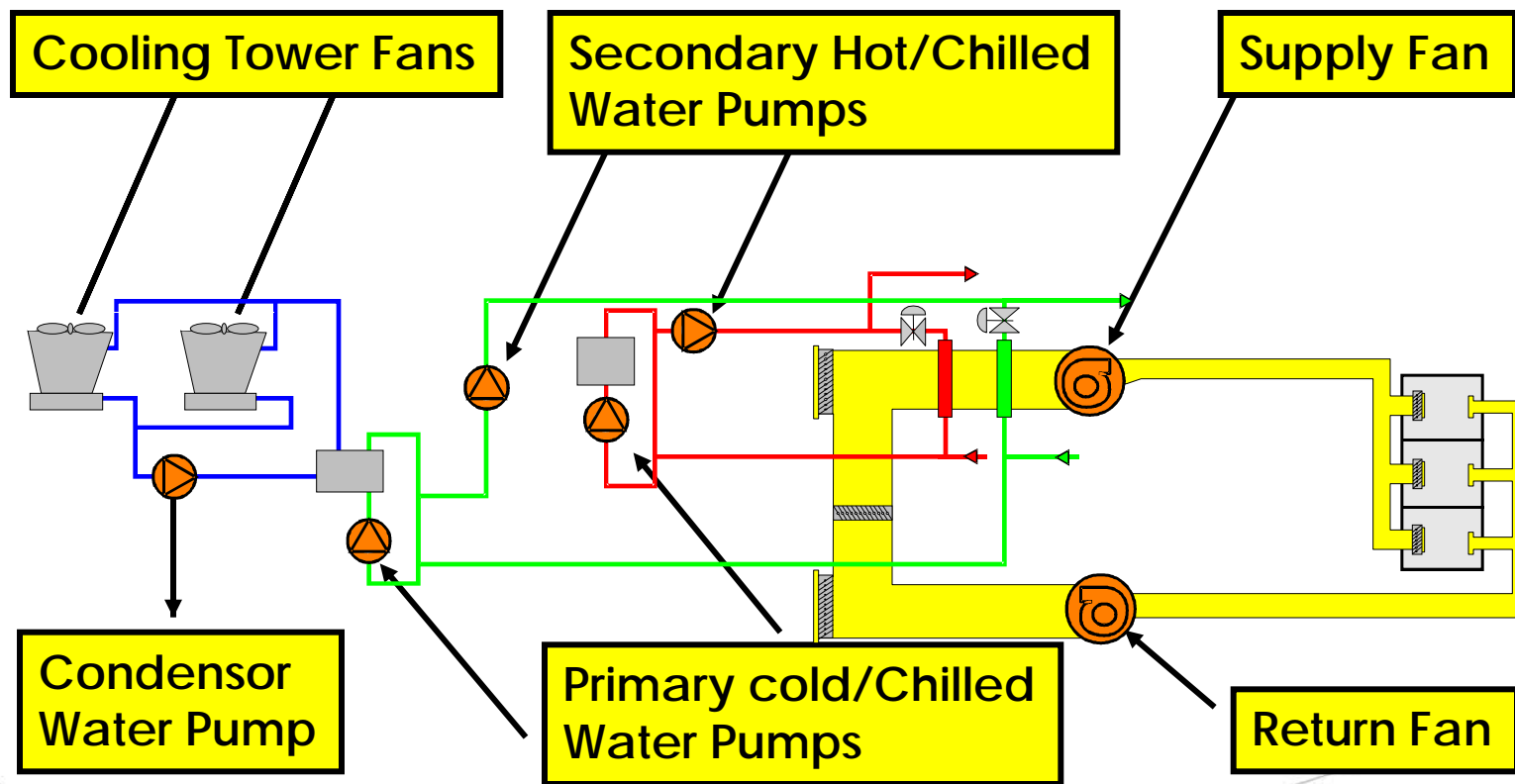


Using Adjustable Frequency Inverters in Variable Torque HVAC Applications

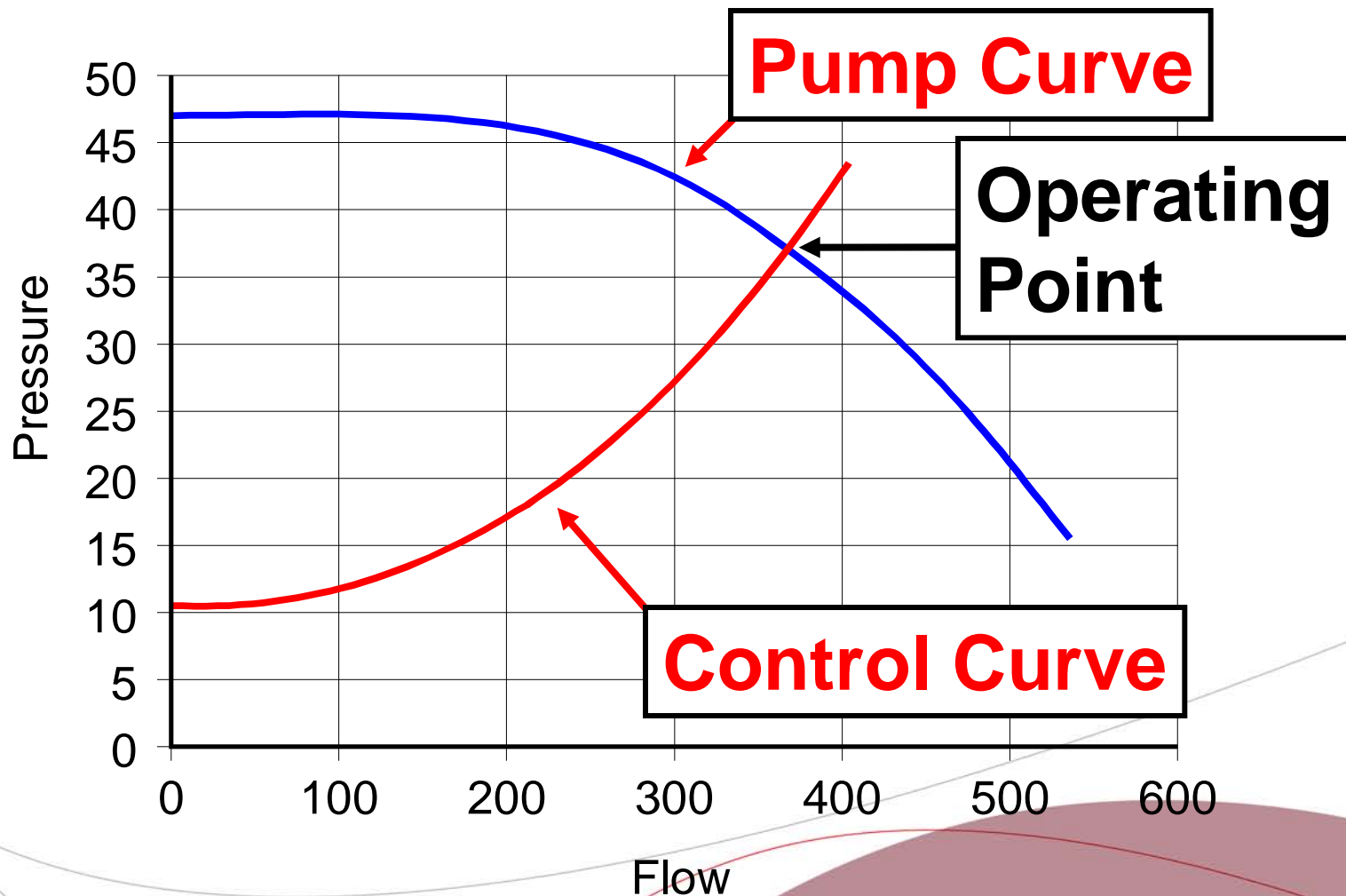
Why Flow Control?

- HVAC systems are designed for “worst case” situations. Most of the time they have excess capacity.
- Controlling flow
 - Saves energy
 - Improves occupant comfort

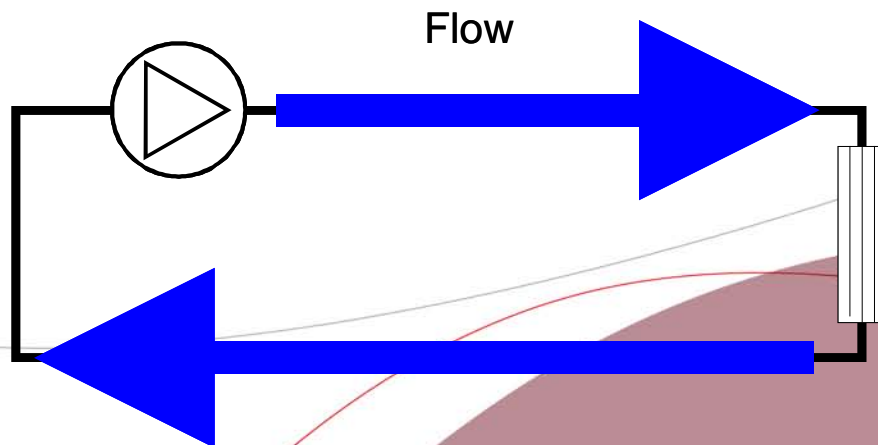
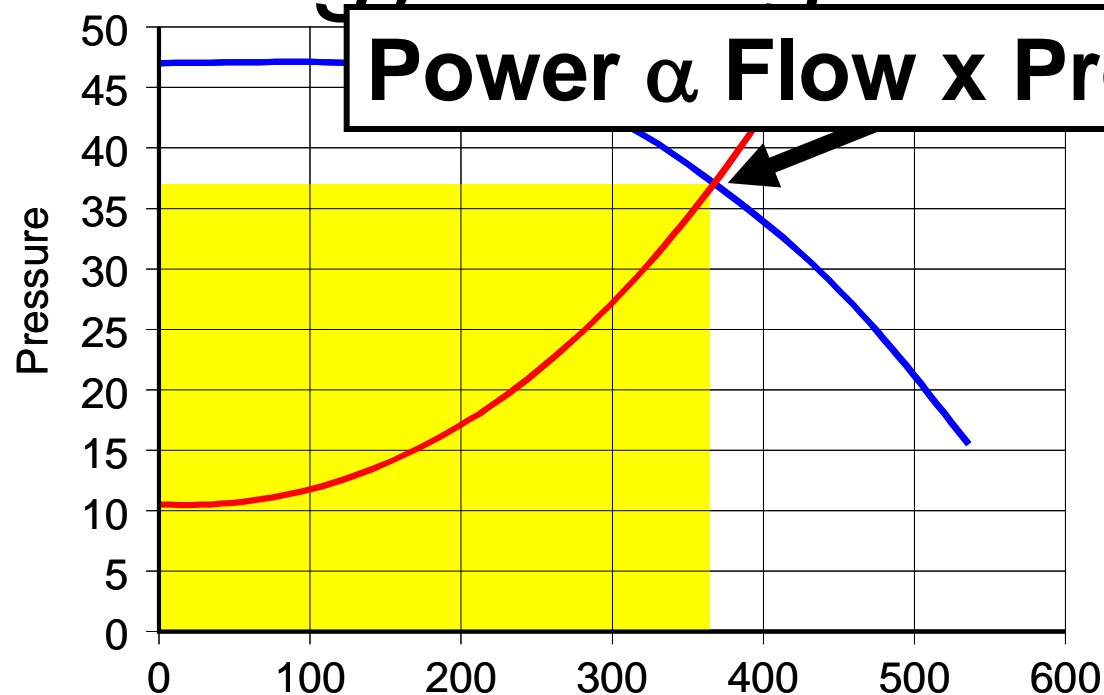
Variable Torque Applications



