-1/4      | 27.68     | 2-1/8             | 53.98 | 1-7/8 | 47.63 | 41.14 | 38.86 | 52.57 | 74.67  |
| GFC 24-24N | 1-1/2    | 58.10 | 1-1/2      | 34.03     | 2-3/8             | 60.33 | 2-1/4 | 57.15 | 50.03 | 45.21 | 56.13 | 83.31  |
| GFC 32-32N | 2        | 50.80 | 2          | 45.97     | 2-1/8             | 73.03 | 3     | 76.20 | 67.56 | 62.73 | 64.26 | 101.60 |

Female  
Connector

**GFC**

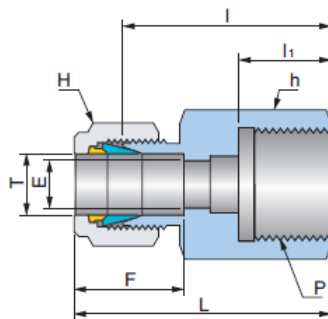
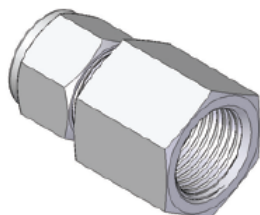


**Connects metric tube to male ISO tapered thread**

| Part No.    | Tube O.D |            | E<br>Min. | Width across flat |    | A    | B    | ℓ    | L    |
|-------------|----------|------------|-----------|-------------------|----|------|------|------|------|
|             | D        | T<br>R(PT) |           | h                 | H  |      |      |      |      |
| GFC 3M-2R   | 3        | 1/8        | 2.4       | 14                | 12 | 12.9 | 15.3 | 22.1 | 28.7 |
| GFC 3M-4R   | 3        | 1/4        | 2.4       | 19                | 12 | 12.9 | 15.3 | 26.9 | 33.5 |
| GFC 4M-2R   | 4        | 1/8        | 2.4       | 14                | 12 | 13.7 | 16.1 | 23.1 | 29.7 |
| GFC 6M-2R   | 6        | 1/8        | 4.8       | 14                | 14 | 15.3 | 17.7 | 23.9 | 31.3 |
| GFC 6M-4R   | 6        | 1/4        | 4.8       | 19                | 14 | 15.3 | 17.7 | 28.4 | 35.8 |
| GFC 6M-6R   | 6        | 3/8        | 4.8       | 22                | 14 | 15.3 | 17.7 | 29.5 | 36.9 |
| GFC 6M-8R   | 6        | 1/2        | 4.8       | 27                | 14 | 15.3 | 17.7 | 35.1 | 42.5 |
| GFC 8M-2R   | 8        | 1/8        | 6.4       | 15                | 16 | 16.2 | 18.6 | 24.6 | 32.1 |
| GFC 8M-4R   | 8        | 1/4        | 6.4       | 19                | 16 | 16.2 | 18.6 | 29.5 | 37   |
| GFC 8M-6R   | 8        | 3/8        | 6.4       | 22                | 16 | 16.2 | 18.6 | 30.2 | 37.7 |
| GFC 8M-8R   | 8        | 1/2        | 6.4       | 27                | 16 | 16.2 | 18.6 | 35.8 | 43.3 |
| GFC 10M-2R  | 10       | 1/8        | 7.9       | 18                | 19 | 17.2 | 19.5 | 25.4 | 33   |
| GFC 10M-4R  | 10       | 1/4        | 7.9       | 19                | 19 | 17.2 | 19.5 | 30.2 | 37.8 |
| GFC 10M-6R  | 10       | 3/8        | 7.9       | 22                | 19 | 17.2 | 19.5 | 31   | 38.6 |
| GFC 10M-8R  | 10       | 1/2        | 7.9       | 27                | 19 | 17.2 | 19.5 | 36.6 | 44.2 |
| GFC 12M-2R  | 12       | 1/8        | 8.3       | 22                | 22 | 22.8 | 22   | 28.4 | 38.5 |
| GFC 12M-4R  | 12       | 1/4        | 9.5       | 22                | 22 | 22.8 | 22   | 30.2 | 40.3 |
| GFC 12M-6R  | 12       | 3/8        | 9.5       | 22                | 22 | 22.8 | 22   | 31   | 41.1 |
| GFC 12M-8R  | 12       | 1/2        | 9.5       | 27                | 22 | 22.8 | 22   | 36.6 | 46.7 |
| GFC 12M-12R | 12       | 3/4        | 9.5       | 35                | 22 | 22.8 | 22   | 38.9 | 49   |
| GFC 15M-8R  | 15       | 1/2        | 11.9      | 27                | 25 | 24.4 | 22   | 36.6 | 46.7 |
| GFC 16M-8R  | 16       | 1/2        | 12.7      | 27                | 25 | 24.4 | 22   | 36.8 | 46.9 |
| GFC 20M-8R  | 20       | 3/4        | 15.9      | 30                | 32 | 26   | 22   | 37.8 | 47.9 |
| GFC 20M-12R | 20       | 3/4        | 15.9      | 35                | 32 | 26   | 22   | 39.6 | 49.7 |
| GFC 22M-12R | 22       | 3/4        | 18.3      | 35                | 32 | 26   | 22   | 39.6 | 49.7 |
| GFC 22M-16R | 22       | 1          | 18.3      | 41                | 32 | 26   | 22   | 47.8 | 57.9 |
| GFC 25M-12R | 25       | 3/4        | 21.8      | 35                | 38 | 31.3 | 26.5 | 41.1 | 53.4 |
| GFC 25M-16R | 25       | 1          | 21.8      | 41                | 38 | 31.3 | 26.5 | 50   | 62.3 |

Gauge Connector

**GGC**



**Connects fractional tube to ISO parallel thread (gauge)**

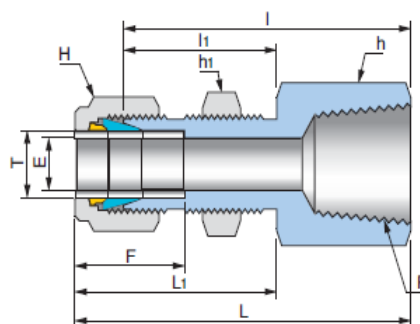
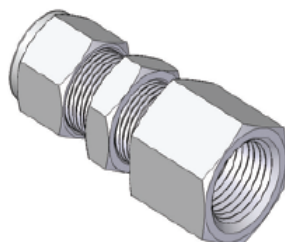
| Part No. | Tube O.D. |       | T<br>G(PF) | E<br>Min. | With across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L     |
|----------|-----------|-------|------------|-----------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|          | D         |       |            |           | h                |       | H     |       |       |       |       |       |       |
|          | in        | mm    |            |           | in               | mm    | in    | mm    |       |       |       |       |       |
| GGC 4-2G | 1/4       | 6.35  | 1/8        | 4.82      | 9/16             | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 26.30 | 12.00 | 33.55 |
| GGC 4-4G | 1/4       | 6.35  | 1/4        | 4.82      | 3/4              | 19.05 | 9/16  | 14.28 | 15.24 | 17.78 | 30.22 | 13.00 | 37.59 |
| GGC 4-6G | 1/4       | 6.35  | 3/8        | 4.82      | 15/16            | 23.81 | 9/16  | 14.28 | 15.24 | 17.78 | 30.22 | 14.22 | 37.59 |
| GGC 4-8G | 1/4       | 6.35  | 1/2        | 4.82      | 1-1/16           | 26.98 | 9/16  | 14.28 | 15.24 | 17.78 | 30.07 | 18.80 | 43.43 |
| GGC 5-4G | 5/16      | 7.93  | 1/4        | 5.58      | 3/4              | 19.05 | 5/8   | 15.87 | 16.25 | 18.54 | 30.98 | 13.00 | 38.35 |
| GGC 5-8G | 5/16      | 7.93  | 1/2        | 7.11      | 1-1/16           | 26.98 | 5/8   | 15.87 | 16.25 | 18.54 | 33.02 | 18.80 | 40.38 |
| GGC 6-4G | 3/8       | 9.52  | 1/4        | 5.58      | 3/4              | 19.05 | 11/16 | 17.46 | 16.76 | 19.30 | 31.75 | 12.95 | 39.12 |
| GGC 6-6G | 3/8       | 9.52  | 3/8        | 6.60      | 15/16            | 23.81 | 11/16 | 17.46 | 16.76 | 19.30 | 31.24 | 14.22 | 38.61 |
| GGC 6-8G | 3/8       | 9.52  | 1/2        | 7.11      | 1-1/16           | 26.98 | 11/16 | 17.46 | 16.76 | 19.30 | 34.54 | 18.80 | 41.91 |
| GGC 8-4G | 1/2       | 12.70 | 1/4        | 5.50      | 7/8              | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 31.80 | 13.00 | 41.95 |
| GGC 8-6G | 1/2       | 12.70 | 3/8        | 6.60      | 15/16            | 23.81 | 7/8   | 22.22 | 22.86 | 21.84 | 34.29 | 14.24 | 44.45 |
| GGC 8-8G | 1/2       | 12.70 | 1/2        | 7.11      | 1-1/16           | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 38.10 | 18.80 | 48.26 |

**Connects metric tube to ISO parallel thread (gauge)**

| Part No.   | Tube O.D.<br>D | T<br>R(PF) | E<br>Min. | Width across flat |    | A    | B    | ℓ    | ℓ1 | L    |
|------------|----------------|------------|-----------|-------------------|----|------|------|------|----|------|
|            |                |            |           | h                 | H  |      |      |      |    |      |
| GGC 3M-4G  | 3              | 1/4        | 2.4       | 19                | 12 | 12.9 | 15.3 | 28.7 | 13 | 35.3 |
| GGC 6M-4G  | 6              | 1/4        | 4.8       | 19                | 14 | 15.3 | 17.7 | 30.2 | 13 | 37.6 |
| GGC 6M-6G  | 6              | 3/8        | 4.8       | 24                | 14 | 15.3 | 17.7 | 30.2 | 14 | 37.6 |
| GGC 6M-8G  | 6              | 1/2        | 4.8       | 27                | 14 | 15.3 | 17.7 | 36.3 | 19 | 43.0 |
| GGC 8M-4G  | 8              | 1/4        | 5.5       | 19                | 16 | 16.2 | 18.6 | 31.0 | 13 | 38.5 |
| GGC 8M-6G  | 8              | 3/8        | 6.5       | 24                | 16 | 16.2 | 18.6 | 28.7 | 14 | 36.2 |
| GGC 8M-8G  | 8              | 1/2        | 7.0       | 27                | 16 | 16.2 | 18.6 | 33.0 | 19 | 40.5 |
| GGC 10M-4G | 10             | 1/4        | 5.5       | 19                | 19 | 17.2 | 19.5 | 31.8 | 13 | 39.4 |
| GGC 10M-6G | 10             | 3/8        | 6.5       | 24                | 19 | 17.2 | 19.5 | 31.2 | 14 | 38.8 |
| GGC 10M-8G | 10             | 1/2        | 7.0       | 27                | 19 | 17.2 | 19.5 | 33.8 | 19 | 41.4 |
| GGC 12M-4G | 12             | 1/4        | 5.5       | 22                | 22 | 22.8 | 22.0 | 31.8 | 13 | 41.9 |
| GGC 12M-6G | 12             | 3/8        | 6.5       | 24                | 22 | 22.8 | 22.0 | 34.3 | 14 | 44.4 |
| GGC 12M-8G | 12             | 1/2        | 7.0       | 27                | 22 | 22.8 | 22.0 | 38.1 | 19 | 48.2 |
| GGC 20M-8G | 20             | 1/2        | 7.0       | 30                | 32 | 26.0 | 22.0 | 44.2 | 19 | 54.3 |
| GGC 22M-8G | 22             | 1/2        | 7.0       | 30                | 32 | 26.0 | 22.0 | 44.2 | 19 | 54.3 |

Bulkhead Female Connector

**GBFC**



**Connects fractional tube to male NPT thread**

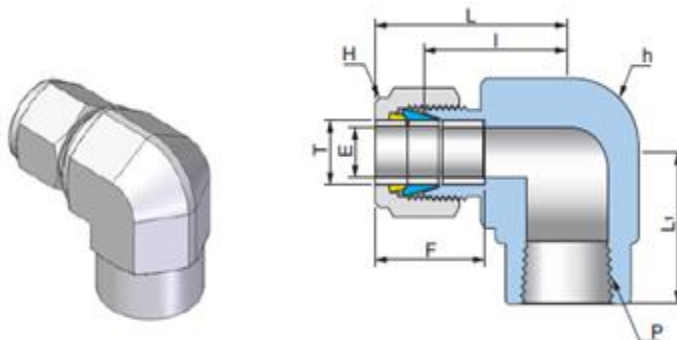
| Part No.    | Tube O.D |       | T<br>(NPT<br>) | E<br>Min. | Width across flat |       |        |       |       |       | A     | ℓ     | ℓ1    | L      | L1    | Panel<br>Hole<br>Drill si<br>ze | Panel<br>Max<br>Thickn<br>ess |
|-------------|----------|-------|----------------|-----------|-------------------|-------|--------|-------|-------|-------|-------|-------|-------|--------|-------|---------------------------------|-------------------------------|
|             | D        |       |                |           | h                 | h1    | H      |       |       |       |       |       |       |        |       |                                 |                               |
|             | in       | mm    |                |           | in                | mm    | in     | mm    |       |       |       |       |       |        |       |                                 |                               |
| GBFC 2-2N   | 1/8      | 3.17  | 1/8            | 2.28      | 9/16              | 14.28 | 1/2    | 12.70 | 7/16  | 11.11 | 12.70 | 38.10 | 24.63 | 44.70  | 31.24 | 8.33                            | 12.70                         |
| GBFC 4-2N   | 1/4      | 6.35  | 1/8            | 4.82      | 5/8               | 15.87 | 5/8    | 15.87 | 9/16  | 14.28 | 15.24 | 39.62 | 26.16 | 46.99  | 33.52 | 11.50                           | 10.16                         |
| GBFC 4-4N   | 1/4      | 6.35  | 1/4            | 4.82      | 3/4               | 19.05 | 5/8    | 15.87 | 9/16  | 14.28 | 15.24 | 44.45 | 26.16 | 51.81  | 33.52 | 11.50                           | 10.16                         |
| GBFC 6-4N   | 3/8      | 9.52  | 1/4            | 7.11      | 3/4               | 19.05 | 3/4    | 19.05 | 11/16 | 17.46 | 16.76 | 47.75 | 29.46 | 55.11  | 36.83 | 14.68                           | 11.17                         |
| GBFC 6-6N   | 3/8      | 9.52  | 3/8            | 7.11      | 7/8               | 22.22 | 3/4    | 19.05 | 11/16 | 17.46 | 16.76 | 49.41 | 29.46 | 56.77  | 36.83 | 14.68                           | 11.17                         |
| GBFC 8-6N   | 1/2      | 12.70 | 3/8            | 10.41     | 15/16             | 23.81 | 15/16  | 23.81 | 7/8   | 22.22 | 22.86 | 51.56 | 31.75 | 61.72  | 41.91 | 19.44                           | 12.70                         |
| GBFC 8-8N   | 1/2      | 12.70 | 1/2            | 10.41     | 1-1/16            | 26.98 | 15/16  | 23.81 | 7/8   | 22.22 | 22.86 | 56.38 | 31.75 | 66.54  | 41.91 | 19.44                           | 12.70                         |
| GBFC 12-12N | 3/4      | 19.05 | 3/4            | 15.74     | 1-1/4             | 31.75 | 1-3/16 | 30.16 | 1-1/8 | 28.57 | 24.38 | 63.60 | 38.30 | 73.51  | 47.21 | 25.79                           | 16.76                         |
| GBFC 16-16N | 1        | 25.40 | 1              | 22.35     | 1-5/8             | 41.24 | 1-5/8  | 41.27 | 1-1/2 | 38.10 | 31.24 | 81.04 | 45.21 | 93.23  | 57.40 | 33.73                           | 19.05                         |
| GBFC 20-20N | 1-1/4    | 31.75 | 1-1/4          | 27.68     | 1-7/8             | 47.63 | 1-7/8  | 47.63 | 1-7/8 | 47.63 | 41.14 | 83.49 | 47.75 | 105.59 | 69.85 | 41.67                           | 19.05                         |
| GBFC 24-24N | 1-1/2    | 38.10 | 1-1/2          | 34.03     | 2-1/4             | 57.15 | 2-1/4  | 57.15 | 2-1/4 | 57.15 | 50.03 | 87.39 | 49.27 | 114.57 | 76.45 | 49.61                           | 19.05                         |
| GBFC 32-32N | 2        | 50.80 | 2              | 45.97     | 2-3/4             | 69.85 | 3      | 69.85 | 3     | 76.20 | 67.56 | 95.30 | 56.38 | 132.63 | 93.71 | 57.94                           | 19.05                         |

**Connects fractional tube to male NPT thread**

| Part No.    | Tube<br>O.D | T<br>(NPT) | E<br>Min. | Width across flat |      |    | A    | ℓ    | ℓ1   | L     | L1    | Panel<br>Hole<br>Drill size | Panel<br>Max<br>Thickness |
|-------------|-------------|------------|-----------|-------------------|------|----|------|------|------|-------|-------|-----------------------------|---------------------------|
|             |             |            |           | h                 | h1   | H  |      |      |      |       |       |                             |                           |
| GBFC 6M-2N  | 6           | 1/8        | 4.8       | 15.8              | 15.8 | 14 | 15.3 | 39.6 | 26.2 | 46.90 | 35.00 | 11.5                        | 10.2                      |
| GBFC 6M-4N  | 6           | 1/4        | 4.8       | 19.0              | 16.0 | 14 | 15.3 | 44.4 | 26.2 | 51.80 | 33.60 | 11.5                        | 10.2                      |
| GBFC 8M-4N  | 6           | 1/4        | 6.3       | 19.0              | 17.4 | 16 | 16.2 | 46.7 | 28.6 | 53.85 | 35.55 | 13.1                        | 11.2                      |
| GBFC 12M-8N | 6           | 1/2        | 9.5       | 27.0              | 24.0 | 22 | 22.8 | 56.4 | 31.8 | 66.50 | 41.90 | 19.5                        | 12.7                      |

