

Technical brochure

# Product Thermostatic expansion valve Type TGE

Hydrocarbons



TGE is a dedicated designed series of thermostatic expansion valve for all standard refrigerants including R410A, HC and R32 refrigerants. The materials used for the new refrigerants were chosen to ensure compatibility with HC + oil.

#### Applications

- Air conditioning systems
- Heat pumps
- Water chillers
- Refrigerated containers
- Traditional refrigeration systems - and others

#### Features

- Hermetic TXV for R290
- Version with MOP (Max. Operating Pressure)
- Straightway flow
- Balance port (BP)
- Low hysteresis
- Opening superheat (OSH) max. 4°K
- Max. working pressure 46 bar / 667 psi
- Long lifetime for heat pump application
- Cylindrical bulb design, with Danfoss patented bulb strap
- Biflow with expansion in both directions
- Adjustable superheat setting
- Laser welded, stainless steel power element / capillary tube
- Mechanical connections (flare, MIO, ORFS) available

**Technical data**

Maximum operating temperature  
- Thermostatic element

N charge: 100°C / 210°F

K charge: 150°C / 302°F

Valve body: 110°C / 230°F

Max. working pressure: 46 bar / 667 psig

Max. test pressure: 51 bar / 740 psig

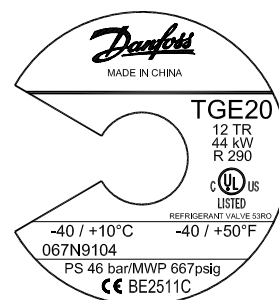
TGE valves are designed with balance port for bi-flow applications

**Identification**

Important valve information is provided on the diaphragm element (fig.1).

Main valve date example:

|                           |   |                                                                      |
|---------------------------|---|----------------------------------------------------------------------|
| TGE20                     | = | Valve type                                                           |
| 12TR                      | = | Rated capacity $Q_{nom}$ in the tons of refrigeration                |
| 44kW                      | = | Rated capacity $Q_{nom}$ in kW                                       |
| R290                      | = | Refrigerant                                                          |
| -40/+10°C                 | = | Evaporating temperature range (°C)                                   |
| -40/+50°F                 | = | Evaporating temperature range (°F)                                   |
| 067N9104                  | = | Code number                                                          |
| PS 46bar/<br>MWP 667 Psig | = | Max. Working Pressure in bar and psig.                               |
| BE2511C                   | = | BE = produced in China,<br>25 = week, 11 = 2011 and<br>C = wednesday |



Danfoss  
67N21.12

**Flammable / Toxic refrigerants**
**R290  
Terms of delivery**

It should be noted that special terms of delivery apply to Danfoss controls for HC and corresponding flammable refrigerants. Please refer to Danfoss literature RZ0ZM (agreement on the application of HC refrigerants). All inquiries for TGE for HC will be dealt with as "inquiries for special versions".

Delivery agreements on components can only be entered into within the EU or EFTA, and the export and re-export of plants or sections of plants containing Danfoss components are also limited to the EU and EFTA.

**Product technology**


The use of Danfoss TGE for R290 and R1270 in refrigeration plants is subject to explosion protection regulations for danger zone 2 (only rare or short term threat).

The Danfoss controls are, therefore, developed for this above-mentioned requirement.

TGE complies with the requirements for explosive atmospheres (94/9/EC) ac. ATEX zone 2.

TGE is marked with a label that indicates fire hazard (B.3.2 / ISO 3864).

TGE complies with the requirements in the Pressure Equipment Directive (PED) (97/23/EC) fluid group I (flammable/toxic media).

TGE is marked with a label that indicates fire hazard (B.3.2 / ISO 3864).

Only Danfoss valves and controls released for use with flammable hydrocarbons must be used with these substances. The actual medium must be stated in the product data sheet and / or on the product.

Only original Danfoss spare parts approved for use with flammable hydrocarbons must be used.

**Technical safety requirements**

The refrigeration system must be located within the EU or EFTA and comply with the existing EU legislation, such as the Pressure Equipment Directive (PED) (97/23/EC), the directive concerning potential explosive atmospheres (ATEX) (94/9/EC), EN 378, and other relevant EU legislation.

The refrigeration system must always comply with any local directive, legislation, and any other regulation applying in the area of installation.

