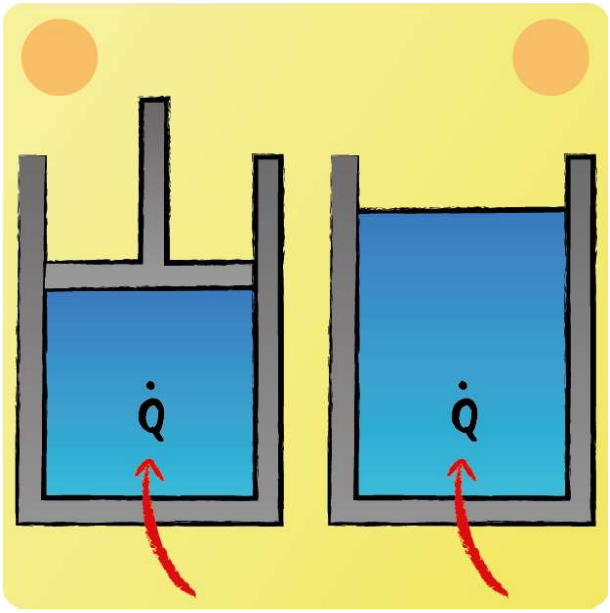
Lecture 3 - Question 2



What is the difference between specific heat capacityc_{p}andc_{v}?

The specific heat capacity defines the relation of heat supplied to a matter and the corresponding change in it's temperature. An equation for specific heat capacity is given by:

$$c = \frac{\Delta Q}{m\,\Delta T}$$

Depending on an isochor or isobaric change of state during the heat absorption the relation is given by c_v or c_p. In case of an isobaric change of state the fluid usually is expanding while it is heated such that the supplied heat partly accounts for the expansion energy. Hence a greater amount of heat is needed to obtain the same temperature difference, that is $c_p > c_v$. For liquids c_p and c_v are almost identical due to a weaker pressure and density coupling compared to gases.