

Data sheet | Thermostatic expansion valves, type TE 5 – TE 55

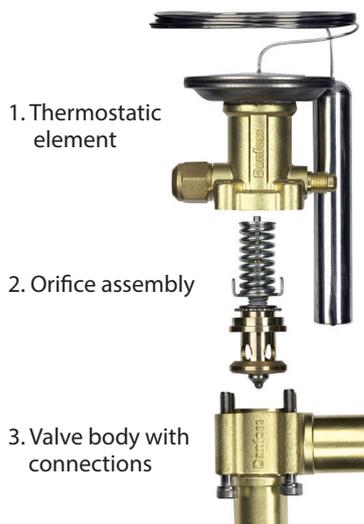
Design/Function

General

TE 5 – TE 55 valves have an interchangeable orifice assembly.

TE 5 – TE 55 valves are built up of three main components (Parts program):

1. Thermostatic element
2. Orifice assembly
3. Valve body with connections

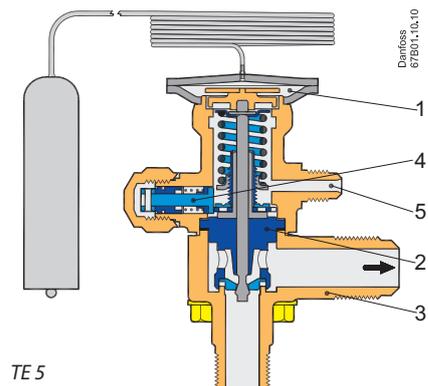


The orifice is refrigerant and range independent.

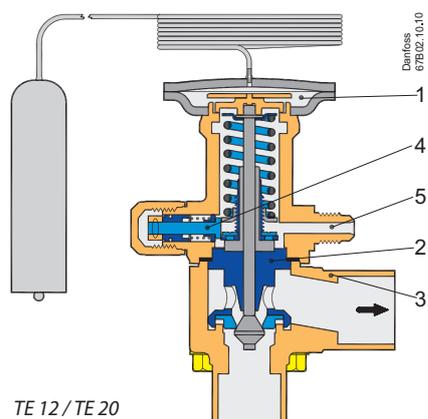
All valves are equipped with external pressure equalization.

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

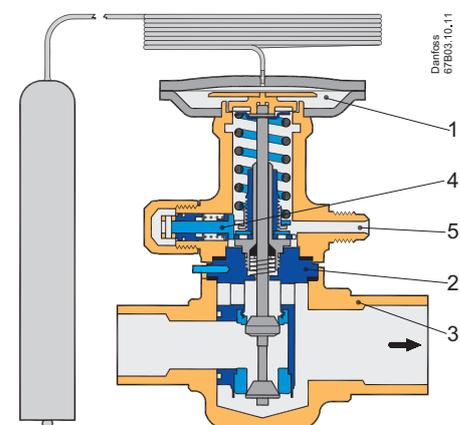
1. Thermostatic element.
2. Interchangeable orifice assembly.
3. Valve body.
4. Superheat setting spindle.
5. External pressure equalizing connection with $\frac{1}{4}$ in / 6 mm flare nut (solder is available on TE 5).



TE 5



TE 12 / TE 20



TE 55

Select valve type

Rated capacities

Valve type	SI units					
	R407F [kW]	R407A [kW]	R404A/R507 [kW]	R22 [kW]	R134a [kW]	R407C [kW]
TE 5	11.0 – 49.0	10.3 – 45.3	8.17 – 35.7	10.4 – 46.0	6.68 – 29.7	10.7 – 47.4
TE 12	71.0 – 115	56.0 – 96.0	50.7 – 81.3	57.2 – 97.8	37.7 – 65.7	55.8 – 94.3
TE 20	141 – 161	126 – 148	87.1 – 102	128 – 150	77.8 – 92.3	118 – 136
TE 55	124 – 250	112 – 242	84.8 – 182	113 – 245	77.9 – 166	112 – 232