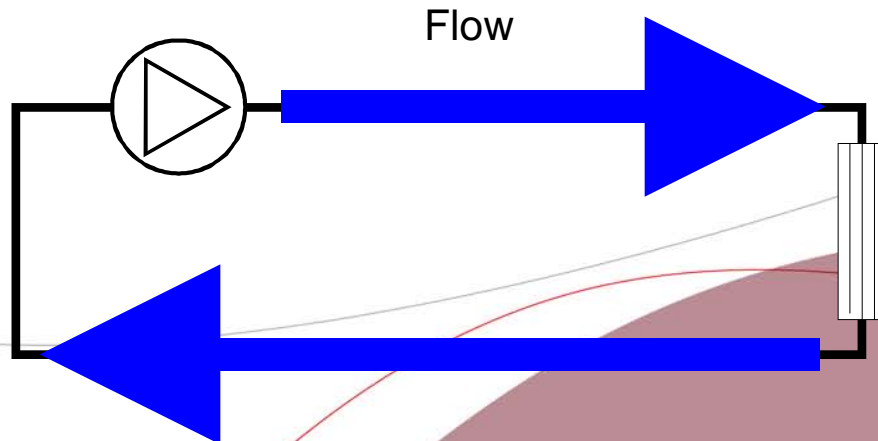
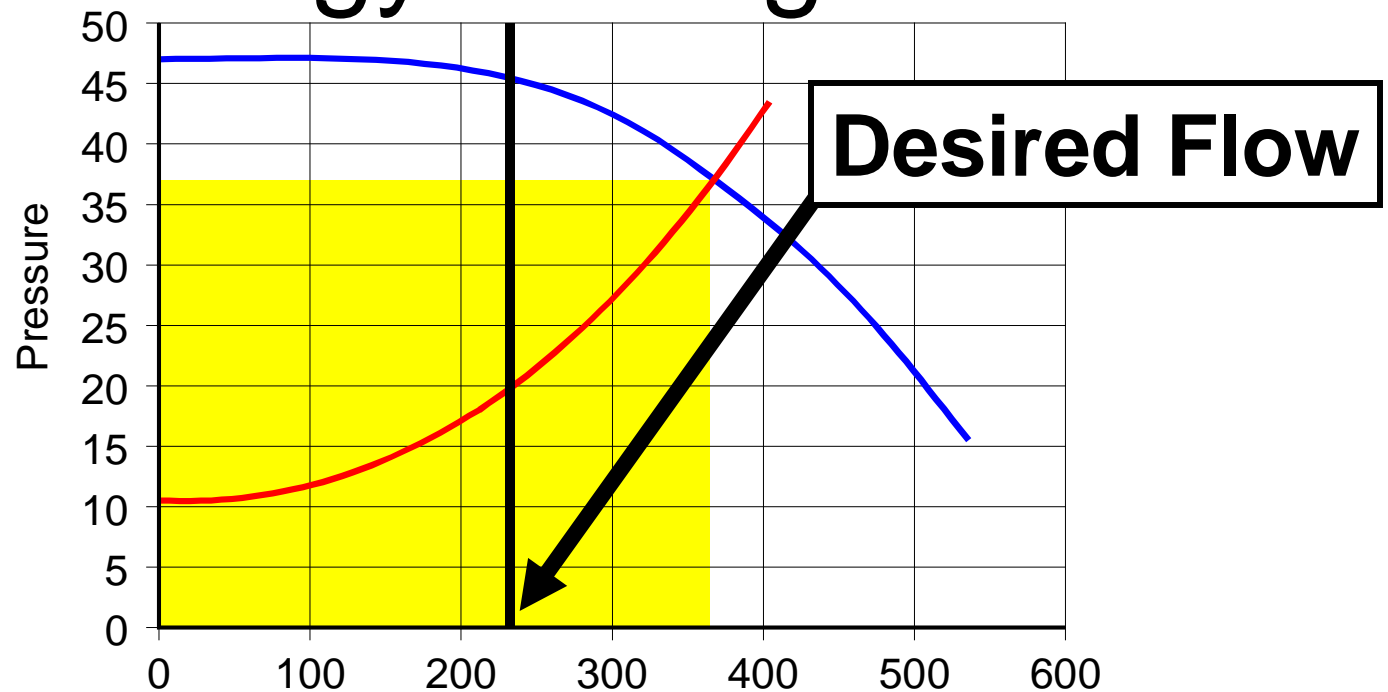
Energy Savings



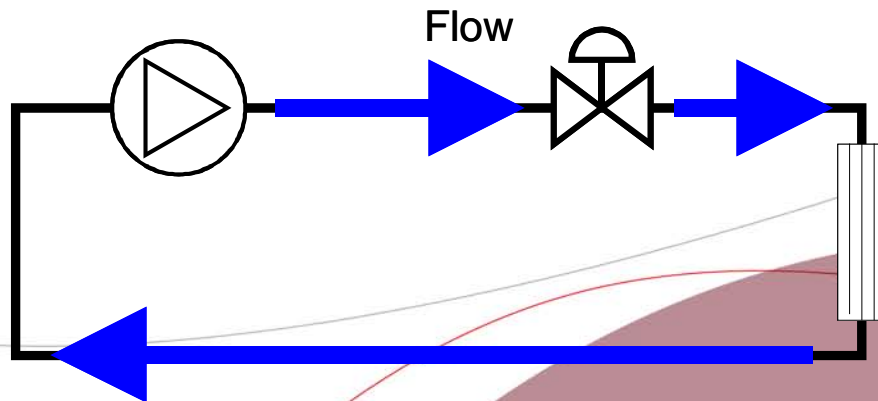
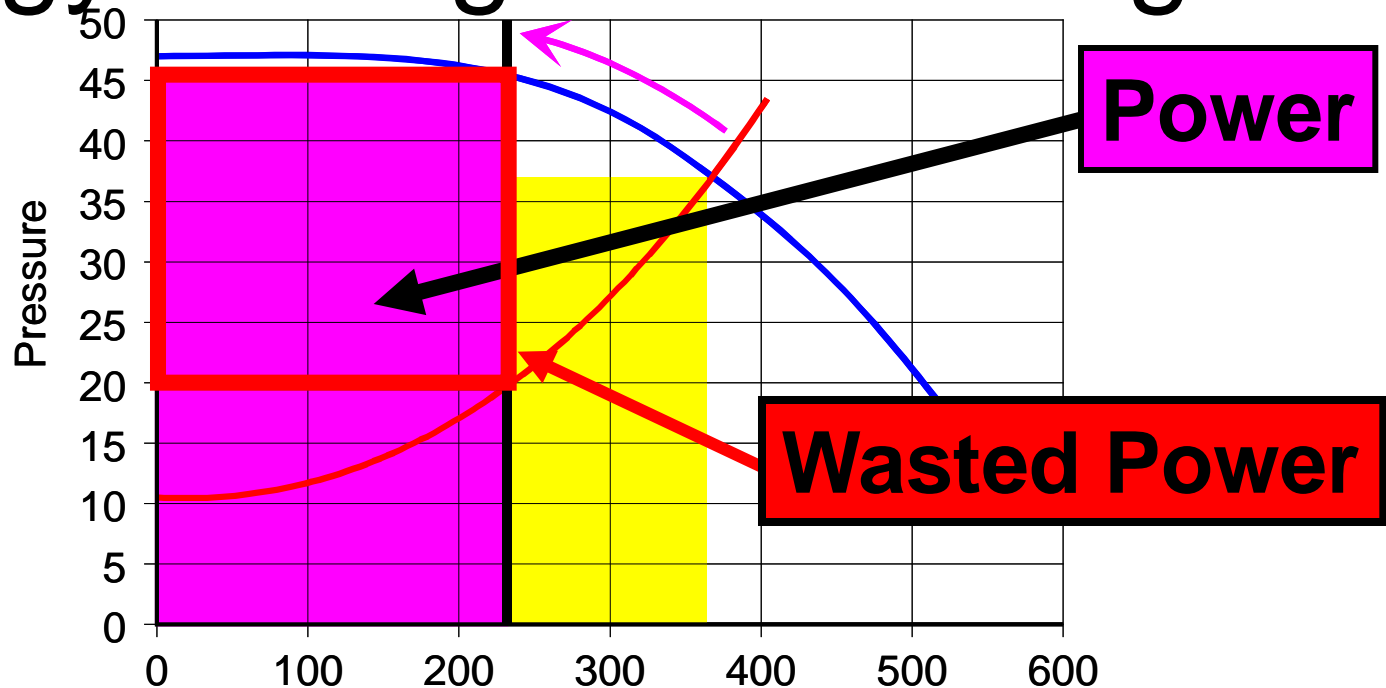
Energy Savings