Female Elbow

**GFL**



**Connects fractional tube to male NPT thread**

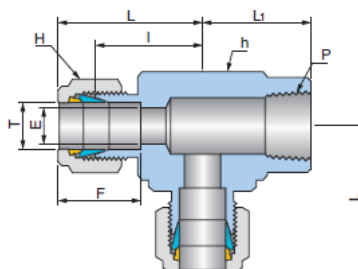
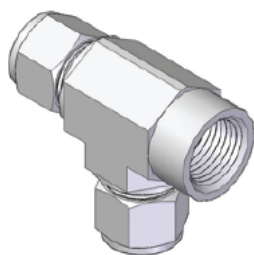
| Part No.   | Tube O.D |       | T<br>(NPT) | E<br>(Min.) | Width across flat |       |       |       | A     | B     | ℓ     | L     | L1    |
|------------|----------|-------|------------|-------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | C        |       |            |             | h                 |       | H     |       |       |       |       |       |       |
|            | in       | mm    |            |             | in                | mm    | in    | mm    |       |       |       |       |       |
| GFL 2-2N   | 1/8      | 3.17  | 1/8        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.03 | 24.63 | 19.05 |
| GFL 2-4N   | 1/8      | 3.17  | 1/4        | 2.28        | 11/16             | 17.46 | 7/16  | 11.11 | 12.70 | 15.24 | 20.82 | 27.43 | 22.35 |
| GFL 3-2N   | 3/16     | 4.76  | 1/8        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 25.40 | 19.05 |
| GFL 4-2N   | 1/4      | 6.35  | 1/8        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.92 | 19.05 |
| GFL 4-4N   | 1/4      | 6.35  | 1/4        | 4.82        | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 22.35 | 29.71 | 22.35 |
| GFL 4-6N   | 1/4      | 6.35  | 3/8        | 4.82        | 13/16             | 20.64 | 9/16  | 14.28 | 15.24 | 17.78 | 24.38 | 31.75 | 22.35 |
| GFL 4-8N   | 1/4      | 6.35  | 1/2        | 4.82        | 1                 | 25.40 | 9/16  | 14.28 | 15.24 | 17.78 | 27.17 | 34.54 | 28.44 |
| GFL 5-2N   | 5/16     | 7.93  | 1/8        | 6.35        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 21.33 | 28.70 | 19.05 |
| GFL 5-4N   | 5/16     | 7.93  | 1/4        | 6.35        | 11/16             | 17.46 | 5/8   | 15.87 | 16.25 | 18.54 | 23.11 | 30.48 | 22.35 |
| GFL 6-2N   | 3/8      | 9.52  | 1/8        | 7.11        | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48 | 19.05 |
| GFL 6-4N   | 3/8      | 9.52  | 1/4        | 7.11        | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 23.87 | 31.24 | 22.35 |
| GFL 6-6N   | 3/8      | 9.52  | 3/8        | 7.11        | 13/16             | 20.64 | 11/16 | 17.46 | 16.76 | 19.30 | 25.90 | 33.27 | 22.35 |
| GFL 6-8N   | 3/8      | 9.52  | 1/2        | 7.11        | 1                 | 25.40 | 11/16 | 17.46 | 16.76 | 19.30 | 28.70 | 36.06 | 28.44 |
| GFL 8-4N   | 1/2      | 12.70 | 1/4        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06 | 22.35 |
| GFL 8-6N   | 1/2      | 12.70 | 3/8        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06 | 22.35 |
| GFL 8-8N   | 1/2      | 12.70 | 1/2        | 10.41       | 1                 | 25.40 | 7/8   | 22.22 | 22.86 | 21.84 | 28.70 | 38.86 | 28.44 |
| GFL 10-6N  | 5/8      | 15.87 | 3/8        | 12.70       | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 27.94 | 38.10 | 22.35 |
| GFL 10-8N  | 5/8      | 15.87 | 1/2        | 12.70       | 1                 | 25.40 | 1     | 25.40 | 24.38 | 21.84 | 29.71 | 39.87 | 28.44 |
| GFL 12-8N  | 3/4      | 19.05 | 1/2        | 15.74       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87 | 28.44 |
| GFL 12-12N | 3/4      | 19.05 | 3/4        | 15.74       | 1-1/4             | 31.75 | 1-1/8 | 28.58 | 24.38 | 21.84 | 34.54 | 44.70 | 31.75 |
| GFL 14-12N | 7/8      | 22.22 | 3/4        | 18.28       | 1-1/4             | 31.75 | 1-1/4 | 31.75 | 25.90 | 21.84 | 34.54 | 44.70 | 31.75 |
| GFL 16-12N | 1        | 25.40 | 3/4        | 22.35       | 1-27/64           | 36.00 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02 | 31.75 |
| GFL 16-16N | 1        | 25.40 | 1          | 22.35       | 1-11/16           | 42.86 | 1-1/2 | 38.10 | 31.24 | 26.41 | 41.40 | 50.29 | 38.10 |

**Connects metric tube to male NPT thread**

| Part No.   | Tube O.D<br>D | T<br>(NPT) | E<br>(Min.) | Width across flat |    | A    | B    | ℓ    | L    | L1    |
|------------|---------------|------------|-------------|-------------------|----|------|------|------|------|-------|
|            |               |            |             | h                 | H  |      |      |      |      |       |
| GFL 6M-2N  | 6             | 1/8        | 4.8         | 12.70             | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 19.00 |
| GFL 6M-4N  | 6             | 1/4        | 4.8         | 17.46             | 14 | 15.3 | 17.7 | 22.4 | 29.8 | 22.40 |
| GFL 6M-6N  | 6             | 3/8        | 4.8         | 20.64             | 14 | 15.3 | 17.7 | 24.4 | 31.7 | 22.40 |
| GFL 6M-8N  | 6             | 1/2        | 4.8         | 25.40             | 14 | 15.3 | 17.7 | 27.2 | 34.6 | 28.40 |
| GFL 8M-2N  | 8             | 1/8        | 6.4         | 15.87             | 16 | 16.2 | 18.6 | 23.1 | 29.9 | 19.00 |
| GFL 8M-4N  | 8             | 1/4        | 6.4         | 17.46             | 16 | 16.2 | 18.6 | 23.1 | 30.6 | 22.40 |
| GFL 8M-8N  | 8             | 1/2        | 6.4         | 25.40             | 16 | 16.2 | 18.6 | 28.0 | 35.2 | 28.40 |
| GFL 10M-2N | 10            | 1/8        | 7.9         | 17.46             | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 19.00 |
| GFL 10M-4N | 10            | 1/4        | 7.9         | 17.46             | 19 | 17.2 | 19.5 | 25.9 | 33.5 | 22.35 |
| GFL 10M-6N | 10            | 3/8        | 7.9         | 20.64             | 19 | 17.2 | 19.5 | 25.9 | 33.5 | 22.40 |
| GFL 10M-8N | 10            | 1/2        | 7.9         | 25.40             | 19 | 17.2 | 19.5 | 28.7 | 36.1 | 28.40 |
| GFL 12M-4N | 12            | 1/4        | 9.5         | 20.64             | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 22.40 |
| GFL 12M-6N | 12            | 3/8        | 9.5         | 20.64             | 22 | 22.8 | 22.0 | 25.9 | 36.2 | 22.35 |
| GFL 12M-8N | 12            | 1/2        | 9.5         | 25.40             | 22 | 22.8 | 22.0 | 28.7 | 38.8 | 28.40 |
| GFL 16M-8N | 16            | 1/2        | 12.7        | 26.98             | 25 | 24.4 | 22.0 | 29.7 | 39.5 | 28.40 |

Female Run Tee

**GFRT**



**Connects fractional tube to male NPT thread**

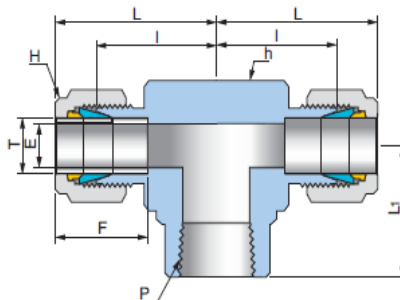
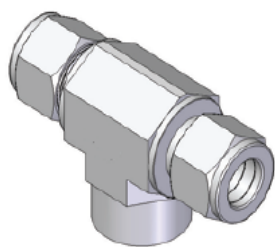
| Part No.    | Tube O.D |       | T<br>(NPT) | E<br>(Min.) | Width across flat |       |       |       | A     | B     | ℓ     | L     | L1    |
|-------------|----------|-------|------------|-------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | C        |       |            |             | h                 |       | H     |       |       |       |       |       |       |
|             | in       | mm    |            |             | in                | mm    | in    | mm    |       |       |       |       |       |
| GFRT 2-2N   | 1/8      | 3.17  | 1/8        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.03 | 24.63 | 19.05 |
| GFRT 2-4N   | 1/8      | 3.17  | 1/4        | 2.28        | 11/16             | 17.46 | 7/16  | 11.11 | 12.70 | 15.24 | 20.82 | 27.43 | 22.35 |
| GFRT 3-2N   | 3/16     | 4.76  | 1/8        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 25.40 | 19.05 |
| GFRT 4-2N   | 1/4      | 6.35  | 1/8        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.92 | 19.05 |
| GFRT 4-4N   | 1/4      | 6.35  | 1/4        | 4.82        | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 22.86 | 29.71 | 22.35 |
| GFRT 4-6N   | 1/4      | 6.35  | 3/8        | 4.82        | 13/16             | 20.64 | 9/16  | 14.28 | 15.24 | 17.78 | 24.38 | 31.75 | 22.35 |
| GFRT 4-8N   | 1/4      | 6.35  | 1/2        | 4.82        | 1                 | 25.40 | 9/16  | 14.28 | 15.24 | 17.78 | 27.17 | 34.54 | 28.44 |
| GFRT 5-2N   | 5/16     | 7.94  | 1/8        | 6.35        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 21.33 | 28.70 | 19.05 |
| GFRT 5-4N   | 5/16     | 7.94  | 1/4        | 6.35        | 11/16             | 17.46 | 5/8   | 15.87 | 16.25 | 18.54 | 23.11 | 30.48 | 22.35 |
| GFRT 6-2N   | 3/8      | 9.52  | 1/8        | 7.11        | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48 | 19.05 |
| GFRT 6-4N   | 3/8      | 9.52  | 1/4        | 7.11        | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 23.87 | 31.24 | 22.35 |
| GFRT 6-6N   | 3/8      | 9.52  | 3/8        | 6.35        | 13/16             | 20.64 | 11/16 | 17.46 | 16.76 | 19.30 | 25.90 | 33.27 | 22.35 |
| GFRT 6-8N   | 3/8      | 9.52  | 1/2        | 7.11        | 1                 | 25.40 | 11/16 | 17.46 | 16.76 | 19.30 | 28.70 | 36.06 | 28.44 |
| GFRT 8-4N   | 1/2      | 12.70 | 1/4        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06 | 22.35 |
| GFRT 8-6N   | 1/2      | 12.70 | 3/8        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06 | 22.35 |
| GFRT 8-8N   | 1/2      | 12.70 | 1/2        | 10.41       | 1                 | 25.40 | 7/8   | 22.22 | 22.86 | 21.84 | 29.71 | 39.87 | 28.44 |
| GFRT 10-6N  | 5/8      | 15.87 | 3/8        | 12.70       | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 27.94 | 38.10 | 22.35 |
| GFRT 10-8N  | 5/8      | 15.87 | 1/2        | 12.70       | 1                 | 25.40 | 1     | 25.40 | 24.38 | 21.84 | 28.70 | 38.86 | 28.44 |
| GFRT 12-8N  | 3/4      | 19.05 | 1/2        | 15.74       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87 | 28.44 |
| GFRT 12-12N | 3/4      | 19.05 | 3/4        | 15.74       | 1-1/4             | 31.75 | 1-1/8 | 28.58 | 24.38 | 21.84 | 34.54 | 44.70 | 31.75 |
| GFRT 14-12N | 7/8      | 22.22 | 3/4        | 18.28       | 1-1/4             | 31.75 | 1-1/4 | 31.75 | 31.75 | 21.84 | 34.54 | 44.70 | 31.75 |
| GFRT 16-12N | 1        | 25.40 | 3/4        | 22.35       | 1-27/64           | 36.12 | 1-1/2 | 38.10 | 38.10 | 26.41 | 36.83 | 49.02 | 31.75 |
| GFRT 16-16N | 1        | 25.40 | 1          | 22.35       | 1-1/16            | 42.86 | 1-1/2 | 38.10 | 38.10 | 26.41 | 41.40 | 50.29 | 38.10 |

**Connects metric tube to male NPT thread**

| Part No.    | Tube O.D<br>D | T<br>(NPT) | E<br>(Min.) | Width across flat |    | A    | B    | ℓ    | L    | L1    |
|-------------|---------------|------------|-------------|-------------------|----|------|------|------|------|-------|
|             |               |            |             | h                 | H  |      |      |      |      |       |
| GFRT 6M-2N  | 6             | 1/8        | 4.8         | 12.70             | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 19.00 |
| GFRT 6M-4N  | 6             | 1/4        | 4.8         | 17.46             | 14 | 15.3 | 17.7 | 22.4 | 29.8 | 22.40 |
| GFRT 6M-6N  | 6             | 3/8        | 4.8         | 20.64             | 14 | 15.3 | 17.7 | 24.4 | 31.7 | 22.40 |
| GFRT 6M-8N  | 6             | 1/2        | 4.8         | 25.40             | 14 | 15.3 | 17.7 | 27.2 | 34.5 | 28.40 |
| GFRT 8M-2N  | 8             | 1/8        | 6.4         | 15.87             | 16 | 16.2 | 18.6 | 23.1 | 29.9 | 19.00 |
| GFRT 8M-4N  | 8             | 1/4        | 6.4         | 17.46             | 16 | 16.2 | 18.6 | 23.1 | 30.6 | 22.40 |
| GFRT 8M-6N  | 8             | 3/8        | 6.4         | 20.64             | 16 | 16.2 | 18.6 | 25.2 | 32.4 | 22.40 |
| GFRT 8M-8N  | 8             | 1/2        | 6.4         | 25.40             | 16 | 16.2 | 18.6 | 28.0 | 35.2 | 28.40 |
| GFRT 10M-2N | 10            | 1/8        | 7.9         | 20.64             | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 19.00 |
| GFRT 10M-4N | 10            | 1/4        | 7.9         | 20.64             | 19 | 17.2 | 19.5 | 25.9 | 33.6 | 22.40 |
| GFRT 10M-6N | 10            | 3/8        | 7.9         | 20.64             | 19 | 17.2 | 19.5 | 25.9 | 33.6 | 22.40 |
| GFRT 10M-8N | 10            | 1/2        | 7.9         | 25.40             | 19 | 17.2 | 19.5 | 26.2 | 33.6 | 28.40 |
| GFRT 12M-4N | 12            | 1/4        | 9.5         | 20.64             | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 22.40 |
| GFRT 12M-6N | 12            | 3/8        | 9.5         | 20.64             | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 22.40 |
| GFRT 12M-8N | 12            | 1/2        | 9.5         | 25.40             | 22 | 22.8 | 22.0 | 29.7 | 40.0 | 28.40 |
| GFRT 16M-8N | 16            | 1/2        | 12.7        | 25.40             | 25 | 24.4 | 22.0 | 29.7 | 40.0 | 28.40 |

Female Branch Tee

**GFBT**



**Connects fractional tube to male NPT thread**

| Part No.    | Tube O.D |       | T<br>(NPT) | E<br>(Min.) | Width across flat |       |       |       | A     | B     | ℓ     | L     | L1    |
|-------------|----------|-------|------------|-------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | D        |       |            |             | h                 | H     |       |       |       |       |       |       |       |
|             | in       | mm    |            |             |                   | in    | mm    |       |       |       |       |       |       |
| GFBT 2-2N   | 1/8      | 3.17  | 1/8        | 2.28        | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 18.03 | 24.38 | 19.05 |
| GFBT 2-4N   | 1/8      | 3.17  | 1/4        | 2.28        | 11/16             | 17.46 | 7/16  | 11.11 | 12.70 | 15.24 | 20.82 | 27.43 | 22.35 |
| GFBT 3-2N   | 3/16     | 4.76  | 1/8        | 3.04        | 1/2               | 12.70 | 1/2   | 12.70 | 13.71 | 16.00 | 18.79 | 25.40 | 19.05 |
| GFBT 4-2N   | 1/4      | 6.35  | 1/8        | 4.82        | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 26.92 | 19.05 |
| GFBT 4-4N   | 1/4      | 6.35  | 1/4        | 4.82        | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 22.35 | 29.71 | 22.35 |
| GFBT 4-6N   | 1/4      | 6.35  | 3/8        | 4.82        | 13/16             | 20.64 | 9/16  | 14.28 | 15.24 | 17.78 | 24.38 | 31.75 | 22.35 |
| GFBT 4-8N   | 1/4      | 6.35  | 1/2        | 4.82        | 1                 | 25.40 | 9/16  | 14.28 | 15.24 | 17.78 | 27.17 | 34.54 | 28.44 |
| GFBT 5-2N   | 5/16     | 7.94  | 1/8        | 6.35        | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 21.33 | 28.70 | 19.05 |
| GFBT 5-4N   | 5/16     | 7.94  | 1/4        | 6.35        | 11/16             | 17.46 | 5/8   | 15.87 | 16.25 | 18.54 | 23.11 | 30.48 | 22.35 |
| GFBT 6-2N   | 3/8      | 9.52  | 1/8        | 7.11        | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 30.48 | 19.05 |
| GFBT 6-4N   | 3/8      | 9.52  | 1/4        | 7.11        | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 23.87 | 31.24 | 22.35 |
| GFBT 6-6N   | 3/8      | 9.52  | 3/8        | 6.35        | 13/16             | 20.64 | 11/16 | 17.46 | 16.76 | 19.30 | 25.90 | 33.27 | 22.35 |
| GFBT 6-8N   | 3/8      | 9.52  | 1/2        | 7.11        | 1                 | 25.40 | 11/16 | 17.46 | 16.76 | 19.30 | 28.70 | 36.06 | 28.44 |
| GFBT 8-4N   | 1/2      | 12.70 | 1/4        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06 | 22.35 |
| GFBT 8-6N   | 1/2      | 12.70 | 3/8        | 10.41       | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 36.06 | 22.35 |
| GFBT 8-8N   | 1/2      | 12.70 | 1/2        | 10.41       | 1                 | 25.40 | 7/8   | 22.22 | 22.86 | 21.84 | 29.71 | 39.87 | 28.44 |
| GFBT 10-6N  | 5/8      | 15.87 | 3/8        | 12.70       | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 27.94 | 38.10 | 22.35 |
| GFBT 10-8N  | 5/8      | 15.87 | 1/2        | 12.70       | 1                 | 25.40 | 1     | 25.40 | 24.38 | 21.84 | 28.70 | 38.86 | 28.44 |
| GFBT 12-8N  | 3/4      | 19.05 | 1/2        | 15.74       | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 39.87 | 28.44 |
| GFBT 12-12N | 3/4      | 19.05 | 3/4        | 15.74       | 1-1/4             | 31.75 | 1-1/8 | 28.58 | 24.38 | 21.84 | 34.54 | 44.70 | 31.75 |
| GFBT 14-12N | 7/8      | 22.22 | 3/4        | 18.28       | 1-1/4             | 31.75 | 1-1/4 | 31.75 | 25.90 | 21.84 | 34.54 | 44.70 | 31.75 |
| GFBT 16-12N | 1        | 25.40 | 3/4        | 22.35       | 1-27/64           | 36.00 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 49.02 | 31.75 |
| GFBT 16-16N | 1        | 25.40 | 1          | 22.35       | 1-11/16           | 42.86 | 1-1/2 | 38.10 | 31.24 | 26.41 | 41.40 | 53.59 | 38.10 |