**Installation and maintenance**

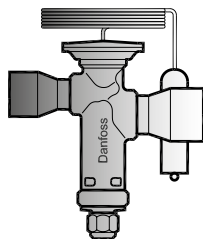
Only authorized persons, who are certified in installing and maintaining refrigeration plants containing flammable hydrocarbons, may do the installation and maintenance.

All requirements from local authorities, regarding use of hydrocarbons in refrigeration systems, must be fulfilled.

The refrigeration system must be designed in such a way that no abnormal impact (e.g. abnormal vibration, liquid hammer, or pressure pulsations) can create risk for damage of the refrigeration system during operation.

Only original Danfoss spare parts approved for use with flammable hydrocarbons may be used. The Danfoss products are classified according to the ATEX directive. Danfoss takes no responsibility for the classification of the refrigeration system.

### Ordering Standard range



Range N = -40 °C to + 10°C

| TGE<br>description | TGE<br>Capacity<br>kW | TGE<br>connection (in.)          | TGE Code No.<br>Multi pack | TGE Code No.<br>Industrial pack |
|--------------------|-----------------------|----------------------------------|----------------------------|---------------------------------|
| TGE10              | 19                    | $\frac{5}{8} \times \frac{7}{8}$ | <b>067N9100</b>            | <b>067N9140</b>                 |
| TGE10              | 25                    | $\frac{5}{8} \times \frac{7}{8}$ | <b>067N9101</b>            | <b>067N9141</b>                 |
| TGE10              | 36                    | $\frac{7}{8} \times \frac{7}{8}$ | <b>067N9102</b>            | <b>067N9142</b>                 |
| TGE10              | 36                    | $\frac{5}{8} \times \frac{7}{8}$ | <b>067N9103</b>            |                                 |
| TGE20              | 43                    | $\frac{5}{8} \times \frac{7}{8}$ | <b>067N9104</b>            | <b>067N9144</b>                 |
| TGE20              | 54                    | $\frac{7}{8} \times \frac{7}{8}$ |                            | <b>067N9145</b>                 |
| TGE20              | 61                    | $\frac{7}{8} \times \frac{7}{8}$ | <b>067N9106</b>            | <b>067N9146</b>                 |
| TGE40              | 94                    | $\frac{7}{8} \times \frac{7}{8}$ |                            | <b>067N9147</b>                 |
| TGE40              | 106                   | $\frac{7}{8} \times \frac{7}{8}$ | <b>067N9108</b>            | <b>067N9148</b>                 |
| TGE40              | 135                   | $\frac{7}{8} \times \frac{7}{8}$ |                            | <b>067N9149</b>                 |

Conditions R290:

Condensations temperature 38 °C

Evap. temperature 4.4 °C

Liquid temperature 37 °C

### Ordering

The valve and bulb straps are supplied in industrial packs or multi packs:

|                              |                         |
|------------------------------|-------------------------|
| Industrial pack, TGE10/12pcs | Multi pack, TGE10/12pcs |
| Industrial pack, TGE20/8pcs  | Multi pack, TGE20/8pcs  |
| Industrial pack, TGE40/8pcs  | Multi pack, TGE40/6pcs  |