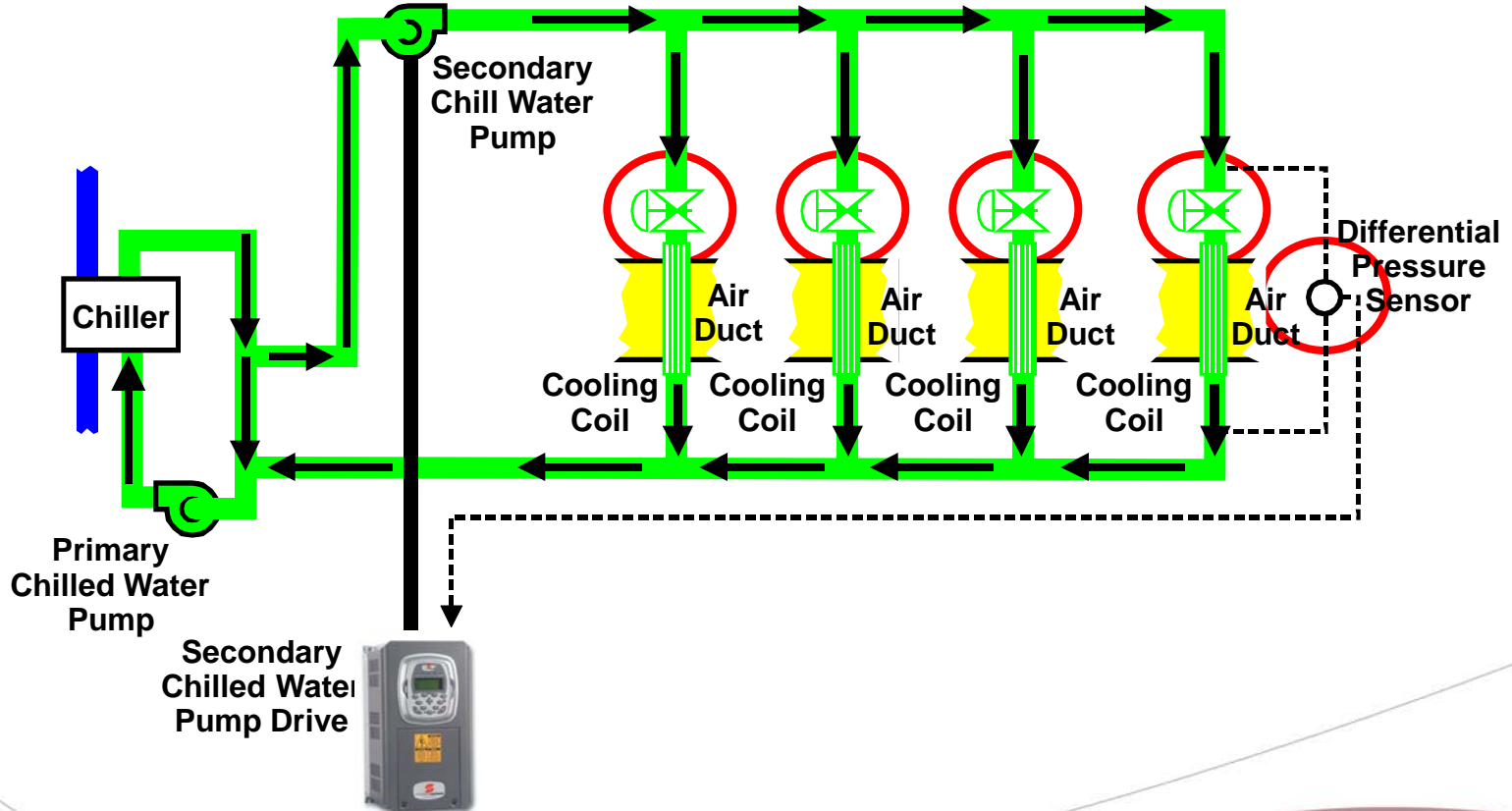
Energy Savings



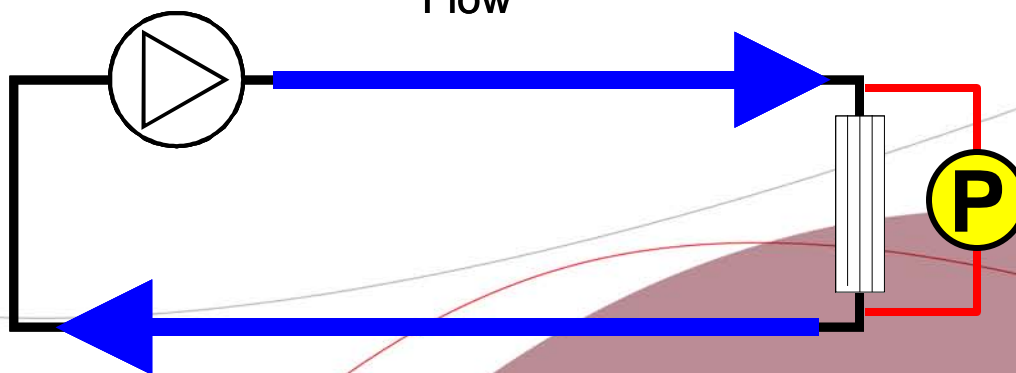
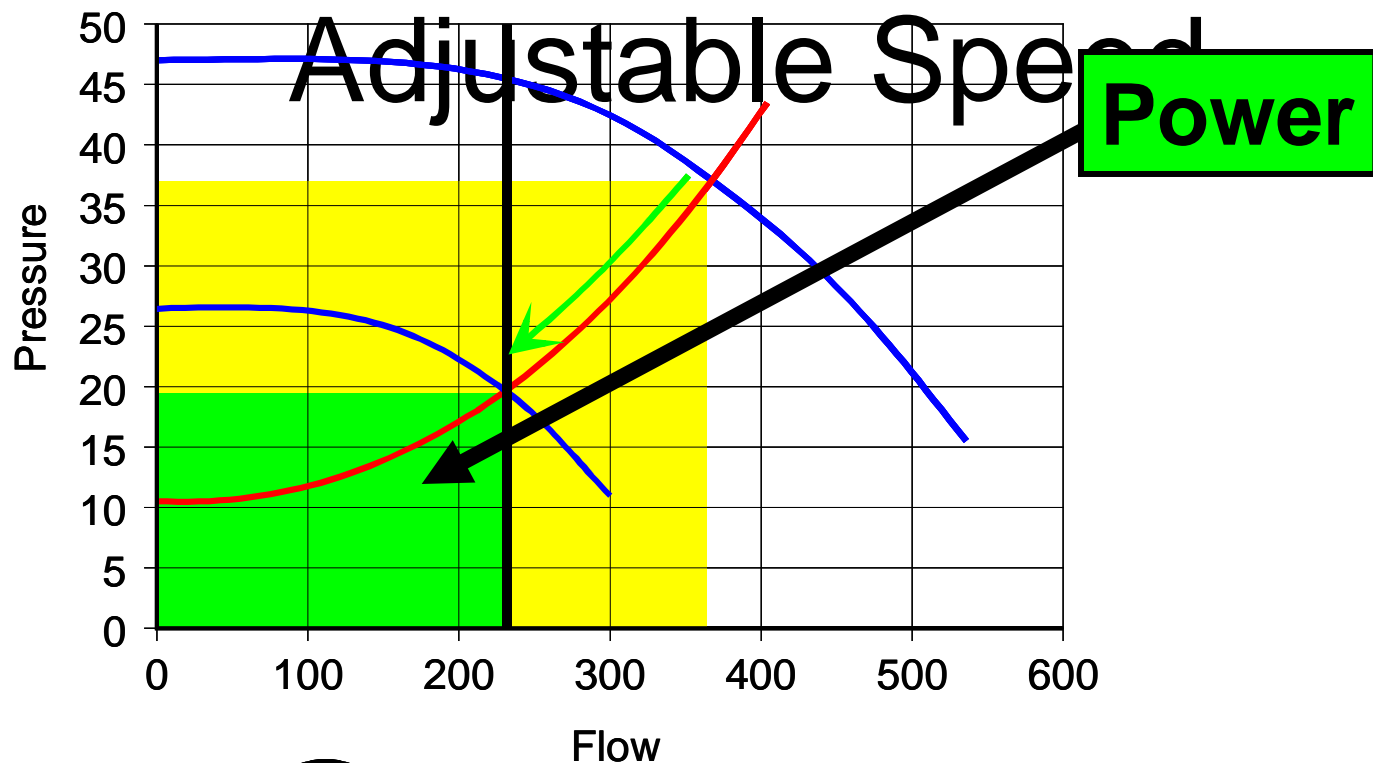
Energy Savings – Throttling



