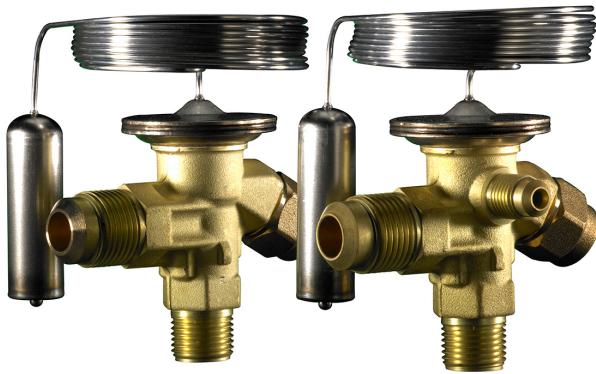


Data Sheet

# Thermostatic expansion valve Type **T 2** and **TE 2**

Thermostatic expansion valves maintain a constant superheat level at the evaporator outlet



Thermostatic expansion valves regulate the injection of refrigerant liquid into evaporators.

Injection is controlled by the refrigerant superheat.

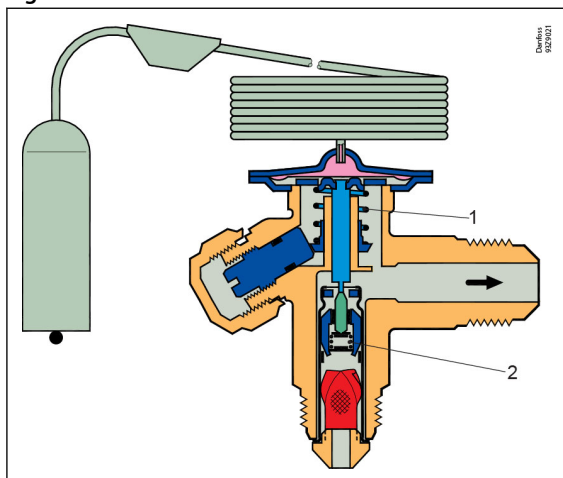
Therefore the valves are especially suitable for liquid injection in "dry" evaporators where the superheat at the evaporator outlet is proportional to the evaporator load.

## Features

- Large temperature range
  - Equally applicable to freezing, refrigeration and air conditioning applications.
- Interchangeable orifice assembly
  - easy storage
  - easy capacity matching
  - better service.
  - easy cleaning and replacement of filter
- Rated capacities from 1 to 20.5 kW / 0.3 to 5.8 TR for R407C
- Can be supplied with MOP (Max. Operating Pressure).
  - Protects the compressor motor against excessive evaporating pressure during normal operation
- Stainless steel bulb and Danfoss patented bulb strap
  - Fast and easy to install
  - Good temperature transfer from pipe to bulb
- Valves for special temperature ranges can be supplied
- Design protected

## Functions

Figure 1: Functions



- |   |                |
|---|----------------|
| 1 | Element Spring |
| 2 | Orifice spring |

T2 and TE2 valves have an interchangeable orifice assembly.

The orifice assembly is suitable for all versions of valve body and refrigerants and in all evaporating temperature ranges.

The charge in the thermostatic element depends on the refrigerant and evaporating temperature range.

The valves are available with internal (T2) or external (TE2) pressure equalization.

External pressure equalization should always be used on systems with liquid distributors. The bulb gives fast and precise reaction to temperature changes in the evaporator. The bulb is fixed with a Danfoss patented bulb strap for quick, easy and reliable connection. The valves are able to withstand the effects that normally occur with hot gas defrosting.

To ensure long operating life, the valve cone and seat are made of a special alloy with particularly good wear qualities.

## Product specification

### Technical data

#### Max. temperature

Bulb, when valve is installed: 100 °C

Bulb, element not mounted: 60 °C

#### Min. temperature

T2 – TE2: -60 °C

#### Max. test pressure

PT = 38 bar

#### Max. working pressure

PS/MWP = 34 bar

Table 1: Technical data

| Refrigerant | Range N<br>-40 °C – 10 °C                                                       | Range NM<br>-40 °C – -5 °C | Range NL<br>-40 °C – -15 °C | Range B<br>-60 °C – -25 °C |
|-------------|---------------------------------------------------------------------------------|----------------------------|-----------------------------|----------------------------|
|             | MOP-point in evaporating temperature $t_e$ and evaporating pressure $p_e^{(1)}$ |                            |                             |                            |
|             | 15 °C / 60 °F                                                                   | 0 °C / 32 °F               | -10 °C / 15 °F              | -20 °C / -4 °F             |
| R22         | 100 psig / 6.9 bar (abs)                                                        | 60 psig / 4.0 bar (abs)    | 35 psig / 2.4 bar (abs)     | 20 psig / 1.4 bar (abs)    |
| R407C       | 95 psig / 6.6 bar (abs)                                                         | –                          | –                           | –                          |
| R134a       | 55 psig / 3.8 bar (abs)                                                         | 30 psig / 2.0 bar (abs)    | 15 psig / 1.0 bar (abs)     | –                          |
| R404A/R507  | 120 psig / 8.3 bar (abs)                                                        | 75 psig / 5.2 bar (abs)    | 50 psig / 3.4 bar (abs)     | 30 psig / 2.1 bar (abs)    |

