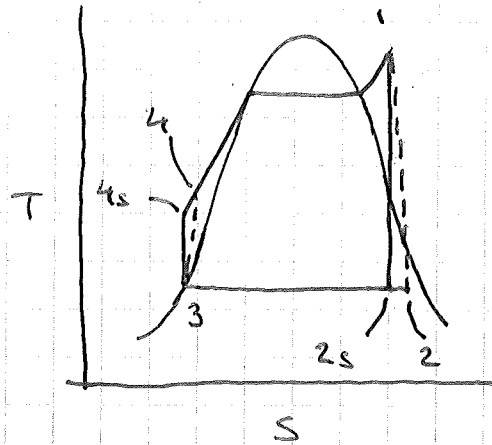
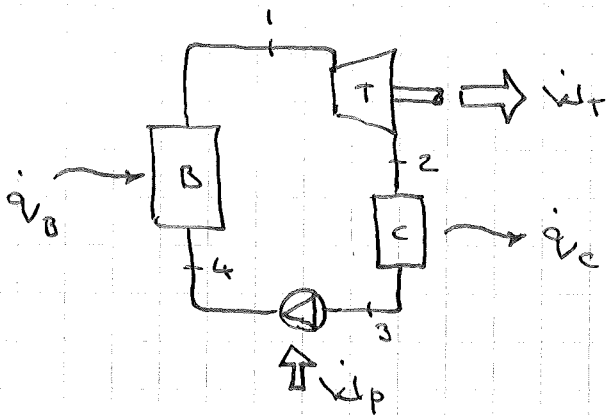


ISENTROPIC EFFICIENCY



ISENTROPIC MEANS: $\Delta S = 0$ (IDEAL, PERFECT, REVERSABLE).

NOTE: ① TO ②_s IS ISENTROPIC $\rightarrow S_1 = S_{2s}$
 ③ TO ④_s IS ISENTROPIC $\rightarrow S_3 = S_{4s}$

FOR A LESS THAN PERFECT WORK PROCESS SOME HEAT IS GENERATED BY FRICTION, IMPERFECT COMPRESSION/ EXPANSION, SHOCK WAVES, ETC. THUS ENTROPY IS GENERATED

IN NON-ISENTROPIC PROCESSES $S_{END} > S_{START}$

NOTE: ① TO ② ... $S_{2s} = S_1 < S_2$
 ③ TO ④ ... $S_{4s} = S_3 < S_4$

WHEN PEOPLE SAY "THE PUMP IS 70% EFFICIENT" THEY MEAN ISENTROPIC EFFICIENCY (COMPARISON TO PERFECTION)

$\eta_T = \frac{\dot{W}_{TACTUAL}}{\dot{W}_{TIDEAL}} = \frac{(h_1 - h_2)}{(h_1 - h_{2s})}$	TURBINE ISENTROPIC EFFICIENCY (OUTPUT DEVICE).
$\eta_P = \frac{\dot{W}_{PIDEAL}}{\dot{W}_{PACTUAL}} = \frac{(h_{4s} - h_3)}{(h_4 - h_3)}$	PUMP ISENTROPIC EFFICIENCY (INPUT DEVICE)

[NOTE: THE CONFORM WITH LITTLE/BIG SO $\eta \leq 1$]