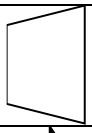
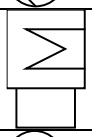
Cycle efficiencies of ORCs using working fluids presented in Figures 5&6.

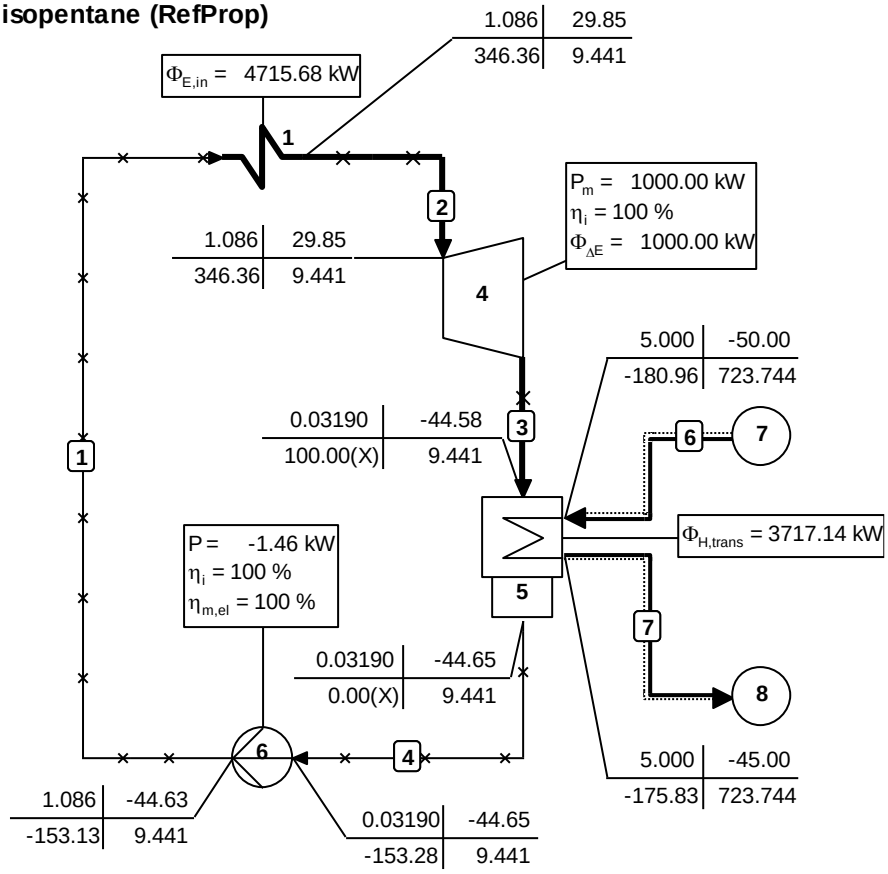
Supplementary material for “Thermodynamic selection of the optimal working fluid for Organic Rankine Cycles” by Attila R. Imre, Réka Kustán and Axel Groniewsky

Cycle efficiencies – calculated in CycleTempo 5.0 environment using fluid data from RefProp 9.0 – of ORCs using working fluids presented in Figures 5&6.

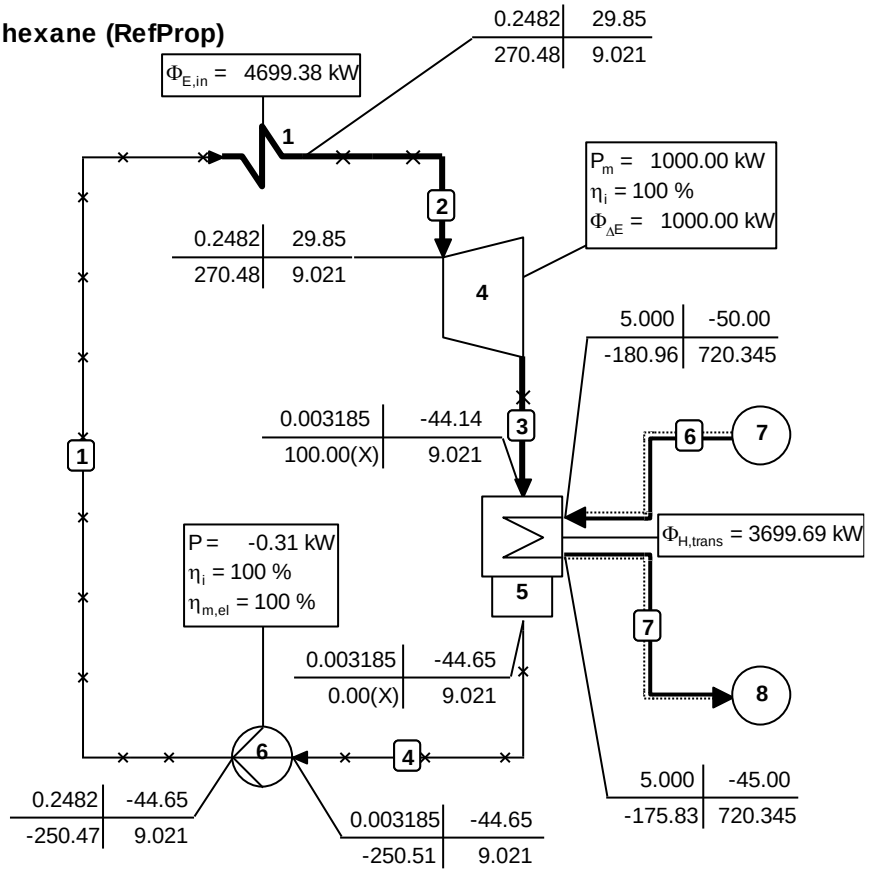
Process flow diagrams (layouts) are shown on pp. 2-4 of the Supplementary Material.