<sup>(1)</sup>  $p_e$  in bar gauge

#### Superheat

SS = static superheat

OS = opening superheat

SH = SS + OS = total superheat

 $Q_{nom}$  = rated capacity

 $Q_{max}$  = maximum capacity

Static superheat SS can be adjusted with setting spindle.

Standard superheat setting SS is 4K for all standard valves.

The opening superheat OS is 6 K from when opening begins to where the valve gives its rated capacity  $Q_{nom}$ .

#### Example

Static superheat SS = 5 K

Opening superheat OS = 6 K

Total superheat SH = 5 + 6 = 11 K

Table 2: Range N: -40 to 50 °F

| Orifice no. | Rated capacity in tons (TR) |       |       |       |               |       |       |       |       |       |       |         |
|-------------|-----------------------------|-------|-------|-------|---------------|-------|-------|-------|-------|-------|-------|---------|
|             | R22                         | R407C | R134a | R513A | R404A<br>R507 | R407A | R407F | R448A | R449A | R454C | R455A | R1234yf |
| 0X          | 0.25                        | 0.26  | 0.19  | 0.16  | 0.18          | 0.25  | 0.28  | 0.26  | 0.25  | 0.22  | 0.24  | 0.14    |
| 0           | 0.51                        | 0.51  | 0.34  | 0.29  | 0.37          | 0.49  | 0.56  | 0.51  | 0.49  | 0.42  | 0.47  | 0.25    |
| 1           | 1                           | 1     | 0.59  | 0.51  | 0.75          | 1     | 1.1   | 1     | 0.97  | 0.79  | 0.93  | 0.43    |
| 2           | 1.3                         | 1.4   | 0.73  | 0.62  | 1             | 1.3   | 1.5   | 1.4   | 1.3   | 1     | 1.3   | 0.53    |
| 3           | 2.3                         | 2.3   | 1.2   | 1     | 1.8           | 2.3   | 2.6   | 2.3   | 2.3   | 1.8   | 2.2   | 0.88    |
| 4           | 3.4                         | 3.5   | 1.8   | 1.5   | 2.8           | 3.5   | 4.1   | 3.6   | 3.5   | 2.6   | 3.3   | 1.3     |
| 5           | 4.8                         | 4.7   | 2.4   | 2     | 3.7           | 4.6   | 5.4   | 4.6   | 4.5   | 3.4   | 4.2   | 1.7     |
| 6           | 5.6                         | 5.6   | 2.9   | 2.5   | 4.4           | 5.6   | 6.5   | 5.7   | 5.5   | 4.2   | 5.2   | 2.1     |

The rated capacity is based on:

Evaporating temperature  $t_e$  = 40 °F

Condensing temperature  $t_c$  = 100 °F

Refrigerant temperature ahead of valve  $t_l$  = 98 °F

Table 3: Range N: -40 to 10 °C

| Orifice no. | Rated capacity in kW |       |       |       |               |       |       |       |       |       |       |         |
|-------------|----------------------|-------|-------|-------|---------------|-------|-------|-------|-------|-------|-------|---------|
|             | R22                  | R407C | R134a | R513A | R404A<br>R507 | R407A | R407F | R448A | R449A | R454C | R455A | R1234yf |
| 0X          | 0.9                  | 0.92  | 0.68  | 0.58  | 0.64          | 0.88  | 1     | 0.9   | 0.88  | 0.77  | 0.86  | 0.49    |
| 0           | 1.8                  | 1.8   | 1.2   | 1     | 1.3           | 1.7   | 2     | 1.8   | 1.7   | 1.5   | 1.7   | 0.87    |
| 1           | 3.5                  | 3.5   | 2.1   | 1.8   | 2.6           | 3.4   | 3.9   | 3.5   | 3.4   | 2.8   | 3.3   | 1.5     |
| 2           | 4.7                  | 4.8   | 2.6   | 2.2   | 3.7           | 4.7   | 5.4   | 4.8   | 4.6   | 3.6   | 4.4   | 1.8     |
| 3           | 8                    | 8.1   | 4.3   | 3.7   | 6.3           | 8     | 9.2   | 8.1   | 7.9   | 6.2   | 7.6   | 3.1     |
| 4           | 12.1                 | 12.4  | 6.4   | 5.4   | 9.9           | 12.4  | 14.3  | 12.6  | 12.1  | 9.3   | 11.5  | 4.6     |
| 5           | 16.7                 | 16.5  | 8.4   | 6.9   | 13            | 16.3  | 19    | 16.3  | 15.7  | 11.8  | 14.7  | 5.9     |
| 6           | 19.7                 | 19.7  | 10.1  | 8.6   | 15.5          | 19.6  | 22.9  | 19.8  | 19.1  | 14.8  | 18.3  | 7.3     |