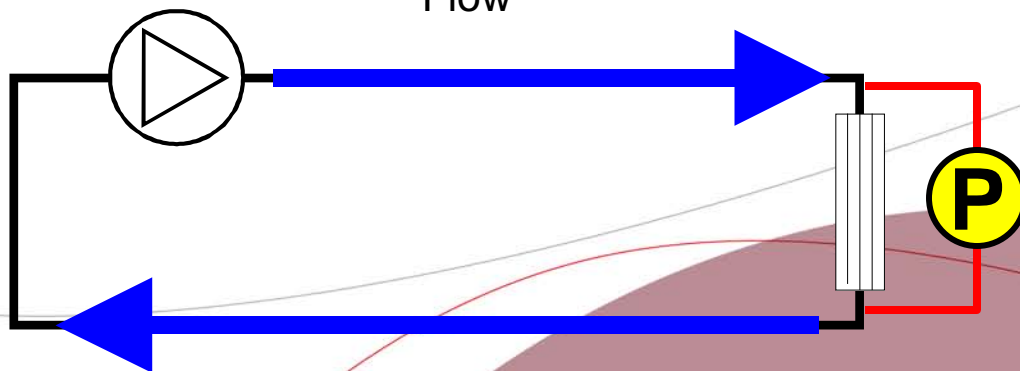
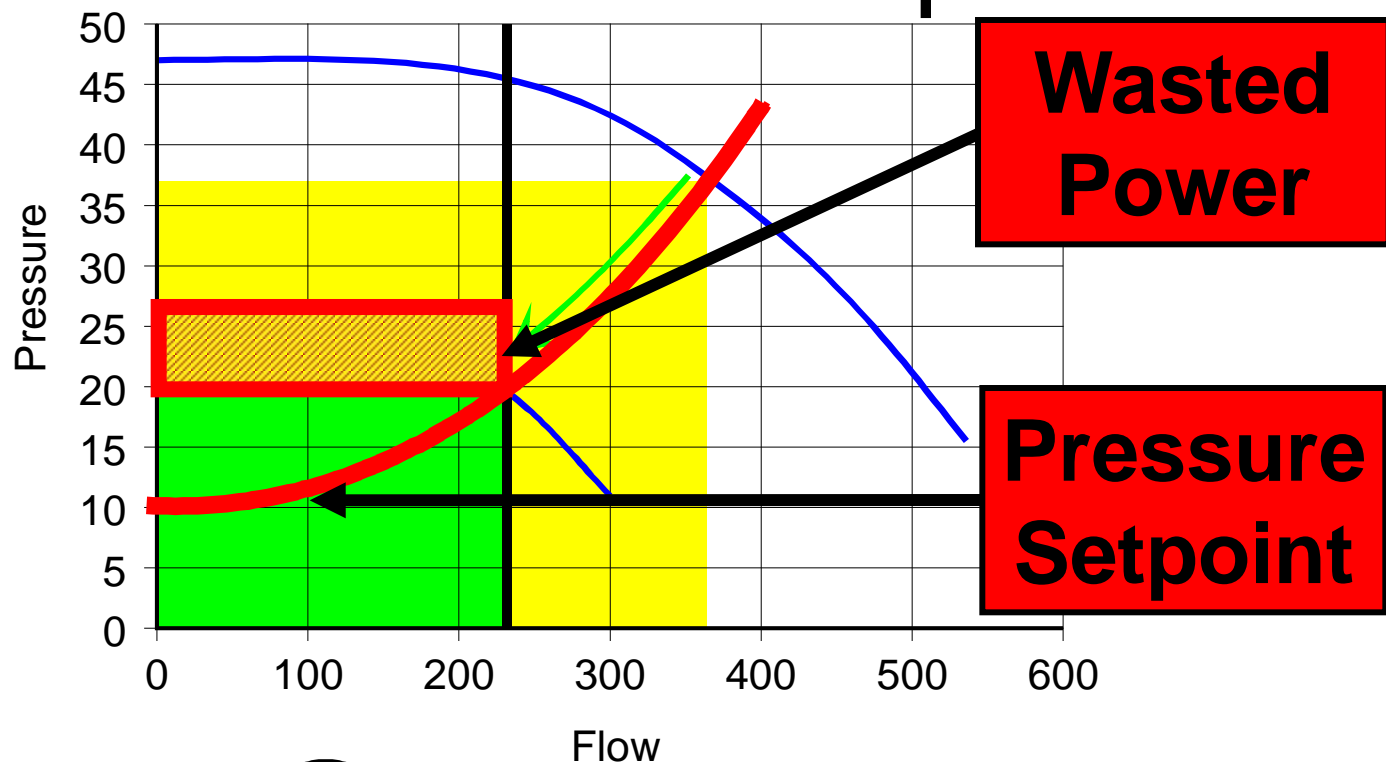
Controlling Secondary Pumps