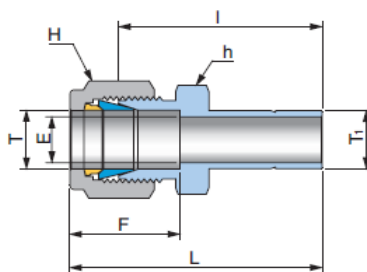
**Connects metric tube to male NPT thread**

| Part No.    | Tube O.D<br>D | T<br>(NPT) | E<br>(Min.) | Width across flat |    | A    | B    | ℓ    | L    | L1    |
|-------------|---------------|------------|-------------|-------------------|----|------|------|------|------|-------|
|             |               |            |             | h                 | H  |      |      |      |      |       |
| GFBT 6M-2N  | 6             | 1/8        | 4.8         | 12.70             | 14 | 15.3 | 17.7 | 19.6 | 27.0 | 19.00 |
| GFBT 6M-4N  | 6             | 1/4        | 4.8         | 17.46             | 14 | 15.3 | 17.7 | 22.4 | 29.8 | 22.40 |
| GFBT 6M-6N  | 6             | 3/8        | 4.8         | 20.64             | 14 | 15.3 | 17.7 | 24.4 | 31.7 | 22.40 |
| GFBT 6M-8N  | 6             | 1/2        | 4.8         | 25.40             | 14 | 15.3 | 17.7 | 27.2 | 34.5 | 28.40 |
| GFBT 8M-2N  | 8             | 1/8        | 6.4         | 15.87             | 16 | 16.2 | 18.6 | 23.1 | 29.9 | 19.00 |
| GFBT 8M-4N  | 8             | 1/4        | 6.4         | 17.46             | 16 | 16.2 | 18.6 | 23.1 | 30.6 | 22.40 |
| GFBT 8M-6N  | 8             | 3/8        | 6.4         | 20.64             | 16 | 16.2 | 18.6 | 25.2 | 32.4 | 22.40 |
| GFBT 8M-8N  | 8             | 1/2        | 6.4         | 25.40             | 16 | 16.2 | 18.6 | 28.0 | 35.2 | 28.40 |
| GFBT 10M-2N | 10            | 1/8        | 7.9         | 17.50             | 19 | 17.2 | 19.5 | 23.9 | 31.5 | 19.00 |
| GFBT 10M-4N | 10            | 1/4        | 7.9         | 20.64             | 19 | 17.2 | 19.5 | 25.9 | 33.5 | 22.40 |
| GFBT 10M-6N | 10            | 3/8        | 7.9         | 20.64             | 19 | 17.2 | 19.5 | 25.9 | 33.5 | 22.40 |
| GFBT 10M-8N | 10            | 1/2        | 9.5         | 25.40             | 19 | 17.2 | 19.5 | 26.2 | 33.6 | 22.40 |
| GFBT 12M-4N | 12            | 1/4        | 9.5         | 20.64             | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 22.40 |
| GFBT 12M-6N | 12            | 3/8        | 9.5         | 20.64             | 22 | 22.8 | 22.0 | 25.9 | 36.0 | 22.40 |
| GFBT 12M-8N | 12            | 1/2        | 9.5         | 25.40             | 22 | 22.8 | 22.0 | 29.7 | 40.0 | 28.40 |
| GFBT 16M-8N | 16            | 1/2        | 12.7        | 25.40             | 25 | 24.4 | 22.0 | 29.7 | 40.0 | 28.70 |



Reducer

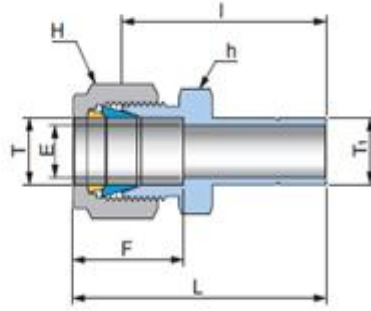
**GR**



**Connects fractional tube to fractional GPI port**

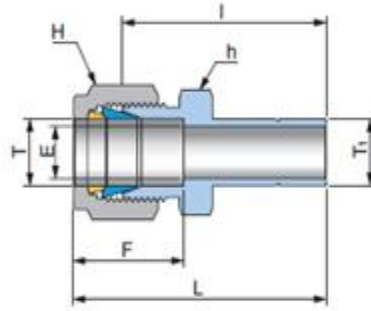
| Part No. | Tube O.D. |       |       |       | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ      | L      |
|----------|-----------|-------|-------|-------|-----------|-------------------|-------|-------|-------|-------|-------|--------|--------|
|          | D         |       | D1    |       |           | h                 |       | H     |       |       |       |        |        |
|          | in        | mm    | in    | mm    |           | in                | mm    | in    | mm    |       |       |        |        |
| GR 1-2   | 1/16      | 1.59  | 1/8   | 3.17  | 1.27      | 5/16              | 7.93  | 5/16  | 7.93  | 8.63  | 10.92 | 25.40  | 29.21  |
| GR 1-4   | 1/16      | 1.59  | 1/4   | 6.35  | 1.27      | 5/16              | 7.93  | 5/16  | 7.93  | 8.63  | 10.92 | 27.68  | 31.49  |
| GR 2-1   | 1/8       | 3.17  | 1/16  | 1.59  | 1.76      | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 22.35  | 28.95  |
| GR 2-2   | 1/8       | 3.17  | 1/8   | 3.17  | 2.03      | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 26.92  | 33.52  |
| GR 2-3   | 1/8       | 3.17  | 3/16  | 4.76  | 2.28      | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 27.68  | 34.29  |
| GR 2-4   | 1/8       | 3.17  | 1/4   | 6.35  | 2.28      | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 29.46  | 36.06  |
| GR 2-6   | 1/8       | 3.17  | 3/8   | 9.52  | 2.28      | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 30.98  | 37.59  |
| GR 2-8   | 1/8       | 3.17  | 1/2   | 12.70 | 2.28      | 9/16              | 14.28 | 7/16  | 11.11 | 12.70 | 15.24 | 37.59  | 44.19  |
| GR 3-2   | 3/16      | 4.76  | 1/8   | 3.17  | 2.03      | 7/16              | 11.11 | 1/2   | 12.70 | 13.71 | 16.00 | 28.19  | 34.79  |
| GR 3-4   | 3/16      | 4.76  | 1/4   | 6.35  | 3.04      | 7/16              | 11.11 | 1/2   | 12.70 | 13.71 | 16.00 | 30.48  | 37.08  |
| GR 4-2   | 1/4       | 6.35  | 1/8   | 3.17  | 2.03      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 29.46  | 36.83  |
| GR 4-3   | 1/4       | 6.35  | 3/16  | 4.76  | 3.04      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 30.22  | 37.59  |
| GR 4-4   | 1/4       | 6.35  | 1/4   | 6.35  | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 31.75  | 39.11  |
| GR 4-5   | 1/4       | 6.35  | 5/16  | 7.93  | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 32.51  | 39.87  |
| GR 4-6   | 1/4       | 6.35  | 3/8   | 9.52  | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 33.27  | 40.64  |
| GR 4-8   | 1/4       | 6.35  | 1/2   | 12.70 | 4.82      | 9/16              | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 38.86  | 46.22  |
| GR 4-10  | 1/4       | 6.35  | 5/8   | 15.87 | 4.82      | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 40.64  | 48.00  |
| GR 4-12  | 1/4       | 6.35  | 3/4   | 19.05 | 4.82      | 13/16             | 20.64 | 9/16  | 14.28 | 15.24 | 17.78 | 40.38  | 47.75  |
| GR 5-6   | 5/16      | 7.93  | 3/8   | 9.52  | 6.35      | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 34.54  | 41.91  |
| GR 5-8   | 5/16      | 7.93  | 1/2   | 12.70 | 6.35      | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 40.13  | 47.49  |
| GR 6-4   | 3/8       | 9.52  | 1/4   | 6.35  | 4.82      | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 34.03  | 41.40  |
| GR 6-6   | 3/8       | 9.52  | 3/8   | 9.52  | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 35.81  | 43.18  |
| GR 6-8   | 3/8       | 9.52  | 1/2   | 12.70 | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 41.14  | 48.51  |
| GR 6-10  | 3/8       | 9.52  | 5/8   | 15.87 | 7.11      | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 42.92  | 50.29  |
| GR 6-12  | 3/8       | 9.52  | 3/4   | 19.05 | 7.11      | 13/16             | 20.64 | 11/16 | 17.46 | 16.76 | 19.30 | 42.92  | 50.29  |
| GR 8-4   | 1/2       | 12.70 | 1/4   | 6.35  | 4.82      | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 34.79  | 44.95  |
| GR 8-6   | 1/2       | 12.70 | 3/8   | 9.52  | 7.11      | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 36.57  | 46.73  |
| GR 8-8   | 1/2       | 12.70 | 1/2   | 12.70 | 9.90      | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 42.16  | 52.32  |
| GR 8-10  | 1/2       | 12.70 | 5/8   | 15.87 | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 43.68  | 53.84  |
| GR 8-12  | 1/2       | 12.70 | 3/4   | 19.05 | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 43.68  | 53.84  |
| GR 8-16  | 1/2       | 12.70 | 1     | 25.40 | 10.41     | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 50.03  | 60.19  |
| GR 10-12 | 5/8       | 15.87 | 3/4   | 19.05 | 12.70     | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 44.45  | 54.61  |
| GR 10-14 | 5/8       | 15.87 | 7/8   | 22.22 | 12.70     | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 45.97  | 56.13  |
| GR 10-16 | 5/8       | 15.87 | 1     | 25.40 | 12.70     | 1-1/16            | 26.98 | 1     | 25.40 | 24.38 | 21.84 | 50.80  | 60.96  |
| GR 12-8  | 3/4       | 19.05 | 1/2   | 12.70 | 9.90      | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 24.38 | 21.84 | 44.45  | 54.61  |
| GR 12-16 | 3/4       | 19.05 | 1     | 25.40 | 15.74     | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 24.38 | 21.84 | 52.32  | 62.48  |
| GR 16-20 | 1         | 25.40 | 1-1/4 | 31.75 | 22.35     | 1-3/8             | 34.93 | 1-1/2 | 38.10 | 31.24 | 26.41 | 68.32  | 80.51  |
| GR 16-24 | 1         | 25.40 | 1-1/2 | 38.10 | 22.35     | 1-5/8             | 41.28 | 1-1/2 | 38.10 | 31.24 | 26.41 | 76.96  | 89.15  |
| GR 16-32 | 1         | 25.40 | 2     | 50.80 | 22.35     | 2-1/8             | 53.98 | 1-1/2 | 38.10 | 31.24 | 26.41 | 100.33 | 112.52 |
| GR 20-24 | 1-1/4     | 31.75 | 1-1/2 | 38.10 | 27.68     | 1-7/8             | 47.63 | 2-1/4 | 57.15 | 41.14 | 38.86 | 82.04  | 104.14 |
| GR 20-32 | 1-1/4     | 31.75 | 2     | 50.80 | 27.68     | 1-7/8             | 47.63 | 3     | 76.20 | 41.14 | 38.86 | 103.12 | 125.22 |
| GR 24-32 | 1-1/2     | 38.10 | 2     | 50.80 | 34.03     | 2-1/4             | 57.15 | 3     | 76.20 | 50.03 | 45.21 | 104.14 | 131.31 |

Reducer

**GR****Connects metric tube to fractional GPI port**

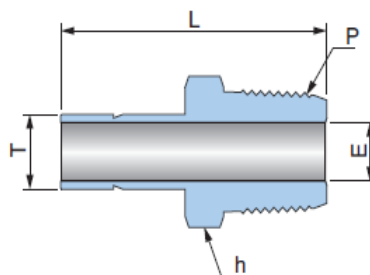
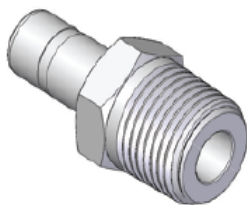
| Part No.  | Tube O.D. |      |       | E<br>Min. | Width across flat |    | A    | B    | l    | L    |
|-----------|-----------|------|-------|-----------|-------------------|----|------|------|------|------|
|           | D         | D1   |       |           | h                 | H  |      |      |      |      |
|           |           | in   | mm    |           |                   |    |      |      |      |      |
| GR 2M-2   | 2         | 1/8  | 3.17  | 1.7       | 12                | 12 | 12.9 | 15.3 | 26.9 | 33.5 |
| GR 3M-2   | 3         | 1/8  | 3.17  | 2.0       | 12                | 12 | 12.9 | 15.3 | 26.9 | 33.5 |
| GR 3M-4   | 3         | 1/4  | 6.35  | 2.4       | 12                | 12 | 12.9 | 15.3 | 29.5 | 36.1 |
| GR 4M-4   | 4         | 1/4  | 6.35  | 2.4       | 12                | 12 | 13.7 | 16.1 | 30.5 | 37.1 |
| GR 6M-2   | 6         | 1/8  | 3.18  | 2.0       | 14                | 14 | 15.3 | 17.7 | 29.5 | 36.9 |
| GR 6M-4   | 6         | 1/4  | 6.35  | 4.8       | 14                | 14 | 15.3 | 17.7 | 31.8 | 39.2 |
| GR 6M-5   | 6         | 5/16 | 7.93  | 4.8       | 14                | 14 | 15.3 | 17.7 | 32.5 | 39.9 |
| GR 6M-6   | 6         | 3/8  | 9.52  | 4.8       | 14                | 14 | 15.3 | 17.7 | 33.3 | 40.7 |
| GR 6M-8   | 6         | 1/2  | 12.70 | 4.8       | 14                | 14 | 15.3 | 17.7 | 38.9 | 46.3 |
| GR 8M-6   | 8         | 3/8  | 9.52  | 6.4       | 15                | 16 | 16.2 | 18.6 | 34.5 | 42.0 |
| GR 8M-8   | 8         | 1/2  | 12.70 | 6.4       | 15                | 16 | 16.2 | 18.6 | 40.1 | 47.6 |
| GR 10M-6  | 10        | 3/8  | 9.52  | 7.1       | 18                | 19 | 17.2 | 19.5 | 36.6 | 44.2 |
| GR 10M-8  | 10        | 1/2  | 12.70 | 7.9       | 18                | 19 | 17.2 | 19.5 | 42.2 | 49.8 |
| GR 12M-8  | 12        | 1/2  | 12.70 | 9.5       | 22                | 22 | 22.8 | 22.0 | 42.2 | 52.3 |
| GR 12M-12 | 12        | 3/4  | 19.05 | 9.5       | 22                | 22 | 22.8 | 22.0 | 43.7 | 53.8 |
| GR 18M-12 | 18        | 3/4  | 19.05 | 15.1      | 27                | 30 | 24.4 | 22.0 | 46.0 | 56.1 |
| GR 18M-16 | 18        | 1    | 25.40 | 15.1      | 27                | 30 | 24.4 | 22.0 | 52.3 | 62.4 |
| GR 25M-16 | 25        | 1    | 25.40 | 20.2      | 35                | 38 | 31.3 | 26.5 | 57.2 | 69.5 |