The rated capacity is based on:

Evaporating temperature  $t_e = 4.4\text{ °C}$

Condensing temperature  $t_c = 38\text{ °C}$

Refrigerant temperature ahead of valve  $t_l = 37\text{ °C}$

### Valve selection based on capacity calculation

As for extended capacity calculations and valve selection based on capacities and refrigerants, please refer to Coolselector®2. Rated and extended capacities are calculated with the Coolselector®2 calculation engine to ARI standards with the ASEREP equations based on laboratory measurements of selected valves.

### How to select a valve

Example:

Refrigerant = R407C

Q (capacity) = 1.1kW

$T_{cond}$  (condensing temperature) = 25 °C

$T_{evap}$  (evaporator temperature) = -30 °C

$T_{sub}$  (subcooling temperature) = 2 K

$D_{pd}$  (distributer pressure drop) = 1 bar

Q (capacity) = 1.1kW

$f_{sub}$  (subcooling correction factor) = 0.98

$f_p$  (distribution correction factor) = 0.96

$$\frac{Q}{f_{sub} \times f_p} = \text{selected capacity}$$

$$\frac{1.1}{0.98 \times 0.96} = 1.17\text{ kW}$$

The selection will be: TE2 orifice 00 (1.21 kW > 1.17 kW)

Table 4: Capacity in kW, range N -40 °C to 10 °C. Opening superheat  $sh = 6\text{ K}$ 

| Valve type | Orifice no. | Cond. temp. [°C] | Evaporating [°C] |      |      |      |
|------------|-------------|------------------|------------------|------|------|------|
|            |             |                  | -40              | -30  | -20  | -10  |
| T2 / TE2   | 0X          | 25               | 0.76             | 0.83 | 0.88 | 0.9  |
| T2 / TE2   | 00          |                  | 0.99             | 1.21 | 1.42 | 1.6  |
| T2 / TE2   | 1           |                  | 1.41             | 1.8  | 2.27 | 2.77 |

Table 5: Subcooling correction factor ' $f_{sub}$ '

| Subcooling [K]    | 2    | 4 | 10   | 15   |
|-------------------|------|---|------|------|
| Correction factor | 0.98 | 1 | 1.07 | 1.12 |

## Thermostatic expansion valve, type T 2 and TE 2

Table 6: Distributer correction factor 'fp' \*

| Pressure drop [bar]   |     | Evaporating [°C] |      |      |      |
|-----------------------|-----|------------------|------|------|------|
|                       |     | -40              | -35  | -30  | -25  |
| "Pressure drop [bar]" | 0   | 1                | 1    | 1    | 1    |
|                       | 1   | 0.96             | 0.96 | 0.96 | 0.96 |
|                       | 1.5 | 0.94             | 0.94 | 0.94 | 0.94 |
|                       | 2   | 0.92             | 0.92 | 0.92 | 0.92 |

\* Calculated at 32 °C condensing temperature

## Dimensions and weights

Figure 2: Flare × flare (All dimintions are in mm)

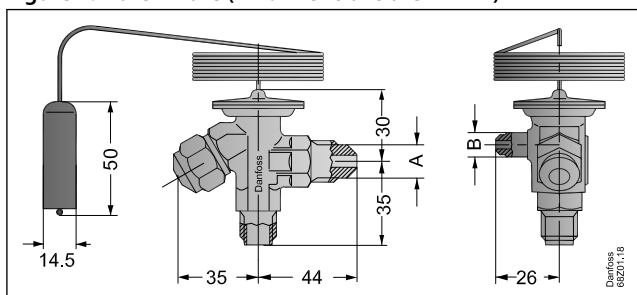


Figure 3: Flare × solder (All dimintions are in mm)