Rated capacities

Valve type	US units					
	R407F [TR]	R407A [TR]	R404A/R507 [TR]	R22 [TR]	R134a [TR]	R407C [TR]
TE 5	3.14 – 13.9	2.92 – 12.9	2.33 – 10.2	2.97 – 13.1	1.91 – 8.49	3.06 – 13.5
TE 12	20.3 – 32.7	16.1 – 27.5	14.5 – 23.5	16.3 – 27.9	10.8 – 18.8	15.9 – 26.9
TE 20	40.0 – 45.9	36.0 – 42.1	24.9 – 29.1	36.6 – 42.9	22.2 – 26.4	33.7 – 38.9
TE 55	35.3 – 71.0	31.8 – 69.0	24.1 – 52.0	32.2 – 70.0	21.9 – 47.4	31.7 – 66.3

The rated capacity is based on:

Evaporating temperature
 Condensing temperature
 Refrigerant temperature ahead of valve

$t_e = 4.4 \text{ }^\circ\text{C (40 }^\circ\text{F)}$
 $t_c = 38 \text{ }^\circ\text{C (100 }^\circ\text{F)}$
 $t_1 = 37 \text{ }^\circ\text{C (98 }^\circ\text{F)}$

Ordering

Element for expansion valve - including bulb strap.
R407F/R407A ¹⁾

Valve type	Pressure equalization		MOP		Range		Capillary tube		Code no.
	Size	Type	[°C]	[°F]	[°C]	[°F]	[m]	[in]	
TE 5	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3501
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3502
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3503
	1/4 in	Solder ODF	-	-	-40 – 10	-40 – 50	3	118	067B3504
TE 12	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3532
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3531
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3533
TE 20	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3561
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3560
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3562
TE 55	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067G3500

¹⁾ On systems charged with R407A, SS will differ from standard 4K (7.2 °F).

For range -40 – 10 °C (-40 – 50 °F), SS = 2.7K (4.9 °F).

For range -40 – -5 °C (-40 – 25 °F) and range -40 – -15 °C (-40 – 5 °F), SS = 2.8K (5.0 °F).

Element for expansion valve - including bulb strap.
R404A/R507

Valve type	Pressure equalization		MOP		Range		Capillary tube		Code no
	Size	Type	[°C]	[°F]	[°C]	[°F]	[m]	[in]	
TES 5	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3342
	1/4 in	Solder ODF	-	-	-40 – 10	-40 – 50	3	118	067B3380
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3238
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3357
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3358
	1/4 in	Solder ODF	-10	15	-40 – -15	-40 – 5	3	118	067B3384
	1/4 in / 6 mm	Flare	-	-	-60 – -25	-75 – -15	3	118	067B3344
	6 mm	Solder ODF	-	-	-60 – -25	-75 – -15	3	118	067B3392
	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	3	118	067B3343
	1/4 in	Solder ODF	-20	-5	-60 – -25	-75 – -15	3	118	067B3381
TES 12	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3347
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3345
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3348
	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	3	118	067B3349
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	5	197	067B3346
	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	5	197	067B3350
TES 20	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3352
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3351
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3353
	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	3	118	067B3354
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	5	197	067B3356
1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	5	197	067B3355	
TES 55	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067G3302
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067G3303
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067G3304
	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	3	118	067G3305
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	5	197	067G3301
1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	5	197	067G3306	

Ordering

Element for expansion valve - including bulb strap.
R22/R407C ¹⁾

Valve type	Pressure equalization		MOP		Range		Capillary tube		Code no.
	Size	Type	[°C]	[°F]	[°C]	[°F]	[m]	[in]	
TEX 5	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3250
	1/4 in	Solder ODF	-	-	-40 – 10	-40 – 50	3	118	067B3420
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3267
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3249
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3253
	1/4 in / 6 mm	Flare	-	-	-60 – -25	-75 – -15	3	118	067B3263
TEX 12	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	3	118	067B3251
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3210
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3209
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3227
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3207
	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3213
TEX 20	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	5	197	067B3211
	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	5	197	067B3212
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3274
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3290
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3286
	1/4 in / 6 mm	Flare	0	32	-40 – -5	-40 – 25	3	118	067B3273
TEX 55	1/4 in / 6 mm	Flare	-10	15	-40 – -15	-40 – 5	3	118	067B3275
	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	5	197	067B3276
	1/4 in / 6 mm	Flare	-20	-5	-60 – -25	-75 – -15	5	197	067B3287
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067G3205
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067G3209
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067G3220