Reducer

**GR****Connects metric tube to metric GPI port**

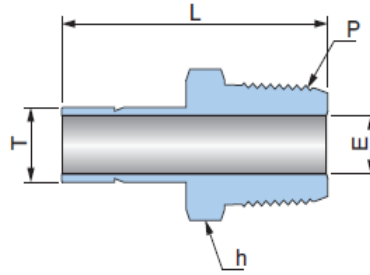
| Part No.   | Tube O.D. |    | E<br>Min. | Width across flat |    | A    | B    | l    | L    |
|------------|-----------|----|-----------|-------------------|----|------|------|------|------|
|            | D         | D1 |           | h                 | H  |      |      |      |      |
| GR 2M-3M   | 2         | 3  | 1.7       | 12                | 12 | 12.9 | 15.3 | 26.9 | 35.3 |
| GR 3M-4M   | 3         | 4  | 2.4       | 12                | 12 | 12.9 | 15.3 | 28.4 | 35.0 |
| GR 3M-6M   | 3         | 6  | 2.4       | 12                | 12 | 12.9 | 15.3 | 29.5 | 36.1 |
| GR 3M-10M  | 3         | 10 | 2.4       | 12                | 12 | 12.9 | 15.3 | 31.8 | 38.4 |
| GR 4M-6M   | 4         | 6  | 2.4       | 12                | 12 | 13.7 | 16.1 | 30.5 | 37.1 |
| GR 6M-3M   | 6         | 3  | 1.8       | 14                | 14 | 15.3 | 17.7 | 29.5 | 36.9 |
| GR 6M-8M   | 6         | 8  | 4.8       | 14                | 14 | 15.3 | 17.7 | 32.5 | 39.9 |
| GR 6M-10M  | 6         | 10 | 4.8       | 14                | 14 | 15.3 | 17.7 | 33.3 | 40.7 |
| GR 6M-12M  | 6         | 12 | 4.8       | 14                | 14 | 15.3 | 17.7 | 38.9 | 46.3 |
| GR 8M-6M   | 8         | 6  | 4.6       | 15                | 16 | 16.2 | 18.6 | 32.8 | 40.3 |
| GR 8M-10M  | 8         | 10 | 6.4       | 15                | 16 | 16.2 | 18.6 | 34.5 | 42.0 |
| GR 8M-12M  | 8         | 12 | 6.4       | 15                | 16 | 16.2 | 18.6 | 40.1 | 47.6 |
| GR 10M-6M  | 10        | 6  | 4.6       | 18                | 19 | 17.2 | 19.5 | 34.8 | 42.4 |
| GR 10M-12M | 10        | 12 | 7.9       | 18                | 19 | 17.2 | 19.5 | 42.2 | 49.8 |
| GR 10M-15M | 10        | 15 | 7.9       | 18                | 19 | 17.2 | 19.5 | 43.7 | 51.3 |
| GR 10M-18M | 10        | 18 | 7.9       | 19                | 19 | 17.2 | 19.5 | 43.7 | 51.3 |
| GR 12M-6M  | 12        | 6  | 4.6       | 22                | 22 | 22.8 | 22.0 | 34.8 | 44.9 |
| GR 12M-10M | 12        | 10 | 7.7       | 22                | 22 | 22.8 | 22.0 | 36.6 | 46.7 |
| GR 12M-16M | 12        | 16 | 9.5       | 22                | 22 | 22.8 | 22.0 | 43.7 | 53.8 |
| GR 12M-18M | 12        | 18 | 9.5       | 22                | 22 | 22.8 | 22.0 | 43.7 | 53.8 |
| GR 12M-20M | 12        | 20 | 9.5       | 22                | 22 | 22.8 | 22.0 | 46.0 | 56.1 |
| GR 12M-22M | 12        | 22 | 9.5       | 24                | 22 | 22.8 | 22.0 | 46.0 | 56.1 |
| GR 12M-25M | 12        | 25 | 9.5       | 27                | 22 | 22.8 | 22.0 | 52.3 | 62.4 |
| GR 16M-12M | 16        | 12 | 9.1       | 24                | 25 | 24.4 | 22.0 | 42.9 | 53.0 |
| GR 18M-12M | 18        | 12 | 9.1       | 27                | 30 | 24.4 | 22.0 | 44.5 | 54.6 |
| GR 18M-16M | 18        | 16 | 12.7      | 27                | 30 | 24.4 | 22.0 | 46.0 | 56.7 |
| GR 18M-20M | 18        | 20 | 15.1      | 27                | 30 | 24.4 | 22.0 | 47.5 | 57.6 |
| GR 18M-22M | 18        | 22 | 15.1      | 27                | 30 | 24.4 | 22.0 | 47.5 | 57.6 |
| GR 18M-25M | 18        | 25 | 15.1      | 27                | 30 | 24.4 | 22.0 | 52.3 | 62.4 |
| GR 20M-16M | 20        | 16 | 12.7      | 30                | 32 | 26.0 | 22.0 | 47.8 | 57.9 |
| GR 20M-18M | 20        | 18 | 13.9      | 30                | 32 | 26.0 | 22.0 | 47.8 | 57.9 |
| GR 20M-22M | 20        | 22 | 15.8      | 30                | 32 | 26.0 | 22.0 | 49.3 | 59.4 |
| GR 20M-25M | 20        | 25 | 15.8      | 30                | 32 | 26.0 | 22.0 | 54.1 | 64.2 |
| GR 22M-18M | 22        | 18 | 13.9      | 30                | 32 | 26.0 | 22.0 | 47.8 | 57.9 |
| GR 22M-20M | 22        | 20 | 15.1      | 30                | 32 | 26.0 | 22.0 | 49.3 | 59.4 |
| GR 22M-25M | 22        | 25 | 18.3      | 30                | 32 | 26.0 | 22.0 | 54.1 | 64.2 |
| GR 25M-18M | 25        | 18 | 13.9      | 35                | 38 | 31.3 | 26.5 | 50.8 | 63.1 |
| GR 25M-20M | 25        | 20 | 15.1      | 35                | 38 | 31.3 | 26.5 | 52.3 | 64.6 |

Male Adapter

**GMA****Connects fractional GPI port to female NPT thread**

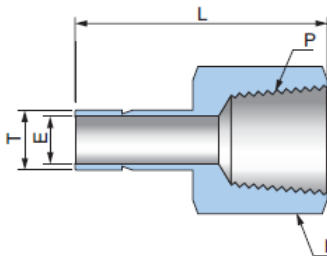
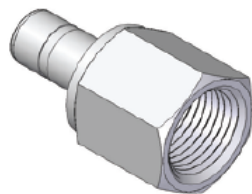
| Part No.   | Tube O.D |       | T<br>(NPT) | E<br>Min. | E1    | Width across flat |       | ℓ     | L      |
|------------|----------|-------|------------|-----------|-------|-------------------|-------|-------|--------|
|            | D        |       |            |           |       | h                 |       |       |        |
|            | in       | mm    |            |           |       | in                | mm    |       |        |
| GMA 2-2N   | 1/8      | 3.17  | 1/8        | 4.57      | 1.77  | 7/16              | 11.11 | 13.45 | 29.50  |
| GMA 2-4N   | 1/8      | 3.17  | 1/4        | 7.11      | 1.77  | 9/16              | 14.28 | 13.45 | 34.80  |
| GMA 3-2N   | 3/16     | 4.76  | 1/8        | 4.57      | 3.04  | 7/16              | 11.11 | 14.20 | 30.22  |
| GMA 3-4N   | 3/16     | 4.76  | 1/4        | 7.11      | 3.04  | 9/16              | 14.28 | 14.20 | 35.56  |
| GMA 4-2N   | 1/4      | 6.35  | 1/8        | 4.57      | 4.57  | 7/16              | 11.11 | 15.75 | 31.80  |
| GMA 4-4N   | 1/4      | 6.35  | 1/4        | 7.11      | 4.57  | 9/16              | 14.28 | 15.75 | 37.08  |
| GMA 4-6N   | 1/4      | 6.35  | 3/8        | 10.41     | 4.57  | 11/16             | 17.46 | 15.75 | 37.84  |
| GMA 4-8N   | 1/4      | 6.35  | 1/2        | 12.70     | 4.57  | 7/8               | 22.22 | 15.75 | 43.43  |
| GMA 5-2N   | 5/16     | 7.93  | 1/8        | 4.57      | 6.35  | 7/16              | 11.11 | 16.80 | 32.76  |
| GMA 5-4N   | 5/16     | 7.93  | 1/4        | 7.11      | 6.35  | 9/16              | 14.28 | 16.80 | 38.10  |
| GMA 6-2N   | 3/8      | 9.52  | 1/8        | 4.57      | 7.11  | 7/16              | 11.11 | 17.50 | 33.50  |
| GMA 6-4N   | 3/8      | 9.52  | 1/4        | 7.11      | 7.11  | 9/16              | 14.28 | 17.50 | 38.90  |
| GMA 6-6N   | 3/8      | 9.52  | 3/8        | 10.41     | 7.11  | 11/16             | 17.46 | 17.50 | 39.60  |
| GMA 6-8N   | 3/8      | 9.52  | 1/2        | 12.70     | 7.11  | 7/8               | 22.22 | 17.50 | 45.20  |
| GMA 8-4N   | 1/2      | 12.70 | 1/4        | 7.11      | 9.90  | 9/16              | 14.28 | 23.20 | 44.50  |
| GMA 8-6N   | 1/2      | 12.70 | 3/8        | 10.41     | 9.90  | 11/16             | 17.46 | 23.20 | 45.20  |
| GMA 8-8N   | 1/2      | 12.70 | 1/2        | 12.70     | 9.90  | 7/8               | 22.22 | 23.20 | 50.50  |
| GMA 10-6N  | 5/8      | 15.87 | 3/8        | 10.41     | 12.70 | 11/16             | 17.46 | 24.70 | 47.40  |
| GMA 10-8N  | 5/8      | 15.87 | 1/2        | 12.70     | 12.70 | 7/8               | 22.22 | 24.70 | 52.30  |
| GMA 10-12N | 5/8      | 15.87 | 3/4        | 18.28     | 12.70 | 1-1/16            | 26.98 | 24.70 | 52.30  |
| GMA 12-8N  | 3/4      | 19.05 | 1/2        | 12.70     | 14.98 | 7/8               | 22.22 | 24.70 | 52.30  |
| GMA 12-12N | 3/4      | 19.05 | 3/4        | 18.28     | 14.98 | 1-1/16            | 26.98 | 24.70 | 52.30  |
| GMA 12-16N | 3/4      | 19.05 | 1          | 22.35     | 14.98 | 1-3/8             | 34.92 | 24.70 | 57.91  |
| GMA 14-12N | 7/8      | 22.22 | 3/4        | 18.28     | 17.27 | 1-1/16            | 26.98 | 26.70 | 54.30  |
| GMA 16-12N | 1        | 25.40 | 3/4        | 18.28     | 20.06 | 1-1/16            | 26.98 | 31.70 | 58.70  |
| GMA 16-16N | 1        | 25.40 | 1          | 22.35     | 20.06 | 1-3/8             | 34.92 | 31.70 | 66.00  |
| GMA 20-20N | 1-1/4    | 31.75 | 1-1/4      | 27.68     | -     | 1-3/4             | 44.45 | 40.00 | 80.26  |
| GMA 24-24N | 1-1/2    | 38.10 | 1-1/2      | 33.27     | -     | 2-1/8             | 53.98 | 51.50 | 94.48  |
| GMA 32-32N | 2        | 50.80 | 2          | 44.45     | -     | 2-3/4             | 69.85 | 68.40 | 119.38 |

Male Adapter

**GMA****Connects fractional GPI port to female ISO tapered thread**

| Part No.    | Tube O.D.<br>D | T<br>R(PT) | E<br>Min. | E1<br>Min. | Width across flat<br>h | ℓ     | L    |
|-------------|----------------|------------|-----------|------------|------------------------|-------|------|
| GMA 3M-2R   | 3              | 1/8        | 4.0       | 1.8        | 12                     | 13.15 | 29.4 |
| GMA 6M-2R   | 6              | 1/8        | 4.6       | 4.6        | 12                     | 15.75 | 32.8 |
| GMA 6M-4R   | 6              | 1/4        | 4.6       | 4.6        | 14                     | 15.75 | 38.1 |
| GMA 8M-4R   | 8              | 1/4        | 6.3       | 6.3        | 14                     | 16.50 | 39.1 |
| GMA 10M-4R  | 10             | 1/4        | 7.7       | 7.7        | 14                     | 17.50 | 39.9 |
| GMA 10M-6R  | 10             | 3/8        | 7.7       | 7.7        | 17                     | 17.50 | 40.6 |
| GMA 10M-8R  | 10             | 1/2        | 11.9      | 7.7        | 22                     | 17.50 | 45.2 |
| GMA 12M-4R  | 12             | 1/4        | 7.1       | 9.1        | 14                     | 23.50 | 46.5 |
| GMA 12M-6R  | 12             | 3/8        | 9.1       | 9.1        | 17                     | 23.50 | 46.5 |
| GMA 12M-8R  | 12             | 1/2        | 11.9      | 9.1        | 22                     | 23.50 | 51.8 |
| GMA 18M-8R  | 18             | 1/2        | 11.9      | 13.9       | 22                     | 24.90 | 53.2 |
| GMA 18M-12R | 18             | 3/4        | 15.9      | 13.9       | 27                     | 24.90 | 53.2 |
| GMA 28M-16R | 28             | 1          | 22.2      | -          | 35                     | 31.70 | 74.7 |
| GMA 28M-20R | 28             | 1-1/4      | 23.8      | -          | 46                     | 31.70 | 76.2 |
| GMA 32M-20R | 32             | 1-1/4      | 27.4      | -          | 46                     | 40.00 | 81.0 |
| GMA 38M-24R | 38             | 1-1/2      | 33.3      | -          | 55                     | 51.50 | 92.2 |

Female Adapter

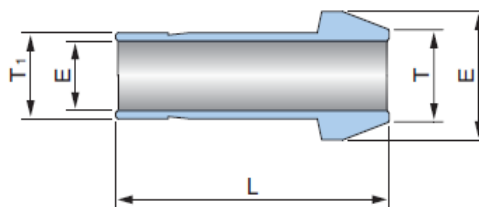
**GFA****Connects fractional GPI port to male NPT thread**

| Part No.   | Tube O.D. |       | T<br>(NPT) | E<br>Min. | Width across flat |       | ℓ     | L      |
|------------|-----------|-------|------------|-----------|-------------------|-------|-------|--------|
|            | D         |       |            |           | h                 |       |       |        |
|            | in        | mm    |            |           | in                | mm    |       |        |
| GFA 2-2N   | 1/8       | 3.17  | 1/8        | 1.77      | 9/16              | 14.28 | 13.45 | 31.50  |
| GFA 2-4N   | 1/8       | 3.17  | 1/4        | 1.77      | 3/4               | 19.05 | 13.45 | 35.30  |
| GFA 3-2N   | 3/16      | 4.76  | 1/8        | 3.04      | 9/16              | 14.28 | 14.20 | 32.00  |
| GFA 3-4N   | 3/16      | 4.76  | 1/4        | 3.04      | 3/4               | 19.05 | 14.20 | 35.81  |
| GFA 4-2N   | 1/4       | 6.35  | 1/8        | 4.57      | 9/16              | 14.28 | 15.75 | 33.02  |
| GFA 4-4N   | 1/4       | 6.35  | 1/4        | 4.57      | 3/4               | 19.05 | 15.75 | 37.10  |
| GFA 4-6N   | 1/4       | 6.35  | 3/8        | 4.57      | 7/8               | 22.22 | 15.75 | 39.37  |
| GFA 4-8N   | 1/4       | 6.35  | 1/2        | 4.57      | 1-1/16            | 26.98 | 15.75 | 45.50  |
| GFA 5-2N   | 5/16      | 7.93  | 1/8        | 6.35      | 9/16              | 14.28 | 16.80 | 34.29  |
| GFA 5-4N   | 5/16      | 7.93  | 1/4        | 6.35      | 3/4               | 19.05 | 16.80 | 37.59  |
| GFA 6-2N   | 3/8       | 9.52  | 1/8        | 7.11      | 9/16              | 14.28 | 17.50 | 34.29  |
| GFA 6-4N   | 3/8       | 9.52  | 1/4        | 7.11      | 3/4               | 19.05 | 17.50 | 38.10  |
| GFA 6-6N   | 3/8       | 9.52  | 3/8        | 7.11      | 7/8               | 22.22 | 17.50 | 40.38  |
| GFA 6-8N   | 3/8       | 9.52  | 1/2        | 7.11      | 1-1/16            | 26.98 | 17.50 | 46.73  |
| GFA 8-4N   | 1/2       | 12.70 | 1/4        | 9.90      | 3/4               | 19.05 | 23.20 | 43.43  |
| GFA 8-6N   | 1/2       | 12.70 | 3/8        | 9.90      | 7/8               | 22.22 | 23.20 | 45.46  |
| GFA 8-8N   | 1/2       | 12.70 | 1/2        | 9.90      | 1-1/16            | 26.98 | 23.20 | 51.80  |
| GFA 10-6N  | 5/8       | 15.87 | 3/8        | 12.70     | 7/8               | 22.22 | 24.70 | 48.26  |
| GFA 10-8N  | 5/8       | 15.87 | 1/2        | 12.70     | 1-1/16            | 26.98 | 24.70 | 53.84  |
| GFA 10-12N | 5/8       | 15.87 | 3/4        | 12.70     | 1-5/16            | 33.33 | 24.70 | 55.37  |
| GFA 12-8N  | 3/4       | 19.05 | 1/2        | 14.98     | 1-1/16            | 26.98 | 24.70 | 52.83  |
| GFA 12-12N | 3/4       | 19.05 | 3/4        | 14.98     | 1-5/16            | 33.33 | 24.70 | 54.86  |
| GFA 12-16N | 3/4       | 19.05 | 1          | 14.98     | 1-5/8             | 41.27 | 24.70 | 58.42  |
| GFA 14-12N | 7/8       | 22.22 | 3/4        | 17.27     | 1-5/16            | 33.33 | 26.70 | 57.15  |
| GFA 16-12N | 1         | 25.40 | 3/4        | 20.06     | 1-5/16            | 33.33 | 31.70 | 60.70  |
| GFA 16-16N | 1         | 25.40 | 1          | 20.06     | 1-5/8             | 41.27 | 31.70 | 64.26  |
| GFA 20-20N | 1-1/4     | 31.75 | 1-1/4      | 27.68     | 2-1/8             | 53.98 | 40.00 | 77.72  |
| GFA 24-24N | 1-1/2     | 38.10 | 1-1/2      | 33.27     | 2-3/8             | 60.33 | 51.50 | 88.90  |
| GFA 32-32N | 2         | 50.80 | 2          | 44.45     | 2-7/8             | 73.03 | 68.40 | 107.44 |