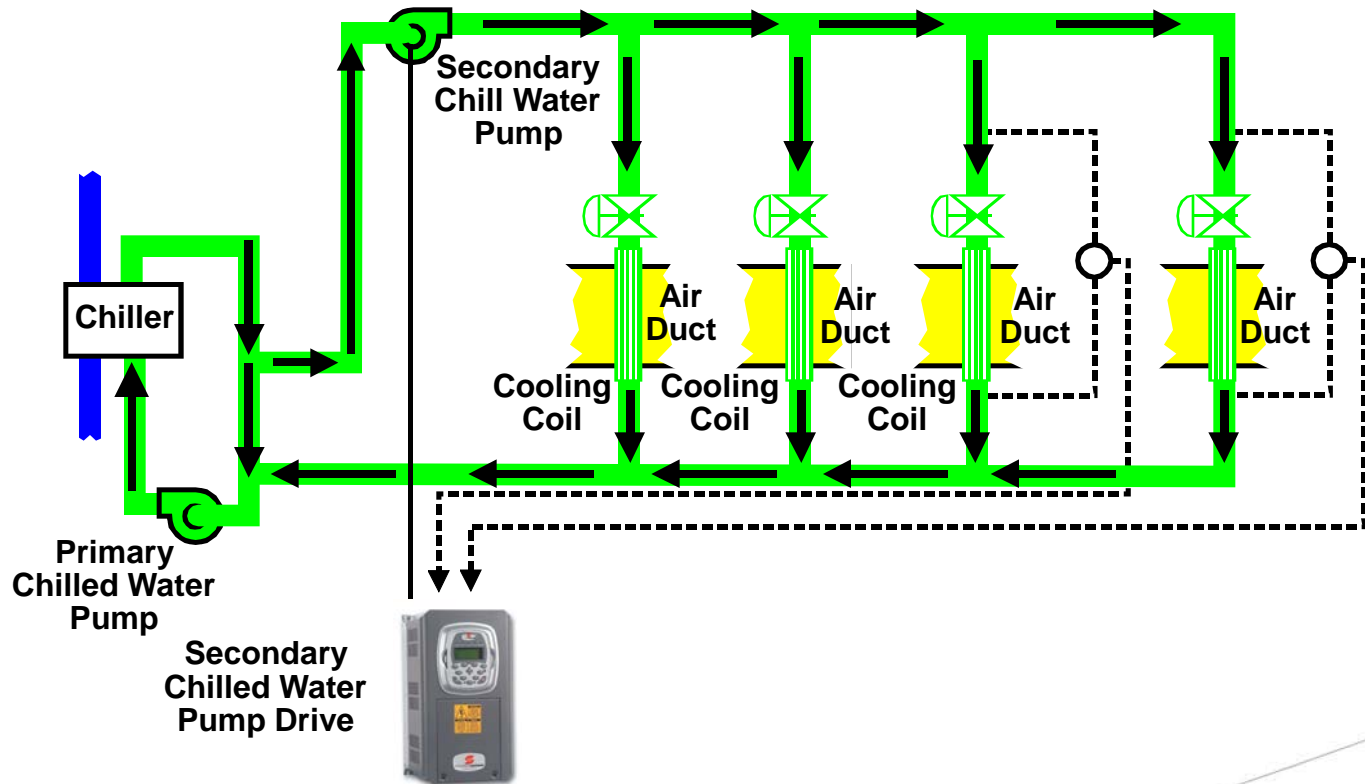
Energy Savings –



Effect of Pressure Setpoint

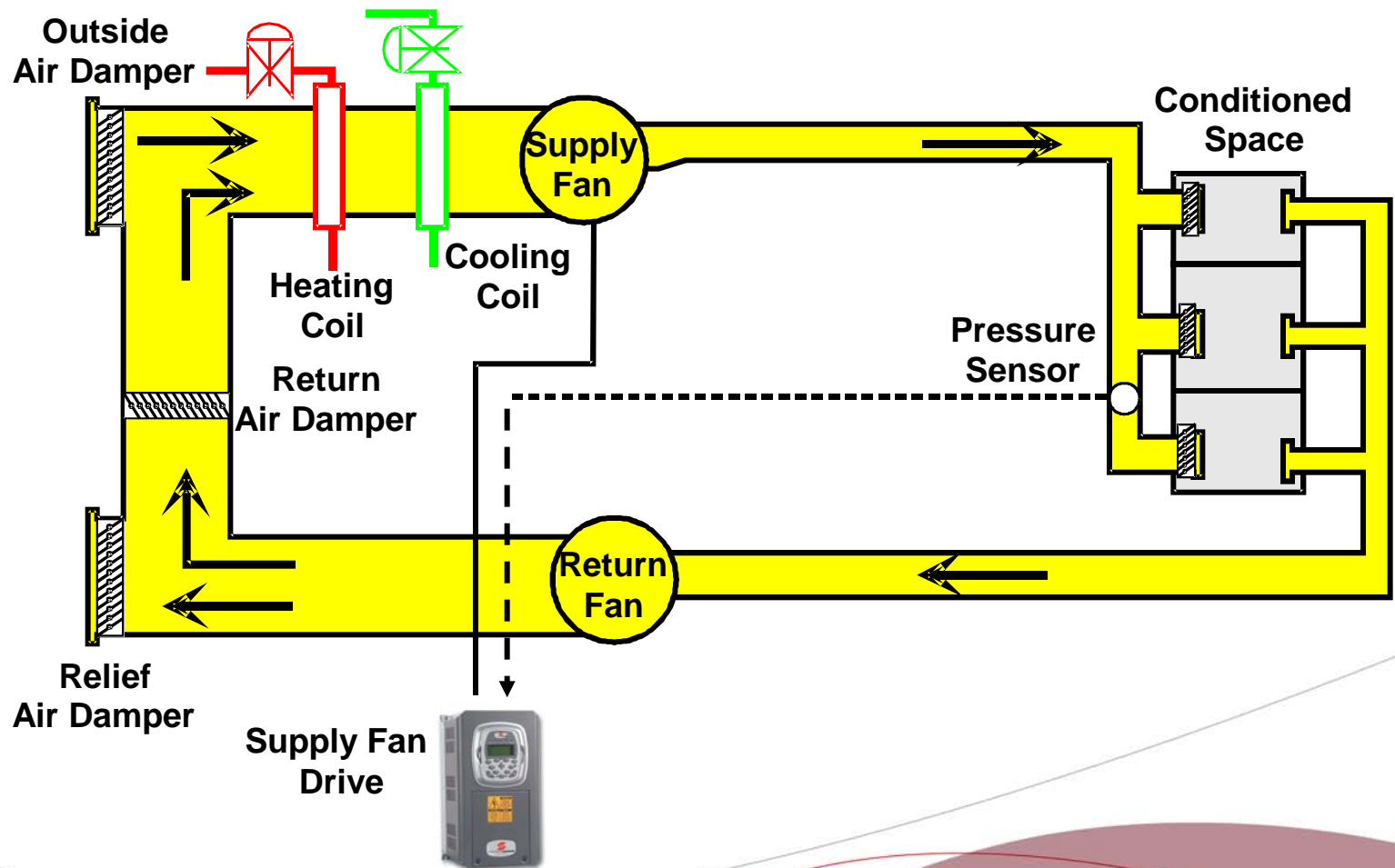


Secondary Pump

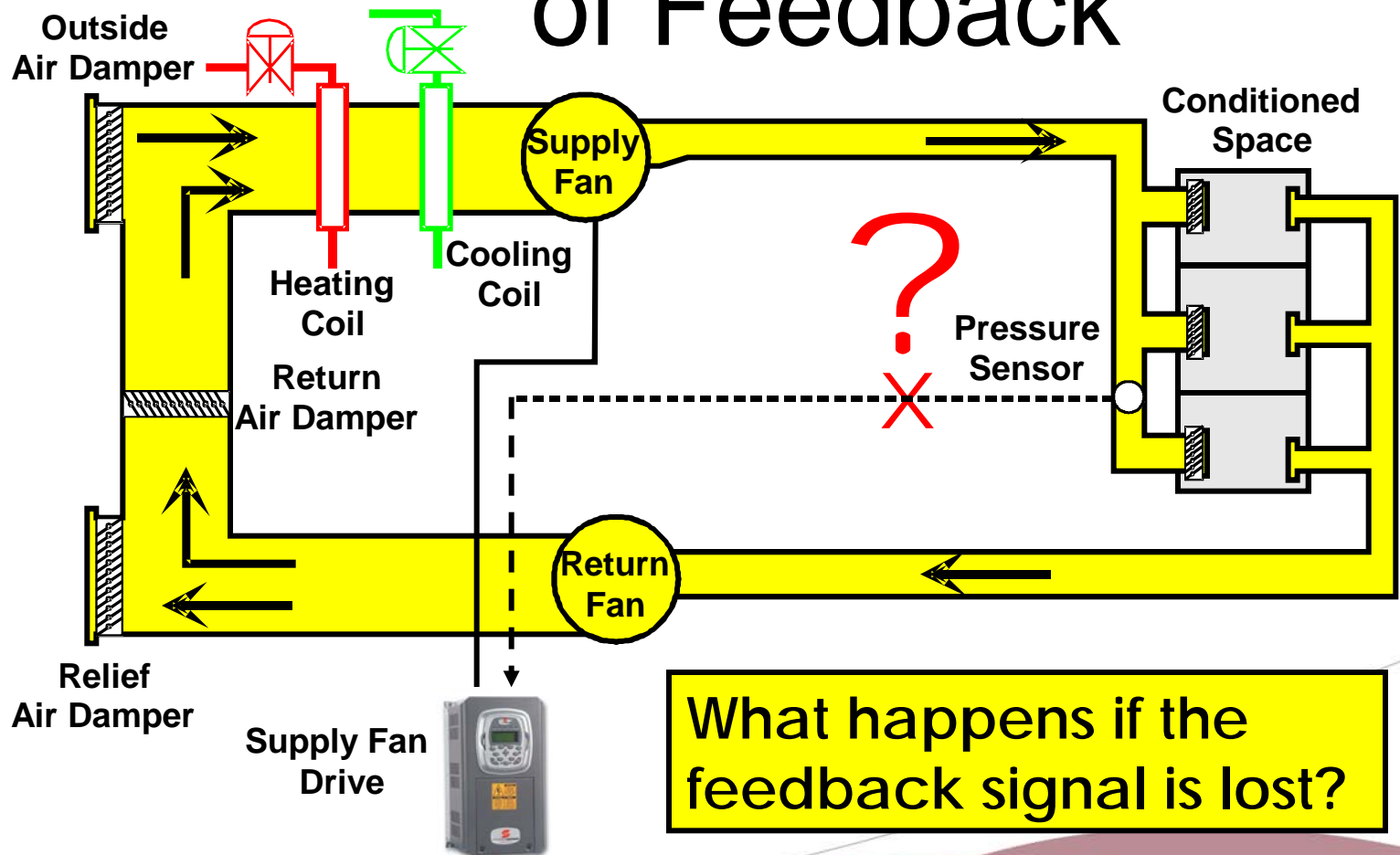


It isn't always clear which is the critical loop.