¹⁾ For R407C plants, please select elements from the dedicated R407C program

Element for expansion valve - including bulb strap.
R134a

Valve type	Pressure equalization		MOP		Range		Capillary tube		Code no.
	Size	Type	[°C]	[°F]	[°C]	[°F]	[m]	[in]	
TEN 5	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3297
	1/4 in	Solder ODF	-	-	-40 – 10	-40 – 50	3	118	067B3430
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3298
TEN 12	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3232
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3233
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	5	197	067B3363
TEN 20	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3292
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3293
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	5	197	067B3370
TEN 55	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067G3222
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067G3223
	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	5	197	067G3230

Element for expansion valve - including bulb strap.
R407C

Valve type	Pressure equalization		MOP		Range		Capillary tube		Code no.
	Size	Type	[°C]	[°F]	[°C]	[°F]	[m]	[in]	
TEZ 5	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3278
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3277
TEZ 12	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	3	118	067B3366
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	3	118	067B3367
TEZ 20	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	5	197	067B3371
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	5	197	067B3372
TEZ 55	1/4 in / 6 mm	Flare	-	-	-40 – 10	-40 – 50	5	197	067G3240
	1/4 in / 6 mm	Flare	15	60	-40 – 10	-40 – 50	5	197	067G3241

Ordering
Orifice for expansion valves. Rated capacity.


Valve type	Orifice no.	R407F	R407A	R404A /R507	R22	R134a	R407C	R407F	R407A	R404A /R507	R22	R134a	R407C	Code no.
		[kW]						[TR]						
TE 5	0.5	11.0	10.3	8.17	10.4	6.68	10.7	3.14	2.92	2.33	2.97	1.91	3.06	067B2788
	1	20.3	18.8	14.9	19.1	12.2	19.6	5.76	5.35	4.26	5.46	3.49	5.60	067B2789
	2	28.1	25.9	20.5	26.3	17.0	27.2	8.00	7.37	5.86	7.51	4.86	7.77	067B2790
	3	35.8	33.3	26.3	33.8	21.8	34.8	10.2	9.48	7.51	9.66	6.23	9.94	067B2791
	4	49.0	45.3	35.7	46.0	29.7	47.4	13.9	12.9	10.2	13.1	8.49	13.5	067B2792
TE 12	5	71.0	56.0	50.7	57.2	37.7	55.8	20.3	16.1	14.5	16.3	10.8	15.9	067B2708
	6	95.0	75.0	64.0	76.3	50.1	73.9	27.1	21.4	18.3	21.8	14.3	21.1	067B2709
	7	115	96.0	81.3	97.8	65.7	94.3	32.7	27.5	23.2	27.9	18.8	26.9	067B2710
TE 20	8	141	126	87.1	128	77.8	118	40.0	36.0	24.9	36.6	22.2	33.7	067B2771 ¹⁾
	9	161	148	102	150	92.3	136	45.9	42.1	29.1	42.9	26.4	38.9	067B2773 ¹⁾
TE 55	9B	124	112	84.8	113	77.9	112	35.3	31.8	24.1	32.2	21.9	31.7	067G2705 ²⁾
	10	173	166	128	169	111	161	49.1	47.4	36.6	48.3	31.7	46.0	067G2701
	11	188	181	138	184	122	175	53.0	52.0	39.4	52.6	34.9	50.0	067G2704
	12	207	199	152	202	134	191	59.0	57.0	43.4	57.7	38.3	54.6	067G2707
	13	250	242	182	245	166	232	71.0	69.0	52.0	70.0	47.4	66.3	067G2710

The rated capacity is based on:

Evaporating temperature	$t_e = 4.4\text{ °C (40 °F)}$
Condensing temperature	$t_c = 38\text{ °C (100 °F)}$
Refrigerant temperature ahead of valve	$t_i = 37\text{ °C (98 °F)}$

¹⁾ Recommend to use orifice no. 9B as alternative for orifice no. 8 and 9 on TE 55 when selecting the valve to work in range -60 – -25°C (-75 – -15°F).
Extend capacity tables for range -60 – -25°C (-75 – -15°F) are not provided.

