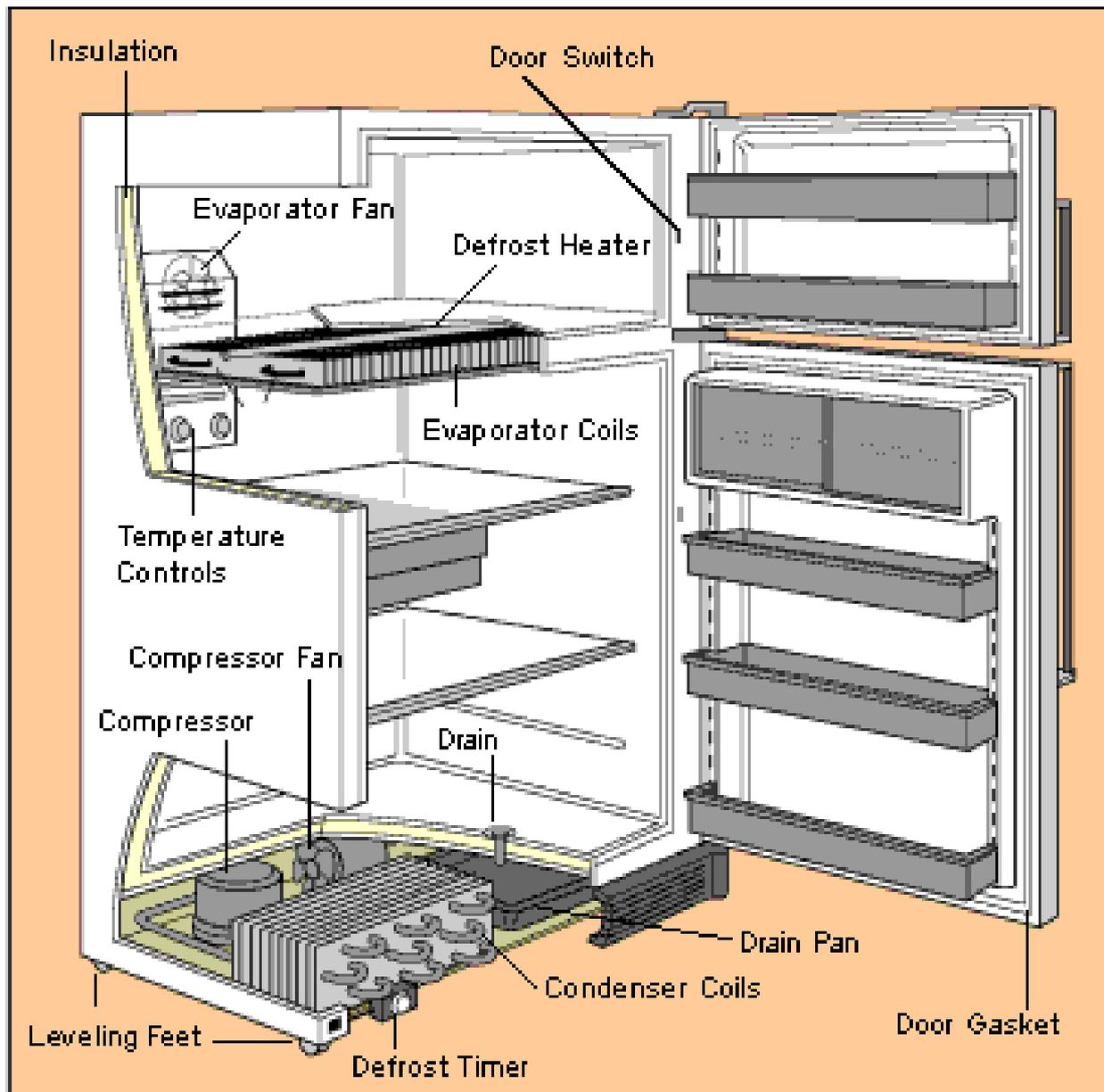


Outline

1. Illustration
2. Basic Ideas
3. Function
4. Cognate Units

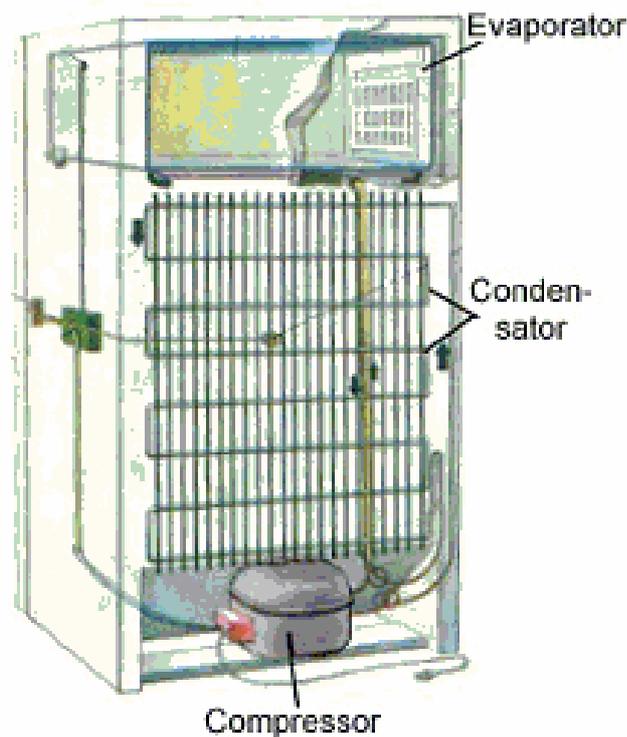
Refridgerators

1. Illustration - different parts of a fridge



Refridgerators