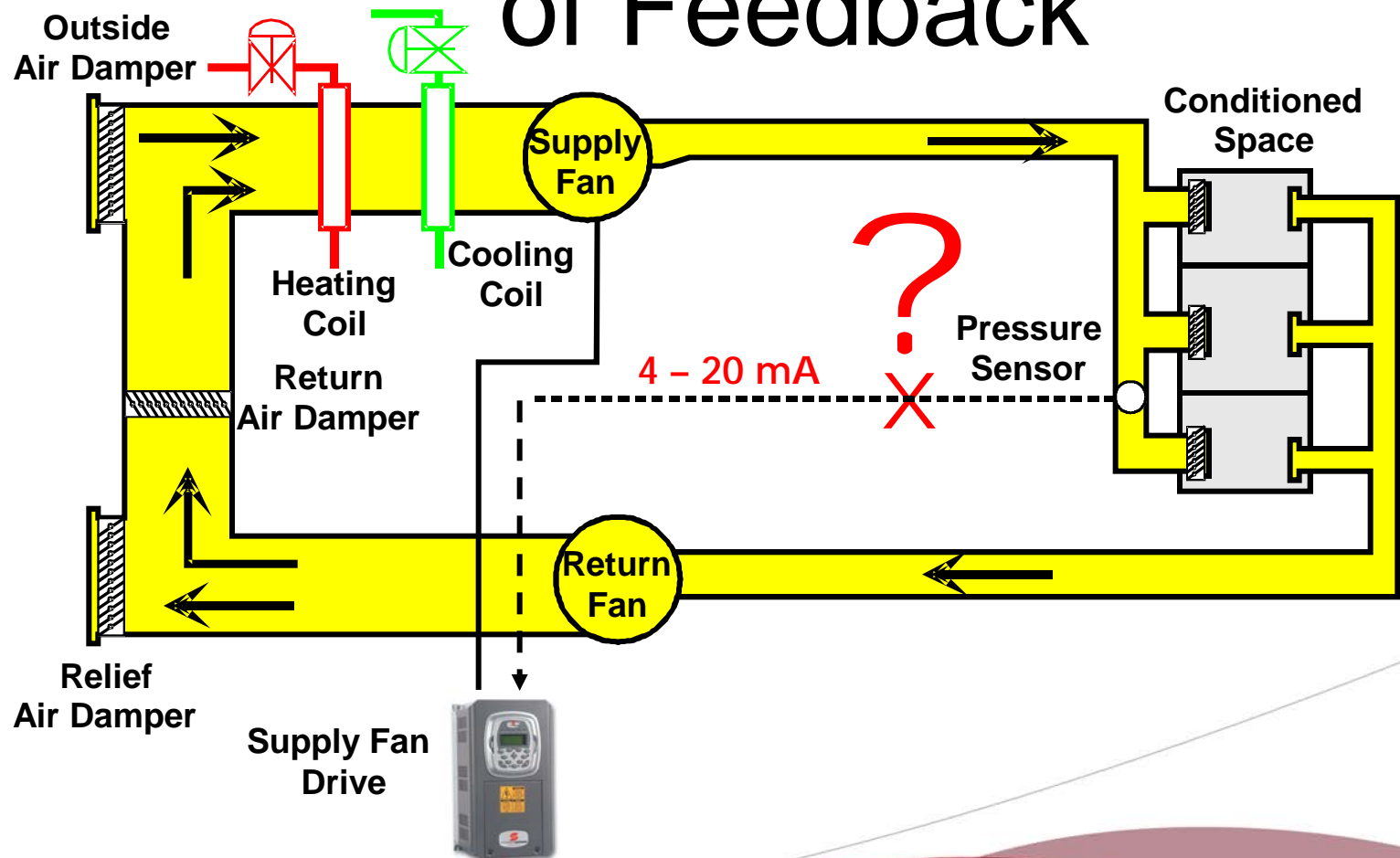
VAV Supply Fan



VAV Supply Fan – Loss of Feedback

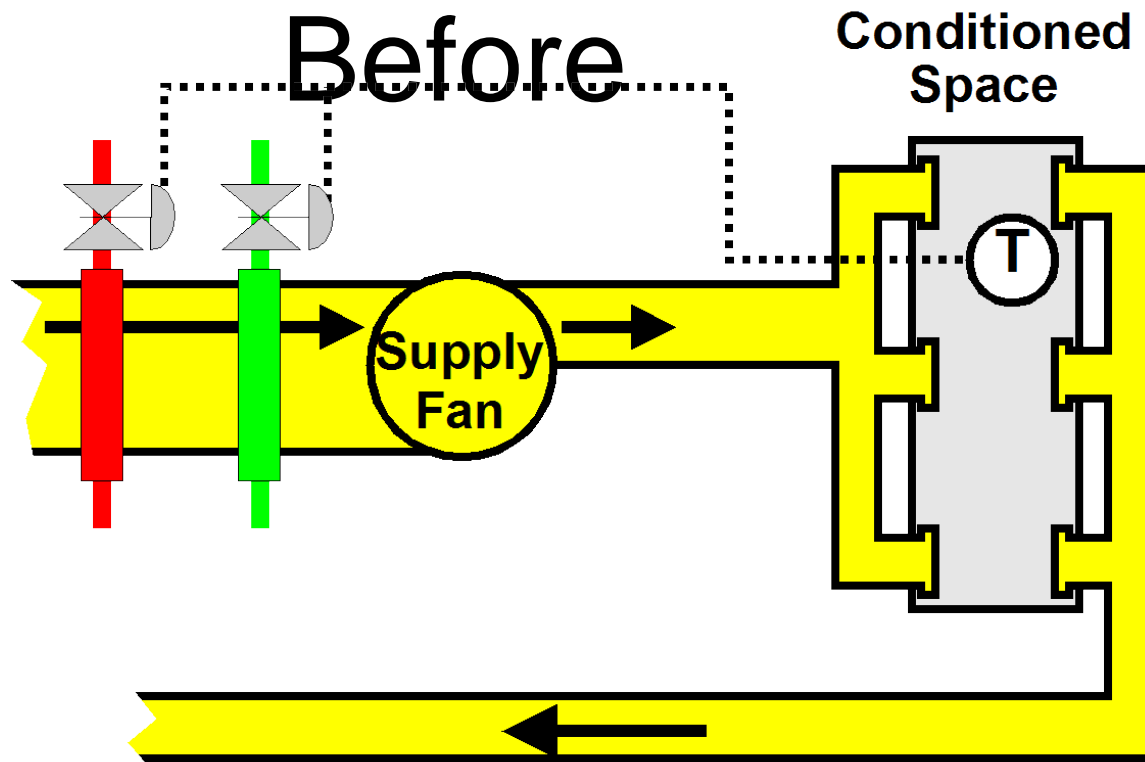


VAV Supply Fan – Loss of Feedback

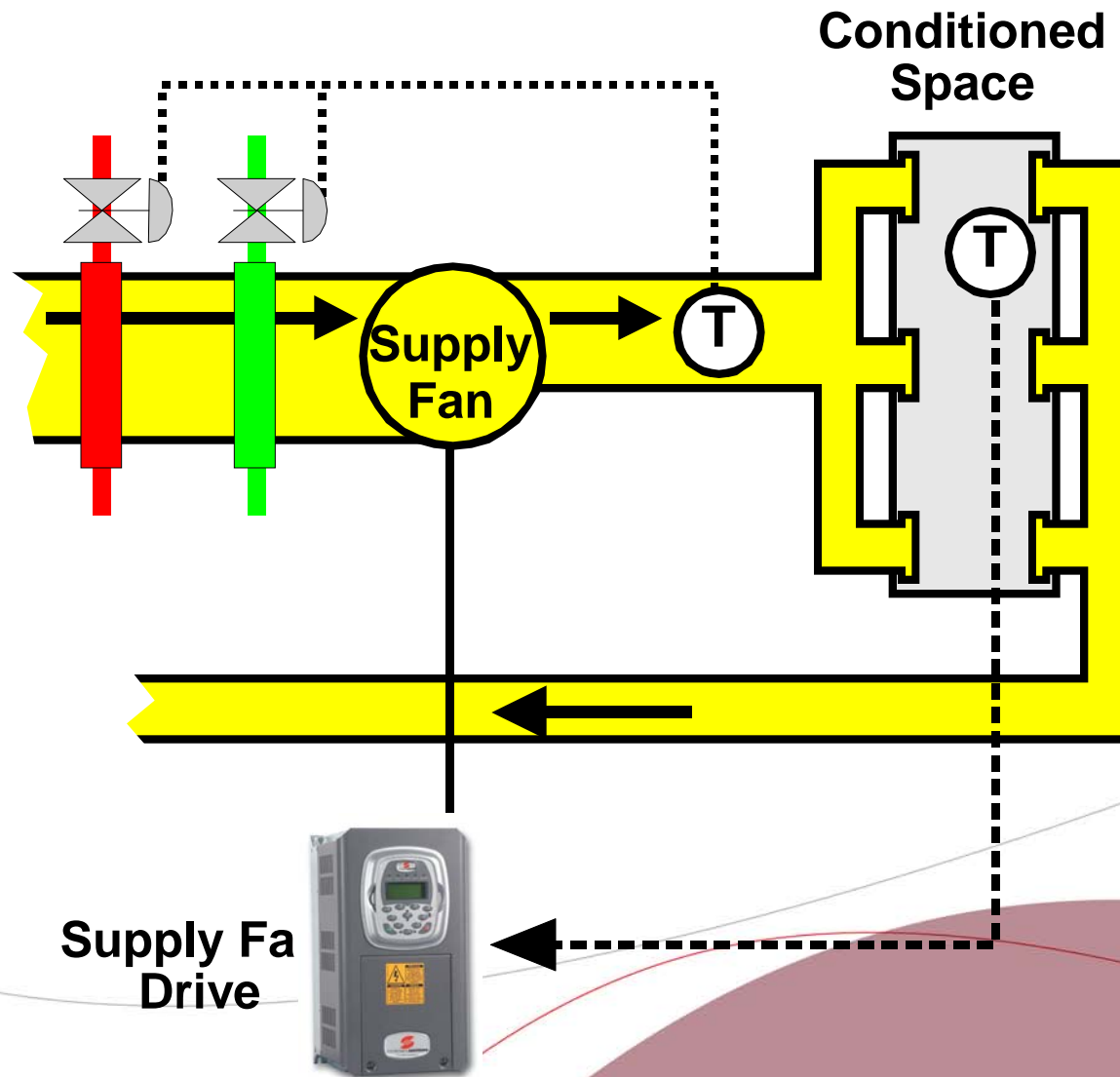


You can detect the loss of a
4 – 20 mA or 2 – 10 V feedback signal.

