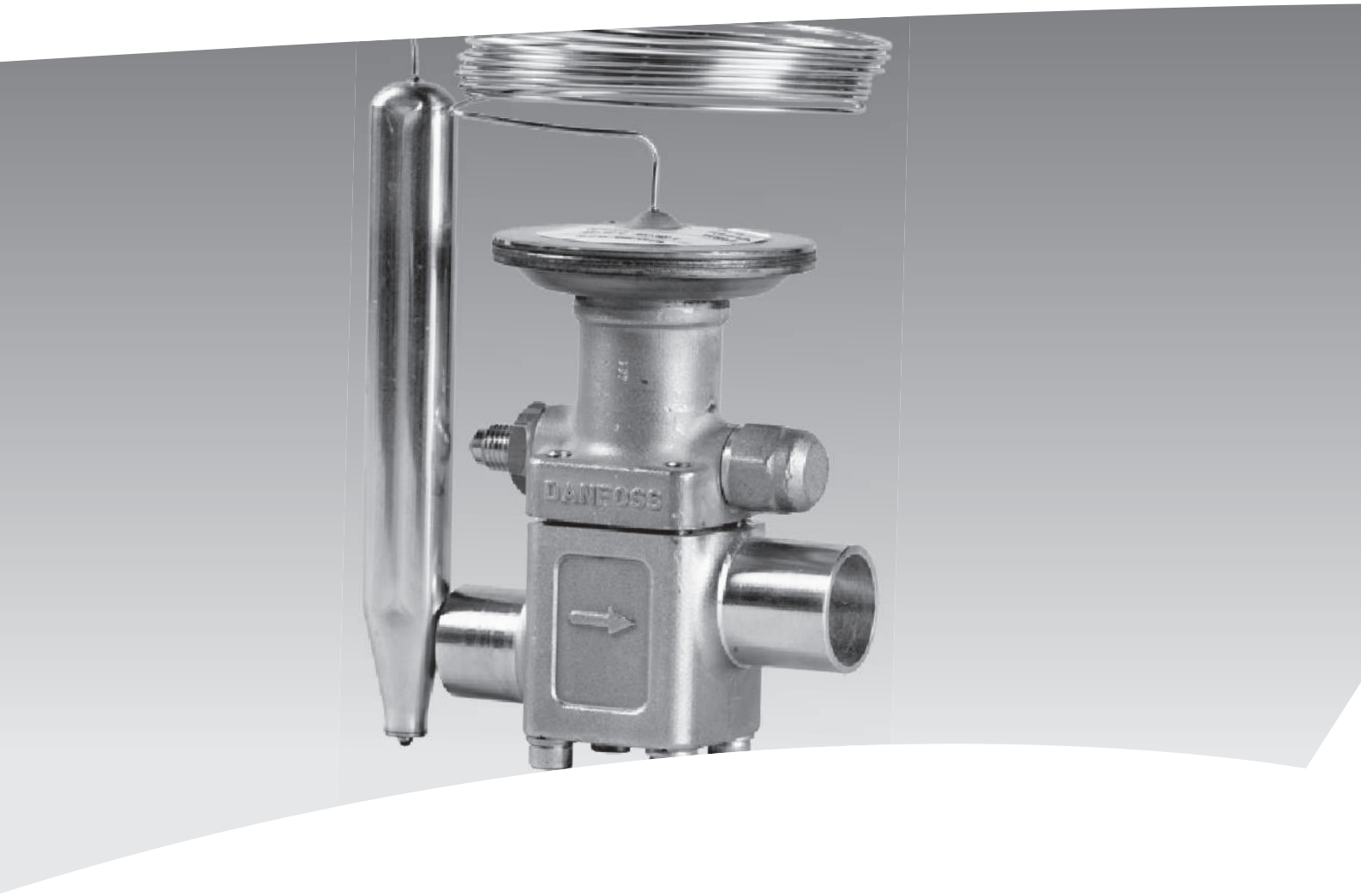

Thermostatic expansion valves, type TE 5 - TE 55

REFRIGERATION AND
AIR CONDITIONING

Teknisk brochure

Contents

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Introduction

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:
  –60 to +10°C
  Equally applicable to freezing, refrigeration and air conditioning plant.
- Interchangeable orifice assembly
  - easier stocking
  - easy capacity matching
  - better service
- Stainless steel power element, capillary tube and bulb
  - high corrosion resistance
  - high strength and vibration resistance
  - fast installation: self-aligning bulb
  - good thermal contact and transmission
- Rated capacities from 19 to 355kW (5.5 to 100 TR) for R22.
- Can be supplied with MOP (Max. Operating Pressure)
  Protects the compressor motor against excessive evaporating pressure.
- Patented double contact bulb
  - Fast and easy to install.
  - Good temperature transfer from pipe to bulb.

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Technical data

Max. temperature
Bulb, when valve is installed: 100°C
Complete valve not installed: 60°C

Min. temperature
–60°C

Max. test pressure
28 bar

Permissible working pressure
22 bar

MOP-points

Refrigerant	Range N – 40 → +10°C	Range NM – 40 → – 5°C	Range NL – 40 → – 15°C	Range B – 60 → – 25°C
	MOP-point in evaporating temperature t_e and evaporating pressure p_e			
	+15°C/+60°F	0°C/+32°F	– 10°C/+15°F	– 20°C/– 4°F
R22	7.0 bar / 101 psig	4.0 bar / 57.5 psig	2.6 bar / 37.8 psig	1.4 bar / 20.9 psig
R134a	4.0 bar / 57.4 psig	1.9 bar / 27.8 psig	1.0 bar / 15.0 psig	
R404A/R507	8.6 bar / 124 psig	5.0 bar / 72.4 psig	3.4 bar / 49.1 psig	2.0 bar / 29.0 psig
R407C	6.5 bar / 94.3 psig			

MOP = Max. Operating Pressure

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.
The standard superheat setting SS is 5 K for valves without MOP and 4 K for valves with MOP.
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

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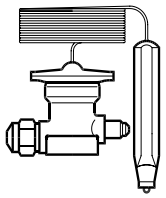
Ordering

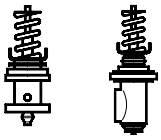
R22



Thermostatic element

Valve type	Pressure equalization	Capillary tube	Code no.					
			Range N −40 to +10°C		Range NM −40 to −5°C	Range NL −40 to −15°C	Range B −60 to −25°C	
	1/4 in. / 6 mm	m	Without MOP	MOP+15°C	MOP 0°C	MOP −10°C	Without MOP	MOP −20°C
TEX 5	Ext. [1]	3	**067B3250**	**067B3267**	**067B3249**	**067B3253**	**067B3263**	**067B3251**
TEX 12	Ext. [2]	3	**067B3210**	**067B3227**	**067B3207**	**067B3213**		**067B3211**
TEX 12	Ext. [2]	5	**067B3209**					**067B3212**
TEX 20	Ext. [2]	3	**067B3274**	**067B3286**	**067B3273**	**067B3275**		**067B3276**
TEX 20	Ext. [2]	5	**067B3290**					**067B3287**
TEX 55	Ext. [2]	3	**067G3205**	**067G3220**	**067G3206**			**067G3207**
TEX 55	Ext. [2]	5	**067G3209**					**067G3217**

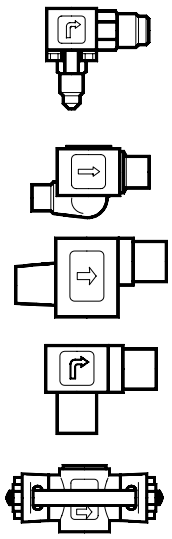
[1]) Pressure equalization with solder connector can be supplied on contacting Danfoss.
[2]) Available as accessory: solder adapter for TE 12, TE 20 and TE 55. **Code no. 068B0170.**



Orifice assembly

Valve type	Rated capacity Range N: −40 to 10°C kW	Rated capacity Range B: −60 to −25°C kW	Orifice no.	**Code no.**
TEX 5-3	19.7	11.9	01	**067B2089**
TEX 5-4.5	26.9	16.7	02	**067B2090**
TEX 5-7.5	38.8	24.8	03	**067B2091**
TEX 5-12	55.3	35.4	04	**067B2092**
TEX 12-4.5	26.8	17.2	01	**067B2005**
TEX 12-7.5	43.4	28.2	02	**067B2006**
TEX 12-12	64.0	41.4	03	**067B2007**
TEX 12-18	84.4	55.9	04	**067B2008**
TEX 20-30	108.0	70.0	01	**067B2172**
TEX 55-50	239.0	148.0	01	**067G2005**
TEX 55-85	356.0	228.0	02	**067G2006**