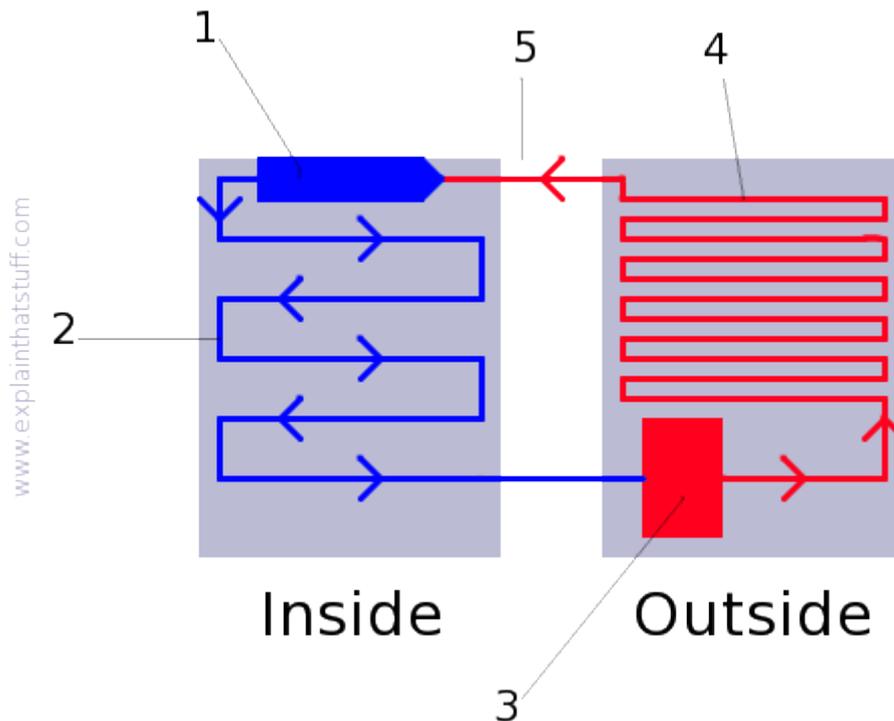
2. Basic Ideas - Gases do the magic



- Circulation of special gases (coolant)
- Compressed gases → compressor = heat
- Expanded gases → expansion valve = cool
- Heat from inside to outside

