

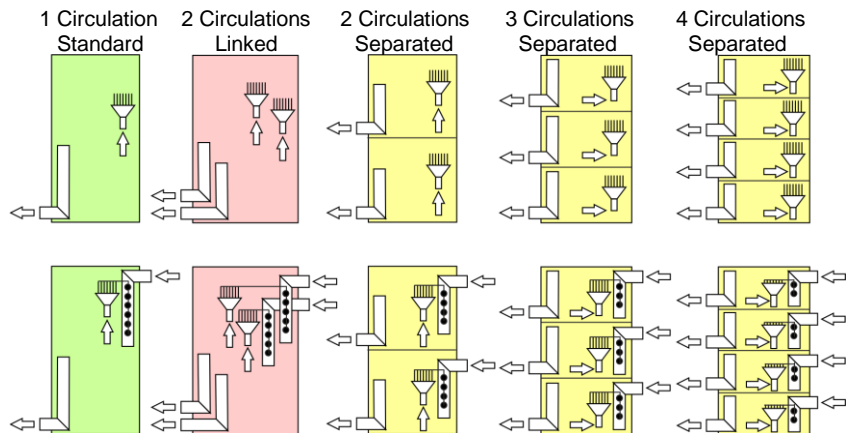


# Evaporator circulations

With the application **DX-Evaporator** five different types can be calculated with respect to the evaporator circulations. A standard circulation and two circulations linked are preferable since the air outlet temperature does not have a stratification in height.

If two or more circulations are above the other, we recommend to provide a **turbulence zone** after the DX-Evaporator.

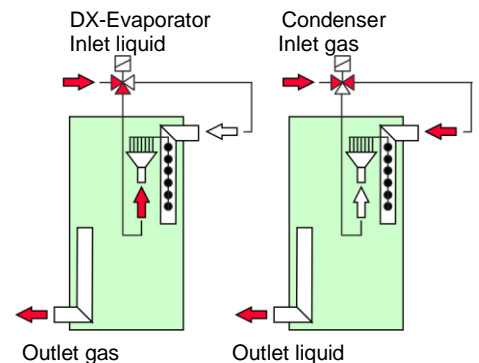
If the same fin coil heat exchanger must be able to function as well as a DX-Evaporator and as a condenser, we recommend to use the application **Changeover refrigerants**. First we calculate the DX-Evaporator. Then the function as condenser will be verified.



Fin coil heat exchangers which have in the **changeover service** two functions (DX-Evaporator and Condenser) must have on the inlet side a **switching valve**. This offers two advantages:

1. In function as a condenser there are no large pressure drops at the inlet, because the hot gases do not need to be conducted through the distributor and the capillaries.
2. In function as a DX-Evaporator, the **hot gas defrosting** is more effective because the hot gases do not need to be conducted through the distributor and the capillaries.

The low cost of the switching valve are a good investment. Some systems had to be rebuilt later, causing significantly higher costs.



## Important details about the example on the right

1. All 12 circles with 8 HE-Tubes (Peer pressure drop).
2. The circuit always horizontal or downwards (Oil return).
3. All capillaries of equal length (Refrigerant distribution).
4. Capillary thickness not lower than 1 mm (Bending deformation).
5. Straight piece before distribution > 10d (Refrigerant distribution).
6. High-quality injection manifold with Venturi properties.
7. Injection vertical position (Refrigerant distribution).
8. **Injection vertical from bottom to top!**

If the fin coil heat exchanger is only used as a DX-Evaporator, also inside grooved tubes can be used. These have a higher performance. If the fin coil heat exchanger is used both as a DX-Evaporator as well as a Condenser, we recommend **inside smooth tubes**.

In inside grooved tubes for condensers the oil can fill the capillary structure and stick it, with the effect, that then the tubes, like smooth tubes, will produce a reduced capacity.