**Capacity**
**R290**

Capacity in kW for range N and superheat OS = 4 K

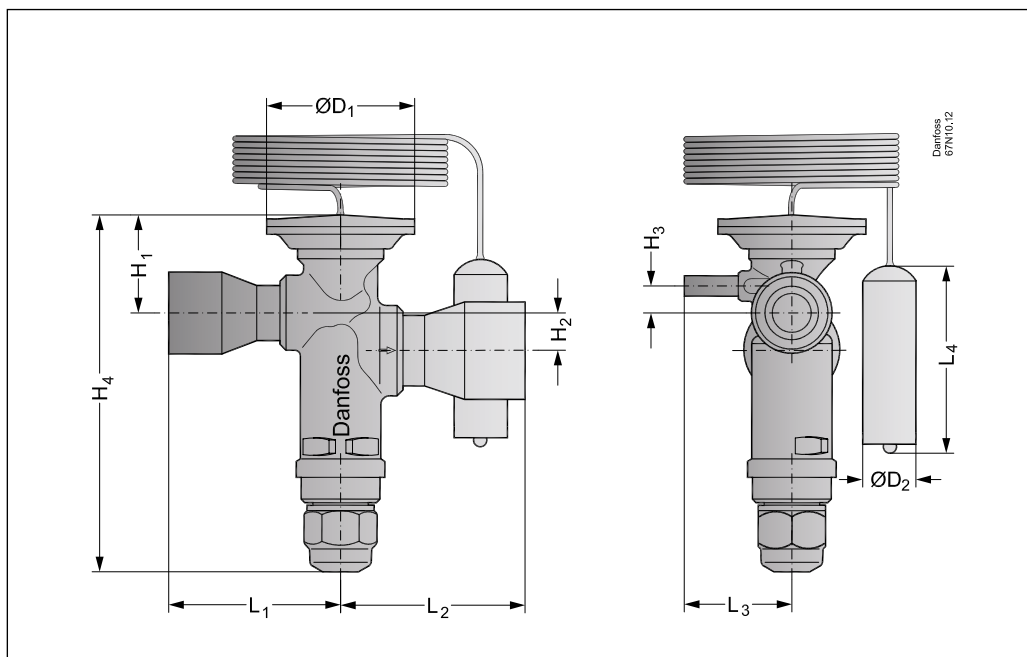
| Type<br>and rated ca-<br>pacity<br>Q <sub>nom</sub> TR | Pressure drop across the valve Δp bar |        |        |        |        |        |        |        | Pressure drop across the valve Δp bar |        |        |        |        |        |        |        |
|--------------------------------------------------------|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|
|                                                        | 2                                     | 4      | 6      | 8      | 10     | 12     | 14     | 16     | 2                                     | 4      | 6      | 8      | 10     | 12     | 14     | 16     |
| <b>Evaporating temperature +15°C</b>                   |                                       |        |        |        |        |        |        |        | <b>Evaporating temperature +10°C</b>  |        |        |        |        |        |        |        |
| TGE 10-3                                               | 7.73                                  | 10.03  | 11.32  | 11.98  | 12.25  | 12.31  | 12.20  | 11.97  | 7.46                                  | 9.66   | 10.86  | 11.40  | 11.65  | 11.68  | 11.57  | 11.34  |
| TGE 10-4                                               | 10.58                                 | 13.70  | 15.41  | 16.26  | 16.59  | 16.62  | 16.43  | 16.07  | 9.41                                  | 12.15  | 13.62  | 14.27  | 14.54  | 14.55  | 14.37  | 14.05  |
| TGE 10-6                                               | 15.66                                 | 20.20  | 22.64  | 23.79  | 24.18  | 24.13  | 23.77  | 23.17  | 14.06                                 | 18.07  | 20.18  | 21.06  | 21.37  | 21.29  | 20.95  | 20.41  |
| TGE 10-8                                               | 20.77                                 | 26.75  | 29.92  | 31.39  | 31.84  | 31.71  | 31.17  | 30.33  | 18.90                                 | 24.24  | 27.01  | 28.12  | 28.46  | 28.30  | 27.79  | 27.00  |
| TGE 10-11                                              | 27.55                                 | 35.95  | 40.74  | 43.31  | 44.50  | 44.89  | 44.68  | 44.02  | 25.71                                 | 33.39  | 37.69  | 39.72  | 40.71  | 40.97  | 40.69  | 40.01  |
| TGE 20-12.5                                            | 35.29                                 | 44.82  | 49.50  | 51.29  | 51.43  | 50.66  | 49.29  | 47.48  | 33.98                                 | 42.97  | 47.27  | 48.59  | 48.61  | 47.80  | 46.44  | 44.68  |
| TGE 20-16                                              | 45.42                                 | 57.41  | 63.23  | 65.24  | 65.15  | 63.93  | 61.97  | 59.49  | 43.72                                 | 55.02  | 60.23  | 61.65  | 61.41  | 60.14  | 58.20  | 55.80  |
| TGE 20-20                                              | 51.81                                 | 66.19  | 73.37  | 76.17  | 76.34  | 75.01  | 72.61  | 69.45  | 50.28                                 | 63.80  | 70.26  | 72.13  | 71.88  | 70.31  | 68.26  | 65.63  |
| TGE 40-26                                              | 80.53                                 | 100.70 | 109.50 | 111.90 | 110.70 | 107.70 | 103.50 | 98.60  | 77.42                                 | 96.27  | 104.20 | 105.60 | 104.10 | 101.10 | 96.95  | 92.20  |