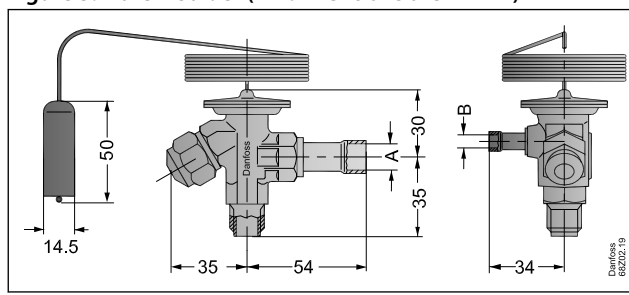


Table 7: Dimensions and weights

|                | Outlet                       | Equalization                | Weight    |
|----------------|------------------------------|-----------------------------|-----------|
|                | A                            | B                           | [kg / lb] |
| Flare × flare  | 1/2 " flare                  | 1/4 " flare                 | 0.3 / 0.7 |
| Flare × solder | 1/2 " solder<br>12 mm solder | 1/4 " solder<br>6 mm solder | 0.3 / 0.7 |

Figure 4: Solder adaptor

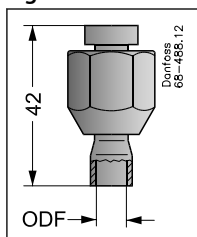
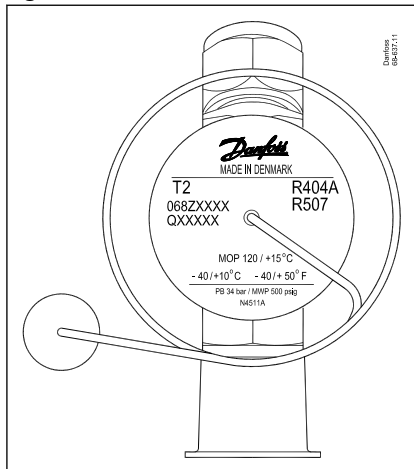


Table 8: Solder adaptor

| Solder ODF |      | Weight      |
|------------|------|-------------|
| [in]       | [mm] | [kg / lb]   |
| 1/4        | 6    | 0.05 / 0.11 |
| 3/8        | 10   | 0.05 / 0.11 |

## Identification

Figure 5: Identification

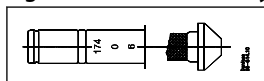


|            |                                        |
|------------|----------------------------------------|
| <b>T2</b>  | internal equalization                  |
| <b>TE2</b> | external equalization                  |
| <b>N</b>   | Nordborg, Denmark (BE = Wuqing, China) |
| <b>45</b>  | week                                   |
| <b>11</b>  | 2011                                   |
| <b>A</b>   | Monday                                 |

### Production place and date N4511A

The thermostatic element has laser engraved data on top of the diaphragm. This engraving gives valve type (with code number), evaporating temperature range, MOP point, refrigerant, and max. working pressure. PS/MWP.

Figure 6: Orifice assembly and filter for flare x flare version for T2 and TE2



### Orifice assembly for T2 and TE2

The orifice assembly is marked with the orifice size (e.g. 06) and week stamp + last number in the year (e.g. 174). The orifice assembly number is also given on the lid of its plastic container.

Figure 7: Capillary tube label for T2 and TE2



### Capillary tube label for T2 and TE2

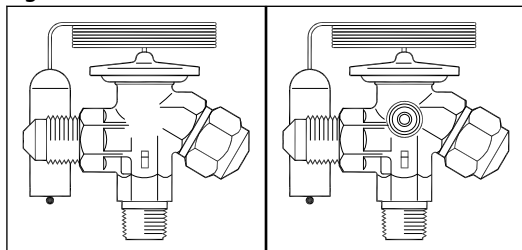
The label gives the orifice size (04) and consists of the lid of the orifice assembly plastic container. It can easily be fastened around the expansion valve capillary tube to clearly identify the valve size.