²⁾ Alternative for orifice no. 8 and 9 in range -60 – -25°C (-75 – -15°F).
Extend capacity tables for range -40 – 10°C (-40 – 50°F) are not provided.

Ordering
Valve body for expansion valves


Flare angleway



Solder straightway



Solder straightway



Flanges



Solder angleway

Type	Connection Inlet × Outlet		Connections / Flow direction	Connection type ¹⁾	Code no.
	[in]	[mm]			
TE 5	$1/2 \times 5/8$	12 × 16	Flare angleway	-	067B4013
	$1/2 \times 5/8$	-	Solder angleway	ODF × ODF	067B4009
	$1/2 \times 7/8$	-	Solder angleway	ODF × ODF	067B4010
	$5/8 \times 7/8$	-	Solder angleway	ODF × ODF	067B4011
	$7/8 \times 1 1/8$	-	Solder angleway	ODF × ODM	067B4034
	$1/2 \times 5/8$	-	Solder straightway	ODF × ODF	067B4007
	$1/2 \times 7/8$	-	Solder straightway	ODF × ODF	067B4008
	$5/8 \times 7/8$	-	Solder straightway	ODF × ODF	067B4032
	$7/8 \times 1 1/8$	-	Solder straightway	ODF × ODM	067B4033
	-	12 × 16	Solder angleway	ODF × ODF	067B4004
	-	12 × 22	Solder angleway	ODF × ODF	067B4005
	-	16 × 22	Solder angleway	ODF × ODF	067B4012
	-	22 × 28	Solder angleway	ODF × ODM	067B4037
	-	12 × 16	Solder straightway	ODF × ODF	067B4002

TE 12	$5/8 \times 7/8$	-	Solder angleway	ODF × ODF	067B4022
	$7/8 \times 1 1/8$	-	Solder angleway	ODF × ODM	067B4023
	$5/8 \times 7/8$	-	Solder straightway	ODF × ODF	067B4020
	$7/8 \times 1 1/8$	-	Solder straightway	ODF × ODM	067B4021
	-	22 × 28	Solder angleway	ODF × ODM	067B4017
	-	16 × 22	Solder straightway	ODF × ODF	067B4018

TE 12	$5/8 \times 7/8$	-	Solder flanges	ODF × ODF	067B4025
	$7/8 \times 1$	-	Solder flanges	ODF × ODF	067B4026
	-	16 × 22	Solder flanges	ODF × ODF	067B4027
	-	22 × 25	Solder flanges	ODF × ODF	067B4015

TE 20	$7/8 \times 1 1/8$	-	Solder angleway	ODF × ODM	067B4023
	-	22 × 28	Solder angleway	ODF × ODM	067B4017
	$7/8 \times 1 1/8$	-	Solder straightway	ODF × ODM	067B4021
	-	22 × 28	Solder straightway	ODF × ODM	067B4016

TE 55	$1 1/8 \times 1 3/8$	-	Solder angleway	ODM × ODM	067G4004
	-	28 × 35	Solder angleway	ODM × ODM	067G4002
	$1 1/8 \times 1 3/8$	-	Solder straightway	ODM × ODM	067G4003
	-	28 × 35	Solder straightway	ODM × ODM	067G4001

¹⁾ ODF = Internal diameter
ODM = External diameter

Spareparts

Bulb strap for TE 5 – TE 55 delivered with the element

Type	Length	Max. tube diameter	Code no.
TE 5 / TE 12	225 mm	2 1/8 in / 53 mm	067N0557
TE 20 / TE 55	350 mm	3 1/8 in / 78 mm	067N0559