The rated capacity is based on:
Evaporating temperature t_e = +5°C for range N and t_e = −30°C for range B
Condensing temperature t_c = +32°C
Refrigerant temperature ahead of valve t_l = +28°C



Valve body

Type	Orifice no.	Connection Inlet × Outlet		Code no.			
		in.	mm	Flare angleway	Solder angleway	Solder straightway	Solder flanges
TE 5	01 - 03 03 04	1/2 × 5/8 1/2 × 7/8 5/8 × 7/8		**067B4013**	**067B4009** **067B4010** **067B4011**	**067B4007** **067B4008**	
TE 5	01- 03 03 04		12 × 16 12 × 22 16 × 22	**067B4013**	**067B4004** **067B4005** **067B4012**	**067B4002** **067B4003**	
TE 12	01 - 02 03 - 04 03 - 04	5/8 × 7/8 7/8 × 1 7/8 × 1 1/8			**067B4022** [1] **067B4023** [2]	**067B4020** [1] **067B4021** [2]	**067B4025** [1] **067B4026** [1]
TE 12	01 - 02 03 - 04 03 - 04		16 × 22 22 × 25 22 × 28		 **067B4017** [2]	**067B4018** [1] **067B4016** [2]	**067B4027** [1] **067B4015** [1]
TE 20	01 01	7/8 × 1 1/8	 22 × 28		**067B4023** [2] **067B4017** [2]	**067B4021** [2] **067B4016** [2]	
TE 55	01- 02 01- 02	1 1/8 × 1 3/8	 28 × 35		**067G4004** [3] **067G4002** [3]	**067G4003** [3] **067G4001** [3]	

[1]) ODF × ODF
[2]) ODF × ODM
[3]) ODM × ODM
ODF = Internal diameter
ODM = External diameter

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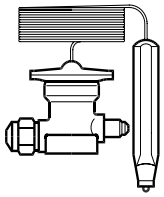
Ordering
(continued)

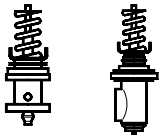
R407C



Thermostatic element

Valve type	Pressure equalization	Capillary tube	Code no.	
			Range N –40 to +10°C	
	$^1/_4$ in. / 6 mm	m	Without MOP	MOP+15°C
TEZ 5	Ext. [1]	3	**067B3278**	**067B3277**
TEZ 12	Ext. [2]	3	**067B3366**	**067B3367**
TEZ 20	Ext. [2]	3	**067B3371**	**067B3372**
TEZ 55	Ext. [2]	3	**067G3240**	**067G3241**

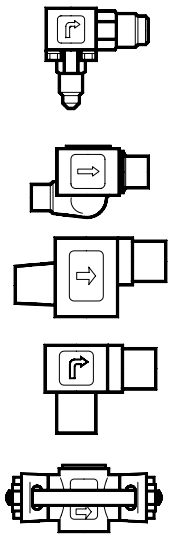
[1]) Pressure equalization with solder connector can be supplied on contacting Danfoss.
[2]) Available as accessory: solder adapter for TE 12, TE 20 and TE 55. **Code no. 068B0170.**



Orifice assembly

Valve type	Rated capacity Range N: –40 to 10°C kW	Orifice no.	**Code no.**
TEZ 5-3.2	21.3	01	**067B2089**
TEZ 5-5.0	29.1	02	**067B2090**
TEZ 5-8.0	41.9	03	**067B2091**
TEZ 5-13	59.7	04	**067B2092**
TEZ 12-5.0	28.9	01	**067B2005**
TEZ 12-8.0	46.9	02	**067B2006**
TEZ 12-13	69.1	03	**067B2007**
TEZ 12-19.5	91.2	04	**067B2008**
TEZ 20-32.5	116.0	01	**067B2172**
TEZ 55-54	259.0	01	**067G2005**
TEZ 55-92	385.0	02	**067G2006**

The rated capacity is based on:
Evaporating temperature t_e = +5°C for range N
Condensing temperature t_c = +32°C
Refrigerant temperature ahead of valve t_l = +28°C



Valve body

Type	Orifice no.	Connection Inlet × Outlet		Code no.			
		in.	mm	Flare angleway	Solder angleway	Solder straightway	Solder flanges
TE 5	01 - 03 03 04	$^1/_2 \times ^5/_8$ $^1/_2 \times ^7/_8$ $^5/_8 \times ^7/_8$		**067B4013**	**067B4009** **067B4010** **067B4011**	**067B4007** **067B4008**	
TE 5	01- 03 03 04		12 × 16 12 × 22 16 × 22	**067B4013**	**067B4004** **067B4005** **067B4012**	**067B4002** **067B4003**	
TE 12	01 - 02 03 - 04 03 - 04	$^5/_8 \times ^7/_8$ $^7/_8 \times 1$ $^7/_8 \times 1^1/_8$			**067B4022** [1]) **067B4023** [2])	**067B4020** [1]) **067B4021** [2])	**067B4025** [1]) **067B4026** [1])
TE 12	01 - 02 03 - 04 03 - 04		16 × 22 22 × 25 22 × 28		 **067B4017** [2])	**067B4018** [1]) **067B4016** [2])	**067B4027** [1]) **067B4015** [1])
TE 20	01 01	$^7/_8 \times 1^1/_8$	 22 × 28		**067B4023** [2]) **067B4017** [2])	**067B4021** [2]) **067B4016** [2])	
TE 55	01- 02 01- 02	$1^1/_8 \times 1^3/_8$	 28 × 35		**067G4004** [3]) **067G4002** [3])	**067G4003** [3]) **067G4001** [3])	

[1]) ODF × ODF
[2]) ODF × ODM
[3]) ODM × ODM
ODF = Internal diameter
ODM = External diameter

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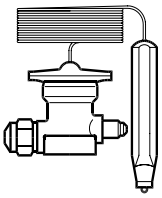
Ordering
(continued)

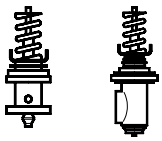


Thermostatic element

R134a

Valve type	Pressure equalization	Capillary tube	Code no.		
			Range N −40 to +10°C		Range NM −40 to −5°C
	1/4 in. / 6 mm	m	Without MOP	MOP +15°C	MOP 0°C
TEN 5	Ext. [1]	3	**067B3297**	**067B3298**	**067B3360**
TEN 12	Ext. [2]	3	**067B3232**	**067B3233**	
TEN 12	Ext. [2]	5	**067B3363**		
TEN 20	Ext. [2]	3	**067B3292**	**067B3293**	
TEN 20	Ext. [2]	5	**067B3370**		
TEN 55	Ext. [2]	3	**067G3222**	**067G3223**	
TEN 55	Ext. [2]	5	**067G3230**		

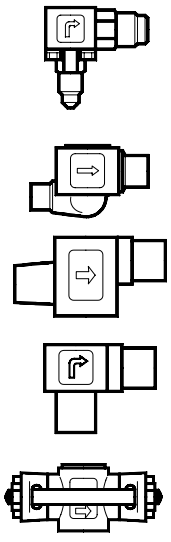
[1]) Pressure equalization with solder connector can be supplied on contacting Danfoss.
[2]) Available as accessory: solder adapter for TE 12, TE 20 and TE 55. **Code no. 068B0170.**



Orifice assembly

Valve type	Rated capacity kW	Orifice no.	**Code no.**
TEN 5-3.7	12.9	01	**067B2089**
TEN 5-5.4	19.1	02	**067B2090**
TEN 5-8.3	29.1	03	**067B2091**
TEN 5-11.2	39.6	04	**067B2092**
TEN 12-4.7	16.7	01	**067B2005**
TEN 12-7.7	27.2	02	**067B2006**
TEN 12-11.4	40.0	03	**067B2007**
TEN 12-15	53.0	04	**067B2008**
TEN 20-18	65.0	01	**067B2170**
TEN 55-41	145.0	01	**067G2001**
TEN 55-62	220.0	02	**067G2002**

The rated capacity is based on:
Evaporating temperature t_e = +5°C
Condensing temperature t_c = +32°C
Refrigerant temperature ahead of valve t_l = +28°C



