Flow calculation

Flow calculation based on heating/cooling capacity

$$Q = \frac{E\ [kW]}{cp\ [kJ/(kg°K)] * \rho\ [kg/dm^3] * \Delta T[°K]}$$

cp – heat capacity, kJ/(kg°K)
ρ – density, kg/dm³
ΔT – supply and return temperature difference, °K
E – heat exchanger capacity, kW

Valve selection when medium is different from water.
(Flow graphs and tables in the Technote are based on water)

Correction for higher/lower densities than water:

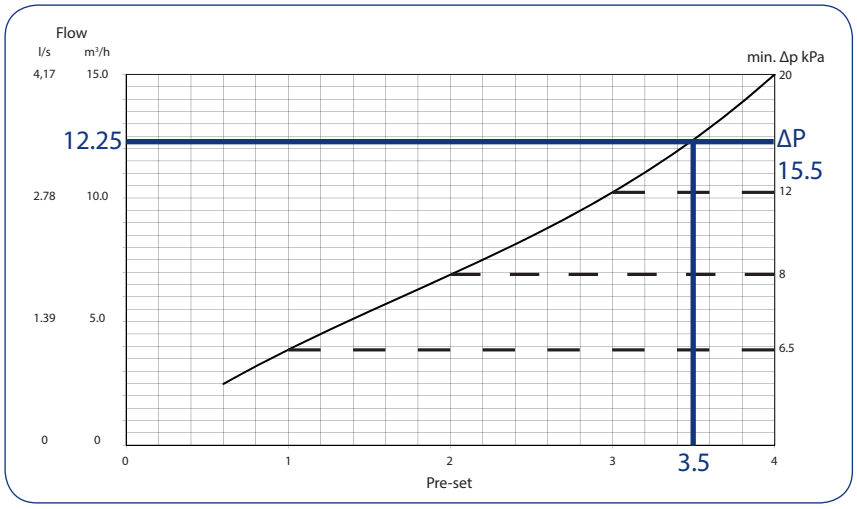
$$Q_d = Q * \sqrt{\rho}$$

Q = Flow water, m³/h
Q_d = Flow with density different from water, m³/h
ρ = fluid density, kg/dm³

Example with Hycool:

Q = 10.0 m³/h (calculated flow for cooling capacity)
Hycool density: 1,5 kg/dm³
Flow Q_d for valve selection
$Q_d = 10.0 * \sqrt{1,5} = 12.25$ m³/h

Frese OPTIMA Compact · Low Flow DN50



Preset the valve to position **3.5**

The required minimum ΔP is **15.5 kPa**