## Ordering

### T2/TE2 Thermostatic element with bulb strap

#### Flare x flare

Figure 8: Flare x flare



Capillary tube: 1.5 m

Range N = -40 – 10 °C

Range B = -60 – -25 °C

Range NM = -40 – -5 °C MOP 0 °C

Range NL = -40 – -15 °C MOP -10 °C

Table 9: Flare x flare

| Refrigerant              | Type | Range     | MOP  | Pressure equaliza-<br>tion Flare | Connection flare inlet × outlet |       | Code no. Multi<br>pack |
|--------------------------|------|-----------|------|----------------------------------|---------------------------------|-------|------------------------|
|                          |      | [°C]      | [°C] |                                  | [in]                            | [mm]  |                        |
| R22/R407C <sup>(1)</sup> | T2   | -40 – 10  | –    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3206               |
|                          | T2   | -40 – 10  | 15   | –                                | 3/8 × 1/2                       | 10×12 | 068Z3208               |
|                          | T2   | -40 – -5  | 0    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3224               |
|                          | T2   | -40 – -15 | -10  | –                                | 3/8 × 1/2                       | 10×12 | 068Z3226               |
|                          | T2   | -60 – -25 | –    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3207               |
|                          | T2   | -60 – -25 | -20  | –                                | 3/8 × 1/2                       | 10×12 | 068Z3228               |
|                          | TE2  | -40 – 10  | –    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3209               |
|                          | TE2  | -40 – 10  | 15   | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3211               |
|                          | TE2  | -40 – -5  | 0    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3225               |
|                          | TE2  | -40 – -15 | -10  | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3227               |
|                          | TE2  | -60 – -25 | –    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3210               |
|                          | TE2  | -60 – -25 | -20  | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3229               |
| R407C                    | T2   | -40 – 10  | –    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3496               |
|                          | T2   | -40 – 10  | 15   | –                                | 3/8 × 1/2                       | 10×12 | 068Z3516               |
|                          | TE2  | -40 – 10  | –    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3501               |
|                          | TE2  | -40 – 10  | 15   | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3517               |
| R134a/R513A              | T2   | -40 – 10  | –    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3346               |
|                          | T2   | -40 – 10  | 15   | –                                | 3/8 × 1/2                       | 10×12 | 068Z3347               |
|                          | T2   | -40 – -5  | 0    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3393               |
|                          | T2   | -40 – -15 | -10  | –                                | 3/8 × 1/2                       | 10×12 | 068Z3369               |
|                          | TE2  | -40 – 10  | –    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3348               |
|                          | TE2  | -40 – 10  | 15   | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3349               |
|                          | TE2  | -40 – -5  | 0    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3392               |
|                          | TE2  | -40 – -15 | -10  | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3370               |



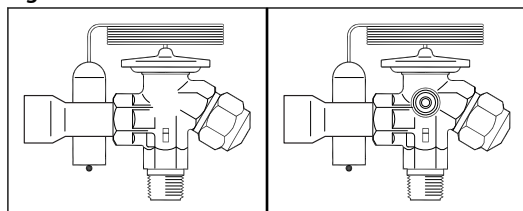
## Thermostatic expansion valve, type T 2 and TE 2

| Refrigerant | Type | Range     | MOP  | Pressure equaliza-<br>tion Flare | Connection flare inlet × outlet |       | Code no. Multi<br>pack |
|-------------|------|-----------|------|----------------------------------|---------------------------------|-------|------------------------|
|             |      | [°C]      | [°C] |                                  | [in]                            | [mm]  |                        |
| R404A/R507  | T2   | -40 – 10  | –    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3400               |
|             | T2   | -40 – 10  | 15   | –                                | 3/8 × 1/2                       | 10×12 | 068Z3402               |
|             | T2   | -40 – -5  | 0    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3406               |
|             | T2   | -40 – -15 | -10  | –                                | 3/8 × 1/2                       | 10×12 | 068Z3408               |
|             | T2   | -60 – -25 | –    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3401               |
|             | T2   | -60 – -25 | -20  | –                                | 3/8 × 1/2                       | 10×12 | 068Z3410               |
|             | TE2  | -40 – 10  | –    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3403               |
|             | TE2  | -40 – 10  | 15   | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3405               |
|             | TE2  | -40 – -5  | 0    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3407               |
|             | TE2  | -40 – -15 | -10  | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3409               |
|             | TE2  | -60 – -25 | –    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3404               |
| R407F/R407A | T2   | -40 – 10  | –    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3715               |
|             | TE2  | -40 – 10  | –    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3714               |
| R448A/R449A | T2   | -40 – 10  | –    | –                                | 3/8 × 1/2                       | 10×12 | 068Z3727               |
|             | TE2  | -40 – 10  | –    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3728               |
|             | T2   | -40 – -15 | -10  | –                                | 3/8 × 1/2                       | 10×12 | 068Z3673               |
|             | T2   | -60 – -25 | -20  | –                                | 3/8 × 1/2                       | 10×12 | 068Z3735               |
|             | TE2  | -60 – -25 | -20  | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z3736               |
| R454C       | T2   | -40 – 10  | -    | –                                | 3/8 × 1/2                       | 10×12 | 068Z7483               |
|             | TE2  | -40 – 10  | -    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z7485               |
| R455A       | T2   | -40 – 10  | -    | –                                | 3/8 × 1/2                       | 10×12 | 068Z7496               |
|             | TE2  | -40 – 10  | -    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z7499               |
| R1234yf     | T2   | -40 – 10  | -    | –                                | 3/8 × 1/2                       | 10×12 | 068Z7487               |
|             | TE2  | -40 – 10  | -    | ¼ in / 6 mm                      | 3/8 × 1/2                       | 10×12 | 068Z7489               |

<sup>(1)</sup> For R407C plants. Please select valves from the dedicated R407C program

### Flare x solder

Figure 9: Flare x solder



Capillary tube: 1.5 m  
 Range N = -40 – 10 °C  
 Range NL = -40 – -15 °C  
 Range B = -60 – -25 °C

