

# Thermo™-Expansion Valve Series T

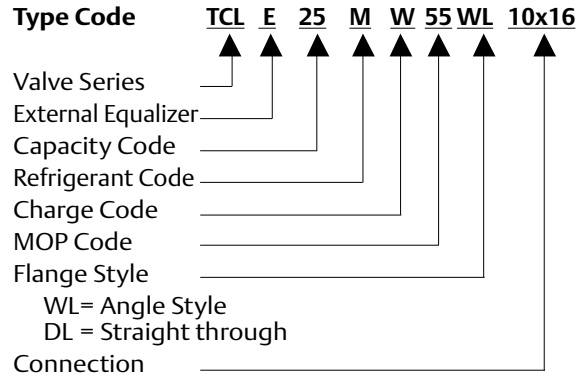
## Exchangeable Power Assemblies and Orifices

### Features

- Modular design for economical logistics and easy assembly and servicing
- Very good stability is attained because of the large forces generated by the large diaphragm diameter
- High-quality materials and processes for high reliability and long lifetime
- Superior partial load performance due to double seat orifice design (TJRE, TERE, TIRE & THRE)
- Biflow capability for applications in heat pumps
- Capillary tube length 1.5 m (TCLE, TJRE) and 3m (TERE, TIRE & THRE)
- PS: 46 / 31 bar with XB / XC power assembly.
- TS: -45 ... +65°C
- No CE marking according art. 3.3 PED 97/23 EC