| TGE 40-30                                              | 91.40                                 | 114.20 | 124.10 | 126.70 | 125.30 | 121.80 | 117.00 | 111.40 | 88.04                                 | 109.40 | 118.30 | 119.70 | 118.00 | 114.40 | 109.70 | 104.20 |
| TGE 40-40                                              | 108.70                                | 139.20 | 154.80 | 161.20 | 162.20 | 160.10 | 155.70 | 149.70 | 105.10                                | 133.70 | 147.80 | 152.30 | 152.50 | 149.70 | 144.80 | 138.50 |
| <b>Evaporating temperature +5°C</b>                    |                                       |        |        |        |        |        |        |        | <b>Evaporating temperature 0°C</b>    |        |        |        |        |        |        |        |
| TGE 10-3                                               | 7.17                                  | 9.24   | 10.30  | 10.79  | 11.00  | 11.02  | 10.90  | 10.67  | 6.84                                  | 8.78   | 9.69   | 10.13  | 10.31  | 10.31  | 10.18  | 9.96   |
| TGE 10-4                                               | 9.02                                  | 11.60  | 12.89  | 13.47  | 13.70  | 13.69  | 13.50  | 13.19  | 8.59                                  | 10.99  | 12.11  | 12.62  | 12.81  | 12.77  | 12.58  | 12.27  |
| TGE 10-6                                               | 13.52                                 | 17.30  | 19.15  | 19.92  | 20.17  | 20.07  | 19.72  | 19.18  | 12.91                                 | 16.45  | 18.02  | 18.70  | 18.89  | 18.76  | 18.40  | 17.87  |
| TGE 10-8                                               | 18.27                                 | 23.32  | 25.74  | 26.72  | 26.98  | 26.77  | 26.23  | 25.45  | 17.54                                 | 22.27  | 24.33  | 25.18  | 25.36  | 25.11  | 24.55  | 23.78  |
| TGE 10-11                                              | 25.11                                 | 32.48  | 36.31  | 38.16  | 39.01  | 39.18  | 38.84  | 38.11  | 24.35                                 | 31.33  | 34.68  | 36.33  | 37.04  | 37.10  | 36.70  | 35.93  |
| TGE 20-12.5                                            | 32.45                                 | 40.84  | 44.50  | 45.62  | 45.53  | 44.69  | 43.35  | 41.65  | 30.74                                 | 38.50  | 41.54  | 42.46  | 42.28  | 41.43  | 40.11  | 38.49  |
| TGE 20-16                                              | 41.74                                 | 52.27  | 56.67  | 57.82  | 57.47  | 56.17  | 54.27  | 51.96  | 39.54                                 | 49.26  | 52.87  | 53.78  | 53.32  | 52.02  | 50.17  | 47.96  |
| TGE 20-20                                              | 48.43                                 | 60.99  | 66.30  | 67.72  | 67.53  | 66.21  | 64.14  | 61.56  | 46.24                                 | 57.78  | 62.24  | 63.52  | 63.16  | 61.78  | 59.71  | 57.20  |
| TGE 40-26                                              | 74.01                                 | 91.52  | 98.07  | 98.98  | 97.36  | 94.26  | 90.25  | 85.68  | 70.20                                 | 86.29  | 91.48  | 91.99  | 90.23  | 87.15  | 83.27  | 78.91  |
| TGE 40-30                                              | 84.33                                 | 104.20 | 111.50 | 112.40 | 110.40 | 106.80 | 102.20 | 96.88  | 80.13                                 | 98.37  | 104.10 | 104.60 | 102.40 | 98.82  | 94.31  | 89.27  |