## Thermostatic expansion valve, type T 2 and TE 2

Table 10: Flare x solder

| Refrigerant              | Type | Range     | MOP  | Pressure equalization Flare | Connection flare inlet x solder outlet |       | Code no. Multi pack |
|--------------------------|------|-----------|------|-----------------------------|----------------------------------------|-------|---------------------|
|                          |      | [°C]      | [°C] |                             | [in]                                   | [mm]  |                     |
| R22/R407C <sup>(1)</sup> | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z3281            |
|                          | T2   | -40 – 10  | –    | –                           | –                                      | 10×12 | 068Z3302            |
|                          | T2   | -40 – 10  | 15   | –                           | 3/8 × 1/2                              | –     | 068Z3287            |
|                          | T2   | -40 – 10  | 15   | –                           | –                                      | 10×12 | 068Z3308            |
|                          | T2   | -40 – -15 | -10  | –                           | –                                      | 10×12 | 068Z3366            |
|                          | T2   | -60 – -25 | –    | –                           | 3/8 × 1/2                              | –     | 068Z3357            |
|                          | T2   | -60 – -25 | –    | –                           | –                                      | 10×12 | 068Z3361            |
|                          | T2   | -60 – -25 | -20  | –                           | 3/8 × 1/2                              | –     | 068Z3319            |
|                          | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3284            |
|                          | TE2  | -40 – 10  | –    | 6 mm                        | –                                      | 10×12 | 068Z3305            |
|                          | TE2  | -40 – 10  | 15   | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3290            |
|                          | TE2  | -40 – 10  | 15   | 6 mm                        | –                                      | 10×12 | 068Z3311            |
|                          | TE2  | -40 – -15 | -10  | 6 mm                        | –                                      | 10×12 | 068Z3367            |
|                          | TE2  | -60 – -25 | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3359            |
|                          | TE2  | -60 – -25 | –    | 6 mm                        | –                                      | 10×12 | 068Z3363            |
|                          | TE2  | -60 – -25 | -20  | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3320            |
| R407C                    | T2   | -40 – 10  | –    | –                           | –                                      | 10×12 | 068Z3502            |
|                          | T2   | -40 – 10  | 15   | –                           | 3/8 × 1/2                              | –     | 068Z3329            |
|                          | T2   | -40 – 10  | 15   | –                           | –                                      | 10×12 | 068Z3514            |
|                          | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3446            |
|                          | TE2  | -40 – 10  | –    | 6 mm                        | –                                      | 10×12 | 068Z3503            |
|                          | TE2  | -40 – 10  | 15   | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3447            |
|                          | TE2  | -40 – 10  | 15   | 6 mm                        | –                                      | 10×12 | 068Z3515            |
| R134a/R513A              | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z3383            |
|                          | T2   | -40 – 10  | –    | –                           | –                                      | 10×12 | 068Z3384            |
|                          | T2   | -40 – 10  | 15   | –                           | 3/8 × 1/2                              | –     | 068Z3387            |
|                          | T2   | -40 – 10  | 15   | –                           | –                                      | 10×12 | 068Z3388            |
|                          | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3385            |
|                          | TE2  | -40 – 10  | –    | 6 mm                        | –                                      | 10×12 | 068Z3386            |
|                          | TE2  | -40 – 10  | 15   | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3389            |
| R404A/R507               | TE2  | -40 – 10  | 15   | 6 mm                        | –                                      | 10×12 | 068Z3390            |
|                          | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z3414            |
|                          | T2   | -40 – 10  | –    | –                           | –                                      | 10×12 | 068Z3435            |
|                          | T2   | -40 – 10  | 15   | –                           | 3/8 × 1/2                              | –     | 068Z3416            |
|                          | T2   | -40 – 10  | 15   | –                           | –                                      | 10×12 | 068Z3423            |
|                          | T2   | -40 – -15 | -10  | –                           | 3/8 × 1/2                              | –     | 068Z3429            |
|                          | T2   | -40 – -15 | -10  | –                           | –                                      | 10×12 | 068Z3436            |
|                          | T2   | -60 – -25 | –    | –                           | 3/8 × 1/2                              | –     | 068Z3418            |
|                          | T2   | -60 – -25 | –    | –                           | –                                      | 10×12 | 068Z3425            |
|                          | T2   | -60 – -25 | -20  | –                           | 3/8 × 1/2                              | –     | 068Z3420            |
|                          | T2   | -60 – -25 | -20  | –                           | –                                      | 10×12 | 068Z3427            |
|                          | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3415            |
|                          | TE2  | -40 – 10  | –    | 6 mm                        | –                                      | 10×12 | 068Z3422            |
|                          | TE2  | -40 – 10  | 15   | 6 mm                        | –                                      | 10×12 | 068Z3424            |
|                          | TE2  | -40 – 10  | 15   | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3417            |
|                          | TE2  | -40 – -15 | -10  | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3430            |
|                          | TE2  | -40 – -15 | -10  | 6 mm                        | –                                      | 10×12 | 068Z3437            |
|                          | TE2  | -60 – -25 | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3419            |
|                          | TE2  | -60 – -25 | –    | 6 mm                        | –                                      | 10×12 | 068Z3426            |
|                          | TE2  | -60 – -25 | -20  | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3421            |
|                          | TE2  | -60 – -25 | -20  | 6 mm                        | –                                      | 10×12 | 068Z3428            |
| R407F/R407A              | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z3716            |
|                          | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3713            |