**Connects metric GPI port to male ISO tapered thread**

| Part No.    | Tube O.D. | T<br>R(PT) | E<br>Min. | Width across flat | ℓ     | L     |
|-------------|-----------|------------|-----------|-------------------|-------|-------|
|             | D         |            |           | h                 |       |       |
| GFA 3M-2R   | 3         | 1/8        | 1.8       | 14                | 13.15 | 31.15 |
| GFA 6M-2R   | 6         | 1/8        | 4.6       | 14                | 15.75 | 32.50 |
| GFA 6M-4R   | 6         | 1/4        | 4.6       | 19                | 15.75 | 37.10 |
| GFA 8M-4R   | 8         | 1/4        | 6.3       | 19                | 16.50 | 37.60 |
| GFA 10M-4R  | 10        | 1/4        | 7.7       | 19                | 17.50 | 38.10 |
| GFA 10M-6R  | 10        | 3/8        | 7.7       | 22                | 17.50 | 40.10 |
| GFA 10M-8R  | 10        | 1/2        | 7.7       | 27                | 17.50 | 46.50 |
| GFA 12M-4R  | 12        | 1/4        | 9.1       | 19                | 23.50 | 43.70 |
| GFA 12M-6R  | 12        | 3/8        | 9.1       | 22                | 23.50 | 46.00 |
| GFA 12M-8R  | 12        | 1/2        | 9.1       | 27                | 23.50 | 52.30 |
| GFA 18M-12R | 18        | 3/4        | 13.9      | 32                | 24.90 | 54.80 |

Port Connector

**GPC****Connects two fractional GPI ports**

| Part No. | Tube O.D. |       | E<br>Min. | D1    | ℓ     | L     |
|----------|-----------|-------|-----------|-------|-------|-------|
|          | D         |       |           |       |       |       |
|          | in        | mm    |           |       |       |       |
| GPC-1    | 1/16      | 1.59  | 1.00      | 3.30  | 10.66 | 13.72 |
| GPC-2    | 1/8       | 3.17  | 1.77      | 6.09  | 15.75 | 22.35 |
| GPC-4    | 1/4       | 6.35  | 4.57      | 9.39  | 18.79 | 24.64 |
| GPC-5    | 5/16      | 7.93  | 6.35      | 10.92 | 20.06 | 25.90 |
| GPC-6    | 3/8       | 9.52  | 7.11      | 12.70 | 20.32 | 26.16 |
| GPC-8    | 1/2       | 12.70 | 9.90      | 15.74 | 25.90 | 35.81 |
| GPC-12   | 3/4       | 19.05 | 14.98     | 22.09 | 27.68 | 37.33 |
| GPC-16   | 1         | 25.40 | 20.06     | 28.44 | 34.54 | 48.00 |

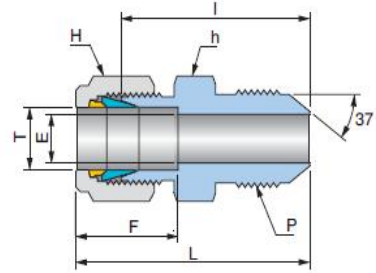
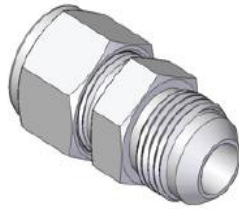
**Connects two metric GPI ports**

| Part No. | Tube O.D. | E<br>Min. | D1    | ℓ     | L     |
|----------|-----------|-----------|-------|-------|-------|
|          | D         |           |       |       |       |
| GPC-3M   | 3         | 2.1       | 6.0   | 15.70 | 22.20 |
| GPC-4M   | 4         | 2.2       | 7.0   | 16.67 | 25.81 |
| GPC-6M   | 6         | 4.4       | 9.0   | 18.70 | 24.60 |
| GPC-8M   | 8         | 6.2       | 11.0  | 20.00 | 25.90 |
| GPC-10M  | 10        | 8.2       | 13.1  | 20.20 | 26.10 |
| GPC-12M  | 12        | 9.1       | 15.0  | 26.00 | 35.80 |
| GPC-15M  | 15        | 12.7      | 19.0  | 27.78 | 37.40 |
| GPC-16M  | 16        | 12.7      | 19.0  | 27.60 | 37.40 |
| GPC-18M  | 18        | 13.9      | 21.0  | 27.91 | 37.40 |
| GPC-20M  | 20        | 15.1      | 23.0  | 29.20 | 38.90 |
| GPC-22M  | 22        | 17.9      | 24.97 | 29.30 | 39.20 |
| GPC-25M  | 25        | 19.8      | 28.0  | 34.50 | 48.00 |
| GPC-28M  | 28        | 23.8      | 34.3  | 48.30 | 63.50 |
| GPC-32M  | 32        | 27.4      | 39.5  | 52.40 | 69.70 |
| GPC-38M  | 38        | 33.3      | 47.1  | 61.40 | 81.90 |

**Installation Instructions**

1. Remove the nut and ferrules from GLOk port 1 and set nut only (no ferrules) over the port connector.
2. Tighten the nut with wrench until sharp rise in torque is felt.
3. Insert the other end of port connector into port 2 and tighten nut 1-1/4 turns with wrench.  
for 1/8", 3mm only 3/4 turn from finger tight.

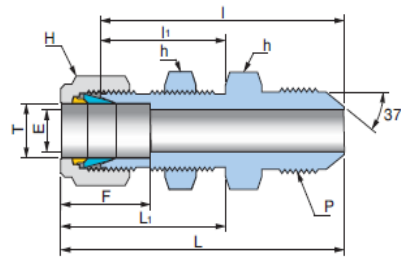
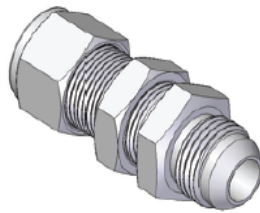
AN Union  
**GAU**



**Connects fractional tube to AN flared tube**

| Part No.  | Tube O.D |       | AN Tube Flare Size |       | Straight Thread T(U) | E Min. | Width across flat |       |       |       | A     | B     | ℓ     | L      |
|-----------|----------|-------|--------------------|-------|----------------------|--------|-------------------|-------|-------|-------|-------|-------|-------|--------|
|           | D        |       | Flare Size         |       |                      |        | h                 |       | H     |       |       |       |       |        |
|           | in       | mm    | in                 | mm    |                      |        | in                | mm    | in    | mm    |       |       |       |        |
| GAU 1-2   | 1/16     | 1.59  | 1/8                | 3.17  | 5/16-24              | 1.27   | 7/16              | 11.11 | 5/16  | 7.93  | 8.63  | 10.92 | 23.36 | 27.17  |
| GAU 2-2   | 1/8      | 3.17  | 1/8                | 3.17  | 5/16-24              | 1.52   | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 24.89 | 31.49  |
| GAU 2-4   | 1/8      | 3.17  | 1/4                | 6.35  | 7/16-20              | 2.28   | 1/2               | 12.70 | 7/16  | 11.11 | 12.70 | 15.24 | 28.44 | 35.05  |
| GAU 4-4   | 1/4      | 6.35  | 1/4                | 6.35  | 7/16-20              | 4.31   | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 30.22 | 37.59  |
| GAU 5-5   | 5/16     | 7.93  | 5/16               | 7.93  | 1/2-20               | 5.84   | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 30.98 | 38.35  |
| GAU 6-4   | 3/8      | 9.52  | 1/4                | 6.35  | 7/16-20              | 4.31   | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 32.25 | 39.62  |
| GAU 6-6   | 3/8      | 9.52  | 3/8                | 9.52  | 9/16-18              | 7.11   | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 32.25 | 39.62  |
| GAU 8-8   | 1/2      | 12.70 | 1/2                | 12.70 | 3/4-16               | 9.90   | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 35.81 | 45.97  |
| GAU 12-12 | 3/4      | 19.05 | 3/4                | 19.05 | 1-1/16-12            | 15.49  | 1-1/8             | 28.58 | 1-1/8 | 28.58 | 24.38 | 21.84 | 43.18 | 53.34  |
| GAU 16-16 | 1        | 25.40 | 1                  | 25.40 | 1-5/16-12            | 21.33  | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 49.27 | 61.46  |
| GAU 20-20 | 1-1/4    | 31.75 | 1-1/4              | 31.75 | 1-5/8-12             | 27.68  | 1-3/4             | 44.45 | 1-7/8 | 47.63 | 41.14 | 38.86 | 44.46 | 77.56  |
| GAU 24-24 | 1-1/2    | 38.10 | 1-1/2              | 38.10 | 1-7/8-12             | 34.03  | 2-1/8             | 53.97 | 2-1/4 | 57.15 | 50.03 | 45.21 | 63.07 | 90.25  |
| GAU 32-32 | 2        | 50.80 | 2                  | 50.80 | 2-1/2-12             | 45.97  | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 83.24 | 120.57 |

AN Bulkhead Union  
**GABU**



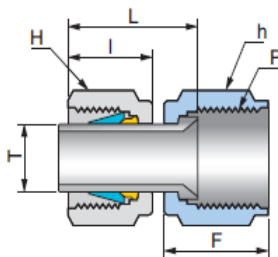
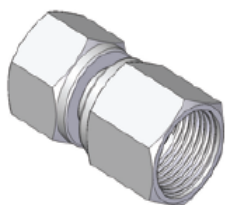
**Connects fractional tube to AN flared tube**

| Part No.  | Tube O.D |       | AN Tube Flare Size |       | Straight Thread T(U) | E Min. | Width across flat |       |       |       | A     | ℓ      | ℓ1    | L      | L1    | Panel Hole Drill size | Panel Max Thickness |
|-----------|----------|-------|--------------------|-------|----------------------|--------|-------------------|-------|-------|-------|-------|--------|-------|--------|-------|-----------------------|---------------------|
|           | D        |       | Flare Size         |       |                      |        | h                 |       | H     |       |       |        |       |        |       |                       |                     |
|           | in       | mm    | in                 | mm    |                      |        | in                | mm    | in    | mm    |       |        |       |        |       |                       |                     |
| GABU 2-2  | 1/8      | 3.17  | 1/8                | 3.17  | 5/16-24              | 1.77   | 1/2               | 12.70 | 7/16  | 11.11 | 13.71 | 40.85  | 24.63 | 47.45  | 31.23 | 8.33                  | 12.70               |
| GABU 4-4  | 1/4      | 6.35  | 1/4                | 6.35  | 7/16-20              | 4.31   | 5/8               | 15.87 | 9/16  | 14.28 | 15.24 | 46.48  | 26.16 | 53.84  | 33.52 | 11.50                 | 10.16               |
| GABU 6-6  | 3/8      | 9.52  | 3/8                | 9.52  | 9/16-18              | 7.11   | 3/4               | 19.05 | 11/16 | 17.46 | 16.76 | 49.78  | 29.46 | 57.15  | 36.83 | 14.68                 | 11.17               |
| GABU 8-8  | 1/2      | 12.70 | 1/2                | 12.70 | 3/4-16               | 9.90   | 5/16              | 23.81 | 7/8   | 22.22 | 22.86 | 55.62  | 31.75 | 65.78  | 41.91 | 19.44                 | 12.70               |
| GABU12-12 | 3/4      | 19.05 | 3/4                | 19.05 | 1-1/16-12            | 15.49  | 1-3/16            | 30.16 | 1-1/8 | 28.58 | 24.38 | 68.83  | 37.33 | 78.99  | 47.49 | 25.79                 | 16.76               |
| GABU16-16 | 1        | 25.40 | 1                  | 25.40 | 1-5/16-12            | 21.33  | 1-5/8             | 41.27 | 1-1/2 | 38.10 | 31.24 | 80.26  | 45.21 | 92.45  | 57.40 | 33.73                 | 19.05               |
| GABU20-20 | 1-1/4    | 31.75 | 1-1/4              | 31.75 | 1-5/8-12             | 27.68  | 1-7/8             | 47.63 | 1-7/8 | 47.63 | 41.14 | 86.37  | 47.75 | 108.47 | 69.85 | 41.67                 | 19.05               |
| GABU24-24 | 1-1/2    | 38.10 | 1-1/2              | 38.10 | 1-7/8-12             | 34.03  | 2-1/4             | 57.15 | 2-1/4 | 57.15 | 50.03 | 94.33  | 49.27 | 121.51 | 76.45 | 49.61                 | 19.05               |
| GABU32-32 | 2        | 50.80 | 2                  | 50.80 | 2-1/2-12             | 45.97  | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 114.29 | 56.38 | 151.62 | 93.71 | 16.27                 | 19.05               |



AN Adapter

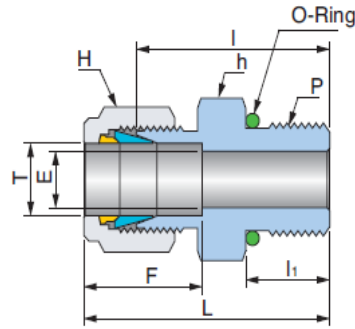
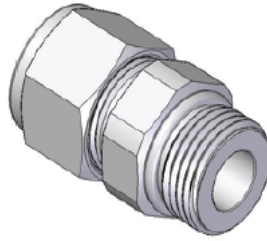
**GAA**



**Connects fractional GPI port to male AN**

| Part No. | Tube O.D |       | AN Tube    |       | Straight Thread T(U) | Width across flat |       |       |       | A     | ℓ     | ℓ1    |
|----------|----------|-------|------------|-------|----------------------|-------------------|-------|-------|-------|-------|-------|-------|
|          | D        |       | Flare Size |       |                      | h                 |       | H     |       |       |       |       |
|          | in       | mm    | in         | mm    |                      | in                | mm    | in    | mm    |       |       |       |
| GAA 2-2  | 1/8      | 3.17  | 1/8        | 3.17  | 5/16-24              | 3/8               | 9.52  | 7/16  | 11.11 | 13.71 | 13.46 | 18.54 |
| GAA 2-4  | 1/8      | 3.17  | 1/4        | 6.35  | 7/16-20              | 9/16              | 14.28 | 7/16  | 11.11 | 15.74 | 13.46 | 19.05 |
| GAA 4-4  | 1/4      | 6.35  | 1/4        | 6.35  | 7/16-20              | 9/16              | 14.28 | 9/16  | 14.28 | 15.74 | 15.74 | 21.33 |
| GAA 6-6  | 3/8      | 9.52  | 3/8        | 9.52  | 9/16-18              | 11/16             | 17.46 | 11/16 | 17.46 | 18.28 | 17.52 | 24.89 |
| GAA 8-8  | 1/2      | 12.70 | 1/2        | 12.70 | 3/4-16               | 7/8               | 22.22 | 7/8   | 22.22 | 21.59 | 23.11 | 31.75 |

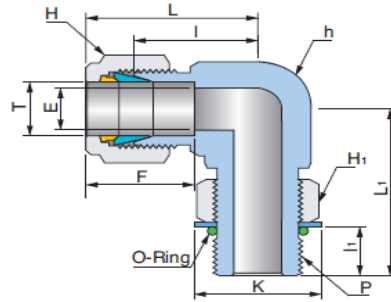
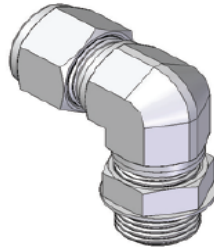
SAE Male Connector  
**GSMC**



**Connects fractional tube to SAE straight thread boss**

| Part No.    | Tube O.D. |       | Straight Thread T(u) | E Min. | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L     | O-Ring Uniform Size No. |
|-------------|-----------|-------|----------------------|--------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------------|
|             | D         |       |                      |        | h                 | H     |       |       |       |       |       |       |       |                         |
|             | in        | mm    |                      |        |                   |       | in    | mm    |       |       |       |       |       |                         |
| GSMC 2-2U   | 1/8       | 3.17  | 5/16-24              | 2.28   | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 23.26 | 7.62  | 29.97 | -902                    |
| GSMC 4-4U   | 1/4       | 6.35  | 7/16-20              | 4.82   | 9/16              | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 26.67 | 9.14  | 34.03 | -904                    |
| GSMC 4-6U   | 1/4       | 6.35  | 9/16-18              | 4.82   | 11/16             | 17.46 | 9/16  | 14.28 | 15.24 | 17.78 | 28.19 | 9.90  | 35.56 | -906                    |
| GSMC 4-8U   | 1/4       | 6.35  | 3/4-16               | 4.82   | 7/8               | 22.22 | 9/16  | 14.28 | 15.24 | 17.78 | 30.22 | 11.17 | 37.59 | -908                    |
| GSMC 4-10U  | 1/4       | 6.35  | 7/8-14               | 4.82   | 1                 | 25.40 | 9/16  | 14.28 | 15.24 | 17.78 | 33.27 | 12.70 | 40.64 | -910                    |
| GSMC 5-5U   | 5/16      | 7.93  | 1/2-20               | 5.84   | 5/8               | 15.87 | 5/8   | 15.87 | 16.25 | 18.54 | 27.43 | 9.14  | 34.79 | -905                    |
| GSMC 6-4U   | 3/8       | 9.52  | 7/16-20              | 5.08   | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 28.19 | 9.14  | 35.56 | -904                    |
| GSMC 6-6U   | 3/8       | 9.52  | 9/16-18              | 7.11   | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 29.71 | 9.90  | 37.08 | -906                    |
| GSMC 6-8U   | 3/8       | 9.52  | 3/4-16               | 7.11   | 7/8               | 22.22 | 11/16 | 17.46 | 16.76 | 19.30 | 31.75 | 11.17 | 39.11 | -908                    |
| GSMC 6-10U  | 3/8       | 9.52  | 7/8-14               | 7.11   | 1                 | 25.40 | 11/16 | 17.46 | 16.76 | 19.30 | 34.79 | 12.70 | 42.16 | -910                    |
| GSMC 8-6U   | 1/2       | 12.70 | 9/16-18              | 7.11   | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 28.95 | 9.90  | 39.11 | -906                    |
| GSMC 8-8U   | 1/2       | 12.70 | 3/4-16               | 10.41  | 7/8               | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 31.75 | 11.17 | 41.91 | -908                    |
| GSMC 8-10U  | 1/2       | 12.70 | 7/8-14               | 10.41  | 1                 | 25.40 | 7/8   | 22.22 | 22.86 | 21.84 | 34.79 | 12.70 | 44.95 | -910                    |
| GSMC 8-12U  | 1/2       | 12.70 | 1-1/16-12            | 10.41  | 1-1/4             | 31.75 | 7/8   | 22.22 | 22.86 | 21.84 | 38.86 | 14.98 | 49.02 | -912                    |
| GSMC 10-8U  | 5/8       | 15.87 | 3/4-16               | 10.66  | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 31.75 | 11.17 | 41.91 | -908                    |
| GSMC 10-10U | 5/8       | 15.87 | 7/8-14               | 12.70  | 1                 | 25.40 | 1     | 25.40 | 24.38 | 21.84 | 35.05 | 12.70 | 45.21 | -910                    |
| GSMC 12-8U  | 3/4       | 19.05 | 3/4-16               | 10.66  | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 24.38 | 21.84 | 35.81 | 11.17 | 45.97 | -908                    |
| GSMC 12-12U | 3/4       | 19.05 | 1-1/16-12            | 15.74  | 1-1/4             | 31.75 | 1-1/8 | 28.57 | 24.38 | 21.84 | 38.86 | 14.98 | 49.02 | -912                    |
| GSMC 14-14U | 7/8       | 22.22 | 1-3/16-12            | 18.28  | 1-3/8             | 34.92 | 1-1/4 | 31.75 | 25.90 | 21.84 | 38.86 | 14.98 | 49.02 | -914                    |
| GSMC 16-12U | 1         | 25.40 | 1-1/16-12            | 16.76  | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 41.14 | 14.98 | 53.34 | -912                    |
| GSMC 16-16U | 1         | 25.40 | 1-5/16-12            | 22.35  | 1-1/2             | 38.10 | 1-1/2 | 38.10 | 31.24 | 26.41 | 42.16 | 14.98 | 54.35 | -916                    |
| GSMC 20-20U | 1-1/4     | 31.75 | 1-5/8-12             | 27.68  | 1-7/8             | 47.63 | 1-7/8 | 47.63 | 41.14 | 38.86 | 46.22 | 14.98 | 68.32 | -920                    |
| GSMC 24-24U | 1-1/2     | 38.10 | 1-7/8-12             | 34.03  | 2-1/8             | 53.98 | 2-1/4 | 57.15 | 50.03 | 45.21 | 50.54 | 14.98 | 77.72 | -924                    |
| GSMC 32-32U | 2         | 50.80 | 2-1/2-12             | 45.97  | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 64.26 | 14.98 | 101.6 | -932                    |

