

Vapor-Compression Refrigeration Cycle

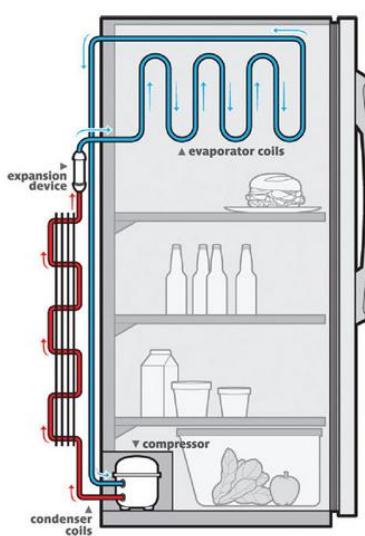
Thermal, Fluids, and Energy
Systems Lab

(ME EN 4650)

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University of Utah*

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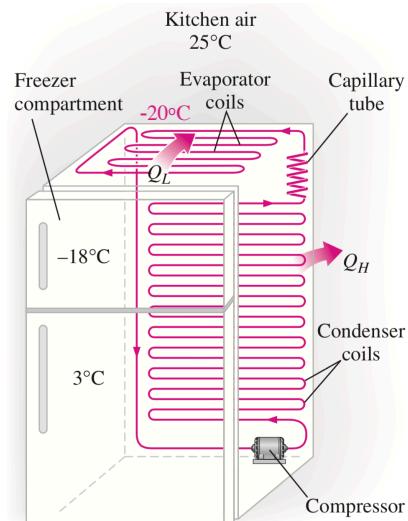
Refrigerator Components



- Removes heat from refrigerated medium
- Maintains refrigerated medium at a low temperature
- Does not care about discharged heat

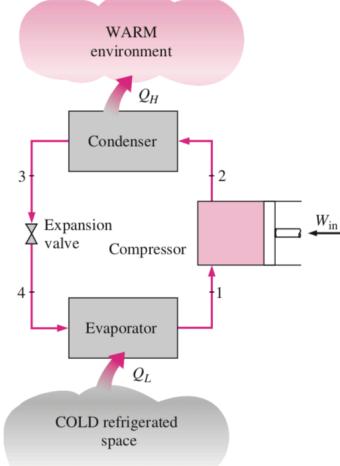
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Refrigerator Temperatures



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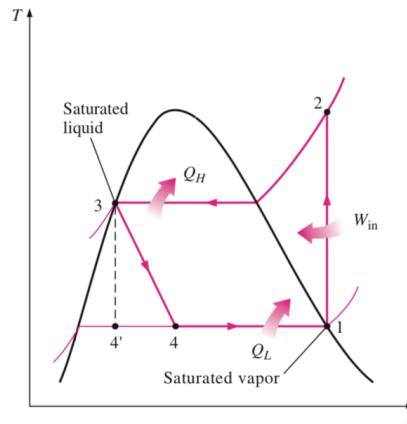
Schematic



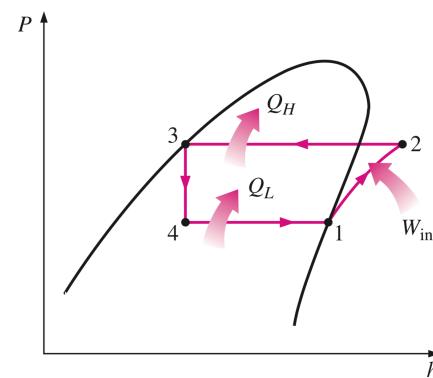
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Ideal Cycle

T-s Diagram

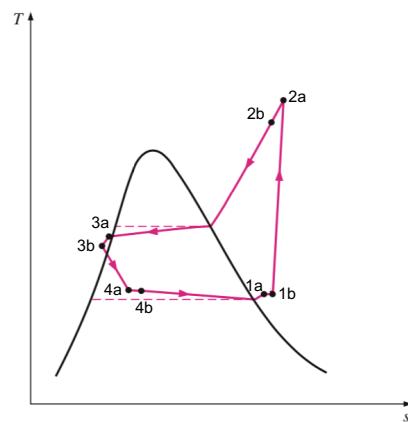
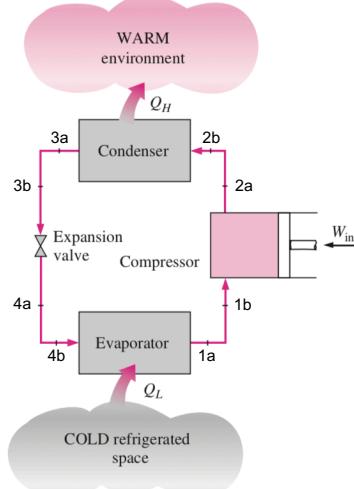