## Thermostatic expansion valve, type T 2 and TE 2

| Refrigerant | Type | Range     | MOP  | Pressure equalization Flare | Connection flare inlet x solder outlet |       | Code no. Multi pack |
|-------------|------|-----------|------|-----------------------------|----------------------------------------|-------|---------------------|
|             |      | [°C]      | [°C] |                             | [in]                                   | [mm]  |                     |
| R448A/R449A | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z3729            |
|             | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3730            |
|             | T2   | -40 – -15 | -10  | –                           | 3/8 × 1/2                              | –     | 068Z3664            |
|             | T2   | -60 – -25 | -20  | –                           | 3/8 × 1/2                              | –     | 068Z3737            |
|             | TE2  | -40 – -15 | -10  | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3665            |
|             | TE2  | -60 – -25 | -20  | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3738            |
|             | T2   | -40 – -15 | -10  | –                           | –                                      | 10×12 | 068Z3674            |
|             | TE2  | -60 – -25 | -20  | 6 mm                        | –                                      | 10×12 | 068Z3672            |
| R452A       | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z3806            |
|             | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z3807            |
|             | T2   | -40 – 10  | –    | –                           | –                                      | 10×12 | 068Z3808            |
|             | TE2  | -40 – 10  | –    | 6 mm                        | –                                      | 10×12 | 068Z3809            |
| R454C       | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z7490            |
|             | T2   | -40 – 10  | –    | –                           | –                                      | 10×12 | 068Z7484            |
|             | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z7492            |
|             | TE2  | -40 – 10  | –    | 6 mm                        | –                                      | 10×12 | 068Z7486            |
| R455A       | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z7494            |
|             | T2   | -40 – 10  | –    | –                           | –                                      | 10×12 | 068Z7498            |
|             | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z7501            |
|             | TE2  | -40 – 10  | –    | 6 mm                        | –                                      | 10×12 | 068Z7500            |
| R1234yf     | T2   | -40 – 10  | –    | –                           | 3/8 × 1/2                              | –     | 068Z7491            |
|             | T2   | -40 – 10  | –    | –                           | –                                      | 10×12 | 068Z7488            |
|             | TE2  | -40 – 10  | –    | ¼ in                        | 3/8 × 1/2                              | –     | 068Z7493            |
|             | TE2  | -40 – 10  | –    | 6 mm                        | –                                      | 10×12 | 068Z7495            |

<sup>(1)</sup> For R407C plants, please select valves from the dedicated R407C program

## Flare connections

Figure 10: Flare connections

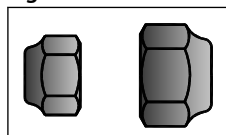


Table 11: Flare connections

| Connection for copper tubing with outside diameter |      | Reducer for copper tubing with outside diameter |      | Code no. |
|----------------------------------------------------|------|-------------------------------------------------|------|----------|
| [in]                                               | [mm] | [in]                                            | [mm] |          |
| 1/4                                                | 6    | –                                               | –    | 011L1101 |
| 3/8                                                | 10   | –                                               | –    | 011L1135 |
| 1/2                                                | 12   | –                                               | –    | 011L1103 |
| –                                                  | –    | 1/4                                             | 6    | 011L1107 |

Example :

A TE2 thermostatic expansion valve consists of two parts + flare nuts if required:

- 1 thermostatic element
- 1 orifice assembly and flare nuts

When ordering one thermostatic expansion valve, TE2 with orifice 01, five code numbers are required:

- 1-off thermostatic element - 068Z3209
- 1-off orifice assembly 01 - 068-2010
- 1-off 3/8 in flare nut - 011L1135
- 1-off 1/2 in flare nut - 011L1103
- 1-off 1/4 in flare nut - 011L1101

## Orifice assembly with filter

Figure 11: Orifice assembly with filter

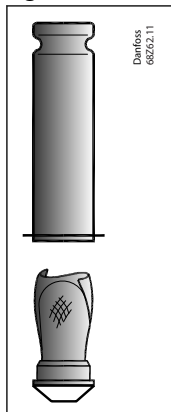


Table 12: Orifice assembly with filter

| Orifice no. | Code no. |
|-------------|----------|
| 0X          | 068-2002 |
| 00          | 068-2003 |
| 01          | 068-2010 |
| 02          | 068-2015 |
| 03          | 068-2006 |
| 04          | 068-2007 |
| 05          | 068-2008 |
| 06          | 068-2009 |