Valve body

Type	Orifice no.	Connection Inlet × Outlet		Code no.			
		in.	mm	Flare angleway	Solder angleway	Solder straightway	Solder flanges
TE 5	01 - 03 03 04	1/2 × 5/8 1/2 × 7/8 5/8 × 7/8		**067B4013**	**067B4009** **067B4010** **067B4011**	**067B4007** **067B4008**	
TE 5	01- 03 03 04		12 × 16 12 × 22 16 × 22	**067B4013**	**067B4004** **067B4005** **067B4012**	**067B4002** **067B4003**	
TE 12	01 - 02 03 - 04 03 - 04	5/8 × 7/8 7/8 × 1 7/8 × 1 1/8			**067B4022** [1] **067B4023** [2]	**067B4020** [1] **067B4021** [2]	**067B4025** [1] **067B4026** [1]
TE 12	01 - 02 03 - 04 03 - 04		16 × 22 22 × 25 22 × 28		 **067B4017** [2]	**067B4018** [1] **067B4016** [2]	**067B4027** [1] **067B4015** [1]
TE 20	01 01	7/8 × 1 1/8	 22 × 28		**067B4023** [2] **067B4017** [2]	**067B4021** [2] **067B4016** [2]	
TE 55	01- 02 01- 02	1 1/8 × 1 3/8	 28 × 35		**067G4004** [3] **067G4002** [3]	**067G4003** [3] **067G4001** [3]	

[1]) ODF × ODF
[2]) ODF × ODM
[3]) ODM × ODM
ODF = Internal diameter
ODM = External diameter

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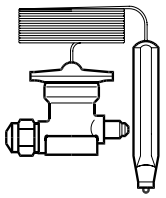
Ordering
(continued)

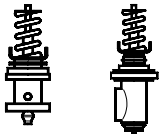


Thermostatic element

R404A/R507

Valve type	Pressure equalization	Capillary tube	Code no.					
			Range N –40 to +10°C		Range NM –40 to –5°C	Range NL –40 to –15°C	Range B –60 to –25°C	
	1/4 in. / 6 mm	m	Without MOP	MOP +15°C	MOP 0°C	MOP –10°C	Without MOP	MOP –20°C
TES 5	Ext. [1]	3	**067B3342**		**067B3357**	**067B3358**	**067B3344**	**067B3343**
TES 12	Ext. [2]	3	**067B3347**		**067B3345**	**067B3348**		**067B3349**
TES 12	Ext. [2]	5	**067B3346**					**067B3350**
TES 20	Ext. [2]	3	**067B3352**		**067B3351**	**067B3353**		**067B3354**
TES 20	Ext. [2]	5	**067B3356**					**067B3355**
TES 55	Ext. [2]	3	**067G3302**		**067G3303**	**067G3304**		**067G3305**
TES 55	Ext. [2]	5	**067G3301**					**067G3306**

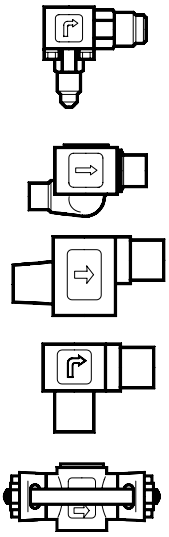
[1] Pressure equalization with solder connector can be supplied on contacting Danfoss.
[2] Available as accessory: solder adapter for TE 12, TE 20 and TE 55. **Code no. 068B0170.**



Orifice assembly

Valve type	Rated capacity range N: –40 to 10°C kW	Rated capacity range B: –60 to –25°C kW	Orifice no.	**Code no.**
TES 5-3.7	13.0	8.0	01	**067B2089**
TES 5-5.0	17.6	11.2	02	**067B2090**
TES 5-7.2	25.3	16.6	03	**067B2091**
TES 5-10.3	36.2	23.7	04	**067B2092**
TES12-4.2	14.8	11.6	01	**067B2005**
TES 12-6.8	23.9	18.9	02	**067B2006**
TES 12-10.0	35.2	27.7	03	**067B2007**
TES 12-13.4	47.1	37.5	04	**067B2008**
TES 20-16.5	59.0	41.0	01	**067B2175**
TES 55-37.0	130.0	95.0	01	**067G2011**
TES 55-56.0	197.0	144.0	02	**067G2012**

The rated capacity is based on:
Evaporating temperature t_e = +5°C for range N and t_e = –30°C for range B
Condensing temperature t_c = +32°C
Refrigerant temperature ahead of valve t_l = +28°C



Valve body

Type	Orifice no.	Connection Inlet × Outlet		Code no.			
		in.	mm	Flare angleway	Solder angleway	Solder straightway	Solder flanges
TE 5	01 - 03 03 04	1/2 × 5/8 1/2 × 7/8 5/8 × 7/8		**067B4013**	**067B4009** **067B4010** **067B4011**	**067B4007** **067B4008**	
TE 5	01- 03 03 04		12 × 16 12 × 22 16 × 22	**067B4013**	**067B4004** **067B4005** **067B4012**	**067B4002** **067B4003**	
TE 12	01 - 02 03 - 04 03 - 04	5/8 × 7/8 7/8 × 1 7/8 × 1 1/8			**067B4022** [1] **067B4023** [2]	**067B4020** [1] **067B4021** [2]	**067B4025** [1] **067B4026** [1]
TE 12	01 - 02 03 - 04 03 - 04		16 × 22 22 × 25 22 × 28		 **067B4017** [2]	**067B4018** [1] **067B4016** [2]	**067B4027** [1] **067B4015** [1]
TE 20	01 01	7/8 × 1 1/8	 22 × 28		**067B4023** [2] **067B4017** [2]	**067B4021** [2] **067B4016** [2]	
TE 55	01- 02 01- 02	1 1/8 × 1 3/8	 28 × 35		**067G4004** [3] **067G4002** [3]	**067G4003** [3] **067G4001** [3]	

[1] ODF × ODF
[2] ODF × ODM
[3] ODM × ODM
ODF = Internal diameter
ODM = External diameter