Units		Nomenclature of the figures
expander/turbine		p | T h | Φ_m p = Pressure [bar] T = Temperature [°C] h = Enthalpy [kJ/kg] Φ_m = Mass flow [kg/s] P_m = Mechanical Power [kW] P = Power [kW] η_i = Isentropic efficiency [%] $\eta_{m,e}$ = Mechanical*Electrical eff. [%] $\Phi_{\Delta E}$ = Energy loss [kW] X = Vapour quality [%] $\Phi_{E,in}$ = Energy input [kW] $\Phi_{H,trans}$ = Transmitted heat flow [kW]
heat source		
pump		
condenser		
sink/source		

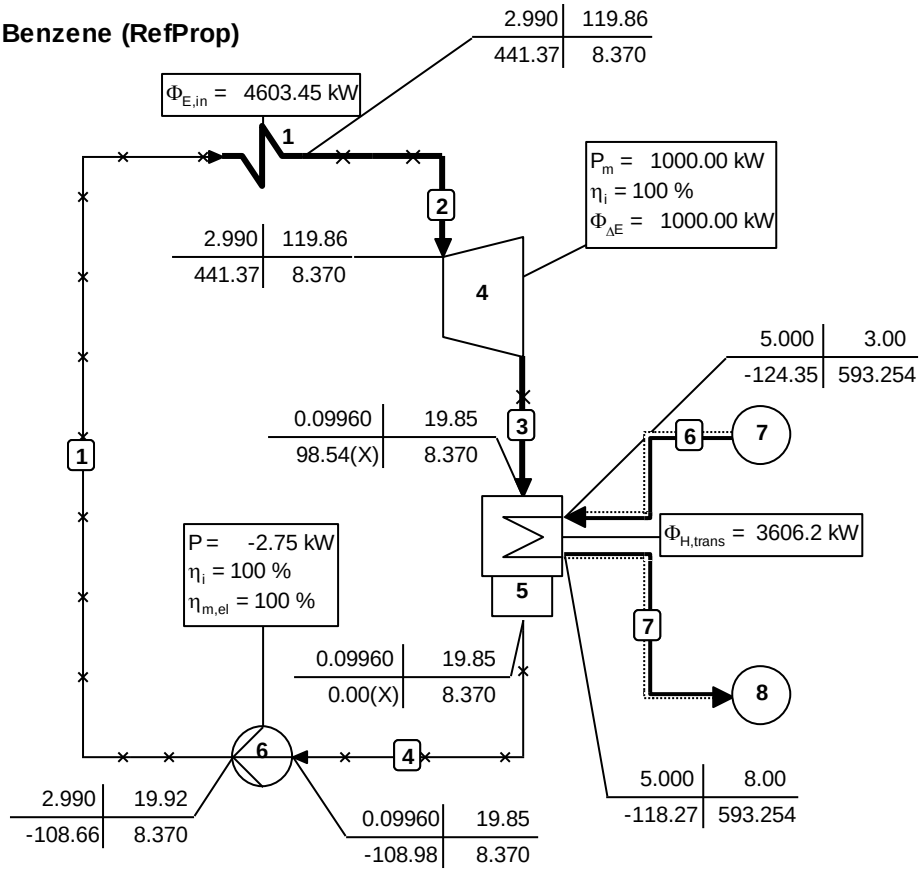
isopentane (RefProp)