TCLE



### Selection Chart for Orifices

| Series | R134a  |      | R404A/<br>R507 |      | R407C   |      | R407A/R407F         |                |                | R410A   |      | R448A/<br>R449A |      | R450A  |      | R513A  |      | R1234ze |      | Orifice       |
|--------|--------|------|----------------|------|---------|------|---------------------|----------------|----------------|---------|------|-----------------|------|--------|------|--------|------|---------|------|---------------|
|        | Type   | (kW) | Type           | (kW) | Type    | (kW) | Type                | (kW)<br>(407A) | (kW)<br>(407F) | Type    | (kW) | Type            | (kW) | Type   | (kW) | Type   | (kW) | Type    | (kW) |               |
| TCLE   | 25 MW  | 1.5  | 25 SW          | 1.3  | 50 NW   | 2.1  | 50NW/<br>25SW40     | 1.9            | 2.1            | 50 ZW   | 2.2  | 25 BW           | 1.9  | 20 DW  | 1.3  | 20 CW  | 1.3  | 20 EW   | 1.1  | X 22440-B1B   |
|        | 75 MW  | 2.9  | 75 SW          | 2.6  | 100 NW  | 4.0  | 100NW/<br>75SW40    | 3.6            | 4.1            | 100 ZW  | 4.3  | 100 BW          | 3.7  | 50 DW  | 2.5  | 50 CW  | 2.6  | 50 EW   | 2.2  | X 22440-B2B   |
|        | 150 MW | 6.1  | 150 SW         | 5.6  | 200 NW  | 8.5  | 200NW/<br>150SW40   | 7.8            | 8.8            | 250 ZW  | 9.2  | 200 BW          | 7.9  | 100 DW | 5.4  | 100 CW | 5.5  | 120 EW  | 4.8  | X 22440-B3B   |
|        | 200 MW | 9.3  | 200 SW         | 8.4  | 300 NW  | 12.9 | 300NW/<br>200SW40   | 11.7           | 13.3           | 400 ZW  | 13.9 | 250 BW          | 11.9 | 150 DW | 8.1  | 150 CW | 8.3  | 150 EW  | 7.2  | X 22440-B3.5B |
|        | 250 MW | 13.5 | 250 SW         | 12.2 | 400 NW  | 18.7 | 400NW/<br>250SW40   | 17             | 19.3           | 600 ZW  | 20.2 | 300 BW          | 17.3 | 200 DW | 11.8 | 200 CW | 12.1 | 200 EW  | 10.5 | X 22440-B4B   |
|        | 350 MW | 17.3 | 400 SW         | 15.7 | 550 NW  | 24.0 | 550NW/<br>400SW40   | 21.9           | 24.8           | 750 ZW  | 25.9 | 500 BW          | 22.1 | 250 DW | 15.1 | 250 CW | 15.5 | 300 EW  | 13.4 | X 22440-B5B   |
|        | 550 MW | 23.6 | 600 SW         | 21.5 | 750 NW  | 32.9 | 750NW/<br>600SW40   | 29.9           | 34             | 1000 ZW | 35.5 | 800 BW          | 30.3 | 400 DW | 20.7 | 400 CW | 21.2 | 450 EW  | 18.4 | X 22440-B6B   |
|        | 750 MW | 32.0 | 850 SW         | 29.0 | 1000 NW | 44.4 | 1000NW/<br>850SW40  | 40.5           | 45.9           | 1400 ZW | 48.0 | 1100 BW         | 41.0 | 500 DW | 28.0 | 500 CW | 28.7 | 600 EW  | 24.8 | X 22440-B7B   |
|        | 900 MW | 37.2 | 1000 SW        | 33.8 | 1150 NW | 51.7 | 1150NW/<br>1000SW40 | 47             | 53             | 1600 ZW | 55.8 | 1300 BW         | 47.7 | 600 DW | 32.6 | 600 CW | 33.4 | 700 EW  | 28.9 | X 22440-B8B   |
| TJRE   | 11 MW  | 45   | 12 SW          | 40   | 14 NW   | 62   | 14NW/<br>12SW40     | 57             | 65             | 19 ZW   | 67.7 | 15 BW           | 58   | 8 DW   | 40   | 8 CW   | 40   | 9 EW    | 35   | X 11873-B4B   |
|        | 13 MW  | 57   | 14 SW          | 51   | 17 NW   | 80   | 17NW/<br>14SW40     | 73             | 83             | 25 ZW   | 86.4 | 18 BW           | 74   | 9 DW   | 50   | 9 CW   | 52   | 10 EW   | 45   | X 11873-B5B   |
| TERE   | 16 MW  | 71   | 18 SW          | 63   | 21 NW   | 99   | 21NW/<br>18SW40     | 90             | 102            | -       | -    | 23 BW           | 91   | 11 DW  | 62   | 11 CW  | 64   | 13 EW   | 55   | X 9117-B6B    |
|        | 19 MW  | 81   | 20 SW          | 72   | 25 NW   | 112  | 25NW/<br>20SW40     | 102            | 116            | -       | -    | 26 BW           | 104  | 13 DW  | 71   | 13 CW  | 73   | 15 EW   | 63   | X 9117-B7B    |
|        | 25 MW  | 112  | 27 SW          | 99   | 33 NW   | 155  | 33NW/<br>27SW40     | 141            | 160            | -       | -    | 35 BW           | 143  | 17 DW  | 98   | 17 CW  | 100  | 20 EW   | 86   | X 9117-B8B    |
|        | 31 MW  | 135  | 34 SW          | 120  | 42 NW   | 188  | 42NW/<br>34SW40     | 171            | 194            | -       | -    | 44 BW           | 174  | 22 DW  | 119  | 22 CW  | 121  | 24 EW   | 105  | X 9117-B9B    |
| TIRE   | 45 MW  | 174  | 47 SW          | 154  | 52 NW   | 241  | 52NW/<br>47SW40     | 219            | 249            | -       | -    | 60 BW           | 222  | 31 DW  | 152  | 31 CW  | 156  | 35 EW   | 135  | X 9166-B10B   |
| THRE   | 55 MW  | 197  | 61 SW          | 174  | 71 NW   | 273  | 71NW/<br>61SW40     | 249            | 283            | -       | -    | 78 BW           | 252  | 38 DW  | 173  | 38 CW  | 177  | 43 EW   | 153  | X 9144-B11B   |
|        | 68 MW  | 236  | 77 SW          | 209  | 94 NW   | 327  | 94NW/<br>77SW40     | 297            | 338            | -       | -    | 98 BW           | 301  | 47 DW  | 206  | 47 CW  | 211  | 53 EW   | 183  | X 9144-B13B   |

| MOP  |      | Evaporating Temperature Range °C |            |           |            |           |
|------|------|----------------------------------|------------|-----------|------------|-----------|
| Code | bar  | R134a MW                         | R404A SW   | R407C NW  | R507 SW    | R410 ZW   |
| 35   | 2.4  | -45 .. 0                         |            |           |            |           |
| 40   | 2.8  |                                  | -45 .. -18 |           | -45 .. -18 |           |
| 55   | 3.8  | -45 .. 11                        | -45 .. -10 |           | -45 .. -10 |           |
| 65   | 4.5  |                                  |            |           |            |           |
| 75   | 5.2  |                                  | -45 .. -2  |           | -45 .. -2  |           |
| 80   | 5.5  |                                  | -45 .. 0   |           | -45 .. 0   |           |
| 100  | 6.9  |                                  |            | -45 .. 14 |            |           |
| 175  | 12.1 |                                  |            |           |            | -45 .. 16 |