| TGE 40-40                                              | 100.90                                | 127.60 | 139.20 | 142.60 | 141.90 | 138.50 | 133.30 | 126.70 | 96.11                                 | 120.50 | 129.80 | 132.00 | 130.50 | 126.50 | 120.80 | 113.90 |
| <b>Evaporating temperature -5°C</b>                    |                                       |        |        |        |        |        |        |        | <b>Evaporating temperature -10°C</b>  |        |        |        |        |        |        |        |
| TGE 10-3                                               | 6.49                                  | 8.27   | 9.06   | 9.45   | 9.60   | 9.58   | 9.45   | 9.23   | 6.11                                  | 7.70   | 8.40   | 8.74   | 8.86   | 8.83   | 8.70   | 8.48   |
| TGE 10-4                                               | 8.13                                  | 10.35  | 11.30  | 11.75  | 11.90  | 11.85  | 11.65  | 11.35  | 7.65                                  | 9.61   | 10.46  | 10.85  | 10.96  | 10.90  | 10.70  | 10.41  |
| TGE 10-6                                               | 12.26                                 | 15.52  | 16.85  | 17.44  | 17.58  | 17.42  | 17.05  | 16.54  | 11.56                                 | 14.45  | 15.63  | 16.13  | 16.22  | 16.04  | 15.68  | 15.17  |
| TGE 10-8                                               | 16.73                                 | 21.10  | 22.85  | 23.56  | 23.67  | 23.38  | 22.82  | 22.06  | 15.84                                 | 19.73  | 21.27  | 21.87  | 21.91  | 21.59  | 21.03  | 20.28  |
| TGE 10-11                                              | 23.46                                 | 29.98  | 32.87  | 34.32  | 34.88  | 34.85  | 34.38  | 33.58  | 22.42                                 | 28.28  | 30.87  | 32.11  | 32.53  | 32.39  | 31.85  | 31.01  |
| TGE 20-12.5                                            | 28.93                                 | 36.00  | 38.50  | 39.25  | 39.00  | 38.14  | 36.88  | 35.34  | 27.01                                 | 33.21  | 35.38  | 35.97  | 35.68  | 34.83  | 33.63  | 32.18  |
| TGE 20-16                                              | 37.21                                 | 46.05  | 48.98  | 49.68  | 49.14  | 47.85  | 46.07  | 43.98  | 34.74                                 | 42.46  | 44.99  | 45.51  | 44.92  | 43.65  | 41.96  | 39.99  |
| TGE 20-20                                              | 43.89                                 | 54.50  | 58.15  | 59.14  | 58.64  | 57.22  | 55.19  | 52.76  | 41.34                                 | 50.68  | 53.83  | 54.56  | 53.95  | 52.52  | 50.55  | 48.23  |
| TGE 40-26                                              | 66.13                                 | 80.69  | 84.71  | 84.90  | 83.04  | 80.02  | 76.30  | 72.18  | 61.79                                 | 74.40  | 77.76  | 77.67  | 75.77  | 72.84  | 69.32  | 65.45  |
| TGE 40-30                                              | 75.61                                 | 92.11  | 96.54  | 96.61  | 94.36  | 90.79  | 86.46  | 81.68  | 70.76                                 | 85.04  | 88.72  | 88.46  | 86.15  | 82.69  | 78.57  | 74.08  |