## Orifice assembly with filter for solder adaptor

Figure 12: Orifice assembly with filter for solder adaptor

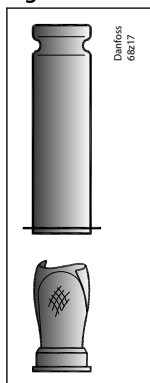


Table 13: Orifice assembly with filter for solder adaptor

| Orifice no. | Code no. |
|-------------|----------|
| 0X          | 068-2089 |
| 00          | 068-2090 |
| 01          | 068-2091 |
| 02          | 068-2092 |
| 03          | 068-2093 |
| 04          | 068-2094 |
| 05          | 068-2095 |
| 06          | 068-2096 |

## Filter

Figure 13: Filter

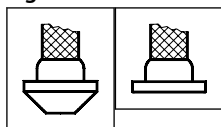


Table 14: Filter type for Industrial pack

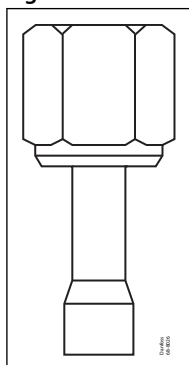
| Filter type          | Code no. Industrial pack |
|----------------------|--------------------------|
| For flare connection | 068-0003                 |
| For solder adaptor   | 068-0015                 |

Table 15: Filter type for Multi pack

| Filter type          | Code no. Multi pack |
|----------------------|---------------------|
| For flare connection | 068-0080            |
| For solder adaptor   | 068-0081            |

## Solder adaptor

Figure 14: Solder adaptor



The adaptor is for use with thermostatic expansion valves T2 and TE2 with flare × solder connections. When the adaptor is fitted correctly it meets the sealing requirements of DIN 8964.

The adaptor offers the following advantages:

- The orifice assembly can be replaced.
- The filter can be cleaned or replaced.

When using the solder adaptor, a special orifice assembly is required. Please use the following tables to select both the appropriate adapter and orifice assembly.

Only in this way can the sealing requirements of DIN 8964 be fulfilled.

Solder adaptor for filter drier (FSA) must not be used in the T2 inlet.

Table 16: Solder adaptor without orifice assembly and filter

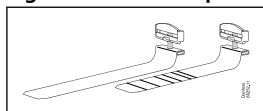
| Connection ODF solder | Code no. |
|-----------------------|----------|
| 1/4 in                | 068-2062 |
| 6 mm                  | 068-2063 |
| 3/8 in                | 068-2060 |
| 10 mm                 | 068-2061 |

Table 17: Filter for solder adaptor

| Description                   | Code no. |
|-------------------------------|----------|
| Filter excl. orifice assembly | 068-0015 |

## Bulb strap (Danfoss patented)

Figure 15: Bulb strap



Each valve is delivered with a Danfoss patented bulb strap. Spares can be ordered.

Table 18: Bulb strap (Danfoss patented)

| Description                              | Pack mode | Quantity / pack | Code no. |
|------------------------------------------|-----------|-----------------|----------|
| Accessory bag with short bulb strap I/45 | I         | 45              | 068U3525 |
| Accessory bag with long bulb strap I/45  | I         | 45              | 068U3527 |
| Accessory bag with short Bulb strap M/25 | M         | 25              | 068U3520 |
| Accessory bag with long Bulb strap M/45  | M         | 45              | 068U3528 |

## Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at [danfoss.com](https://danfoss.com) or contact your local Danfoss representative if you have any questions.

**Table 19: Certificates, declarations, and approvals**

| File name                    | Document type                 | Document topic        | Approval authority |
|------------------------------|-------------------------------|-----------------------|--------------------|
| EAC RU Д-ДК.Б/108.В.00191_18 | EAC Declaration               | Machinery & Equipment | EAC                |
| Danfoss 068U9615.06          | Manufacturers Declaration     | PED/RoHS              | Danfoss            |
| Danfoss 068Z9620.00          | Manufacturers Declaration     | -                     | Danfoss            |
| Danfoss 068-9601.00          | Manufacturers Declaration     | -                     | Danfoss            |
| UA.089.D.00188-17            | UA Declaration                | PED                   | LLC CDC EURO TYSK  |
| UA.TR-089.0993-17            | Pressure - Safety Certificate | PED                   | LLC CDC EURO TYSK  |
| Danfoss 068U9616.01          | Manufacturers Declaration     | China RoHS            | Danfoss            |