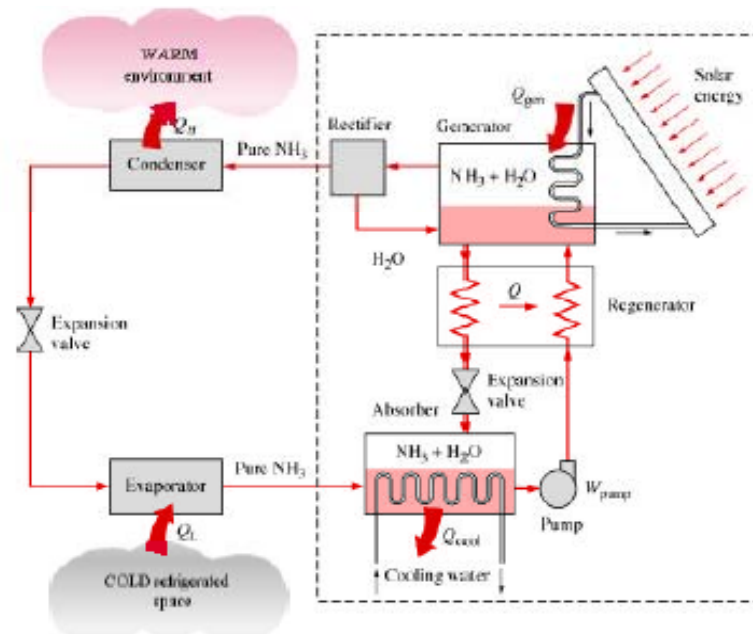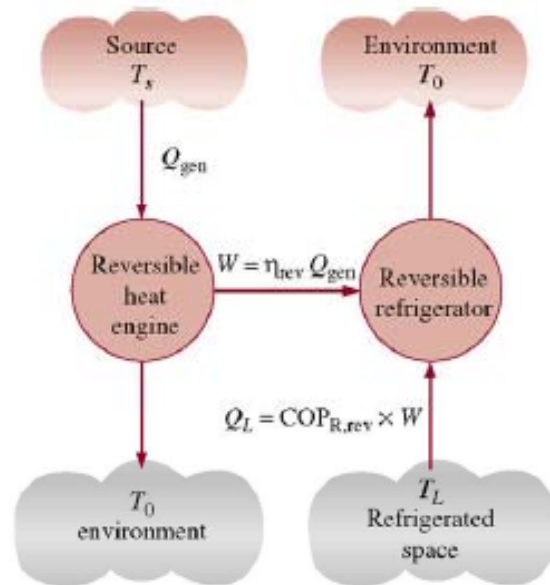# Ammonia Absorption Refrigeration Cycle

- **Useful when inexpensive thermal energy is available at 200 to 200 C**
- **Pump work is typically small because a liquid is being compressed**

COP for an Ammonia Absorption Refrigeration Cycle

$$W = \eta_{rev} Q_{gen} = \left(1 - \frac{T_0}{T_s}\right) Q_{gen}$$

$$Q_L = COP_{R,rev} W = \left(\frac{T_L}{T_0 - T_L}\right) W$$

$$COP_{rev,\,absorption} = \frac{Q_L}{Q_{gen}} = \left(1 - \frac{T_0}{T_s}\right)\left(\frac{T_L}{T_0 - T_L}\right)$$