P-h Diagram



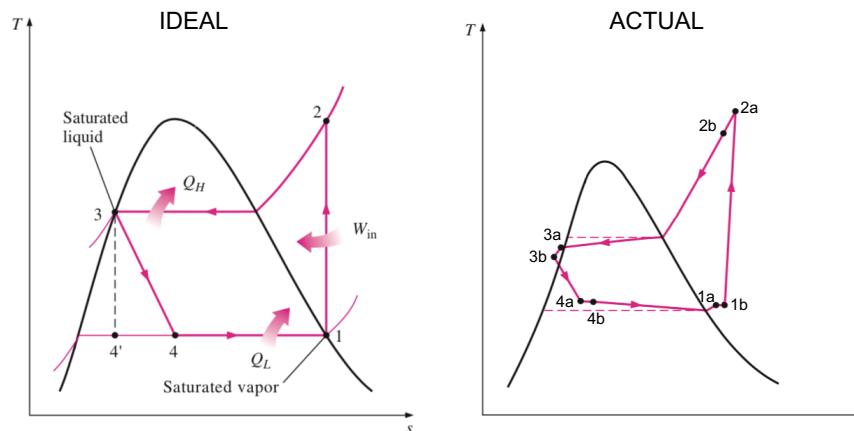
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Actual Cycle



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Ideal vs Actual Cycle



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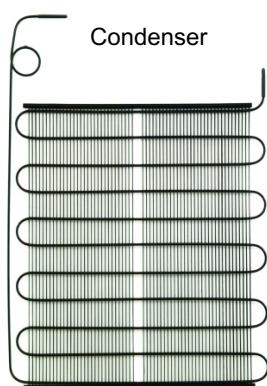
Refrigerator Components

Compressor



Refrigerant
(working fluid)

Condenser



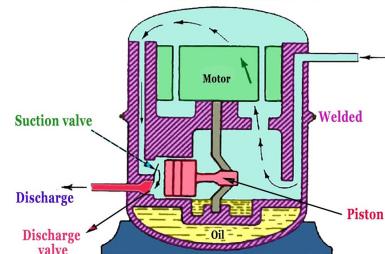
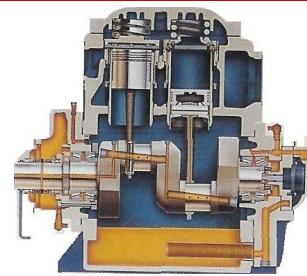
Evaporator



