

Calculation of the heat output and pump selection

Example 1:

Known: IsoTherm with pump Grundfos UPS 15-60
 Volume flow $V = 750 \text{ l/h} = 0,75 \text{ m}^3/\text{h}$
 Temperature difference $\Delta t = 6 \text{ K}$

Wanted: Heat output Q
 Remaining pump head H_{Rest}

Calculation: $Q = V \times \Delta t \times 1,163$
 $Q = 0,75 \text{ m}^3/\text{h} \times 6 \text{ K} \times 1,163$
 $Q = 5,7 \text{ kW}$

H_{Rest} pump level 1 = 2,5 mWS (250 mbar)

H_{Rest} pump level 2 = 3,8 mWS (380 mbar)

H_{Rest} pump level 3 = 4,5 mWS (450 mbar)

Example 2:

Known IsoTherm with pump Grundfos UPS 15-60
 A remaining pump head of 2 mWS should be available
 Temperature difference $\Delta t = 6 \text{ K}$

Wanted: Volume flow V
 Heat output Q

Calculation:	Pump level 1	Pump level 2	Pump level 3
	<u>$V = 0,9 \text{ m}^3/\text{h}$ (from Diagramm)</u>	<u>$V = 1,4 \text{ m}^3/\text{h}$ (from Diagramm)</u>	<u>$V = 1,7 \text{ m}^3/\text{h}$ (from Diagramm)</u>
	$Q = V \times \Delta t \times 1,163$	$Q = V \times \Delta t \times 1,163$	$Q = V \times \Delta t \times 1,163$
	$Q = 0,9 \text{ m}^3/\text{h} \times 6 \text{ K} \times 1,163$	$Q = 1,4 \text{ m}^3/\text{h} \times 6 \text{ K} \times 1,163$	$Q = 1,7 \text{ m}^3/\text{h} \times 6 \text{ K} \times 1,163$
	<u>$Q = 6,3 \text{ kW}$</u>	<u>$Q = 9,8 \text{ kW}$</u>	<u>$Q = 11,8 \text{ kW}$</u>

ATTENTION: For the achievement of the nominal heat output the pressure difference primary circuit (boiler-/ radiator circuit) to the secondary circuit (floor heating) should be at minimum 150 mbar.
 The temperature difference between primary and secondary circuit should be at least 15 K.