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Capacity

Capacity in KW for Range N: –40°C to +10°C

R22

Valve type	Orifice no.	Pressure drop across valve Δp bar								Pressure drop across valve Δp bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
		Evaporating temperature +10°C								**Evaporating temperature 0°C**							
TEX 5-3	01	12.4	16.3	18.8	20.5	21.7	22.4	22.8	23.0	12.8	16.7	19.1	20.8	22.0	22.7	23.2	23.3
TEX 5-4.5	02	17.2	22.5	25.9	28.1	29.7	30.6	31.1	31.3	17.7	22.9	26.1	28.3	29.9	30.9	31.5	31.7
TEX 5-7.5	03	25.3	32.8	37.4	40.6	42.6	43.9	44.5	44.7	25.9	33.0	37.5	40.6	42.8	44.2	45.0	45.3
TEX 5-12	04	35.8	46.6	53.3	57.8	60.8	62.6	63.6	63.9	36.6	47.0	53.5	58.0	61.2	63.2	64.3	64.7
TEX 12-4.5	01	16.8	22.5	26.1	28.6	30.3	31.4	32.1	32.3	16.1	21.2	24.5	26.8	28.5	29.6	30.3	30.6
TEX 12-7.5	02	27.3	36.4	42.1	46.1	48.8	50.7	51.6	52.0	26.2	34.5	39.8	43.5	46.1	47.8	48.9	49.3
TEX 12-12	03	40.2	53.3	61.6	67.2	71.1	73.5	74.9	75.5	38.7	50.8	58.5	63.9	67.7	70.3	71.9	72.6
TEX 12-18	04	53.2	70.2	80.9	88.1	93.0	96.1	97.8	98.5	51.7	67.6	77.8	85.0	90.2	93.7	95.8	96.9
TEX 20-30	01	72.0	94.4	108	118	124	129	131	132	66.3	86.0	98.5	107	113	118	120	121
TEX 55-50	01	158	209	241	263	278	287	293	295	145	190	218	237	251	260	265	267
TEX 55-85	02	239	313	360	391	412	425	432	434	221	286	326	355	375	388	395	397
		Evaporating temperature -10°C								**Evaporating temperature -20°C**							
TEX 5-3	01	11.1	14.3	16.3	17.7	18.8	19.5	19.9	20.1		11.5	13.0	14.1	15.0	15.6	16.0	16.2
TEX 5-4.5	02	15.4	19.7	22.4	24.3	25.7	26.7	27.3	27.6		15.9	18.1	19.6	20.8	21.6	22.1	22.4
TEX 5-7.5	03	22.7	28.7	32.7	35.6	37.8	39.4	40.4	40.9		23.2	26.3	28.7	30.6	32.0	32.9	33.5
TEX 5-12	04	32.3	41.1	46.8	51.0	54.1	56.3	57.7	58.4		33.2	37.7	41.1	43.7	45.7	47.0	47.8
TEX 12-4.5	01		18.7	21.4	23.4	24.8	25.8	26.4	26.6		15.9	18.1	19.6	20.8	21.6	22.1	22.4
TEX 12-7.5	02		30.4	34.8	37.9	40.2	41.8	42.8	43.2		25.9	29.4	32.0	33.9	35.2	36.1	36.5
TEX 12-12	03		44.5	50.9	55.6	59.0	61.4	62.9	63.7		37.7	42.9	46.7	49.6	51.7	53.1	53.9
TEX 12-18	04		59.1	67.7	74.0	78.7	82.1	84.3	85.6		49.9	57.0	62.3	66.4	69.6	71.8	73.1
TEX 20-30	01		75.4	85.9	93.6	99.2	103	106	107		63.7	72.4	78.8	83.8	87.4	90.0	91.4
TEX 55-50	01		166	189	205	217	225	229	231		140	158	171	181	187	191	193
TEX 55-85	02		251	285	309	327	339	346	349		213	240	260	275	285	291	294
		Evaporating temperature -30°C								**Evaporating temperature -40°C**							
TEX 5-3	01		9.0	10.2	11.1	11.7	12.2	12.5	12.7			7.9	8.5	9.0	9.4	9.7	9.8
TEX 5-4.5	02		12.6	14.3	15.4	16.4	17.0	17.5	17.8			11.1	12.0	12.7	13.3	13.7	13.9
TEX 5-7.5	03		18.3	20.8	22.7	24.2	25.4	26.2	26.8			16.2	17.7	19.0	19.9	20.7	21.2
TEX 5-12	04		26.3	29.8	32.5	34.6	36.3	37.5	38.2			23.2	25.3	27.1	28.5	29.5	30.2
TEX 12-4.5	01			14.8	16.0	16.9	17.6	18.0	18.3			11.9	12.8	13.5	14.0	14.4	14.6
TEX 12-7.5	02			24.2	26.2	27.7	28.8	29.5	29.9			19.4	21.0	22.2	23.1	23.7	24.1
TEX 12-12	03			35.1	38.1	40.5	42.4	43.7	44.5			28.1	30.6	32.6	34.1	35.3	36.1
TEX 12-18	04			46.6	51.0	54.6	57.4	59.6	61.0			37.4	41.1	44.2	46.8	48.8	50.3
TEX 20-30	01			59.2	64.5	68.8	72.0	74.4	75.8			47.5	51.8	55.4	58.2	60.4	61.9
TEX 55-50	01			129	139	146	151	155	156			102	110	116	120	122	123
TEX 55-85	02			197	212	224	232	237	240			158	170	178	185	189	191

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Capacity *(continued)*

Capacity in KW for Range B: –60°C to –25°C

R22

Valve type	Orifice no.	Pressure drop across valve Δp bar								Pressure drop across valve Δp bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
		Evaporating temperature -25°C								**Evaporating temperature -30°C**							
TEX 5-3	01	8.1	10.2	11.6	12.5	13.3	13.8	14.2	14.4	7.2	9.0	10.2	11.1	11.7	12.2	12.5	12.7
TEX 5-4.5	02	11.3	14.2	16.1	17.4	18.5	19.2	19.7	20.0	10.1	12.6	14.3	15.4	16.4	17.0	17.5	17.8
TEX 5-7.5	03	16.4	20.7	23.5	25.6	27.3	28.6	29.5	30.0	14.6	18.3	20.8	22.7	24.2	25.4	26.2	26.8
TEX 5-12	04	23.5	29.6	33.6	36.6	39.0	40.8	42.1	42.8	20.9	26.3	29.8	32.5	34.6	36.3	37.5	38.2
TEX 12-4.5	01	11.3	14.5	16.4	17.8	18.8	19.6	20.0	20.3	10.2	13.1	14.8	16.0	16.9	17.6	18.0	18.3
TEX 12-7.5	02	18.5	23.6	26.8	29.0	30.7	31.9	32.7	33.2	16.8	21.4	24.2	26.2	27.7	28.8	29.5	29.9
TEX 12-12	03	26.8	34.2	38.9	42.3	45.0	46.9	48.3	49.1	24.3	30.9	35.1	38.1	40.5	42.4	43.7	44.5
TEX 12-18	04	35.4	45.3	51.7	56.6	60.4	63.4	65.6	67.0	32.0	40.8	46.6	51.0	54.6	57.4	59.6	61.0
TEX 20-20	01	46.0	58.0	66.0	72.0	76.0	80.0	82.0	83.0	41.0	52.0	59.0	65.0	69.0	72.0	74.0	76.0
TEX 55-35	01	100	127	143	155	163	169	173	174	91.0	115	129	139	146	151	155	156
TEX 55-60	02	154	194	218	236	249	258	264	267	140	175	197	212	224	232	237	240
		Evaporating temperature -40°C								**Evaporating temperature -50°C**							
TEX 5-3	01	5.6	7.0	7.9	8.5	9.0	9.4	9.7	9.8		5.5	6.1	6.6	7.0	7.3	7.5	7.7
TEX 5-4.5	02	7.9	9.9	11.1	12.0	12.7	13.3	13.7	13.9		7.7	8.7	9.4	9.9	10.4	10.7	10.9
TEX 5-7.5	03	11.4	14.3	16.2	17.7	19.0	19.9	20.7	21.2		11.2	12.7	13.9	14.9	15.8	16.4	16.9
TEX 5-12	04	16.3	20.5	23.2	25.3	27.1	28.5	29.5	30.2		16.0	18.2	19.9	21.3	22.5	23.4	24.1
TEX 12-4.5	01	8.3	10.5	11.9	12.8	13.5	14.0	14.4	14.6		8.5	9.5	10.2	10.8	11.2	11.5	11.7
TEX 12-7.5	02	13.7	17.2	19.4	21.0	22.2	23.1	23.7	24.1		13.9	15.5	16.8	17.7	18.5	19.0	19.4
TEX 12-12	03	19.6	24.8	28.1	30.6	32.6	34.1	35.3	36.1		19.8	22.5	24.5	26.2	27.6	28.6	29.4
TEX 12-18	04	25.5	32.6	37.4	41.1	44.2	46.8	48.8	50.3		25.9	29.9	33.1	35.9	38.2	40.2	41.6
TEX 20-20	01	33.0	42.0	47.0	52.0	55.0	58.0	60.0	62.0		33.0	38.0	42.0	45.0	47.0	49.0	51.0
TEX 55-35	01	73.0	92.0	102	110	116	120	122	123		73.0	81.0	87.0	91.0	94.0	96.0	97.0
TEX 55-60	02	114	141	158	170	178	185	189	191		113	126	135	142	147	150	151
		Evaporating temperature -55°C								**Evaporating temperature -60°C**							
TEX 5-3	01										4.4	4.9	5.3	5.6	5.9	6.1	6.2
TEX 5-4.5	02										6.2	7.0	7.6	8.0	8.4	8.6	8.8
TEX 5-7.5	03										9.0	10.3	11.3	12.1	12.9	13.5	13.9
TEX 5-12	04										12.9	14.7	16.1	17.3	18.3	19.2	19.8
TEX 12-4.5	01		7.6	8.5	9.2	9.7	10.1	10.4	10.5								
TEX 12-7.5	02		12.5	14.0	15.1	16.0	16.7	17.2	17.5								
TEX 12-12	03		17.8	20.3	22.1	23.7	25.0	26.0	26.7								
TEX 12-18	04		23.3	27.0	30.0	32.6	34.8	36.7	38.2								
TEX 20-20	01		30.0	34.0	37.0	40.0	43.0	45.0	46.0								
TEX 55-35	01		66.0	73.0	78.0	82.0	84.0	86.0	87.0								
TEX 55-60	02		102	113	121	127	131	134	135								

Correction for subcooling Δt_{sub}

The evaporator capacities used must be corrected if subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor below. Selections can then be made from the tables above.

Note:
Insufficient subcooling can produce flash gas.

