

4 seasons

1 valve

for a complete
changeover with
minimum pressure drop
and a very low risk of
leakage.



ENGINEERING
TOMORROW

Danfoss



A world leader in climate and energy technology

The Danfoss Group operates globally with the primary aims of making modern living possible for our stakeholders and being a leader in refrigeration, heating, power electronics, and mobile hydraulics.

We employ 24,000 people, 6,000 of whom work in Denmark at 11 different locations.

We produce approximately 250,000 components each day at our 76 factories in 25 countries.

We promise leadership in our businesses through reliability, excellence, and innovation – driving true customer satisfaction and solutions within climate and energy.

Extensive experience in all key HVAC/R segments

Danfoss plays a leading role in research, development and production in a wide spectrum of industries, and has been a key player in the HVAC/R field for more than 75 years. Our Refrigeration & Air Conditioning Division designs, produces and markets a comprehensive range of automated solutions and compressors for a wide variety of HVAC/R segments, including

- Heat Pumps
- Commercial Air Conditioning
- Residential Air Conditioning
- Commercial Refrigeration
- Household, Light Commercial and Mobile Refrigeration
- Wholesalers & Installers
- Industrial Refrigeration
- Food Retail

Learn more at www.danfoss.com

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Let your system **adapt instantly** no matter what the weather

4-way valves for reversible A/C and heat pumps

2 modes

Cooling in summer
- heating in winter.
4-way valve ensures
instant changeover
with max. efficiency



www.danfoss.com

Set the thermostat and let the seasons change. Danfoss Saginomiya 4-way valves keep your reversible unit running efficiently, no matter what the forecast.

4-way reversible valves provide consistent changeover between heating and cooling modes, so manufacturers can install one bi-flow valve instead of two separate components.

But our OEM customers save more than an item on their parts list. Together with the rest of Danfoss bi-flow components, producers and end-users can count on best-in-class reliability and enhanced energy savings – whatever the weather.

Complete range for all your bi-flow needs

Danfoss provides the largest range of components for reversible systems from any single supplier, worldwide.

So whether you're looking for dedicated bi-flow components or other parts, the Danfoss family of products has what it takes to build your heating or cooling system from the ground up for maximum efficiency.



Danfoss Saginomiya 4-way valves for reversible units:

Reliable performance

- Instant changeover at minimum pressure differential
- No incomplete changeover

Flexible application

- Industry-leading capacity range
- Available for all common refrigerants
- Wide variety of connection diameters and configurations

Products specially designed for bi-flow systems



4-way valves 2

Product range: STF, VHV

The 4-way valve allows inversion of the refrigeration cycle, changing from cooling mode in summer to heating mode in winter.



Filter driers 7

Product range: DMB, DCB

Bi-flow filter driers ensure fast and effective adsorption of moisture and acids. Thanks to built-in check valves, refrigerant liquid always flows through the filter drier from the outer side of the filter core toward the center, retaining all dirt particles irrespective of flow direction.



Bi-flow expansion valve 5a

Thermostatic expansion valves

Product range: TUB(E), TCB(E), TGE, TRE80

Thermostatic expansion valves regulate the injection of refrigerant liquid into evaporators. Injection is controlled by refrigerant superheat. The indicated product range comprises a variety of valves designed specifically for reversible units.



Bi-flow expansion valve 5a

Electronic expansion valves

Product range: ETS

A series of electrically operated expansion valves for precise liquid injection in evaporators. The fully balanced design incorporates valve piston and linear positioning to provide bi-flow functionality and tight solenoid shut-off function in both flow directions.

More Danfoss products for bi-flow systems:

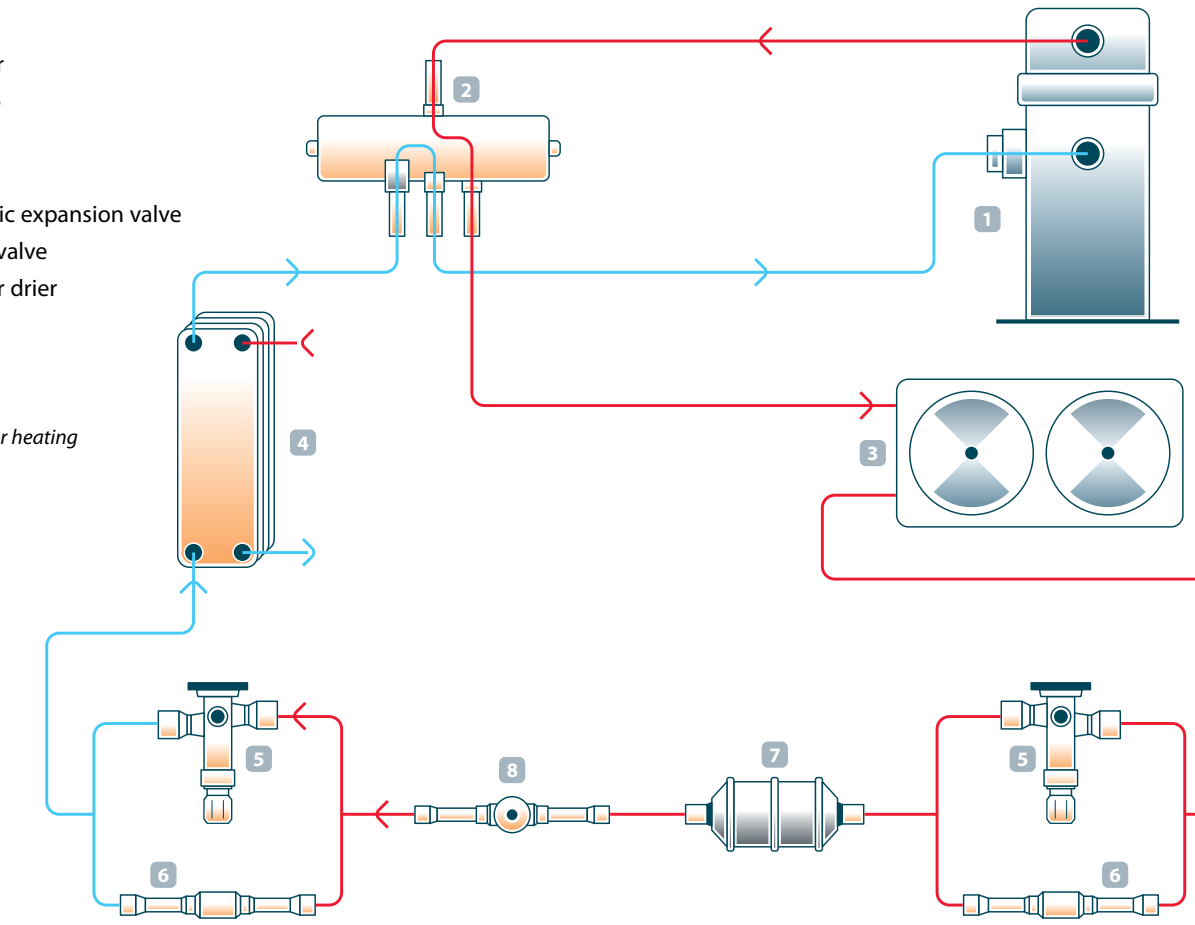
Superheat Controllers (EKC 316A, EKC 312, EXD 316, EKD 316, EIM 336), **Sight glasses** (SG, SG+), **Ball valves** (GBC), **Check valves** (NRV, NRVH), **Thermostatic expansion valves** (TE2, TR6), **Solenoid valves** (EVRC), **Distributors** (3863, 5271, 5371, 5500, 6500), **Pressure switches** (ACB, LCB, KP, RT), **Temperature switches** (KP, RT), **Pressure sensors** (AKS, NSK/XSK), **Temperature sensors** (AKS/EKS), **Soft-Starters** (MCI).

How it works:

Summer mode with bi-flow filter drier*

- 1 Compressor
- 2 4-way valve
- 3 Condenser
- 4 Evaporator
- 5 Thermostatic expansion valve
- 6 NRV check valve
- 7 Bi-flow filter drier
- 8 Sight glass

* Reverse system for heating



Summer mode with bi-flow expansion valve*

- 1 Compressor
- 2 4-way valve
- 3 Condenser
- 4 Evaporator
- 5a Bi-flow expansion valve
- 6a DCR filter drier
- 7a Superheat controller

* Reverse system for heating