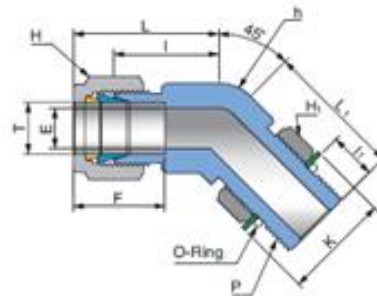
SAE Male Elbow  
**GSML**



Connects fractional tube to SAE straight thread boss

| Part No.    | Tube O.D |       | Straight Thread T(U) | E Min. | Width across flat |       |       |       |       |       | A     | B     | l     | l1    | L      | L1    | K     | O-Ring Uniform Size No. |    |   |    |   |
|-------------|----------|-------|----------------------|--------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------------------------|----|---|----|---|
|             | D        |       |                      |        | h                 | H     | H1    | A     | B     | l     |       |       |       |       |        |       |       |                         | l1 | L | L1 | K |
|             | in       | mm    |                      |        |                   |       |       |       |       |       |       |       |       |       |        |       |       |                         |    |   |    |   |
| GSML4-4U    | 1/4      | 6.35  | 7/16-20              | 4.82   | 1/2               | 12.70 | 9/16  | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 21.08 | 9.90  | 28.44  | 28.44 | 16.51 | -904                    |    |   |    |   |
| GSML5-5U    | 5/16     | 7.93  | 1/2-20               | 5.84   | 9/16              | 14.28 | 5/8   | 15.87 | 5/8   | 15.87 | 16.25 | 18.54 | 22.86 | 9.90  | 30.22  | 29.46 | 18.28 | -905                    |    |   |    |   |
| GSML6-6U    | 3/8      | 9.52  | 9/16-18              | 7.11   | 5/8               | 15.87 | 11/16 | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 24.63 | 11.17 | 32.00  | 32.25 | 20.06 | -906                    |    |   |    |   |
| GSML6-8U    | 3/8      | 9.52  | 3/4-16               | 7.11   | 13/16             | 20.64 | 11/16 | 17.46 | 7/8   | 22.22 | 16.76 | 19.30 | 27.43 | 12.70 | 34.79  | 37.84 | 25.65 | -908                    |    |   |    |   |
| GSML8-8U    | 1/2      | 12.70 | 3/4-16               | 10.41  | 13/16             | 20.64 | 7/8   | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 27.43 | 12.70 | 37.59  | 37.84 | 25.65 | -908                    |    |   |    |   |
| GSML 10-10U | 5/8      | 15.87 | 7/8-14               | 12.70  | 1                 | 25.40 | 1     | 25.40 | 1     | 25.40 | 24.38 | 21.84 | 29.46 | 14.22 | 39.62  | 43.43 | 29.46 | -910                    |    |   |    |   |
| GSML12-12U  | 3/4      | 19.05 | 1-1/16-12            | 15.74  | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 1-1/4 | 31.75 | 24.38 | 21.84 | 31.24 | 16.76 | 41.40  | 48.76 | 36.57 | -912                    |    |   |    |   |
| GSML14-14U  | 7/8      | 22.22 | 1-3/16-12            | 18.28  | 1-1/4             | 31.75 | 1-1/4 | 31.75 | 1-3/8 | 34.92 | 25.90 | 21.84 | 33.02 | 16.76 | 43.18  | 50.54 | 40.38 | -914                    |    |   |    |   |
| GSML16-16U  | 1        | 25.40 | 1-5/16-12            | 22.35  | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 1-1/2 | 38.10 | 31.24 | 26.41 | 38.35 | 16.76 | 50.54  | 53.59 | 43.94 | -916                    |    |   |    |   |
| GSML 20-20U | 1-1/4    | 31.75 | 1-5/8-12             | 27.68  | 1-11/16           | 42.76 | 1-7/8 | 47.63 | 1-7/8 | 47.63 | 41.14 | 38.86 | 45.72 | 16.76 | 67.81  | 58.16 | 54.86 | -920                    |    |   |    |   |
| GSML 24-24U | 1-1/2    | 38.10 | 1-7/8-12             | 34.03  | 2                 | 50.80 | 2-1/4 | 57.15 | 2-1/8 | 53.98 | 50.03 | 45.21 | 50.80 | 16.76 | 77.97  | 60.45 | 62.23 | -924                    |    |   |    |   |
| GSML 32-32U | 2        | 50.80 | 2-1/2-12             | 45.97  | 2-3/4             | 69.85 | 3     | 76.20 | 2-3/4 | 69.85 | 67.56 | 62.73 | 69.85 | 16.76 | 107.18 | 71.62 | 80.26 | -932                    |    |   |    |   |

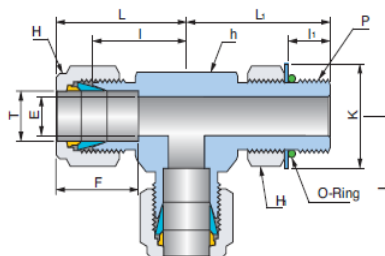
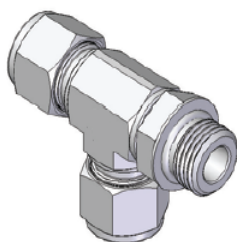
45° SAE Male Elbow  
**GSMBL**



Connects fractional tube to SAE straight thread boss

| Part No.    | Tube O.D. |       | Straight Thread T(u) | E Min. | Width across flat |       |       |       |       |       | A     | B     | l     | l1    | L     | L1    | K     | O-Ring Uniform Size No. |    |   |    |   |
|-------------|-----------|-------|----------------------|--------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------------|----|---|----|---|
|             | D         |       |                      |        | h                 | H     | H1    | A     | B     | l     |       |       |       |       |       |       |       |                         | l1 | L | L1 | K |
|             | in        | mm    |                      |        |                   |       |       |       |       |       |       |       |       |       |       |       |       |                         |    |   |    |   |
| GSMBL 4-4U  | 1/4       | 6.35  | 7/16-20              | 4.82   | 1/2               | 12.70 | 9/16  | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 18.28 | 9.90  | 25.65 | 25.65 | 16.51 | -904                    |    |   |    |   |
| GSMBL 6-6U  | 3/8       | 9.52  | 9/16-18              | 7.11   | 5/8               | 15.87 | 11/16 | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 20.57 | 11.17 | 27.94 | 28.19 | 20.06 | -906                    |    |   |    |   |
| GSMBL 8-8U  | 1/2       | 12.70 | 3/4-16               | 10.41  | 13/16             | 20.64 | 7/8   | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 21.84 | 12.70 | 32.00 | 32.25 | 25.65 | -908                    |    |   |    |   |
| GSMBL12-12U | 3/4       | 19.05 | 1-1/16-12            | 15.74  | 1-1/8             | 28.58 | 1-1/8 | 28.58 | 1-1/4 | 31.75 | 24.38 | 21.84 | 29.71 | 16.76 | 39.87 | 47.24 | 36.57 | -912                    |    |   |    |   |
| GSMBL16-16U | 1         | 25.40 | 1-5/16-12            | 22.35  | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 1-1/2 | 38.10 | 31.24 | 26.41 | 35.30 | 16.76 | 47.49 | 50.54 | 43.94 | -916                    |    |   |    |   |

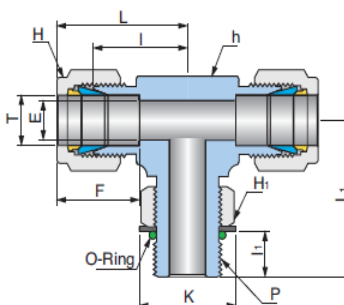
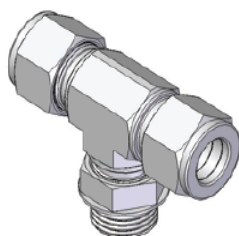
SAE Male Run Tee  
**GSMRT**



**Connects fractional tube to SAE straight thread boss**

| Part No.     | Tube O.D.<br>D |       | Straight Thread<br>T(u) | E<br>Min. | Width across flat |       |       |       |       |       | A     | B     | ℓ     | ℓ1    | L      | L1    | K     | O-Ring<br>Unifor<br>m<br>Size N<br>o. |
|--------------|----------------|-------|-------------------------|-----------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|---------------------------------------|
|              | in             | mm    |                         |           | h                 | H     | H1    | in    | mm    | in    |       |       |       |       |        |       |       |                                       |
| GSMRT 4-4U   | 1/4            | 6.35  | 7/16-20                 | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 21.08 | 9.90  | 28.44  | 28.44 | 16.51 | -904                                  |
| GSMRT 6-6U   | 3/8            | 9.52  | 9/16-18                 | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 24.63 | 11.17 | 32.00  | 32.25 | 20.06 | -906                                  |
| GSMRT 8-8U   | 1/2            | 12.70 | 3/4-16                  | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 27.43 | 12.70 | 37.59  | 37.84 | 25.65 | -908                                  |
| GSMRT 12-12U | 3/4            | 19.05 | 1-1/16-12               | 15.74     | 1-1/8             | 26.98 | 1-1/8 | 28.58 | 1-1/4 | 31.75 | 24.38 | 21.84 | 31.24 | 16.76 | 41.40  | 48.76 | 36.57 | -912                                  |
| GSMRT 16-16U | 1              | 25.40 | 1-5/16-12               | 22.35     | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 1-1/2 | 38.10 | 31.24 | 26.41 | 38.35 | 16.76 | 50.54  | 50.54 | 43.94 | -916                                  |
| GSMRT 20-20U | 1-1/4          | 31.75 | 1-5/8-12                | 27.68     | 1-11/16           | 42.86 | 1-7/8 | 47.63 | 1-7/8 | 47.63 | 41.14 | 38.86 | 45.72 | 16.76 | 67.81  | 58.16 | 54.86 | -920                                  |
| GSMRT 24-24U | 1-1/2          | 38.10 | 1-7/8-12                | 34.03     | 2                 | 50.80 | 2-1/4 | 57.15 | 2-1/8 | 53.98 | 50.03 | 45.21 | 50.80 | 16.76 | 77.97  | 60.45 | 62.23 | -924                                  |
| GSMRT 32-32U | 2              | 50.80 | 2-1/2-12                | 45.97     | 2-3/4             | 69.85 | 3     | 76.20 | 2-3/4 | 69.85 | 67.56 | 62.73 | 69.85 | 16.76 | 107.18 | 71.62 | 80.26 | -932                                  |

SAE Male Branch Tee  
**GSMBT**

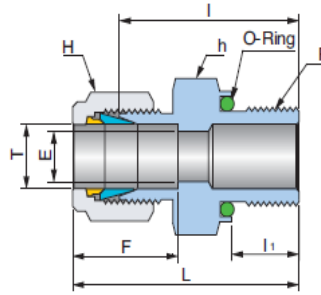
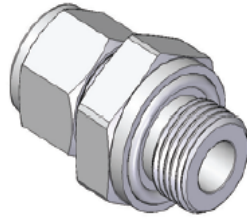


**Connects fractional tube to SAE straight thread boss**

| Part No.     | Tube O.D.<br>D |       | Straight Thread<br>T(u) | E<br>Min. | Width across flat |       |       |       |       |       | A     | B     | ℓ     | ℓ1    | L      | L1    | K     | O-Ring<br>Unifor<br>m<br>Size N<br>o. |
|--------------|----------------|-------|-------------------------|-----------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|---------------------------------------|
|              | in             | mm    |                         |           | h                 | H     | H1    | in    | mm    | in    |       |       |       |       |        |       |       |                                       |
| GSMBT 4-4U   | 1/4            | 6.35  | 7/16-20                 | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 21.08 | 9.90  | 28.44  | 28.44 | 16.51 | -904                                  |
| GSMBT 6-6U   | 3/8            | 9.52  | 9/16-18                 | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 24.63 | 11.17 | 32.00  | 32.25 | 20.06 | -906                                  |
| GSMBT 8-8U   | 1/2            | 12.70 | 3/4-16                  | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 27.43 | 12.70 | 37.59  | 37.84 | 25.65 | -908                                  |
| GSMBT 12-12U | 3/4            | 19.05 | 1-1/16-12               | 15.74     | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 1-1/4 | 31.75 | 24.38 | 21.84 | 31.24 | 16.76 | 41.40  | 48.76 | 36.57 | -912                                  |
| GSMBT 16-16U | 1              | 25.40 | 1-5/16-12               | 22.35     | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 1-1/2 | 38.10 | 31.24 | 26.41 | 38.35 | 16.76 | 50.54  | 53.59 | 43.94 | -916                                  |
| GSMBT 20-20U | 1-1/4          | 31.75 | 1-5/8-12                | 27.68     | 1-11/16           | 42.86 | 1-7/8 | 47.63 | 1-7/8 | 47.63 | 41.14 | 38.86 | 45.72 | 16.76 | 67.81  | 58.16 | 54.86 | -920                                  |
| GSMBT 24-24U | 1-1/2          | 38.10 | 1-7/8-12                | 34.03     | 2                 | 50.80 | 2-1/4 | 57.15 | 2-1/8 | 53.98 | 50.03 | 45.21 | 50.80 | 16.76 | 77.97  | 60.45 | 62.23 | -924                                  |
| GSMBT 32-32U | 2              | 50.80 | 2-1/2-12                | 45.97     | 2-3/4             | 69.85 | 3     | 76.20 | 2-3/4 | 69.85 | 67.56 | 62.73 | 69.85 | 16.76 | 107.18 | 71.62 | 80.26 | -932                                  |

O-Seal Straight Thread Connector

**GOSTC**

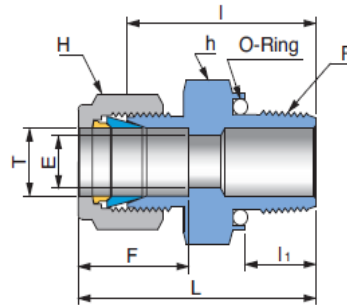
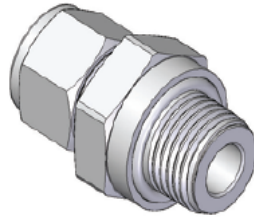


**Connects fractional tube to female straight thread**

| Part No.     | Tube O.D.<br>D |       | Straight Thread<br>T(u) | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L     | O-Ring<br>Unifor<br>m<br>Size N<br>o. |
|--------------|----------------|-------|-------------------------|-----------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------------------------|
|              | in             | mm    |                         |           | h                 |       | H     |       |       |       |       |       |       |                                       |
|              |                |       |                         |           | in                | mm    | in    | mm    |       |       |       |       |       |                                       |
| GOSTC 2-2U   | 1/8            | 3.17  | 5/16-20                 | 2.28      | 9/16              | 14.28 | 7/16  | 11.11 | 12.70 | 15.24 | 26.16 | 8.63  | 32.76 | -011                                  |
| GOSTC 3-3U   | 3/16           | 4.76  | 3/8-24                  | 3.04      | 5/8               | 15.87 | 1/2   | 12.70 | 13.71 | 16.00 | 27.68 | 9.65  | 34.29 | -012                                  |
| GOSTC 4-4U   | 1/4            | 6.35  | 7/16-20                 | 4.82      | 3/4               | 19.05 | 9/16  | 14.28 | 15.24 | 17.78 | 30.98 | 10.41 | 38.35 | -111                                  |
| GOSTC 5-5U   | 5/16           | 7.93  | 1/2-20                  | 6.35      | 7/8               | 22.22 | 5/8   | 15.87 | 16.25 | 18.54 | 33.27 | 11.17 | 40.64 | -112                                  |
| GOSTC 6-6U   | 3/8            | 9.52  | 9/16-18                 | 7.11      | 15/16             | 23.81 | 11/16 | 17.46 | 16.76 | 19.30 | 35.05 | 11.93 | 42.41 | -113                                  |
| GOSTC 8-8U   | 1/2            | 12.70 | 3/4-16                  | 10.41     | 1-1/8             | 28.57 | 7/8   | 22.22 | 22.86 | 21.84 | 35.81 | 11.93 | 45.97 | -116                                  |
| GOSTC 12-12U | 3/4            | 19.05 | 1-1/16-12               | 15.74     | 1-1/2             | 38.10 | 1-1/8 | 28.58 | 24.38 | 21.84 | 42.16 | 14.22 | 52.32 | -215                                  |
| GOSTC 16-16U | 1              | 25.40 | 1-5/16-12               | 22.35     | 1-3/4             | 44.45 | 1-1/2 | 38.10 | 31.24 | 26.41 | 45.97 | 14.22 | 58.16 | -219                                  |