Δt_{sub}	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
Correction factor	1.00	1.06	1.11	1.15	1.2	1.25	1.3	1.35	1.39	1.44

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Capacity *(continued)*

Capacity in KW for Range N: –40°C to +10°C

R407C

Valve type	Orifice no.	Pressure drop across valve Δp bar								Pressure drop across valve Δp bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
		Evaporating temperature +10°C								**Evaporating temperature 0°C**							
TEZ 5 - 3.2	01	12.9	16.8	19.2	20.7	21.7	22.0	22.1	22.1	13.3	17.2	19.5	21.0	22.0	22.2	22.5	22.4
TEZ 5 - 5.0	02	17.9	23.2	26.4	28.4	29.7	30.0	30.2	30.0	18.4	23.6	26.6	28.6	29.9	30.3	30.6	30.4
TEZ 5 - 8.0	03	26.3	33.8	38.1	41.0	42.6	43.0	43.2	42.9	26.9	34.0	38.3	41.0	42.8	43.3	43.7	43.5
TEZ 5 - 13	04	37.2	48.0	54.4	58.4	60.8	61.3	61.7	61.3	38.1	48.4	54.6	58.6	61.2	61.9	62.4	62.1
TEZ 12 - 5.0	01	17.5	23.2	26.6	28.9	30.3	30.8	31.1	31.0	16.7	21.8	25.0	27.1	28.5	29.0	29.4	29.4
TEZ 12 - 8.0	02	28.4	37.5	42.9	46.6	48.8	49.7	50.1	49.9	27.2	35.5	40.6	43.9	46.1	46.8	47.4	47.3
TEZ 12 - 13	03	41.8	54.9	62.8	67.9	71.0	72.0	72.7	72.5	40.2	52.3	59.7	64.5	67.7	68.9	69.7	69.7
TEZ 12 - 19.5	04	55.0	72.0	83.0	89.0	93.0	94.0	94.9	94.6	53.8	70.0	79.0	86.0	90.0	92.0	92.9	93.0
TEZ 20 - 32.5	01	75.0	97.0	110	119	124	126	127	127	69.0	89.0	100	108	113	116	116	116
TEZ 55 - 54	01	164	215	246	266	278	281	284	283	151	196	222	239	251	255	257	256
TEZ 55 - 92	02	249	322	367	395	412	417	419	417	230	295	333	359	375	380	383	381
		Evaporating temperature -10°C								**Evaporating temperature -20°C**							
TEZ 5 - 3.2	01	11.5	14.6	16.5	17.7	18.8	19.1	19.3	19.1		11.7	13.1	14.1	14.9	15.1	15.4	15.2
TEZ 5 - 5.0	02	16.0	20.1	22.6	24.3	25.7	26.2	26.5	26.2		16.2	18.3	19.6	20.6	21.0	21.2	21.1
TEZ 5 - 8.0	03	23.6	29.3	33.0	35.6	37.8	38.6	39.2	38.9		23.7	26.6	28.7	30.3	31.0	31.6	31.5
TEZ 5 - 13	04	33.6	41.9	47.3	51.0	54.1	55.2	56.0	55.5		33.9	38.1	41.1	43.3	44.3	45.1	44.9
TEZ 12 - 5.0	01		19.1	21.6	23.4	24.8	25.3	25.6	25.3		16.2	18.3	19.6	20.6	21.0	21.2	21.1
TEZ 12 - 8.0	02		31.0	35.1	37.9	40.2	41.0	41.5	41.0		26.4	29.7	32.0	33.6	34.1	34.7	34.3
TEZ 12 - 13	03		45.4	51.4	55.6	59.0	60.2	61.0	60.5		38.5	43.3	46.7	49.1	50.1	51.0	50.7
TEZ 12 - 19.5	04		60.3	68.4	74.0	78.7	80.5	81.8	81.3		50.9	57.6	62.3	65.7	67.5	68.9	68.7
TEZ 20 - 32.5	01		77.0	87.0	94.0	99.0	101	103	102		65.0	73.1	78.8	83.0	84.8	86.4	85.9
TEZ 55 - 54	01		169	191	205	217	221	222	219		143	160	171	179	181	183	181
TEZ 55 - 92	02		256	288	309	327	332	336	332		217	242	260	272	276	279	276
		Evaporating temperature -30°C								**Evaporating temperature -40°C**							
TEZ 5 - 3.2	01		9.2	10.3	11.0	11.5	11.7	11.9	11.8			7.9	8.3	8.6	8.9	9.0	9.0
TEZ 5 - 5.0	02		12.9	14.4	15.2	16.1	16.3	16.6	16.6			11.1	11.8	12.2	12.6	12.7	12.8
TEZ 5 - 8.0	03		18.7	21.0	22.5	23.7	24.4	24.9	24.9			16.2	17.3	18.2	18.9	19.3	19.5
TEZ 5 - 13	04		26.8	30.1	32.2	33.9	34.8	35.6	35.5			23.2	24.8	26.0	27.1	27.4	27.8
TEZ 12 - 5.0	01			14.9	15.8	16.6	16.9	17.1	17.0			11.9	12.5	13.0	13.3	13.4	13.4
TEZ 12 - 8.0	02			24.4	25.9	27.1	27.6	28.0	27.8			19.4	20.6	21.3	21.9	22.0	22.2
TEZ 12 - 13	03			35.5	37.7	39.7	40.7	41.5	41.4			28.1	30.0	31.3	32.4	32.8	33.2
TEZ 12 - 19.5	04			47.1	50.5	53.5	55.1	56.6	56.7			37.0	40.0	42.0	44.0	45.4	46.3
TEZ 20 - 32.5	01			59.8	63.9	67.4	69.1	70.7	70.5			48.0	51.0	53.0	55.0	56.2	56.9
TEZ 55 - 54	01			130	138	143	145	147	145			102	108	111	114	113	113
TEZ 55 - 92	02			199	210	220	223	225	223			158	167	171	176	176	176

Correction for subcooling Δt_{sub}

The evaporator capacities used must be corrected if subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor below. Selections can then be made from the tables above.

Note:
Insufficient subcooling can produce flash gas.

Δt_{sub}	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
Correction factor	1.00	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57

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Capacity *(continued)*

Capacity in KW for Range N: –40°C to +10°C

R134a

Valve type	Orifice no.	Pressure drop across valve Δp bar					Pressure drop across valve Δp bar				
		2	4	6	8	10	2	4	6	8	10
		Evaporating temperature +10°C					**Evaporating temperature 0°C**				
TEN 5 - 3.7	01	10.4	13.3	14.8	15.6	16.0	8.8	11.1	12.4	13.0	13.3
TEN 5 - 5.4	02	15.7	19.6	21.9	22.9	23.4	13.2	16.6	18.4	19.4	19.8
TEN 5 - 8.3	03	22.8	28.3	31.2	32.6	33.3	19.5	24.3	27.0	28.5	29.2
TEN 5 - 11.2	04	32.3	40.4	44.6	46.7	47.7	27.8	34.7	38.7	40.8	41.8
TEN 12 - 4.7	01	13.1	17.0	19.0	20.1	20.7	11.4	14.6	16.3	17.3	17.7
TEN 12 - 7.7	02	21.3	27.5	30.9	32.7	33.5	18.6	23.8	26.8	28.1	28.8
TEN 12 - 11.4	03	31.4	40.4	45.3	47.9	49.2	27.2	34.7	38.9	41.1	42.2
TEN 12 - 15	04	42.0	53.8	60.2	63.7	65.5	36.3	46.1	51.7	54.9	56.5
TEN 20 - 18	01	52.8	67.1	74.7	78.8	80.7	45.6	57.5	64.2	67.8	69.5
TEN 55 - 41	01	117	128	167	176	180	101	128	142	150	153
TEN 55 - 62	02	178	226	251	264	270	155	195	216	227	232
		Evaporating temperature -10°C					**Evaporating temperature -20°C**				
TEN 5 - 3.7	01	7.0	8.8	9.8	10.3	10.5	5.5	6.8	7.5	7.9	8.1
TEN 5 - 5.4	02	10.6	13.2	14.7	15.5	15.8	8.3	10.2	11.4	12.0	12.3
TEN 5 - 8.3	03	15.5	19.3	21.5	22.8	23.5	12.0	14.9	16.7	17.8	18.3
TEN 5 - 11.2	04	22.2	27.6	30.8	32.7	33.6	17.2	21.3	23.9	25.4	26.2
TEN 12 - 4.7	01	9.6	12.1	13.5	14.3	14.6	7.8	9.7	10.8	11.4	11.7
TEN 12 - 7.7	02	15.7	19.8	22.0	23.3	23.8	12.8	15.9	17.7	18.7	19.1
TEN 12 - 11.4	03	22.8	28.7	32.1	34.0	34.9	18.4	23.0	25.6	27.3	28.0
TEN 12 - 15	04	30.1	38.0	42.7	45.5	46.9	24.1	30.3	34.1	36.6	37.9
TEN 20 - 18	01	38.0	47.5	53.0	56.2	57.8	30.6	38.0	42.5	45.2	46.6
TEN 55 - 41	01	84.6	106	117	123	125	68.7	84.5	93.2	97.8	99.5
TEN 55 - 62	02	130	161	179	188	192	106	130	143	151	153
		Evaporating temperature -30°C					**Evaporating temperature -40°C**				
TEN 5 - 3.7	01	4.2	5.1	5.7	6.0	6.2	3.3	4.0	4.4	4.6	4.7
TEN 5 - 5.4	02	6.4	7.8	8.7	9.2	9.4	5.0	6.1	6.7	7.1	7.3
TEN 5 - 8.3	03	9.2	11.4	12.7	13.6	14.1	7.1	8.8	9.8	10.6	11.0
TEN 5 - 11.2	04	13.2	16.3	18.2	19.5	20.2	10.2	12.6	14.1	15.1	15.7
TEN 12 - 4.7	01	6.3	7.7	8.5	9.0	9.1	5.1	6.2	6.8	7.2	7.3
TEN 12 - 7.7	02	10.3	12.6	13.9	14.7	15.0	8.3	10.1	11.1	11.7	12.0
TEN 12 - 11.4	03	14.6	18.1	20.2	21.5	22.2	11.7	14.4	16.1	17.2	17.7
TEN 12 - 15	04	18.9	23.7	26.8	28.9	30.2	15.0	18.8	21.4	23.2	24.4
TEN 20 - 18	01	24.2	30.0	33.5	35.8	37.1	19.4	23.9	26.8	28.7	29.8
TEN 55 - 41	01	54.9	66.6	73.0	76.4	77.5	44.4	53.2	58.0	60.4	61.1
TEN 55 - 62	02	84.9	103	113	118	120	68.8	82.6	90.1	94.1	95.3