| TGE 40-40                                              | 90.83                                 | 112.70 | 119.80 | 120.90 | 118.60 | 114.00 | 107.90 | 100.80 | 85.04                                 | 103.80 | 109.20 | 109.30 | 106.20 | 101.10 | 94.84  | 89.58  |
| <b>Evaporating temperature -15°C</b>                   |                                       |        |        |        |        |        |        |        | <b>Evaporating temperature -20°C</b>  |        |        |        |        |        |        |        |
| TGE 10-3                                               | 5.72                                  | 7.12   | 7.74   | 8.04   | 8.13   | 8.09   | 7.95   | 7.74   | 5.316                                 | 6.537  | 7.088  | 7.34   | 7.411  | 7.361  | 7.224  | 7.021  |
| TGE 10-4                                               | 7.14                                  | 8.87   | 9.62   | 9.95   | 10.04  | 9.96   | 9.76   | 9.48   | 6.641                                 | 8.14   | 8.798  | 9.082  | 9.143  | 9.054  | 8.859  | 8.586  |
| TGE 10-6                                               | 10.82                                 | 13.36  | 14.40  | 14.82  | 14.87  | 14.67  | 14.31  | 13.82  | 10.08                                 | 12.28  | 13.2   | 13.54  | 13.55  | 13.35  | 12.99  | 12.52  |
| TGE 10-8                                               | 14.89                                 | 18.31  | 19.66  | 20.15  | 20.13  | 19.79  | 19.23  | 18.51  | 13.92                                 | 16.89  | 18.06  | 18.46  | 18.39  | 18.04  | 17.48  | 16.79  |
| TGE 10-11                                              | 21.27                                 | 26.46  | 28.74  | 29.77  | 30.05  | 29.81  | 29.21  | 28.33  | 20.04                                 | 24.58  | 26.56  | 27.39  | 27.53  | 27.2   | 26.53  | 25.62  |
| TGE 20-12.5                                            | 25.03                                 | 30.40  | 32.28  | 32.74  | 32.41  | 31.59  | 30.45  | 29.10  | 23.07                                 | 27.65  | 29.28  | 29.64  | 29.29  | 28.51  | 27.44  | 26.19  |
| TGE 20-16                                              | 32.20                                 | 38.86  | 41.02  | 41.39  | 40.77  | 39.55  | 37.96  | 36.13  | 29.67                                 | 35.34  | 37.19  | 37.44  | 36.81  | 35.66  | 34.17  | 32.47  |
| TGE 20-20                                              | 38.64                                 | 46.73  | 49.43  | 49.95  | 49.26  | 47.84  | 45.96  | 43.76  | 35.87                                 | 42.79  | 45.09  | 45.44  | 44.7   | 43.32  | 41.53  | 39.48  |
| TGE 40-26                                              | 57.29                                 | 68.07  | 70.84  | 70.53  | 68.63  | 65.84  | 62.53  | 58.94  | 52.79                                 | 61.85  | 64.12  | 63.66  | 61.8   | 59.16  | 56.08  | 52.77  |
| TGE 40-30                                              | 65.71                                 | 77.89  | 80.89  | 80.39  | 78.08  | 74.77  | 70.89  | 66.71  | 60.62                                 | 70.86  | 73.28  | 72.59  | 70.33  | 67.19  | 63.58  | 59.72  |
| TGE 40-40                                              | 78.92                                 | 94.52  | 98.50  | 97.56  | 93.96  | 90.18  | 85.68  | 80.76  | 72.68                                 | 85.3   | 87.87  | 87.29  | 84.77  | 81.15  | 76.92  | 72.34  |