Refridgerators

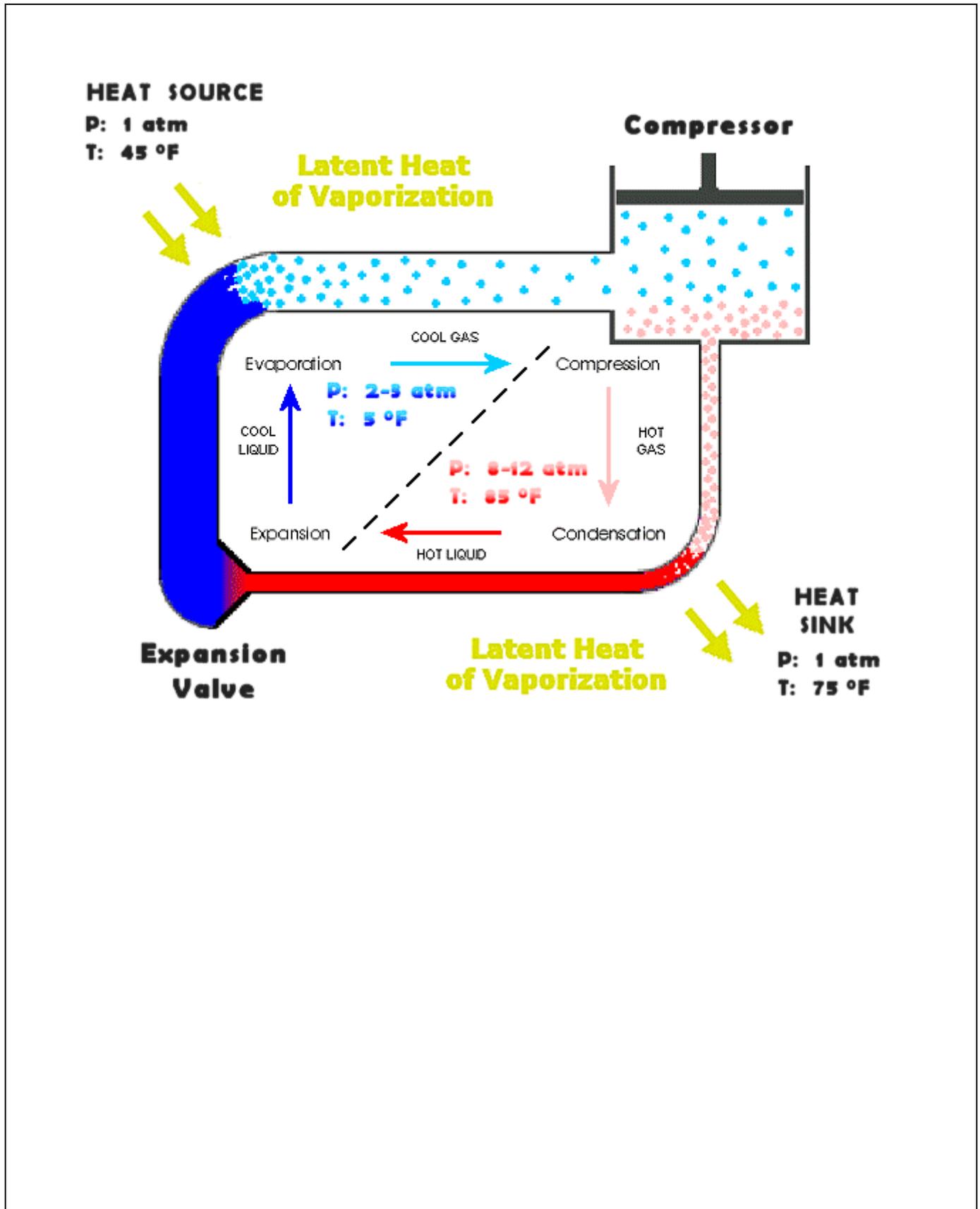
3. How a refrigerator works



- 1) expansion valve (nozzle): drop of pressure
- 2) chiller cabinet: absorption & removal of heat
- 3) compressor: raising pressure
- 4) thin pipes: giving off heat
- 5) Back flow of coolant into expansion valve