Correction for subcooling Δt_{sub}

The evaporator capacities used must be corrected if subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor below. Selections can then be made from the tables above.

Note:
Insufficient subcooling can produce flash gas.

Δt_{sub}	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
Correction factor	1.00	1.08	1.13	1.19	1.25	1.31	1.37	1.42	1.48	1.54

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Capacity *(continued)*

Capacity in KW for Range N: –40°C to +10°C

R404A/R507

Valve type	Orifice no.	Pressure drop across valve Δp bar								Pressure drop across valve Δp bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
		Evaporating temperature +10°C								**Evaporating temperature 0°C**							
TES 5 - 3.7	01	9.9	12.8	14.3	15.1	15.5	15.7	15.8	15.8	9.4	12.1	13.7	14.5	14.9	14.9	14.9	14.9
TES 5 - 5.0	02	13.6	17.4	19.4	20.5	21.0	21.2	21.4	21.3	13.0	16.6	18.6	19.6	20.1	20.2	20.2	20.2
TES 5 - 7.2	03	19.9	25.1	27.7	29.1	29.9	30.2	30.4	30.4	19.3	24.4	27.3	28.8	29.5	29.6	29.6	29.5
TES 5 - 10.3	04	28.2	35.8	39.7	41.7	42.8	43.2	43.5	43.5	27.4	34.9	39.1	41.4	42.4	42.4	42.4	42.3
TES 12 - 4.2	01	11.8	15.5	17.5	18.7	19.4	19.6	19.8	19.8	10.3	13.5	15.3	16.31	6.7	16.8	16.9	16.8
TES 12 - 6.8	02	19.2	25.2	28.5	30.3	31.3	31.7	31.9	32.0	16.9	22.0	24.8	26.4	27.2	27.4	27.4	27.3
TES 12 - 10.0	03	28.4	37.0	41.8	44.5	46.0	46.6	47.0	47.0	24.7	32.2	36.4	38.7	39.9	40.2	40.3	40.3
TES 12 - 13.4	04	38.0	49.4	55.7	59.2	61.2	62.1	62.7	63.0	33.0	42.8	48.5	51.7	53.4	53.9	54.2	54.4
TES 20 - 16.7	01	48.0	62.0	69.0	73.0	75.0	76.0	77.0	77.0	42.0	53.0	60.0	64.0	66.0	66.0	66.0	66.0
TES 55 - 37	01	106	137	154	164	169	170	171	171	92	119	134	142	145	146	145	145
TES 55 - 56.0	02	161	208	232	245	252	254	255	255	141	181	203	214	219	219	219	218
		Evaporating temperature -10°C								**Evaporating temperature -20°C**							
TES 5 - 3.7	01	7.9	10.1	11.3	12.0	12.4	12.4	12.3	12.2		7.9	8.9	9.6	9.8	9.9	9.8	9.7
TES 5 - 5.0	02	10.9	13.9	15.6	16.6	17.0	17.0	16.9	16.8		11.0	12.4	13.3	13.7	13.8	13.6	13.5
TES 5 - 7.2	03	16.0	20.4	23.0	24.5	25.1	25.2	25.2	25.2		16.1	18.3	19.8	20.5	20.7	20.6	20.6
TES 5 - 10.3	04	22.9	29.1	32.9	35.0	36.0	36.2	36.1	36.1		23.1	26.2	28.4	29.3	29.6	29.6	29.4
TES 12 - 4.2	01	9.0	11.7	13.2	14.1	14.5	14.5	14.4	14.3		6.2	10.9	11.7	12.0	12.0	11.9	11.7
TES 12 - 6.8	02	14.8	19.1	21.6	23.0	23.6	23.6	23.5	23.3		15.7	17.8	19.1	19.6	19.7	19.5	19.3
TES 12 - 10.0	03	21.6	27.8	31.5	33.6	34.7	34.8	34.7	34.6		22.8	25.9	28.0	28.8	29.2	29.1	28.9
TES 12 - 13.4	04	28.6	37.0	42.1	45.1	46.7	47.1	47.2	47.2		30.2	34.6	37.6	39.1	39.9	39.9	40.0
TES 20 - 16.7	01	36.0	46.0	52.0	56.0	57.0	58.0	58.0	57.0		38.0	43.0	47.0	48.0	49.0	49.0	48.0
TES 55 - 37.0	01	80.0	103	115	122	125	125	123	122		84.0	94.0	101	103	103	101	100
TES 55 - 56.0	02	124	157	176	186	190	190	188	186		129	145	155	158	158	156	153
		Evaporating temperature -30°C								**Evaporating temperature -40°C**							
TES 5 - 3.7	01			6.9	7.3	7.6	7.6	7.5	7.5			5.1	5.5	5.7	5.7	5.6	5.5
TES 5 - 5.0	02			9.7	10.3	10.7	10.7	10.6	10.5			7.2	7.7	8.0	8.0	7.9	7.8
TES 5 - 7.2	03			14.3	15.4	16.2	16.4	16.3	16.2			10.7	11.6	12.3	12.5	12.5	12.4
TES 5 - 10.3	04			20.5	22.1	23.1	23.4	23.3	23.2			15.3	16.6	17.5	17.8	17.8	17.7
TES 12 - 4.2	01			8.7	9.3	9.6	9.6	9.5	9.3			6.7	7.2	7.4	7.4	7.3	7.2
TES 12 - 6.8	02			14.3	15.3	15.8	15.9	15.7	15.4			11.1	11.8	12.3	12.3	12.1	11.9
TES 12 - 10.0	03			20.8	22.4	23.4	23.7	23.5	23.4			16.1	17.4	18.3	18.6	18.5	18.4
TES 12 - 13.4	04			27.8	30.3	32.0	32.7	32.9	32.9			21.6	23.8	25.3	26.1	26.3	26.5
TES 20 -16.7	01			35.0	37.0	39.0	40.0	40.0	39.0			27.0	29.0	31.0	31.0	31.0	31.0
TES 55 -37.0	01			75.0	80.0	82.0	81.0	80.0	78.0			58.0	61.0	62.0	62.0	60.0	59.0
TES 55 - 56.0	02			116	123	127	126	124	121			90.0	95.0	97.0	97.0	94.0	92.0