**Capacity (Continued)**
**R290**

Capacity in kW for range N and superheat OS = 4 K

| Type<br>and rated<br>capacity<br>Q <sub>nom</sub> TR | Pressure drop across the valve Δp bar |       |       |       |       |       |       |       | Pressure drop across the valve Δp bar |       |       |       |       |       |       |       |
|------------------------------------------------------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|
|                                                      | 2                                     | 4     | 6     | 8     | 10    | 12    | 14    | 16    | 2                                     | 4     | 6     | 8     | 10    | 12    | 14    | 16    |
| <b>Evaporating temperature -25°C</b>                 |                                       |       |       |       |       |       |       |       | <b>Evaporating temperature -30°C</b>  |       |       |       |       |       |       |       |
| TGE 10-3                                             | 4.90                                  | 5.94  | 6.43  | 6.64  | 6.69  | 6.63  | 6.50  | 6.30  | 4.45                                  | 5.37  | 5.79  | 5.97  | 6.01  | 5.94  | 5.81  | 5.62  |
| TGE 10-4                                             | 6.11                                  | 7.39  | 7.97  | 8.21  | 8.24  | 8.15  | 7.96  | 7.70  | 5.56                                  | 6.69  | 7.18  | 7.38  | 7.40  | 7.30  | 7.12  | 6.87  |
| TGE 10-6                                             | 9.30                                  | 11.18 | 11.97 | 12.25 | 12.23 | 12.02 | 11.67 | 11.22 | 8.47                                  | 10.12 | 10.80 | 11.03 | 10.98 | 10.77 | 10.43 | 10.01 |
| TGE 10-8                                             | 12.89                                 | 15.41 | 16.42 | 16.73 | 16.63 | 16.26 | 15.72 | 15.06 | 11.78                                 | 13.99 | 14.86 | 15.09 | 14.95 | 14.59 | 14.07 | 13.44 |
| TGE 10-11                                            | 18.68                                 | 22.56 | 24.24 | 24.88 | 24.88 | 24.46 | 23.73 | 22.78 | 17.18                                 | 20.56 | 21.97 | 22.42 | 22.29 | 21.78 | 21.00 | 20.03 |
| TGE 20-12.5                                          | 21.02                                 | 24.88 | 26.27 | 26.55 | 26.20 | 25.47 | 24.49 | 23.34 | 18.91                                 | 22.27 | 23.47 | 23.68 | 23.34 | 22.67 | 21.77 | 20.73 |
| TGE 20-16                                            | 27.05                                 | 31.80 | 33.37 | 33.52 | 32.90 | 31.82 | 30.46 | 28.91 | 24.34                                 | 28.46 | 29.80 | 29.88 | 29.29 | 28.30 | 27.05 | 25.64 |
| TGE 20-20                                            | 32.92                                 | 38.74 | 40.68 | 40.88 | 40.14 | 38.82 | 37.15 | 35.25 | 29.81                                 | 34.86 | 36.50 | 36.60 | 35.86 | 34.62 | 33.07 | 31.33 |
| TGE 40-26                                            | 48.11                                 | 55.59 | 57.42 | 56.86 | 55.08 | 52.63 | 49.81 | 46.78 | 43.24                                 | 49.66 | 51.14 | 50.53 | 48.85 | 46.60 | 44.03 | 41.29 |
| TGE 40-30                                            | 55.32                                 | 63.74 | 65.67 | 64.87 | 62.70 | 59.78 | 56.46 | 52.93 | 49.78                                 | 57.00 | 58.52 | 57.67 | 55.61 | 52.92 | 49.89 | 46.69 |
| TGE 40-40                                            | 66.08                                 | 76.34 | 78.89 | 78.13 | 75.67 | 72.27 | 68.34 | 64.14 | 59.55                                 | 68.40 | 70.42 | 69.54 | 67.18 | 64.01 | 60.41 | 56.57 |
| <b>Evaporating temperature -35°C</b>                 |                                       |       |       |       |       |       |       |       | <b>Evaporating temperature -40°C</b>  |       |       |       |       |       |       |       |
| TGE 10-3                                             | 4.02                                  | 4.82  | 5.19  | 5.33  | 5.35  | 5.29  | 5.16  | 4.98  | 3.60                                  | 4.30  | 4.61  | 4.74  | 4.74  | 4.67  | 4.55  | 4.38  |
| TGE 10-4                                             | 5.02                                  | 6.01  | 6.44  | 6.60  | 6.61  | 6.50  | 6.32  | 6.09  | 4.51                                  | 5.38  | 5.75  | 5.88  | 5.87  | 5.76  | 5.59  | 5.38  |
| TGE 10-6                                             | 7.66                                  | 9.11  | 9.69  | 9.87  | 9.81  | 9.59  | 9.27  | 8.87  | 6.89                                  | 8.16  | 8.65  | 8.79  | 8.71  | 8.50  | 8.19  | 7.82  |
| TGE 10-8                                             | 10.68                                 | 12.62 | 13.35 | 13.52 | 13.36 | 13.00 | 12.50 | 11.91 | 9.63                                  | 11.32 | 11.94 | 12.06 | 11.88 | 11.53 | 11.05 | 10.50 |
| TGE 10-11                                            | 15.65                                 | 18.59 | 19.73 | 20.00 | 19.76 | 19.17 | 18.34 | 17.34 | 14.17                                 | 16.68 | 17.58 | 17.69 | 17.37 | 16.83 | 16.12 | 15.29 |
| TGE 20-12.5                                          | 16.68                                 | 19.81 | 20.84 | 21.00 | 20.68 | 20.07 | 19.26 | 18.32 | 14.98                                 | 17.53 | 18.42 | 18.55 | 18.26 | 17.70 | 16.97 | 16.14 |
| TGE 20-16                                            | 21.73                                 | 25.32 | 26.45 | 26.49 | 25.94 | 25.03 | 23.90 | 22.63 | 19.29                                 | 22.40 | 23.37 | 23.39 | 22.88 | 22.05 | 21.04 | 19.90 |
| TGE 20-20                                            | 26.76                                 | 31.15 | 32.53 | 32.55 | 31.84 | 30.69 | 29.28 | 27.69 | 23.87                                 | 27.68 | 28.84 | 28.82 | 28.15 | 27.09 | 25.80 | 24.37 |
| TGE 40-26                                            | 38.54                                 | 44.05 | 45.24 | 44.61 | 43.06 | 41.01 | 38.69 | 36.23 | 34.11                                 | 38.84 | 39.80 | 39.19 | 37.77 | 35.92 | 33.85 | 31.65 |
| TGE 40-30                                            | 44.42                                 | 50.60 | 51.80 | 50.93 | 49.02 | 46.57 | 43.83 | 40.95 | 39.36                                 | 44.64 | 45.59 | 44.74 | 42.99 | 40.78 | 38.32 | 35.75 |
| TGE 40-40                                            | 53.26                                 | 60.84 | 62.43 | 61.48 | 59.25 | 56.34 | 53.05 | 49.58 | 47.31                                 | 53.78 | 55.02 | 54.06 | 51.98 | 49.32 | 46.35 | 43.23 |

