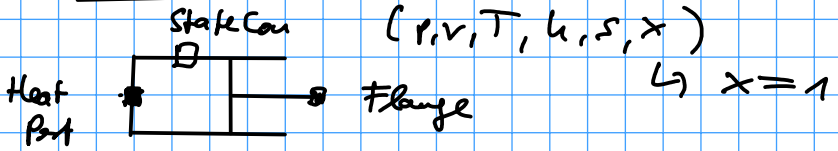


Cylinder

Ableitung von \dot{d} : $\frac{d(\dot{d})}{\dot{d}}$



Variablen: $p, V, T, U, u, s, \dot{Q}, F, \dot{s}_p$

Gleichungen

Anzahl der Variablen: 5 interne, 2 Heat Port (davon 1 flur), 2 Flange (1 flur), 6 State Cam

\Rightarrow 17 Gleichungen

10 Verbindungen Anschluss/interne Variable, z.B. in h : $T = T$, $2+2+6$
z.B. out-state: $p = p$, out-state: $v = V/m$, out-state: $x = 1$

4 Zustandsgleichungen

$$(H = U + p \cdot V)$$

1. Hauptsatz (rev.)

$$p \cdot V = m R_i T$$

$$s = c_p \ln \frac{T}{T_0} - R_i \ln \frac{p}{p_0}$$

$$\frac{dU}{dt} = \frac{dQ}{dt} - p \frac{dV}{dt}$$

$$U = m c_v (T - T_0) + U_0$$

$$F = p \cdot A \quad (2)$$

$$\dot{u} = \dot{q} - p \dot{v}$$

$$h = c_p (T - T_0) + \frac{U_0}{m} + R_i T_0$$

$$V = V_0 + A s_p$$