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Capacity *(continued)*

Capacity in KW for Range B: –60°C to –25°C

R404A/R507

Valve type	Orifice no.	Pressure drop across valve Δp bar								Pressure drop across valve Δp bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
		Evaporating temperature -25°C								**Evaporating temperature -30°C**							
TES 5 - 3.7	01	8.1	8.5	8.6	9.1	9.2	9.4	9.5	9.5	7.7	8.1	8.3	8.6	8.9	9.1	9.1	9.2
TES 5 - 5.0	02	12.0	12.5	13.0	13.5	14.7	15.3	15.9	16.0	11.2	11.7	12.2	12.6	13.4	14.2	14.7	14.8
TES 5 - 7.2	03	19.8	20.5	21.3	22.3	24.4	25.1	25.8	26.2	18.0	18.2	18.8	19.6	20.8	21.8	22.9	23.4
TES 5 - 10.3	04	20.0	24.0	26.0	27.0	27.5	28.0	28.5	29.0	18.0	22.0	24.8	25.0	25.5	26.0	26.3	26.5
TES 12 - 4.2	01	9.8	12.8	13.6	14.6	15.1	15.4	15.5	15.9	9.4	11.1	12.3	13.0	13.3	13.5	13.6	14.1
TES 12 - 6.8	02	18.4	21.2	22.8	24.9	25.7	25.8	26.2	26.3	16.5	18.6	20.2	21.5	22.1	22.2	22.4	22.8
TES 12 - 10.0	03	30.5	35.3	37.4	41.7	42.4	43.0	43.2	43.6	27.7	30.7	33.8	35.8	36.5	37.1	37.4	37.9
TES 12 - 13.4	04	34.3	40.2	42.8	47.0	48.4	48.8	49.1	49.3	30.5	34.4	37.7	40.5	40.9	41.4	41.6	42.1
TES 20 - 11.7	01	34.0	41.0	46.0	50.0	51.0	52.0	53.0	53.0	30.0	37.0	40.0	43.0	45.0	45.0	46.0	47.0
TES 55 - 27.0	01	71.0	91.0	97.0	104	109	109	111	112	63.0	79.0	86.0	93.0	94.0	95.0	96.0	96.0
TES 55 - 41.0	02	111	140	147	161	170	171	174	175	99.0	124	132	143	145	146	147	149
		Evaporating temperature -40°C								**Evaporating temperature -50°C**							
TES 5 - 3.7	01		6.3	6.6	6.7	7.1	7.2	7.3	7.5		4.4	4.6	4.7	4.8	4.9	4.9	5.3
TES 5 - 5.0	02		10.0	10.1	10.3	10.5	11.0	11.3	11.4		7.8	7.9	8.2	8.3	8.3	8.4	8.6
TES 5 - 7.2	03		14.2	14.4	14.6	15.3	15.8	16.1	16.4		10.3	10.5	10.6	10.7	11.0	11.1	11.3
TES 5 - 10.3	04		17.5	19.5	20.0	20.5	21.0	21.0	21.2		13.5	15.0	15.5	16.0	16.0	16.0	15.5
TES 12 - 4.2	01		9.0	9.6	10.0	10.5	10.6	10.8	10.9		7.1	7.4	7.8	7.9	8.0	8.1	8.3
TES 12 - 6.8	02		14.8	15.8	16.2	16.7	17.0	17.1	17.5		11.4	11.8	12.4	12.9	13.1	13.3	13.4
TES 12 - 10.0	03		24.7	27.0	27.0	28.2	28.5	28.8	29.1		19.5	20.5	21.0	21.7	21.9	22.1	22.7
TES 12 - 13.4	04		27.7	29.4	30.5	31.9	32.1	32.3	32.6		21.9	23.1	23.9	24.4	24.9	25.1	25.4
TES 20 - 11.7	01		31.0	33.0	34.0	34.0	35.0	35.0	35.0		26.0	26.0	27.0	27.0	27.0	28.0	28.0
TES 55 - 27.0	01		63.0	67.0	70.0	73.0	74.0	75.0	76.0		46.0	48.0	50.0	51.0	52.0	53.0	54.0
TES 55 - 41.0	02		98.0	106	108	114	115	115	116		74.0	78.0	79.0	81.0	82.0	82.0	83.0
		Evaporating temperature -55°C								**Evaporating temperature -60°C**							
TES 5 - 3.7	01											3.0	3.3	3.4	3.4	3.4	3.5
TES 5 - 5.0	02											6.6	6.8	6.9	6.9	7.1	7.3
TES 5 - 7.2	03											7.8	7.9	8.0	8.1	8.2	8.2
TES 5 - 10.3	04											11.5	12.0	12.2	12.3	12.2	12.0
TES 12 - 4.2	01			6.3	6.9	7.0	7.1	7.3	7.8								
TES 12 - 6.8	02			10.7	10.9	11.2	11.3	11.4	11.5								
TES 12 - 10.0	03			17.9	18.5	18.9	19.2	19.5	19.7								
TES 12 - 13.4	04			20.2	20.5	20.9	21.3	21.6	22.0								
TES 20 -11.7	01			24.0	24.0	25.0	25.0	26.0	26.0								
TES 55 - 27.0	01			39.0	39.0	41.0	41.0	42.0	42.0								
TES 55 - 41.0	02			63.0	64.0	65.0	65.0	66.0	66.0								

Correction for subcooling Δt_{sub}

The evaporator capacities used must be corrected if subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor below. Selections can then be made from the tables above.

Note:
Insufficient subcooling can produce flash gas.

Δt_{sub}	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
Correction factor	1.00	1.1	1.2	1.29	1.37	1.46	1.54	1.63	1.7	1.78

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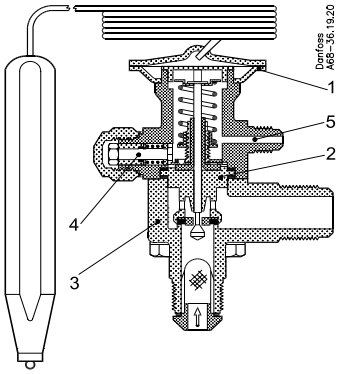
Design/Function

General
TE 5 and TE 55 valves have an interchange-able orifice assembly.

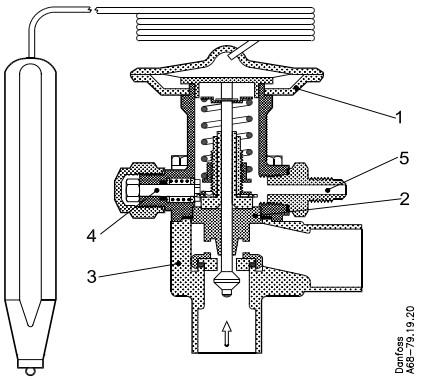
TE 5 and TE 55 valves are built up of three interchangeable main components:
I. Thermostatic element, 1
II. Orifice assembly, 2
III. Valve body with connections, 3

For the same valve type and refrigerant, the associated orifice assembly is suitable for all versions of valve body and in all evaporating temperature ranges.
The charge in the thermostatic element depends on the evaporating temperature range. The valves are equipped with external pressure equalization.
External pressure equalization should always be used on systems with liquid distributors.
The double contact bulb gives fast and precise reaction to temperature changes in the evaporator. It also makes fitting the bulb quick and easy.
The valves are able to withstand the effects that normally occur with hot gas defrosting.

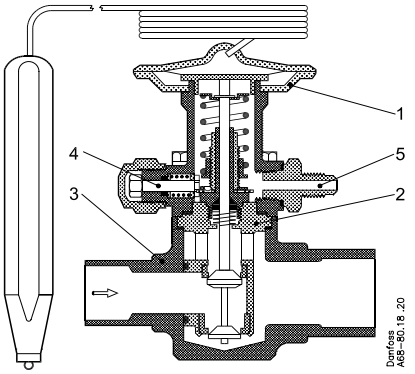
To ensure long operating life, the valve cone and seat are made of a special alloy with particularly good wear qualities.



TE 5



TE 12 / TE 20



TE 55

1. Thermostatic element (diaphragm)
2. Interchangeable orifice assembly
3. Valve body
4. Superheat setting spindle (see instructions)
5. Ext. pressure equalizing connection with 1⁄4 in./6 mm flare nut

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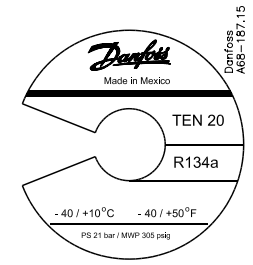
Identification

The thermostatic element is fitted with a label (on top of the diaphragm).The code refers to the refrigerant for which the valve is designed:

X = R22
N = R134a
S = R404A/R507
Z = R407C

The label gives valve type, evaporating temperature range, MOP point, refrigerant, and max. test pressure, PS.

With TE 20 and TE 55 the rated capacity is stamped on a band label fastened to the valve.