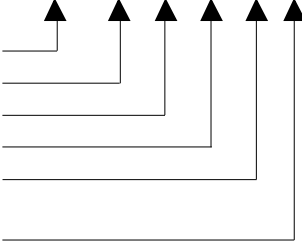
### Available upon special request:

- Power assembly with solder connection for external pressure equalization
- Non-standard MOPs
- Non-standard charges
- Non-standard connection sizes. See last page of this chapter

### Type Code

**XB 1019 M W 55 - 1 B**

Power Assembly  
 Refrigerant Code  
 Charge Code  
 MOP Code  
 Capillary Tube Length  
 1=1.5m; 2=3m  
 External Equalization



Nominal capacity ( $Q_n$ ) is based on the following conditions:

| Refrigerant    | Evaporating temperature | Condensing temperature                | Subcooling |
|----------------|-------------------------|---------------------------------------|------------|
| R407C          | +4°C dew point          | +38°C bubble point<br>+43°C dew point | 1K         |
| R134a, R410A   | +4°C                    | +38°C                                 |            |
| R448A, R449A   | +4°C dew point          | +38°C bubble / +43°C dew point        |            |
| R450A          |                         | +38°C bubble / +38.6°C dew point      |            |
| R513A, R1234ze |                         | +38°C bubble / +38°C dew point        |            |

Valve selection for other operating conditions see "Correction Tables for Thermo-Expansion Valves Series TI, TX3, TX6, T and L" or use the "Controls Navigator" selection tool (download from [www.emersonclimate.eu](http://www.emersonclimate.eu)).

### Selection Chart for Power Assemblies and Recommended Flanges

| Orifice       | Connection<br>Standard-Flange. Angle (see last page of this chapter) Solder/ODF |   | Power Assembly |
|---------------|---|---|----------------|
|               | mm  | inch  |                |
| X 22440-B1B   | C 501 - 5 mm<br>10 x 16   | C 501 - 5<br>$\frac{3}{8} \times \frac{5}{8}$                                       | XB1019...1B    |
| X 22440-B2B   |   |   |                |
| X 22440-B3B   |   |   |                |
| X 22440-B3.5B |   |   |                |
| X 22440-B4B   |   |   |                |
| X 22440-B5B   | C 501 - 7 mm<br>12 x 16   | C 501 - 7<br>$\frac{1}{2} \times \frac{5}{8}$                                       |                |
| X 22440-B6B   |   |   |                |
| X 22440-B7B   | A 576 mm<br>16 x 22 (22 x 28 ODM)   | $\frac{5}{8} \times \frac{7}{8}$ ( $\frac{1}{8} \times 1 \frac{1}{8}$ ODM)          |                |
| X 22440-B8B   |   |   |                |
| X 11873-B4B   | 10331<br>22 x 22  | $\frac{7}{8} \times \frac{7}{8}$ ( $1 \frac{1}{8} \times 1 \frac{1}{8}$ ODM)        |                |
| X 11873-B5B   |   |   |                |
| X 9117-B6B    | 9153 mm<br>22 x 22  | $\frac{9153}{78} \times \frac{7}{8}$<br>( $1 \frac{1}{8} \times 1 \frac{1}{8}$ ODM) | XC726...2B     |
| X 9117-B7B    |   |   |                |
| X 9117-B8B    |   |   |                |
| X 9117-B9B    |   |   |                |
| X 9166-B10B   |   |   |                |
| X 9144-B11B   | 9149<br>22 x 22   | $\frac{9149}{78} \times \frac{7}{8}$ ( $1 \frac{1}{8} \times 1 \frac{1}{8}$ ODM)    |                |
| X 9144-B13B   |   |   |                |

### Spare Parts

|  | Type                       | Part No.                         |
|--|----------------------------|----------------------------------|
| Gasket Set for T Series Valves   | X 13455 -1                 | <b>027 579</b>                   |
| Service Tool for T Series Valves   | X 99999                    | <b>800 005</b>                   |
| Steel screws for following flange types:<br>C501, 9761, 6346, A576<br>9148, 9149, 9152, 9153, 10331, 10332 | Screw ST 32<br>Screw ST 48 | <b>803 573</b><br><b>803 574</b> |

Note: Please refer "Controls Navigator" for selection and adjustment guideline