Throttling valve

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Compressor



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Condenser Coils

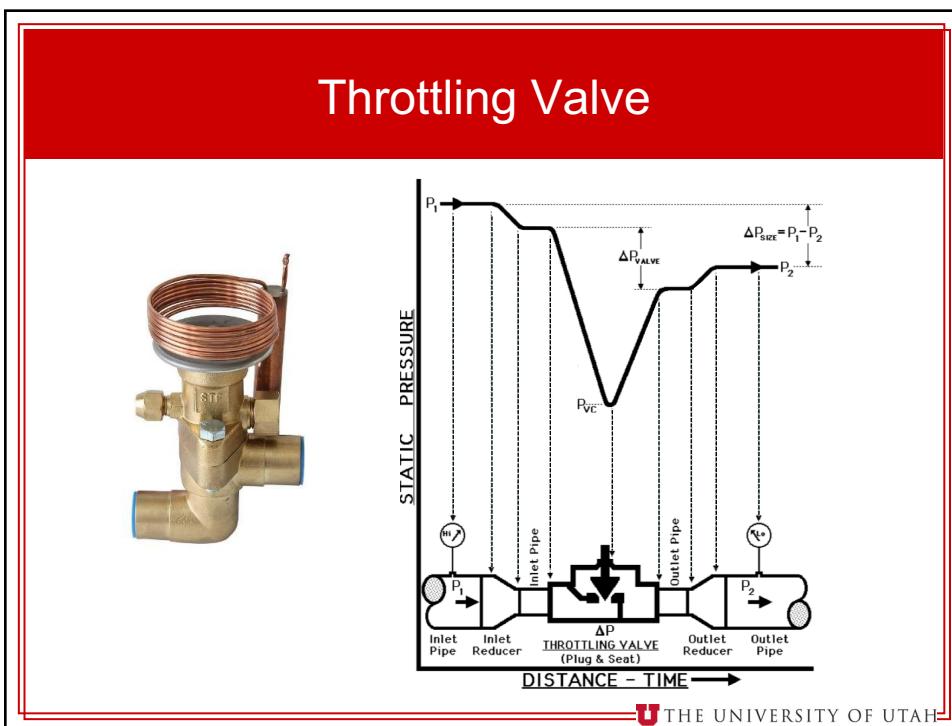
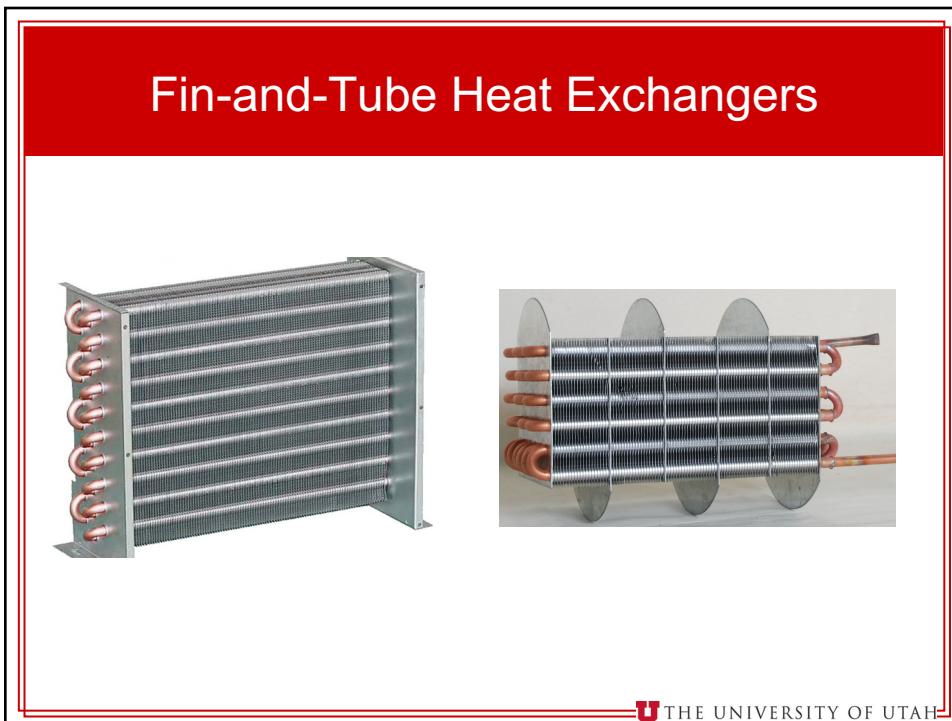
Located in **back** of unit



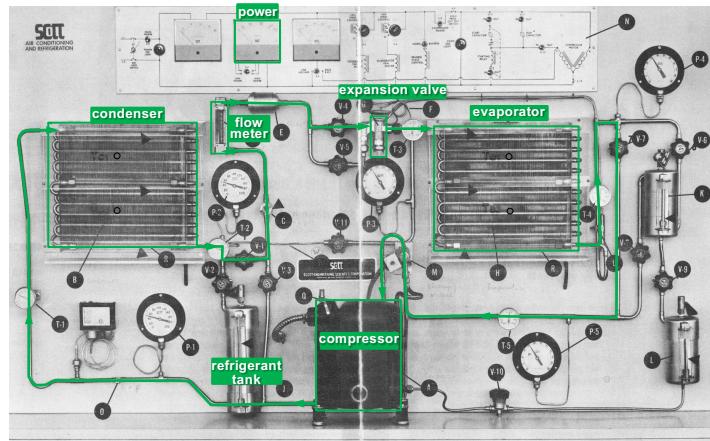
Located in **bottom** of unit



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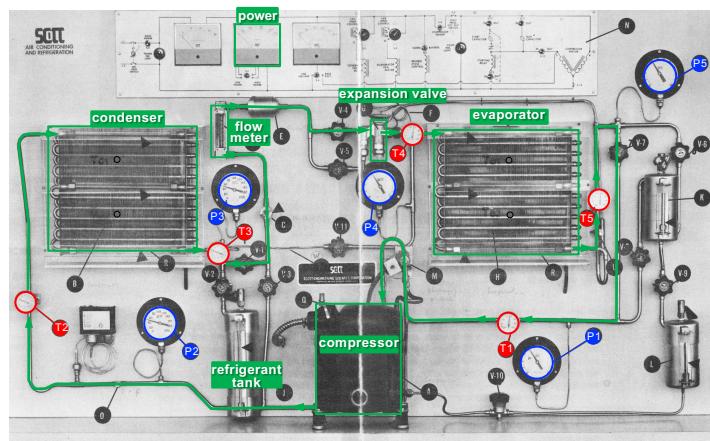


Experimental Setup



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Experimental Setup



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