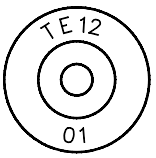


Element label

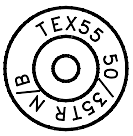
Orifice assembly for TE 5, TE 12, 20 and 55
The orifice assembly is marked on top of the spring cup, e.g. as shown in the figure.
For a given size of valve, the same orifice assembly can be used for valves with ranges N and B.

The thermostatic elements are different however:

- *On TE 5 and TE 12*
  the upper stamp (TE 12) indicates for which valve type the orifice can be used. The lower stamp (01) is the orifice size.
- *On TE 20 and TE 55*
  the upper stamp (N/B 50/35 TR) indicates the rated capacity in the two evaporating temperature ranges N and B, and the refrigerant.
  (50/35 TR = 175 kW in range N and 123 kW in range B).
  The lower stamp (TEX 55) refers to the valve type for which the assembly can be used.

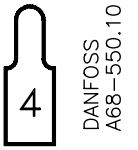


Orifice assembly marking for TE 5 and TE 12



Orifice assembly marking for TE 20 and TE 55

Capillary tube label for TE 5 to TE 55
The label gives the orifice size (04). A new label always accompanies a new orifice assembly.



Capillary tube label TE 5 → TE 55

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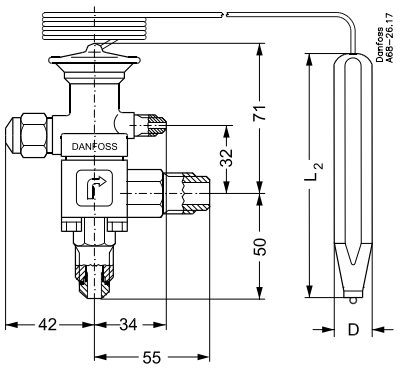
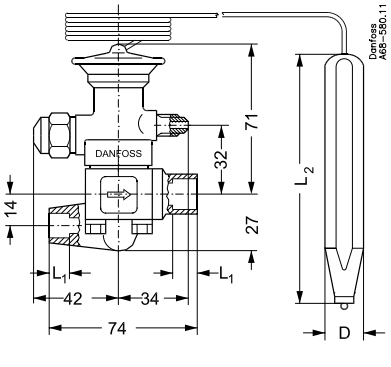
Dimensions and weights

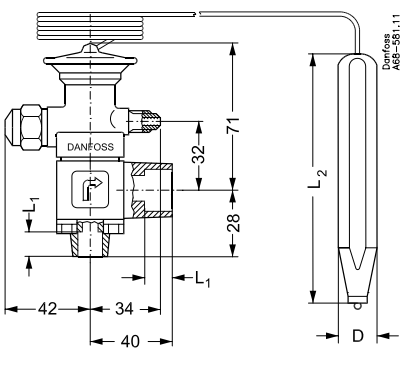
TE 5



TE 5 - Flare, angleway
Weight: 1.1 kg



TE 5 - Solder, straightway
Weight: 1 kg



TE 5 - Solder, angleway
Weight: 1 kg

TE 5

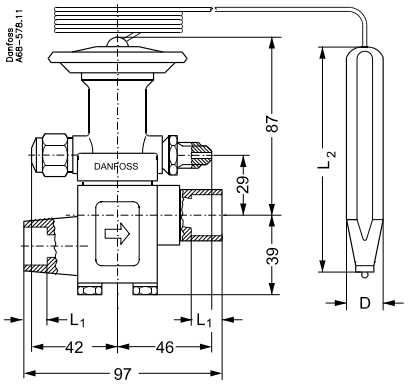
Inlet side $\varnothing D_1$	L_1 mm
1/2 in. / 12 mm ODF	10
5/8 in. / 16 mm ODF	10

Outlet side $\varnothing D_2$	L_1 mm
5/8 in. / 16 mm ODF	12
7/8 in. / 22 mm ODF	17

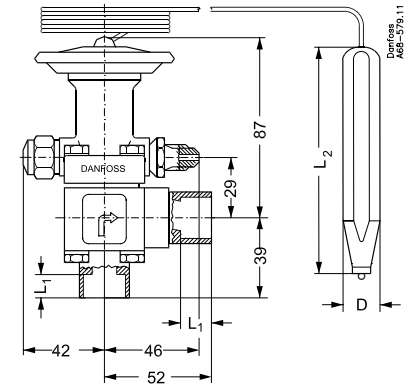
TE 5

	L_2	D
Range N	115.5	∅16.0
Range B	111.0	∅20.3

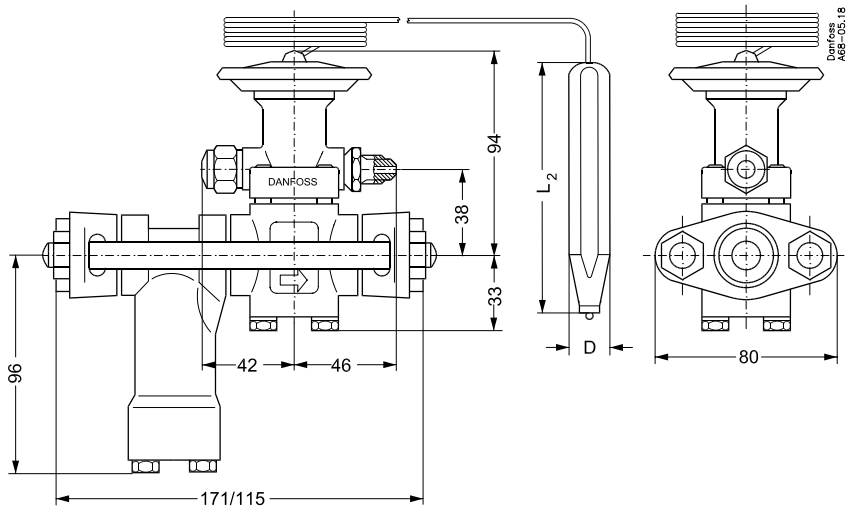
Dimensions and weights
(continued)



TE 12 and 20 - Solder, straightway
Weight: TE 12: 1.5 kg
TE 20: 1.7 kg



TE 12 and 20 - Solder, angleway
Weight: TE 12: 1.5 kg
TE 20: 1.6 kg



TE 12 - Solder flanges, straightway
Weight: Without filter: 2.3 kg
With filter: 3.2 kg

TE 12 and TE 20

Inlet side $\varnothing D_1$	L_1 mm
$^5/_8$ in. / 16 mm ODF	12
$^7/_8$ in. / 22 mm ODF	17

Outlet side $\varnothing D_2$	L_1 mm
$^7/_8$ in. / 22 mm ODF	17
$1^1/_8$ in. / 28 mm ODM	25

Bulb - TE 12

	L_2	D
Range N	111.0	∅20.3
Range B	148.0	∅20.3

Bulb - TE 20

	L_2	D
Range N/B	148.0	∅20.3

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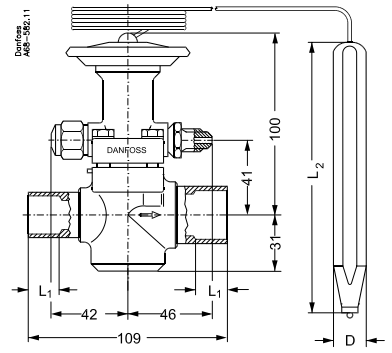
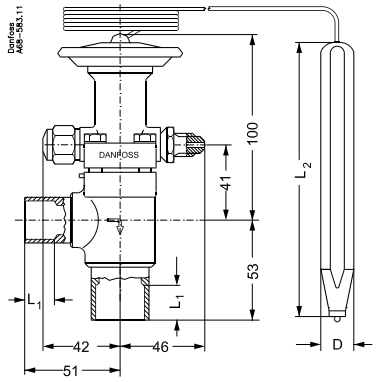
Dimensions and weights
(continued)



TE 55 - Solder, straightway
Weight: 1.7 kg



TE 55 - Solder, straightway
Weight: 1.6 kg

TE 55

Inlet side $\varnothing D_1$	L_1 mm
$^{7}/_{8}$ in. / 22 mm ODF	17
$1^{1}/_{8}$ in. / 28 mm ODM	25

Outlet side $\varnothing D_2$	L_1 mm
$1^{1}/_{8}$ in. / 28 mm ODF	22
$1^{3}/_{8}$ in. / 35 mm ODM	27

Bulb - TE 55

	L_2	D
Range N/B	148.0	∅20.3

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