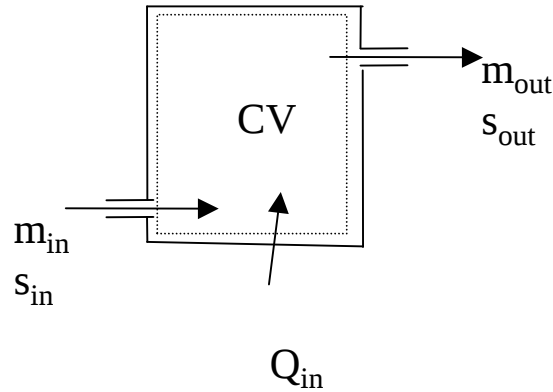


Penjanaan Entropi Sistem Terbuka

Di samping haba, **jisim keluar/masuk** juga membawa entropi bersama-samanya



$$\Delta S_{CV} = \sum_{j=1} \frac{Q_j}{T_j} + \sum S_{in} - \sum S_{out} + S_{gen}$$

$$\Delta S_{CV} = \sum_{j=1} \frac{Q_j}{T_j} + \sum ms_{in} - \sum ms_{out} + S_{gen}$$

$$\frac{dS_{CV}}{dt} = \sum_{j=1} \frac{\dot{Q}_j}{T_j} + \sum \dot{m}s_{in} - \sum \dot{m}s_{out} + \dot{S}_{gen}$$

Kadar
perubahan
entropi
sistem

Kadar *pemindahan*
entropi

Kadar
penjanaan
entropi

Proses Aliran Mantap

$$\frac{dm_{CV}}{dt} = 0 \rightarrow \boxed{\sum \dot{m}_{in} = \sum \dot{m}_{out}}$$

$$\frac{dS_{CV}}{dt} = 0$$

$$\cancel{\frac{dS_{CV}}{dt}} = \sum_{j=1} \frac{\dot{Q}_j}{T_j} + \sum \dot{m}_i s_i - \sum \dot{m}_o s_o + \dot{S}_{gen}$$

$$\boxed{0 = \sum_{j=1} \frac{\dot{Q}_j}{T_j} + \sum \dot{m}_i s_i - \sum \dot{m}_o s_o + \dot{S}_{gen}}$$

1 masuk / 1 keluar;

$$0 = \sum_{j=1} \frac{\dot{Q}_j}{T_j} + \dot{m}(s_i - s_o) + \dot{S}_{gen}$$

$$s_o - s_i = \sum_{j=1} \frac{\cancel{\dot{Q}_j} / \dot{m}}{T_j} + \frac{\dot{S}_{gen}}{\dot{m}}$$

Proses adiabatik bolehbalik = proses seentropi

Proses seentropi tak semestinya adiabatik bb.

Proses bolehbalik $\rightarrow S_{gen} = 0$

Mengeluarkan W_{max}

Menggunakan W_{min}