O-Seal Pipe Thread Connector

**GOPTC**



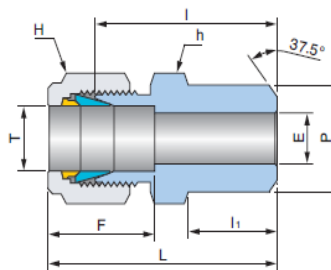
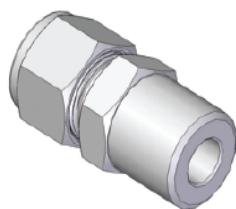
**Connects fractional tube to female NPT thread**

| Part No.   | Tube O.D.<br>D |       | T<br>*(NPT) | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L     | O-Ring<br>Unifor<br>m<br>Size N<br>o. |
|------------|----------------|-------|-------------|-----------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------------------------|
|            | in             | mm    |             |           | h                 |       | H     |       |       |       |       |       |       |                                       |
|            |                |       |             |           | in                | mm    | in    | mm    |       |       |       |       |       |                                       |
| GOPTC 2-2N | 1/8            | 3.17  | 1/8         | 2.28      | 3/4               | 19.05 | 7/16  | 11.11 | 12.70 | 15.24 | 26.16 | 7.11  | 32.76 | -111                                  |
| GOPTC 4-2N | 1/4            | 6.35  | 1/8         | 4.82      | 3/4               | 19.05 | 9/16  | 14.28 | 15.24 | 17.78 | 27.68 | 7.11  | 35.05 | -111                                  |
| GOPTC 4-4N | 1/4            | 6.35  | 1/4         | 4.82      | 15/16             | 23.81 | 9/16  | 14.28 | 15.24 | 17.78 | 30.98 | 9.65  | 38.35 | -113                                  |
| GOPTC 6-4N | 3/8            | 9.52  | 1/4         | 7.11      | 15/16             | 23.81 | 11/16 | 17.46 | 16.76 | 19.30 | 32.51 | 9.65  | 39.87 | -113                                  |
| GOPTC 6-6N | 3/8            | 9.52  | 3/8         | 7.11      | 1-1/8             | 28.58 | 11/16 | 17.46 | 16.76 | 19.30 | 34.03 | 10.41 | 41.40 | -116                                  |
| GOPTC 6-8N | 3/8            | 9.52  | 1/2         | 7.11      | 1-5/16            | 33.33 | 11/16 | 17.46 | 16.76 | 19.30 | 39.62 | 13.46 | 46.99 | -212                                  |
| GOPTC 8-8N | 1/2            | 12.70 | 1/2         | 10.41     | 1-5/16            | 33.33 | 7/8   | 22.22 | 22.86 | 21.84 | 39.62 | 13.46 | 49.78 | -212                                  |

\* ISO Paralled Threads are available upon request.

Male Pipe  
Weld Connector

**GMPWC**

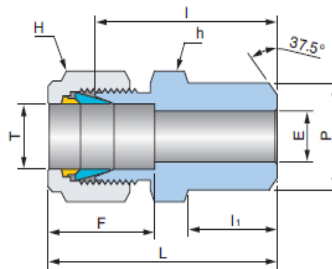
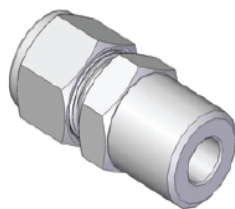


**Connects fractional tube to pipe**

| Part No.     | Tube O.D.<br>D |       | Male Pipe Size<br>P |       | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L      |
|--------------|----------------|-------|---------------------|-------|-----------|-------------------|-------|-------|-------|-------|-------|-------|-------|--------|
|              | in             | mm    | Nom.                | O.D.  |           | h                 |       | H     |       |       |       |       |       |        |
|              |                |       |                     |       |           | in                | mm    | in    | mm    |       |       |       |       |        |
| GMPWC 2-2P   | 1/8            | 3.17  | 1/8                 | 10.29 | 2.28      | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 23.87 | 9.65  | 31.24  |
| GMPWC 3-2P   | 3/16           | 4.76  | 1/8                 | 10.29 | 3.04      | 7/16              | 11.11 | 1/2   | 12.70 | 13.71 | 16.00 | 24.63 | 9.65  | 31.24  |
| GMPWC 4-2P   | 1/4            | 6.35  | 1/8                 | 10.29 | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 25.40 | 9.65  | 32.76  |
| GMPWC 4-4P   | 1/4            | 6.35  | 1/4                 | 13.72 | 4.82      | 9/16              | 14.28 | 9/16  | 14.28 | 15.24 | 17.78 | 30.48 | 14.22 | 37.84  |
| GMPWC 5-2P   | 5/16           | 7.93  | 1/8                 | 10.29 | 5.08      | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 26.67 | 9.65  | 34.03  |
| GMPWC 5-4P   | 5/16           | 7.93  | 1/4                 | 13.72 | 6.35      | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 31.24 | 14.22 | 38.60  |
| GMPWC 6-4P   | 3/8            | 9.52  | 1/4                 | 13.72 | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 32.51 | 14.22 | 39.87  |
| GMPWC 6-6P   | 3/8            | 9.52  | 3/8                 | 17.15 | 7.11      | 11/16             | 17.46 | 11/16 | 17.46 | 16.76 | 19.30 | 32.51 | 14.22 | 39.87  |
| GMPWC 6-8P   | 3/8            | 9.52  | 1/2                 | 21.34 | 7.11      | 7/8               | 22.22 | 11/16 | 17.46 | 16.76 | 19.30 | 38.86 | 11.05 | 43.23  |
| GMPWC 8-6P   | 1/2            | 12.70 | 3/8                 | 17.15 | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 33.27 | 14.22 | 43.43  |
| GMPWC 8-8P   | 1/2            | 12.70 | 1/2                 | 21.34 | 10.41     | 7/8               | 22.22 | 7/8   | 22.22 | 22.86 | 21.84 | 38.86 | 19.05 | 49.02  |
| GMPWC 8-12P  | 1/2            | 12.70 | 3/4                 | 26.67 | 10.41     | 1-1/16            | 26.98 | 7/8   | 22.22 | 22.86 | 21.84 | 40.38 | 19.05 | 50.54  |
| GMPWC 10-8P  | 5/8            | 15.87 | 1/2                 | 21.34 | 12.70     | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 38.86 | 19.05 | 49.02  |
| GMPWC 12-12P | 3/4            | 19.05 | 3/4                 | 26.67 | 15.74     | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 40.38 | 19.05 | 50.54  |
| GMPWC 16-16P | 1              | 25.40 | 1                   | 33.40 | 22.35     | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 50.03 | 23.87 | 62.23  |
| GMPWC 20-20P | 1-1/4          | 31.75 | 1-1/4               | 42.16 | 27.68     | 1-3/4             | 44.45 | 2     | 50.80 | 41.14 | 38.86 | 55.11 | 23.87 | 77.21  |
| GMPWC 24-24P | 1-1/2          | 38.10 | 1-1/2               | 48.26 | 34.03     | 2-1/8             | 53.98 | 2-1/4 | 57.15 | 50.03 | 45.21 | 61.72 | 26.16 | 88.90  |
| GMPWC 32-32P | 2              | 50.80 | 2                   | 60.33 | 47.75     | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 76.20 | 26.92 | 113.53 |

Male Pipe  
Weld Connector

**GMPWC**

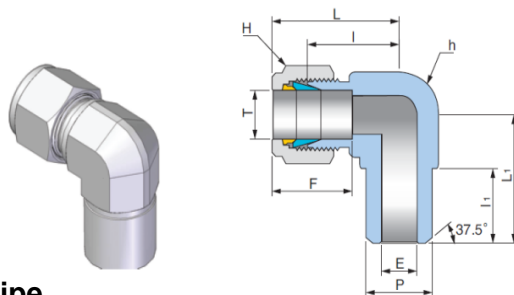


### Connects metric tube to pipe

| Part No.      | Tube<br>O.D.<br>D | Male Pipe Size<br>P |       | E<br>Min. | With across flat |    |      |      |      |      |      |
|---------------|-------------------|---------------------|-------|-----------|------------------|----|------|------|------|------|------|
|               |                   | Nom.                | O.D.  |           | h                | H  | A    | B    | ℓ    | ℓ1   | L    |
|               |                   |                     |       |           |                  |    |      |      |      |      |      |
| GMPWC 3M-2P   | 3                 | 1/8                 | 10.29 | 2.4       | 12               | 12 | 12.9 | 15.3 | 23.1 | 9.7  | 29.7 |
| GMPWC 4M-2P   | 4                 | 1/8                 | 10.29 | 2.4       | 12               | 12 | 13.7 | 16.1 | 24.1 | 9.7  | 30.7 |
| GMPWC 6M-2P   | 6                 | 1/8                 | 10.29 | 4.8       | 14               | 14 | 15.3 | 17.7 | 25.4 | 9.7  | 32.8 |
| GMPWC 6M-4P   | 6                 | 1/4                 | 13.72 | 4.8       | 14               | 14 | 15.3 | 17.7 | 30.2 | 14.2 | 37.6 |
| GMPWC 8M-2P   | 8                 | 1/8                 | 10.29 | 5.1       | 15               | 16 | 16.2 | 18.6 | 26.7 | 9.7  | 34.2 |
| GMPWC 8M-4P   | 8                 | 1/4                 | 13.72 | 6.4       | 15               | 16 | 16.2 | 18.6 | 31.2 | 14.2 | 38.7 |
| GMPWC 8M-8P   | 8                 | 1/2                 | 21.34 | 6.4       | 22               | 16 | 16.2 | 18.6 | 37.3 | 19.0 | 44.8 |
| GMPWC 10M-4P  | 10                | 1/4                 | 13.72 | 7.1       | 18               | 19 | 17.2 | 19.5 | 33.3 | 14.2 | 40.9 |
| GMPWC 10M-6P  | 10                | 3/8                 | 17.15 | 7.9       | 18               | 19 | 17.2 | 19.5 | 32.5 | 14.2 | 40.1 |
| GMPWC 10M-8P  | 10                | 1/2                 | 21.34 | 7.9       | 22               | 19 | 17.2 | 19.5 | 38.1 | 19.0 | 45.7 |
| GMPWC 12M-4P  | 12                | 1/4                 | 13.72 | 7.1       | 22               | 22 | 22.8 | 22.0 | 33.3 | 14.2 | 43.4 |
| GMPWC 12M-6P  | 12                | 3/8                 | 17.15 | 9.5       | 22               | 22 | 22.8 | 22.0 | 33.3 | 14.2 | 43.4 |
| GMPWC 12M-8P  | 12                | 1/2                 | 21.34 | 9.5       | 22               | 22 | 22.8 | 22.0 | 38.1 | 19.0 | 48.2 |
| GMPWC 14M-6P  | 14                | 3/8                 | 17.15 | 10.3      | 24               | 25 | 24.4 | 22.0 | 34.0 | 14.2 | 44.1 |
| GMPWC 15M-8P  | 15                | 1/2                 | 21.34 | 11.9      | 24               | 25 | 24.4 | 22.0 | 38.9 | 19.0 | 49.0 |
| GMPWC 16M-8P  | 16                | 1/2                 | 21.34 | 12.7      | 24               | 25 | 24.4 | 22.0 | 38.9 | 19.0 | 49.0 |
| GMPWC 18M-8P  | 18                | 1/2                 | 21.34 | 13.5      | 27               | 30 | 24.4 | 22.0 | 40.4 | 19.0 | 50.5 |
| GMPWC 32M-20P | 32                | 1-1/4               | 42.16 | 28.6      | 46               | 50 | 42.0 | 41.6 | 56.6 | 23.9 | 79.6 |
| GMPWC 38M-24P | 38                | 1-1/2               | 48.26 | 33.7      | 55               | 60 | 49.4 | 47.9 | 64.0 | 26.2 | 91.6 |

Male Pipe  
Weld Elbow

# GMPWL

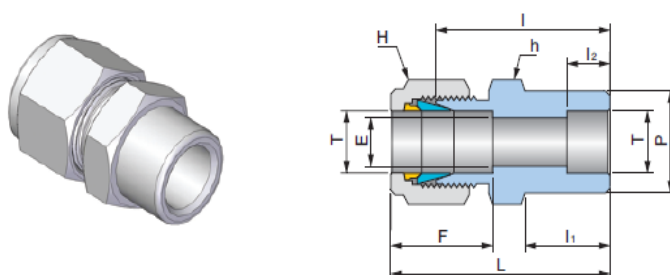


Connects fractional tube to pipe

| Part No.    | Tube O.D. |       | Male Pipe Size |       | E<br>Min. | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L     | L1    |
|-------------|-----------|-------|----------------|-------|-----------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | D         |       | P              |       |           | h                 |       | H     |       |       |       |       |       |       |       |
|             | in        | mm    | Nom.           | O.D.  |           | in                | mm    | in    | mm    |       |       |       |       |       |       |
| GMPWL 2-2P  | 1/8       | 3.17  | 1/8            | 10.29 | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 9.65  | 26.92 | 18.79 |
| GMPWL 4-4P  | 1/4       | 6.35  | 1/4            | 13.72 | 4.82      | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 14.22 | 26.92 | 23.36 |
| GMPWL 6-4P  | 3/8       | 9.52  | 1/4            | 13.72 | 7.11      | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 14.22 | 30.48 | 25.40 |
| GMPWL 8-8P  | 1/2       | 12.70 | 1/2            | 21.34 | 10.41     | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 19.05 | 36.06 | 33.02 |
| GMPWL12-12P | 3/4       | 19.05 | 3/4            | 26.67 | 15.74     | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 19.05 | 39.87 | 36.83 |

Tube Socket  
Weld Connector

# GTSWC

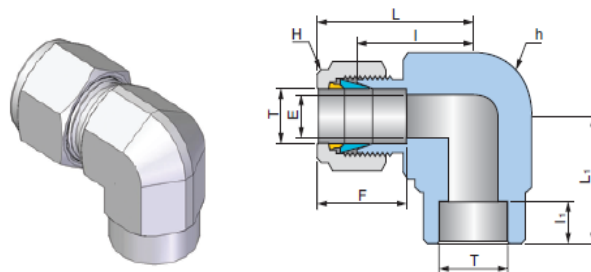


Connects fractional tubes

| Part No.    | Tube O.D. |       | E<br>Min. | D1    | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | ℓ2    | L     |
|-------------|-----------|-------|-----------|-------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | D         |       |           |       | h                 |       | H     |       |       |       |       |       |       |       |
|             | in        | mm    |           |       | in                | mm    | in    | mm    |       |       |       |       |       |       |
| GTSWC 2-2   | 1/8       | 3.17  | 2.28      | 7.87  | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 22.35 | 8.63  | 6.35  | 28.95 |
| GTSWC 4-4   | 1/4       | 6.35  | 4.82      | 11.17 | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 26.16 | 10.41 | 7.87  | 33.52 |
| GTSWC 6-6   | 3/8       | 9.52  | 7.11      | 15.74 | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 30.22 | 11.93 | 9.65  | 37.59 |
| GTSWC 8-8   | 1/2       | 12.70 | 10.41     | 19.05 | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 30.98 | 11.93 | 12.70 | 41.14 |
| GTSWC 12-12 | 3/4       | 19.05 | 15.74     | 26.67 | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 33.27 | 11.93 | 14.22 | 43.43 |
| GTSWC 16-16 | 1         | 25.40 | 22.35     | 33.27 | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 40.38 | 14.22 | 19.05 | 52.57 |

Tube Socket  
Weld Elbow

# GTSWL

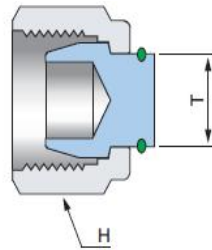


Connects fractional tubes

| Part No.    | Tube O.D. |       | E<br>Min. | D1    | Width across flat |       |       |       | A     | B     | ℓ     | ℓ1    | L     | L1    |
|-------------|-----------|-------|-----------|-------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | D         |       |           |       | h                 |       | H     |       |       |       |       |       |       |       |
|             | in        | mm    |           |       | in                | mm    | in    | mm    |       |       |       |       |       |       |
| GTSWL 4-4   | 1/4       | 6.35  | 4.82      | 12.70 | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 19.55 | 7.87  | 26.92 | 19.55 |
| GTSWL 6-6   | 3/8       | 9.52  | 7.11      | 15.74 | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 23.11 | 9.65  | 30.48 | 23.11 |
| GTSWL 8-8   | 1/2       | 12.70 | 10.41     | 20.57 | 13/16             | 20.64 | 7/8   | 22.22 | 22.86 | 21.84 | 25.90 | 12.70 | 36.06 | 25.90 |
| GTSWL 12-12 | 3/4       | 19.05 | 15.74     | 26.92 | 1-1/16            | 26.98 | 1-1/8 | 28.58 | 24.38 | 21.84 | 29.71 | 14.22 | 39.87 | 29.71 |
| GTSWL 16-16 | 1         | 25.40 | 22.35     | 35.05 | 1-3/8             | 34.93 | 1-1/2 | 38.10 | 31.24 | 26.41 | 36.83 | 19.05 | 49.02 | 36.83 |