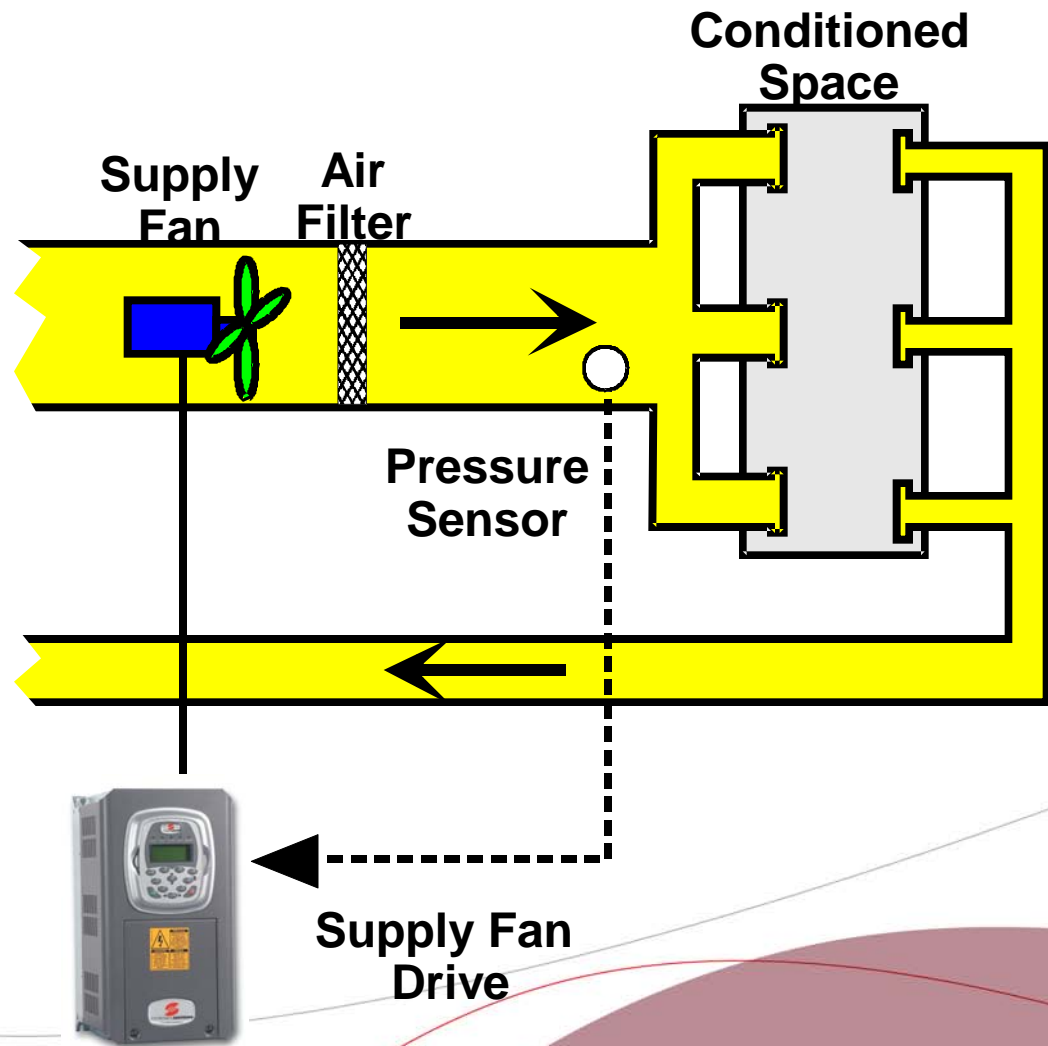
CAV Supply Fan Retrofit – Before



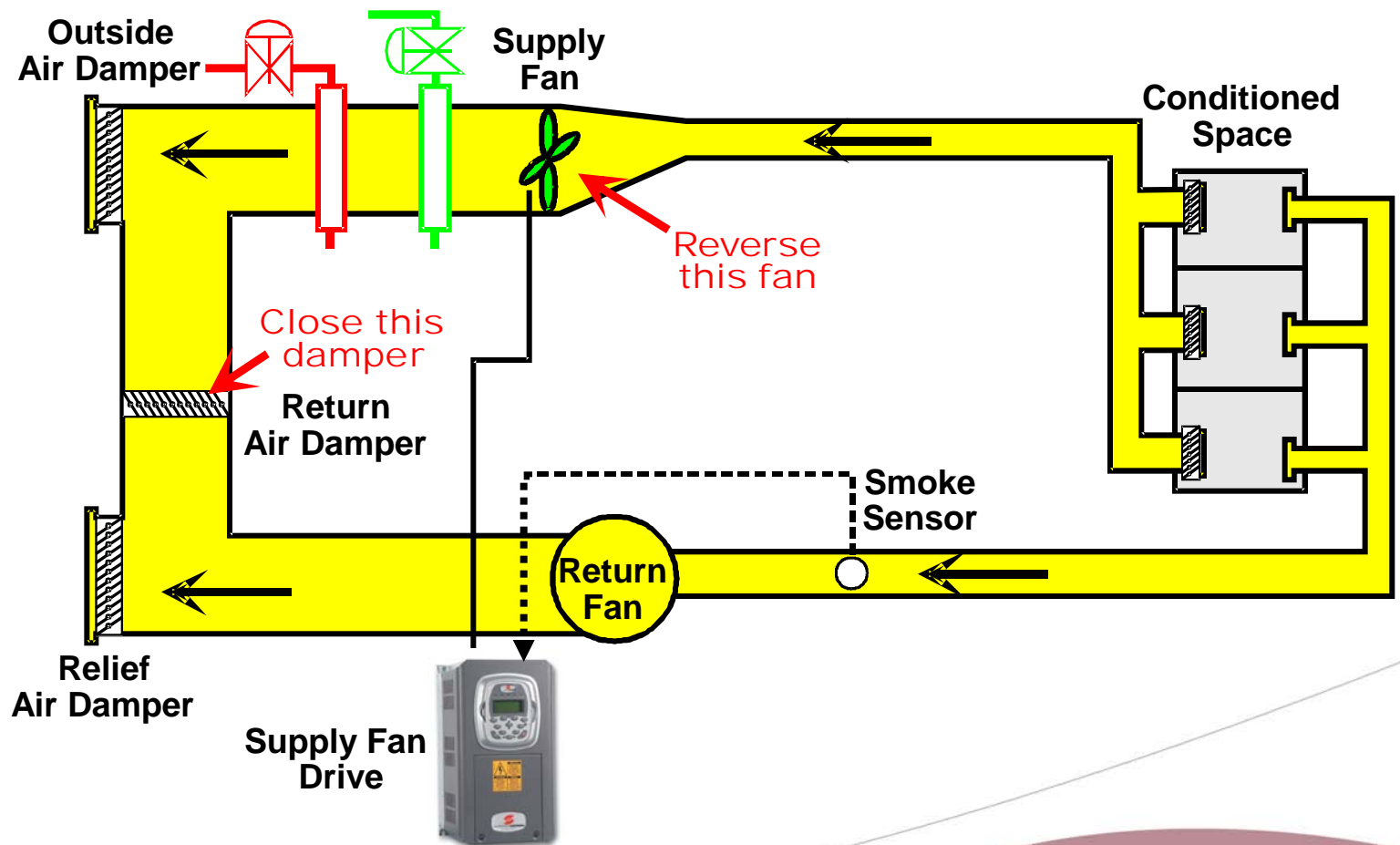
CAV Supply Fan Retrofit – After



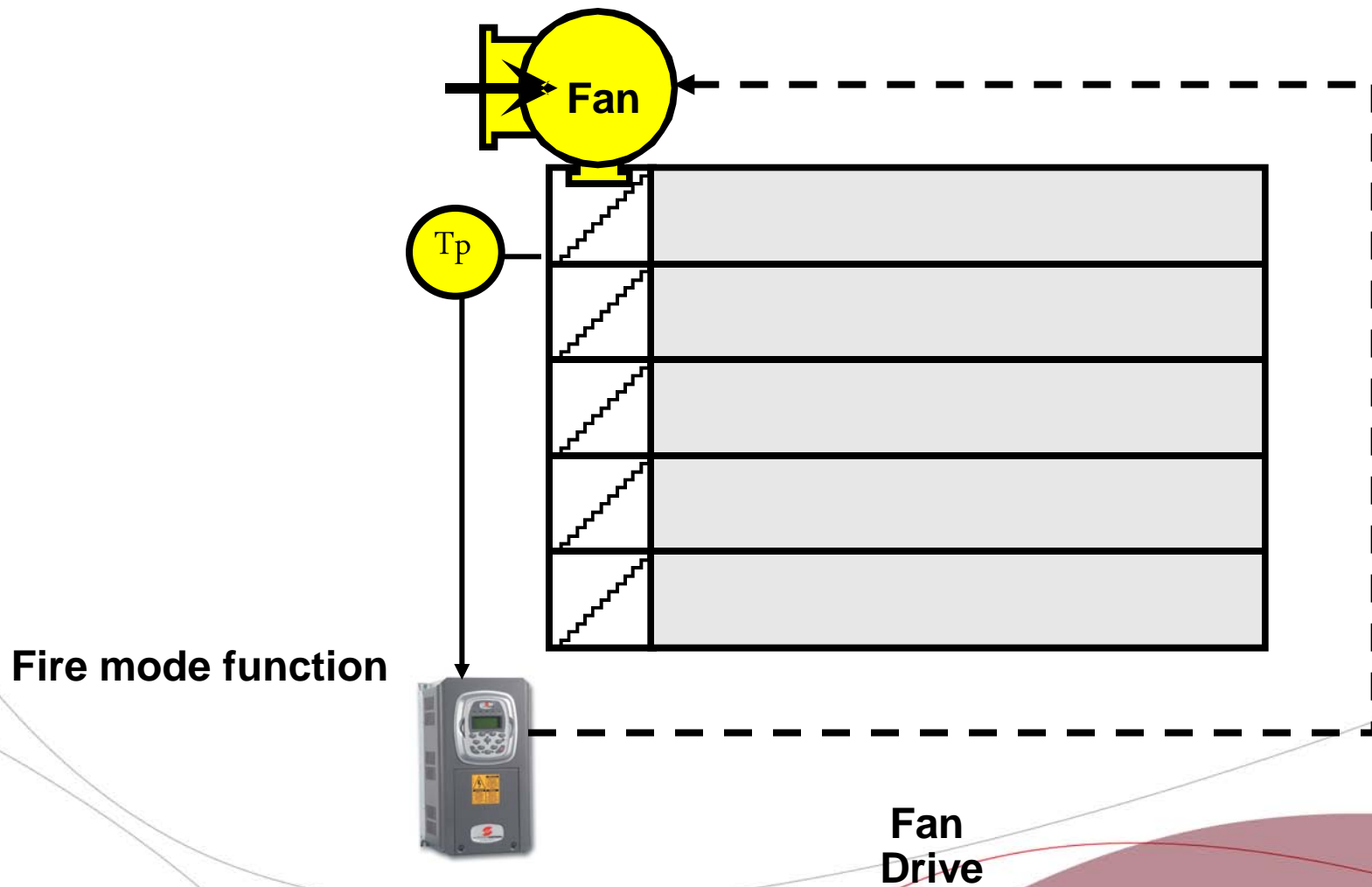
CAV Supply Fan – Clean Room



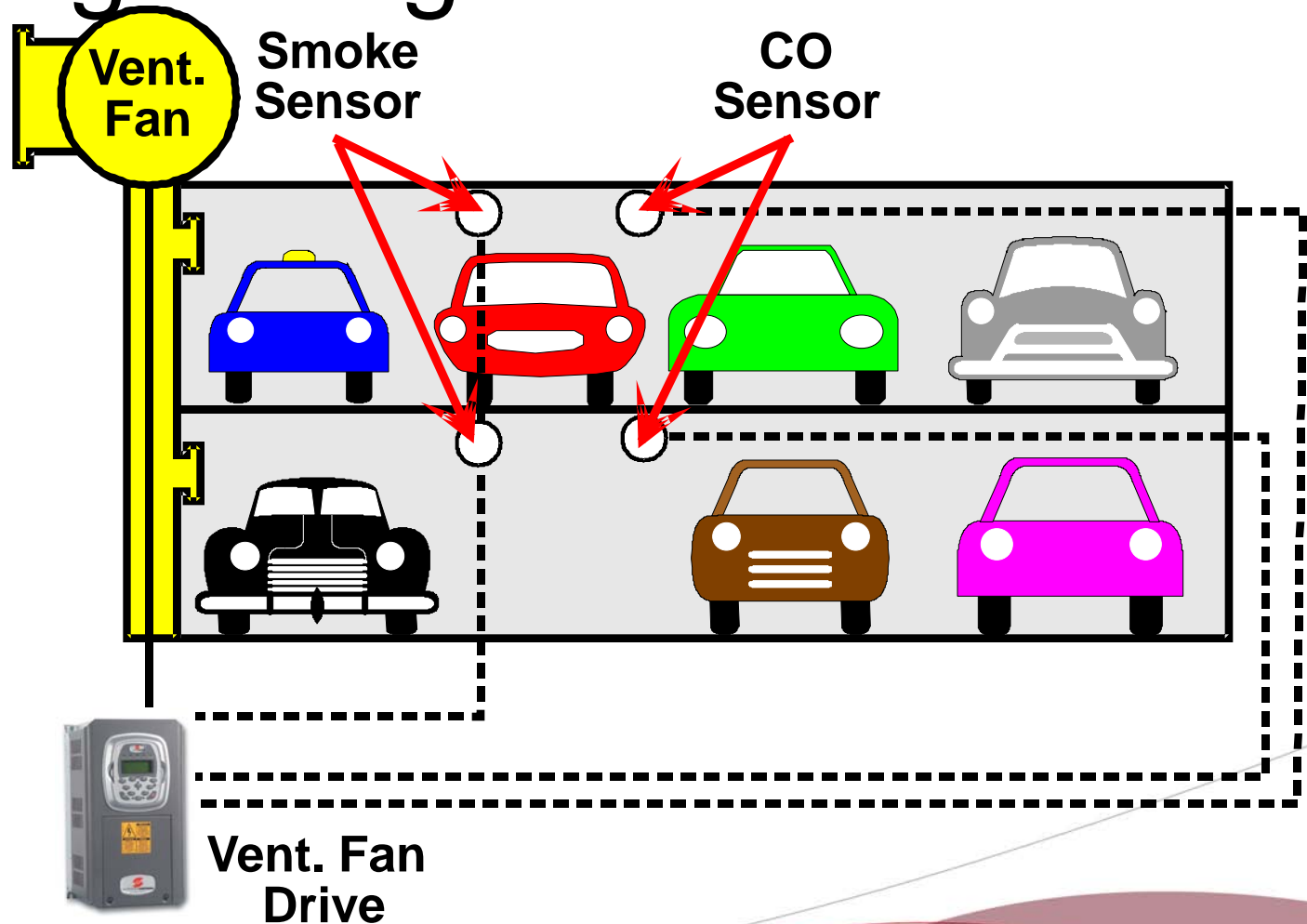