## Dimensions and weights



| Type   | Connection<br>inlet x outlet<br>ODF solder |         | Capillary<br>tube<br>length<br>m | H <sub>1</sub> | H <sub>2</sub> | H <sub>3</sub> | H <sub>4</sub> | L <sub>1</sub> | L <sub>2</sub> | L <sub>3</sub> | L <sub>4</sub> | ØD <sub>1</sub> | ØD <sub>2</sub> | Weight |
|--------|--------------------------------------------|---------|----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|--------|
|        | in.                                        | mm      |                                  | mm             | mm             | mm             | mm             | mm             | mm             | mm             | mm             | mm              | mm              | kg     |
| TGE 10 | $\frac{3}{8} \times \frac{5}{8}$           | 10 × 16 | 1.5                              | 28.5           | 7.5            | 5              | 93             | 41.5           | 45.5           | 37.5           | 70             | 45              | 14.5            | 0.37   |
|        | $\frac{1}{2} \times \frac{5}{8}$           | 12 × 16 |                                  |                |                |                |                |                | 59.5           |                |                |                 |                 |        |
|        | $\frac{1}{2} \times \frac{7}{8}$           | 12 × 22 |                                  |                |                |                |                | 45.5           |                |                |                |                 |                 |        |
|        | $\frac{5}{8} \times \frac{5}{8}$           |         |                                  |                |                |                |                | 59.5           |                |                |                |                 |                 |        |
|        | $\frac{5}{8} \times \frac{7}{8}$           | 16 × 22 |                                  |                |                |                |                |                |                |                |                |                 |                 |        |
|        | $\frac{5}{8} \times 1 \frac{1}{8}$         |         |                                  |                |                |                |                |                |                |                |                |                 |                 |        |
| TGE 20 | $\frac{5}{8} \times \frac{7}{8}$           | 16 × 22 | 1.5                              | 32             | 9              | 8              | 117            | 48             | 62             | 40             | 78             | 53              | 19.2            | 0.57   |
|        | $\frac{7}{8} \times \frac{7}{8}$           |         |                                  |                |                |                |                | 62             |                |                |                |                 |                 |        |
|        | $\frac{5}{8} \times 1 \frac{1}{8}$         | 16 × 28 |                                  |                |                |                |                | 48             | 66             |                |                |                 |                 |        |
|        | $\frac{7}{8} \times 1 \frac{1}{8}$         | 22 × 28 |                                  |                |                |                |                | 62             |                |                |                |                 |                 |        |
|        | $\frac{7}{8} \times 1 \frac{3}{8}$         |         |                                  |                |                |                |                |                |                |                |                |                 |                 |        |
|        |                                            |         |                                  |                |                |                |                |                |                |                |                |                 |                 |        |
| TGE 40 | $\frac{7}{8} \times 1 \frac{3}{8}$         | 22 × 35 | 3                                | 39             | 15             | 11             | 144            |                | 74.5           | 43.5           | 78             | 60              | 19.2            | 0.93   |
|        | $1 \frac{1}{8} \times 1 \frac{1}{8}$       |         |                                  |                |                |                |                | 69.5           | 69.5           |                |                |                 |                 |        |
|        | $1 \frac{1}{8} \times 1 \frac{3}{8}$       | 28 × 35 |                                  |                |                |                |                |                | 74.5           |                |                |                 |                 |        |