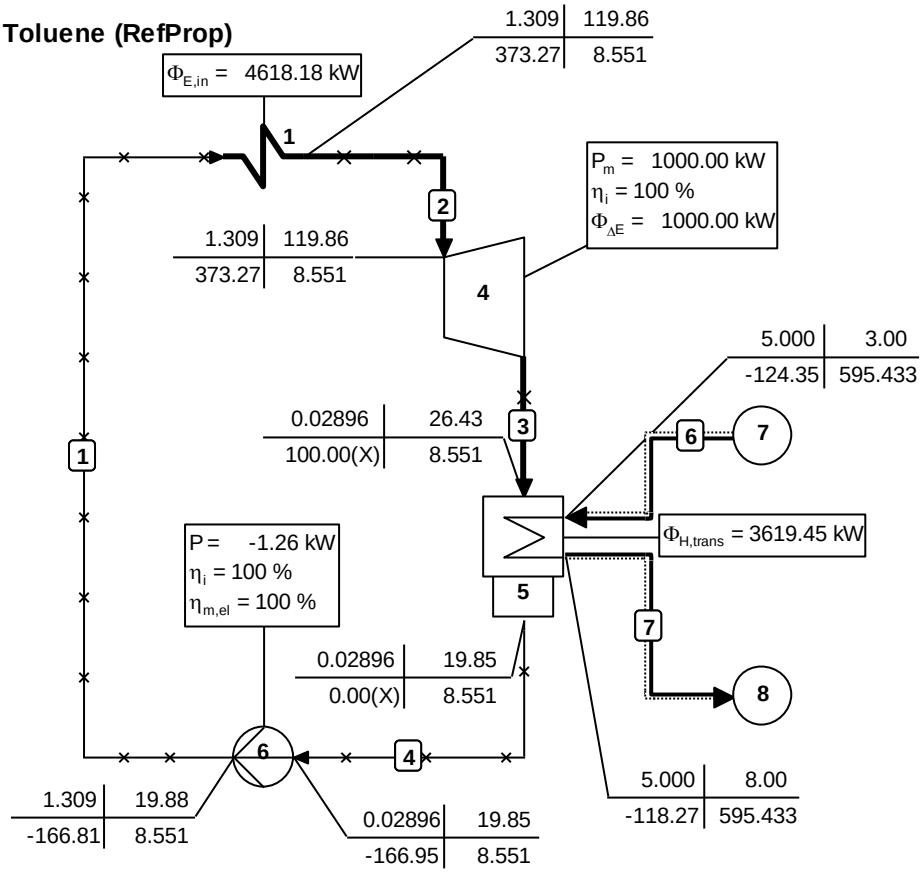
hexane (RefProp)



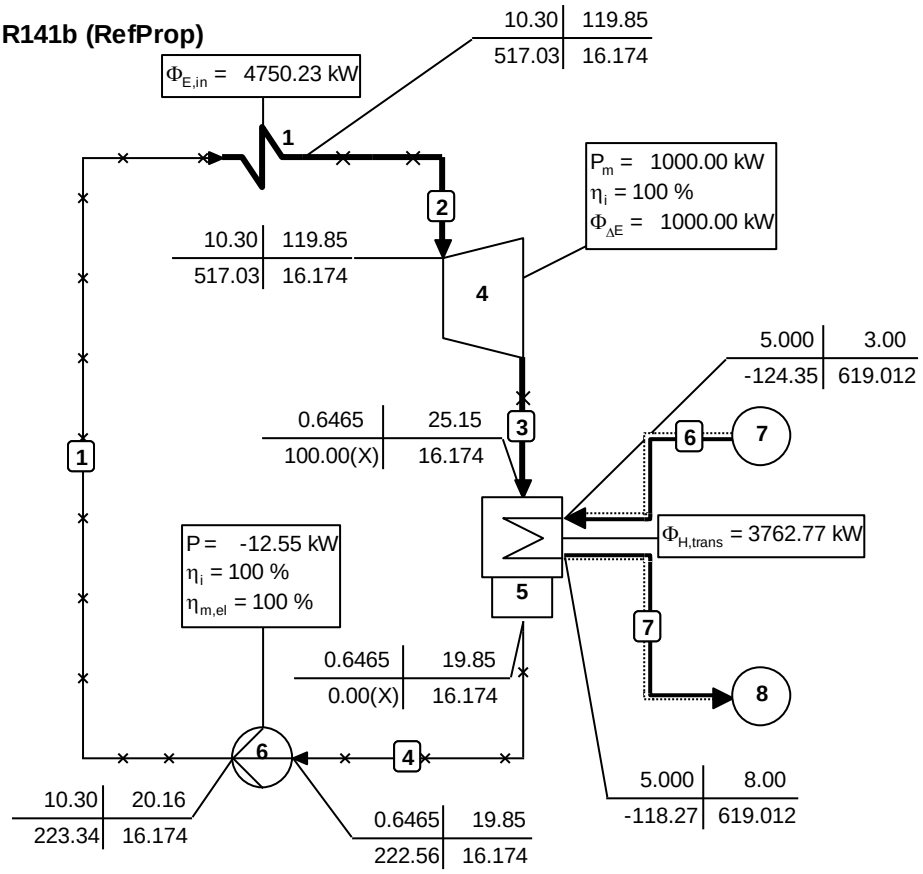
Benzene (RefProp)



Toluene (RefProp)



R141b (RefProp)



pentane (RefProp)