→ cycle

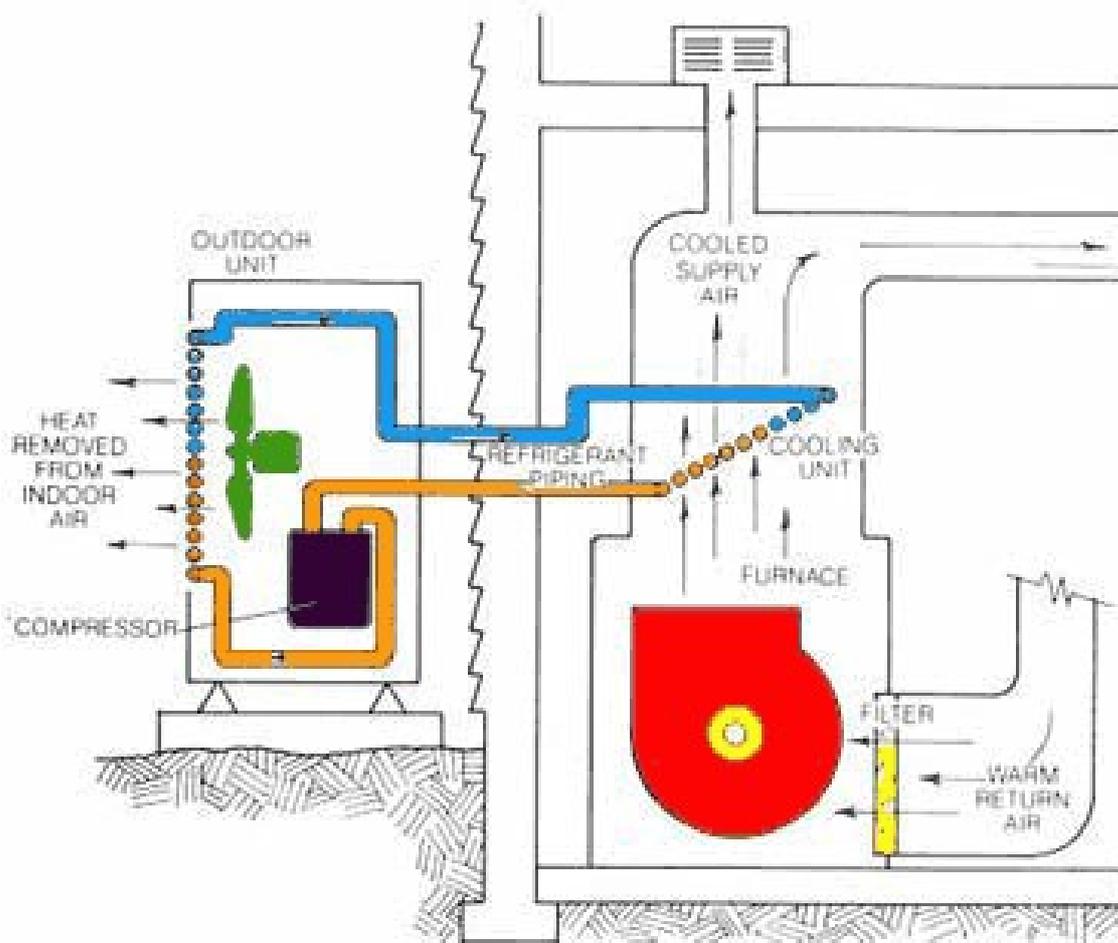
Refridgerators



Refridgerators

4. Cognate Units - Air Conditioning

→ Refrigerator without insulated box



Central Air-Conditioning & Heating System

Graphic courtesy: Air-Conditioning & Refrigeration Institute