Plug  
**GP**



**fractional**

| Part No. | Tube O.D. |       | Width across flat |       |
|----------|-----------|-------|-------------------|-------|
|          | D         |       | H                 |       |
|          | in        | mm    | in                | mm    |
| GP-1     | 1/16      | 1.59  | 5/16              | 7.93  |
| GP-2     | 1/8       | 3.17  | 7/16              | 11.11 |
| GP-3     | 3/16      | 4.76  | 1/2               | 12.70 |
| GP-4     | 1/4       | 6.35  | 9/16              | 14.28 |
| GP-5     | 5/16      | 7.93  | 5/8               | 15.87 |
| GP-6     | 3/8       | 9.52  | 11/16             | 17.46 |
| GP-8     | 1/2       | 12.70 | 7/8               | 22.22 |
| GP-10    | 5/8       | 15.87 | 1                 | 25.40 |
| GP-12    | 3/4       | 19.05 | 1-1/8             | 28.58 |
| GP-14    | 7/8       | 22.22 | 1-1/4             | 31.75 |
| GP-16    | 1         | 25.40 | 1-1/2             | 38.10 |
| GP-20    | 1-1/4     | 31.75 | 1-7/8             | 47.63 |
| GP-24    | 1-1/2     | 38.10 | 2-1/4             | 57.15 |
| GP-32    | 2         | 50.80 | 3                 | 76.20 |

**metric**

| Part No. | Tube O.D. |      | Width across flat |    | Part No | Tube O.D. |    | Width across flat |    |
|----------|-----------|------|-------------------|----|---------|-----------|----|-------------------|----|
|          | D         |      | H                 |    |         | D         |    | H                 |    |
|          | mm        | mm   | mm                | mm |         | mm        | mm | mm                | mm |
| GP-2M    | 2         | 12.0 | SP-16M            | 16 | 25      |           |    |                   |    |
| GP-3M    | 3         | 12.0 | SP-18M            | 18 | 30      |           |    |                   |    |
| GP-4M    | 4         | 12.0 | SP-20M            | 20 | 32      |           |    |                   |    |
| GP-6M    | 6         | 14.0 | SP-22M            | 22 | 32      |           |    |                   |    |
| GP-8M    | 8         | 16.0 | SP-25M            | 25 | 38      |           |    |                   |    |
| GP-10M   | 10        | 19.0 | SP-28M            | 28 | 46      |           |    |                   |    |
| GP-12M   | 12        | 22.0 | SP-32M            | 32 | 50      |           |    |                   |    |
| GP-15M   | 15        | 25.0 | SP-38M            | 38 | 60      |           |    |                   |    |



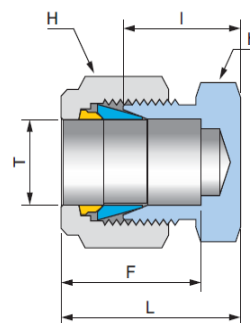
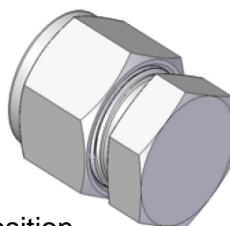
**Installation Instructions**

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

**Note**

Do not tighten 1-1/4 turns as this has machined ferrule not the standard ferrules. Tighten 1/8 turn for 1/16, 1/8, and 3/16inch and 2, 3, and 4 mm size plug, 1/2 turn turn over 1 and 25mm size plug.

Cap  
**GC**



1. Inert the tube end into the Cap
2. With a wrench, 1-1/4 turns from the finger-tight position, (3/4 turn for 1/8", 3/16" 3mm and 4mm)

**Cap end of fractional tube**

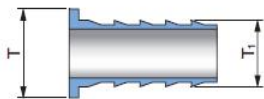
| Part No. | Tube O.D. |       | Width across flat |       |       |       | A     | B     | ℓ     | L     |
|----------|-----------|-------|-------------------|-------|-------|-------|-------|-------|-------|-------|
|          | D         |       | h                 |       | H     |       |       |       |       |       |
|          | in        | mm    | in                | mm    | in    | mm    |       |       |       |       |
| GC-1     | 1/16      | 1.59  | 5/16              | 7.93  | 5/16  | 7.93  | 8.63  | 10.92 | 11.20 | 14.18 |
| GC-2     | 1/8       | 3.17  | 7/16              | 11.11 | 7/16  | 11.11 | 12.70 | 15.24 | 13.46 | 20.06 |
| GC-3     | 3/16      | 4.76  | 7/16              | 11.11 | 1/2   | 12.70 | 13.71 | 16.00 | 14.73 | 21.33 |
| GC-4     | 1/4       | 6.35  | 1/2               | 12.70 | 9/16  | 14.28 | 15.24 | 17.78 | 16.00 | 23.26 |
| GC-5     | 5/16      | 7.93  | 9/16              | 14.28 | 5/8   | 15.87 | 16.25 | 18.54 | 17.01 | 24.38 |
| GC-6     | 3/8       | 9.52  | 5/8               | 15.87 | 11/16 | 17.46 | 16.76 | 19.30 | 18.28 | 25.65 |
| GC-8     | 1/2       | 12.70 | 13/16             | 20.63 | 7/8   | 22.22 | 22.86 | 21.84 | 19.05 | 29.21 |
| GC-10    | 5/8       | 15.87 | 15/16             | 23.81 | 1     | 25.40 | 24.38 | 21.84 | 19.81 | 29.97 |
| GC-12    | 3/4       | 19.05 | 1-1/16            | 26.98 | 1-1/8 | 28.57 | 24.38 | 21.84 | 21.33 | 31.49 |
| GC-14    | 7/8       | 22.22 | 1-3/16            | 30.16 | 1-1/4 | 31.75 | 25.90 | 21.84 | 23.87 | 34.03 |
| GC-16    | 1         | 25.40 | 1-3/8             | 34.92 | 1-1/2 | 38.10 | 31.24 | 26.41 | 26.16 | 38.35 |
| GC-20    | 1-1/4     | 31.75 | 1-3/4             | 44.45 | 1-7/8 | 47.63 | 41.14 | 38.86 | 31.24 | 53.34 |
| GC-24    | 1-1/2     | 38.10 | 2-1/8             | 53.98 | 2-1/4 | 57.15 | 50.15 | 45.21 | 37.33 | 64.51 |
| GC-32    | 2         | 50.80 | 2-3/4             | 69.85 | 3     | 76.20 | 67.56 | 62.73 | 49.27 | 86.61 |

**Cap end of metric tube**

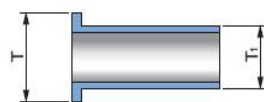
| Part No. | Tube O.D. | Width across flat |    | A    | B    | ℓ    | L    |
|----------|-----------|-------------------|----|------|------|------|------|
|          | D         | h                 | H  |      |      |      |      |
| GC-2M    | 2         | 12                | 12 | 12.9 | 15.3 | 13.5 | 20.1 |
| GC-3M    | 3         | 12                | 12 | 12.9 | 15.3 | 13.5 | 20.1 |
| GC-4M    | 4         | 12                | 12 | 13.7 | 16.1 | 14.7 | 21.3 |
| GC-6M    | 6         | 14                | 14 | 15.3 | 17.7 | 15.7 | 23.1 |
| GC-8M    | 8         | 15                | 16 | 16.2 | 18.6 | 17.0 | 24.5 |
| GC-10M   | 10        | 18                | 19 | 17.2 | 19.5 | 19.0 | 26.6 |
| GC-12M   | 12        | 22                | 22 | 22.8 | 22.0 | 19.0 | 29.1 |
| GC-15M   | 15        | 24                | 25 | 24.4 | 22.0 | 19.8 | 29.9 |
| GC-16M   | 16        | 24                | 25 | 24.4 | 22.0 | 19.8 | 29.9 |
| GC-18M   | 18        | 27                | 30 | 24.4 | 22.0 | 21.3 | 31.4 |
| GC-20M   | 20        | 30                | 32 | 26.0 | 22.0 | 23.9 | 34.0 |
| GC-22M   | 22        | 30                | 32 | 26.0 | 22.0 | 23.9 | 34.0 |
| GC-25M   | 25        | 35                | 38 | 31.3 | 26.5 | 26.2 | 38.5 |
| GC-28M   | 28        | 41                | 46 | 36.6 | 36.6 | 27.7 | 48.5 |
| GC-32M   | 32        | 46                | 50 | 42.0 | 41.6 | 32.8 | 55.8 |
| GC-38M   | 38        | 55                | 60 | 49.4 | 47.9 | 37.8 | 65.4 |

Tube Insert

**GI**



Barbed Type



Plain Type

**fractional**

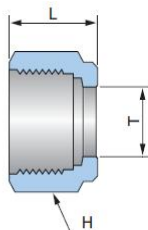
| Part No. | Tube OD<br>T |       | Tube ID<br>T1 |       |
|----------|--------------|-------|---------------|-------|
|          | inch         | mm    | inch          | mm    |
| GI-0302  | 3/16         | 4.76  | 1/8           | 3.17  |
| GI-0402  | 1/4          | 6.35  | 1/8           | 3.17  |
| GI-0403  | 1/4          | 6.35  | 3/16          | 4.76  |
| GI-0502  | 5/16         | 7.93  | 1/8           | 3.17  |
| GI-0503  | 5/16         | 7.93  | 3/16          | 4.76  |
| GI-0504  | 5/16         | 7.93  | 1/4           | 6.35  |
| GI-0603  | 3/8          | 9.52  | 3/16          | 4.76  |
| GI-0604  | 3/8          | 9.52  | 1/4           | 6.35  |
| GI-0804  | 1/2          | 12.70 | 1/4           | 6.35  |
| GI-0806  | 1/2          | 12.70 | 3/8           | 9.52  |
| GI-1006  | 5/8          | 15.87 | 3/8           | 9.52  |
| GI-1008  | 5/8          | 15.87 | 1/2           | 12.7  |
| GI-1208  | 3/4          | 19.05 | 1/2           | 12.7  |
| GI-1210  | 3/4          | 19.05 | 5/8           | 15.87 |
| GI-1612  | 1            | 25.40 | 3/4           | 19.05 |

**metric**

| Part No.  | Tube OD<br>T | Tube ID<br>T1 |
|-----------|--------------|---------------|
|           | mm           | mm            |
| GI-M06M04 | 6            | 4             |
| GI-M08M06 | 8            | 6             |
| GI-M10M08 | 10           | 8             |
| GI-M12M08 | 12           | 8             |
| GI-M12M10 | 12           | 10            |

Nut

**GN**



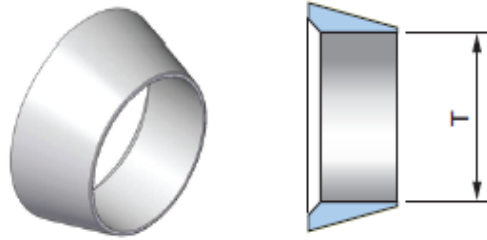
**fractional**

| Part No. | Tube OD<br>T |       | Tube ID |       | L    |
|----------|--------------|-------|---------|-------|------|
|          | inch         | mm    | inch    | mm    |      |
| GN-02    | 1/8          | 3.17  | 7/16    | 11.11 | 11.9 |
| GN-03    | 3/16         | 4.76  | 1/2     | 12.7  | 11.9 |
| GN-04    | 1/4          | 6.35  | 9/16    | 14.28 | 12.7 |
| GN-05    | 5/16         | 7.93  | 5/8     | 15.87 | 13.5 |
| GN-06    | 3/8          | 9.52  | 11/16   | 17.46 | 14.2 |
| GN-08    | 1/2          | 12.70 | 7/8     | 22.22 | 17.5 |
| GN-10    | 5/8          | 15.87 | 1       | 25.4  | 17.5 |
| GN-12    | 3/4          | 19.05 | 1-1/8   | 28.57 | 17.5 |
| GN-14    | 7/8          | 22.22 | 1-1/4   | 31.75 | 17.5 |
| GN-16    | 1            | 25.40 | 1-1/2   | 38.1  | 20.6 |
| GN-20    | 1-1/4        | 31.75 | 1-7/8   | 47.63 | 31.7 |
| GN-24    | 1-1/2        | 38.10 | 2-1/4   | 57.15 | 38.1 |
| GN-32    | 2            | 50.80 | 3       | 76.2  | 52.3 |

**metric**

| Part No. | Tube O |       | L     |
|----------|--------|-------|-------|
|          | D<br>T | H     |       |
|          | mm     | mm    | mm    |
| GN-M03   | 3      | 11.11 | 11.90 |
| GN-M04   | 4      | 12.70 | 11.90 |
| GN-M06   | 6      | 14.28 | 12.70 |
| GN-M08   | 8      | 15.87 | 13.50 |
| GN-M10   | 10     | 19.05 | 15.10 |
| GN-M12   | 12     | 22.22 | 17.50 |
| GN-M15   | 15     | 25.40 | 17.50 |
| GN-M16   | 16     | 25.40 | 17.50 |
| GN-M18   | 18     | 30.16 | 17.50 |
| GN-M20   | 20     | 31.75 | 17.50 |
| GN-M22   | 22     | 31.75 | 17.50 |
| GN-M25   | 25     | 38.10 | 20.60 |
| GN-M28   | 28     | 47.63 | 30.60 |
| GN-M30   | 30     | 50.80 | 32.70 |
| GN-M32   | 32     | 50.80 | 34.40 |
| GN-M38   | 38     | 57.15 | 40.60 |

Front Ferrule  
**GFF**



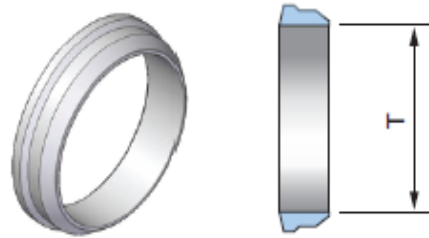
**fractional**

| Part No. | Tube OD<br>T |       |
|----------|--------------|-------|
|          | inch         | mm    |
| GFF-02   | 1/8          | 3.17  |
| GFF-03   | 3/16         | 4.76  |
| GFF-04   | 1/4          | 6.35  |
| GFF-05   | 5/16         | 7.93  |
| GFF-06   | 3/8          | 9.52  |
| GFF-08   | 1/2          | 12.70 |
| GFF-10   | 5/8          | 15.87 |
| GFF-12   | 3/4          | 19.05 |
| GFF-14   | 7/8          | 22.22 |
| GFF-16   | 1            | 25.40 |
| GFF-20   | 1-1/4        | 31.75 |
| GFF-24   | 1-1/2        | 38.10 |
| GFF-32   | 2            | 50.80 |

**metric**

| Part No. | Tube OD<br>T |
|----------|--------------|
|          | mm           |
| GFF-M03  | 3            |
| GFF-M04  | 4            |
| GFF-M06  | 6            |
| GFF-M08  | 8            |
| GFF-M10  | 10           |
| GFF-M12  | 12           |
| GFF-M15  | 15           |
| GFF-M16  | 16           |
| GFF-M18  | 18           |
| GFF-M20  | 20           |
| GFF-M22  | 22           |
| GFF-M25  | 25           |
| GFF-M28  | 28           |
| GFF-M30  | 30           |
| GFF-M32  | 32           |
| GFF-M38  | 38           |

Back Ferrule  
**GBF**



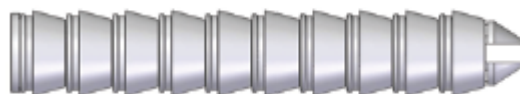
**fractional**

| Part No. | Tube OD<br>T |       |
|----------|--------------|-------|
|          | inch         | mm    |
| GBF-02   | 1/8          | 3.17  |
| GBF-03   | 3/16         | 4.76  |
| GBF-04   | 1/4          | 6.35  |
| GBF-05   | 5/16         | 7.93  |
| GBF-06   | 3/8          | 9.52  |
| GBF-08   | 1/2          | 12.70 |
| GBF-10   | 5/8          | 15.87 |
| GBF-12   | 3/4          | 19.05 |
| GBF-14   | 7/8          | 22.22 |
| GBF-16   | 1            | 25.40 |
| GBF-20   | 1-1/4        | 31.75 |
| GBF-24   | 1-1/2        | 38.10 |
| GBF-32   | 2            | 50.80 |

**metric**

| Part No. | Tube OD<br>T |
|----------|--------------|
|          | mm           |
| GBF-M03  | 3            |
| GBF-M04  | 4            |
| GBF-M06  | 6            |
| GBF-M08  | 8            |
| GBF-M10  | 10           |
| GBF-M12  | 12           |
| GBF-M15  | 15           |
| GBF-M16  | 16           |
| GBF-M18  | 18           |
| GBF-M20  | 20           |
| GBF-M22  | 22           |
| GBF-M25  | 25           |
| GBF-M28  | 28           |
| GBF-M30  | 30           |
| GBF-M32  | 32           |
| GBF-M38  | 38           |

## Ferrule Set

**GFS**

Ferrules can be ordered as a set with an arbor.  
 Each arbor holds 10 ferrule sets.

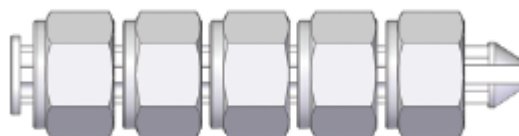
**fractional**

| Part No. | Tube OD<br>T |       |
|----------|--------------|-------|
|          | inch         | mm    |
| GFS-02   | 1/8          | 3.17  |
| GFS-04   | 1/4          | 6.35  |
| GFS-06   | 3/8          | 9.52  |
| GFS-08   | 1/2          | 12.70 |

**metric**

| Part No. | Tube OD<br>T |
|----------|--------------|
|          | mm           |
| GFS-M04  | 4            |
| GFS-M06  | 6            |
| GFS-M08  | 8            |
| GFS-M10  | 10           |
| GFS-M12  | 12           |

## Ferrule &amp; Nut Set

**GFNS**

Ferrules and nut can be ordered as a set with an arbor.  
 Each arbor holds 5 ferrule and nut sets.

**fractional**

| Part No. | Tube OD<br>T |       |
|----------|--------------|-------|
|          | inch         | mm    |
| GFNS-02  | 1/8          | 3.17  |
| GFNS-04  | 1/4          | 6.35  |
| GFNS-06  | 3/8          | 9.52  |
| GFNS-08  | 1/2          | 12.70 |

**metric**

| Part No. | Tube OD<br>T |
|----------|--------------|
|          | mm           |
| GFNS-M04 | 4            |
| GFNS-M06 | 6            |
| GFNS-M08 | 8            |
| GFNS-M10 | 10           |
| GFNS-M12 | 12           |



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