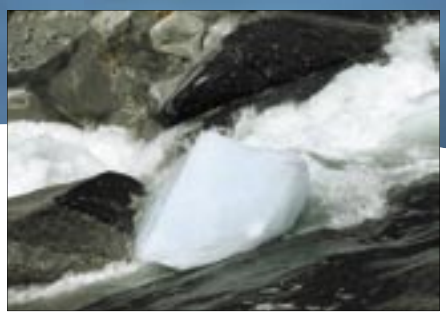
Thermostatic expansion valves



Exact injection - precise temperature

TU and TC range in stainless steel

- Compact design
- Quick and easy soldering
- TU - Bi-flow function (orifice 0 to 8)
- TC - Bi-flow function (orifice 1 and 2)

The TU and TC is an extension of the thermostatic expansion valve range made from stainless steel, with bi-metallic stainless steel/copper connections.
The valves are available with interchangeable or fixed orifice assemblies.
The program has been developed for both low and high pressure refrigerants.
The flexible TUA and TCAE parts programme optimises stock levels.
The valve is also available in a range of variants that meet OEM demands.

REFRIGERATION AND
AIR CONDITIONING

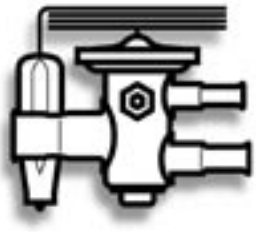
Easy handling and installation

Applications:
The TC valve is manufactured from stainless steel and as such is the best valve on the market for applications in the food processing and storage industries.
It is also perfect for:

- Traditional refrigeration plants
- Transport refrigeration
- Ice making machines
- Liquid coolers
- Air conditioning units
- Heat pumps

TUA/TUAE and TCAE
- Exchangeable orifice
- Adjustable superheat
- Reduced stock

TUB/TUBE and TCBE
- Fixed orifice
- Adjustable superheat



TUC/TUCE and TCCE
- Fixed orifice
- Fixed superheat

Valves for all fluorinated refrigerants
TU and TC´s are available with bulb charges suiteable for all the commonly used fluorinated refrigerants: R134a, R404A, R407C and R507. The valves can also be used with high pressure refrigerants such as R410A, for which they are ideally suited. Danfoss continually adapts its valves for use with new refrigerants. For more information on thise, please contact your local Danfoss stockist.

Type overwiev

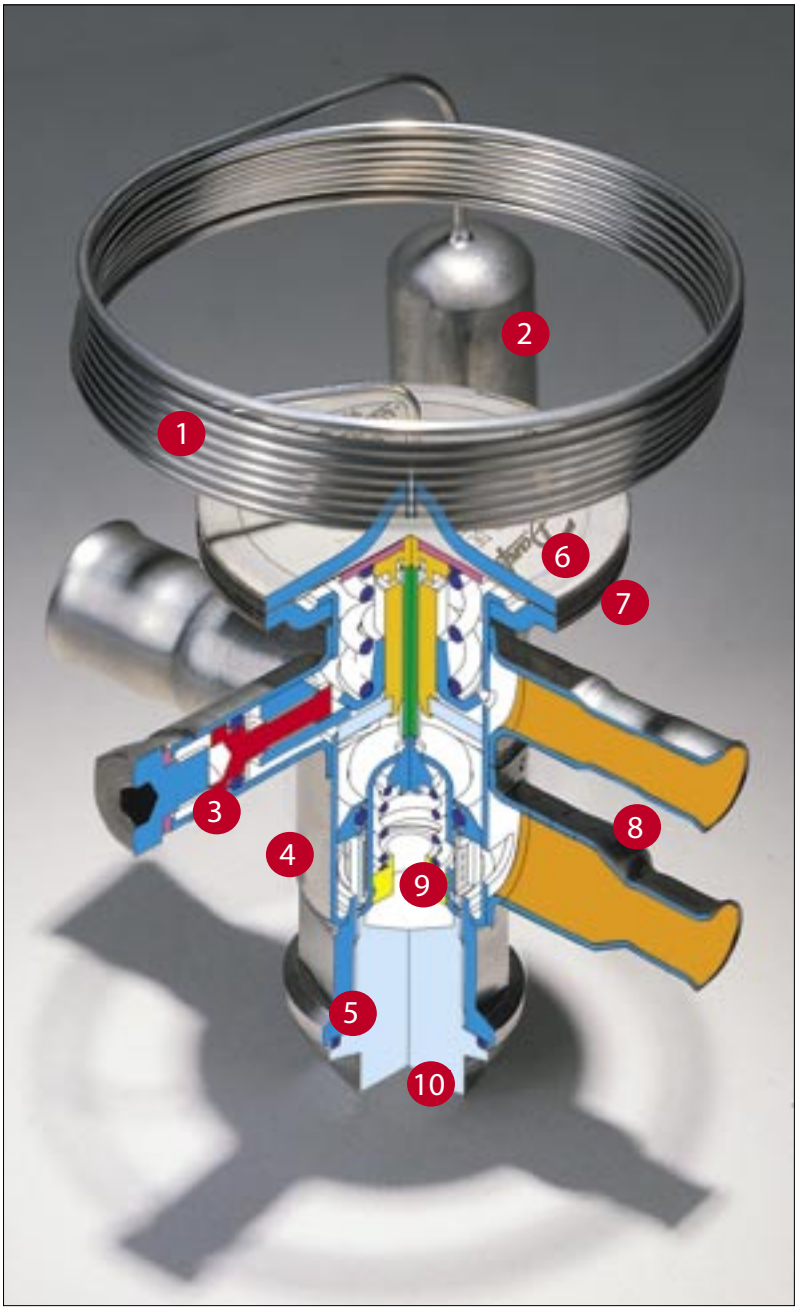
Valve type	TUA	TUAE	TUB	TUBE	TUC	TUCE	TCAE	TCBE	TCCE
Orifice	Exchangeable	Exchangeable	Fixed	fixed	fixed	Fixed	Exchangeable	Fixed	Fixed
Orifive number	9	9	9	9	9	9	3	3	3
Superheat	Adjustable	Adjustable	Adjustable	Adjustable	Fixed	Fixed	Adjustable	Adjustable	Fixed
Connection -Straightway	YES	YES	YES	YES	YES	YES	YES	YES	YES
Connection - angleway	No	No	YES	YES	YES	YES	No	No	No
External equalization	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes

Capacities in kW (Evaporating temperature - 10 °C

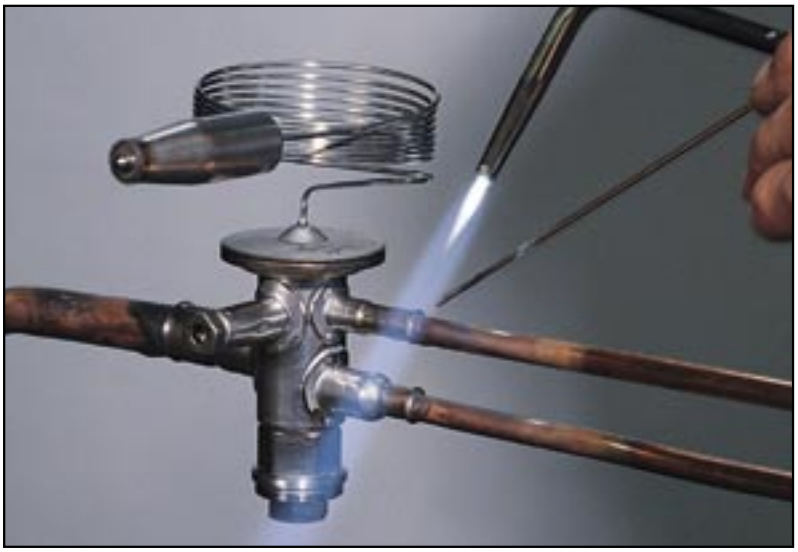
	Orifice	R134a		R404A		R407C		R410A	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
TU	0	0.31	0.43	0.29	0.39	0.37	0.56	0.53	0.79
	1	0.41	0.58	0.39	0.54	0.48	0.77	0.76	1.15
	2	0.51	0.76	0.50	0.73	0.60	1.01	1.04	1.70
	3	0.71	1.10	0.70	1.00	0.84	1.40	1.44	2.40
	4	1.10	1.60	1.00	1.50	1.30	2.10	2.20	3.50
	5	1.40	2.10	1.40	2.00	1.70	2.80	2.90	4.80
	6	2.10	3.20	2.10	3.10	2.50	4.20	4.30	7.10
	7	2.80	4.20	2.80	4.10	3.40	5.60	5.80	9.50
	8	4.30	6.30	4.20	6.10	5.00	8.40	8.60	14.10
	9	6.30	9.30	6.20	9.00	7.50	12.40	12.90	21.00
TC	1	6.80	10.20	7.00	10.20	9.30	15.50	11.30	18.60
	2	8.60	13.00	8.90	13.00	11.70	19.70	14.10	23.70
	3	11.20	17.10	11.40	16.80	15.30	25.60	18.40	30.90

For further information - please see our catalogue or technical leaflet

Superior by design and function



1. Stainless steel capillary tube for superior strength and ductilicy.
2. Bulb with double contact surface for fast, safe and convenient mounting.
3. Allen key superheat setting is convenient and space-saving compared to the screwdriver adjustment used in most conventional valves. The Allen key also makes adjustment more precise.
4. The use of stainless steel makes the TU and TC light and strong and suitable for applications that are subject to vibrations and mechanical shocks, e.g. Transportation/Marine systems.
5. Orifice assembly with an unmatched hermetic seal. TUA/E and TCAE features a simple but ingenous solution to the tightening problem which fulfils present and future industry demands.
6. Laser engraved inscription will never wear out and can still be read after years of service.
7. Laser welded stainless steel thermostatic element for unsurpassed joint strength and operational lifetime.
8. Bi-metal connections (stainless steel with rolled on copper cladding) for safe, fast and convenient copper-to-copper soldering.
9. TUA/E and TCAE features a seperate strainer, mounted on the orifice assembly for easy maintenance and cleaning.
10. Each orifice features a label with information about size and code number.



The genuine TC solder valve.
Ingenious enough to make it easier to do a better job.

21st century Production Technology

TC is a great example of a product which seems to be simple, yet is so complex that development of it has taken a team of engineers several years to develop. As a result the production line is among the most sophisticated in the world. Cellular manufacturing and computer monitoring make it simple to sequentially mix both large quantities of valves for industrial use and smaller numbers needed by installers and wholesalers. Because production time is the same for variants as for standard types, Danfoss can meet customers requirements for flexibility and fast order response.

Laser welding
The thermostatic element is laser welded in a fully automatic process, assuring optimum joint quality and unsurpassed strength. In laser welding, the heat is tightly concentrated at the weld and much less heat input is needed. Therefore, the TC valve's diaphragm maintains its structural integrity for a greatly extended service lifetime.

Computer-controlled quality
Fully automated production of the TC valve includes an extensive sequence of 100% controls and function tests. Each valve is subjected to complete leak testing, pressure testing, and tests for internal tightness.

Danfoss is also using fully automated joining technology for the TC series. Because all joined surfaces are stainless steel, they can be soldered in a flux-free process in a neutral atmosphere flow furnace. Every joint is computer tested during production to assure 100% tightness of each valve.