Supply Fan – Smoke Extraction



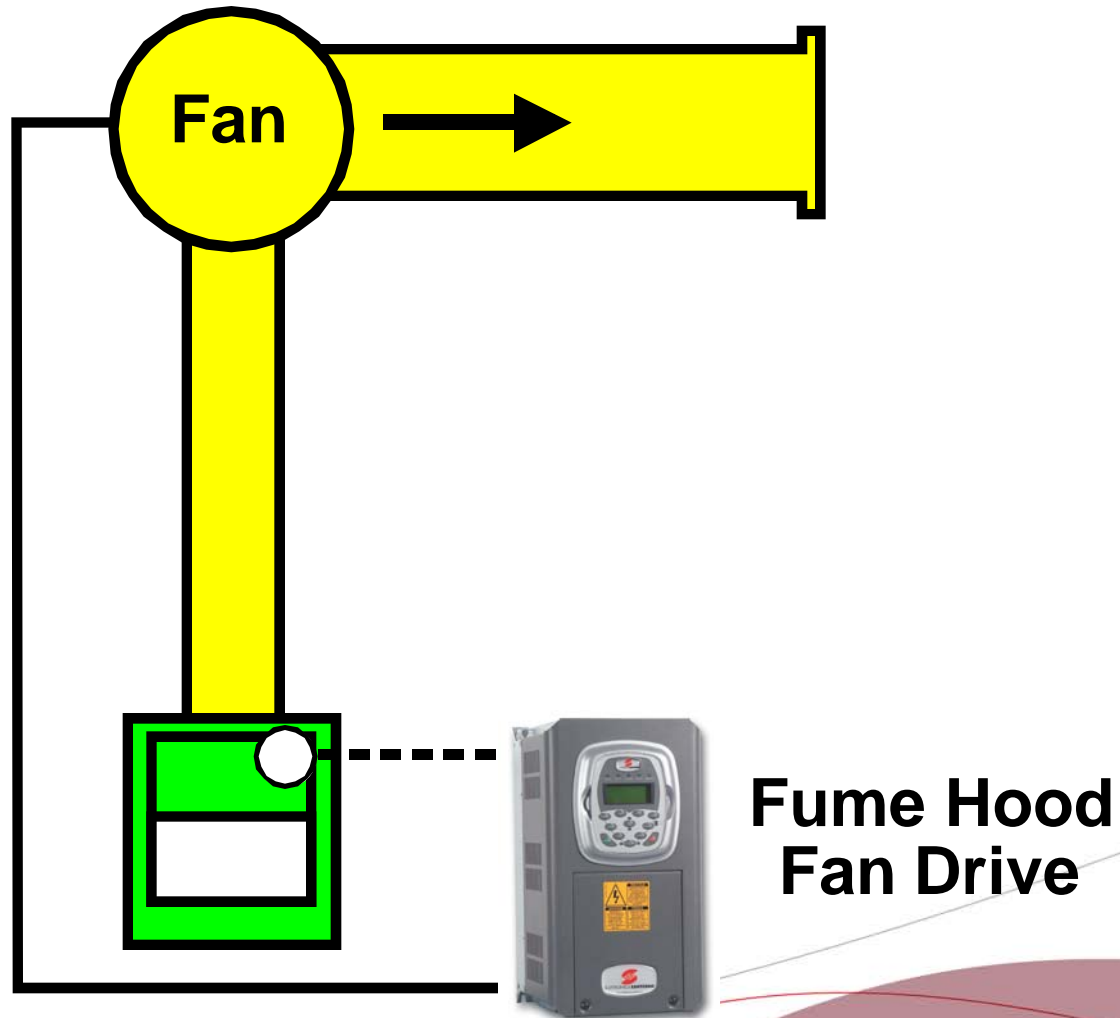
Stairwell Pressurization



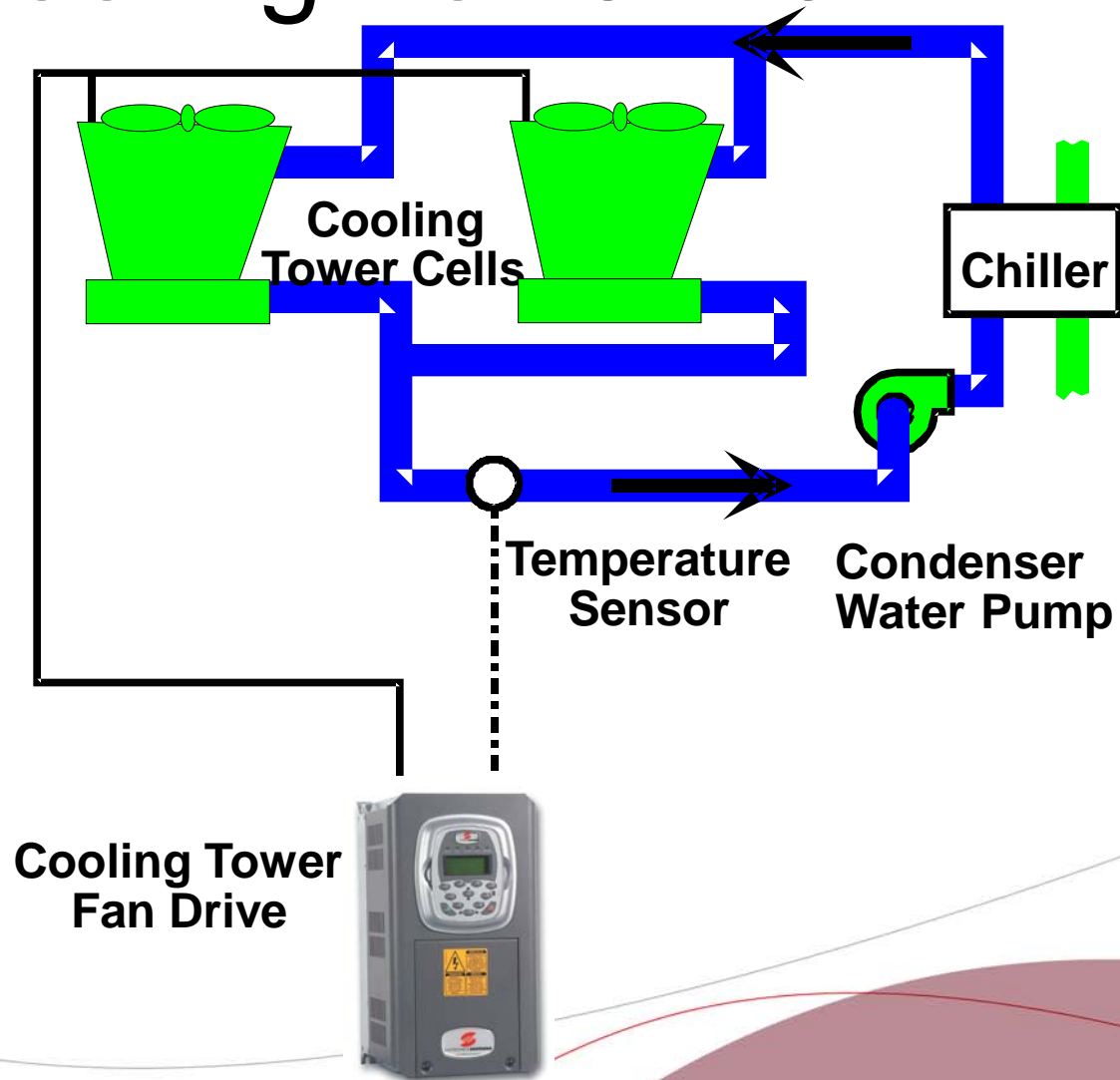
Parking Garage Ventilation Fan



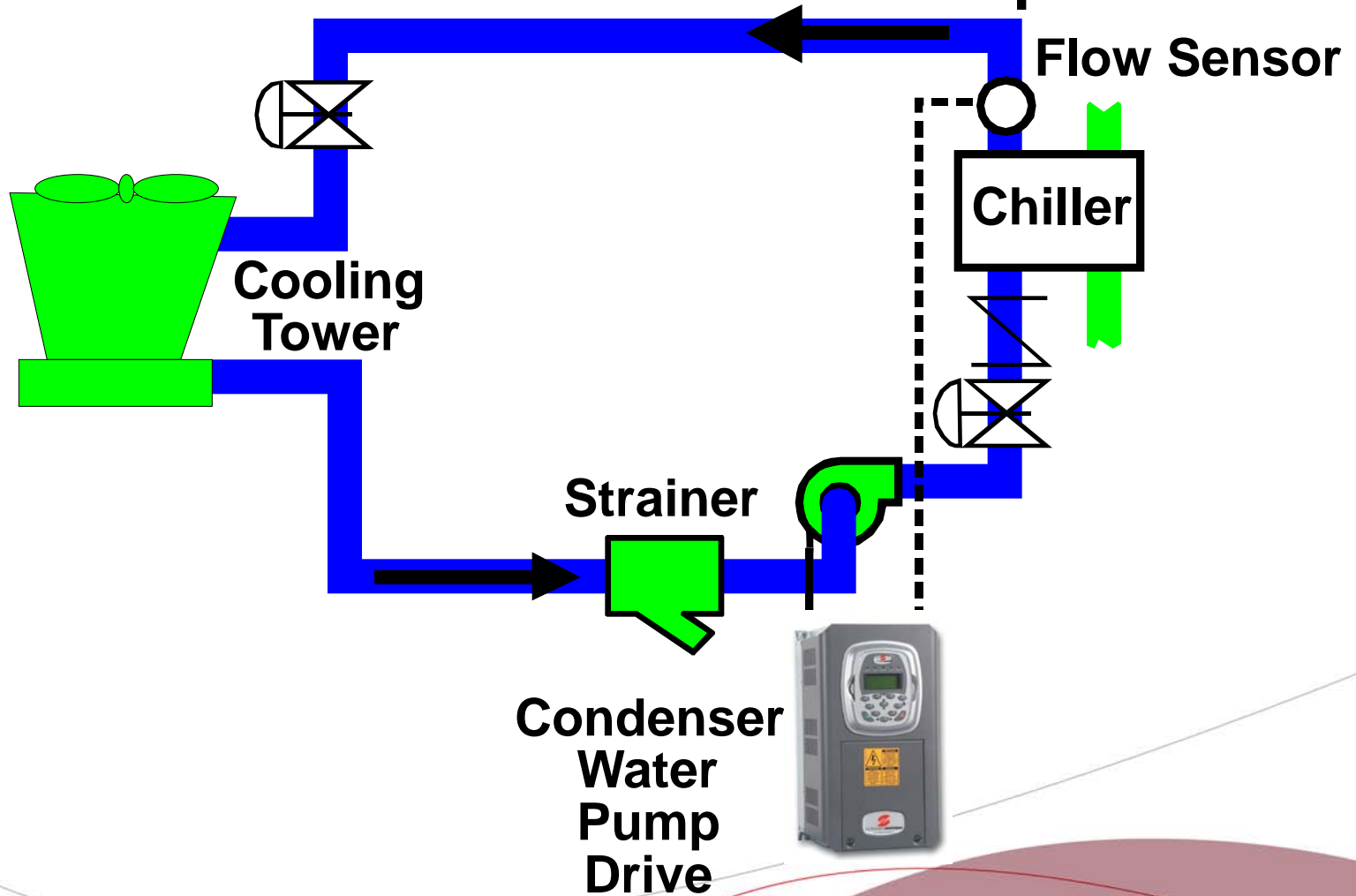
Fume Hood Fan



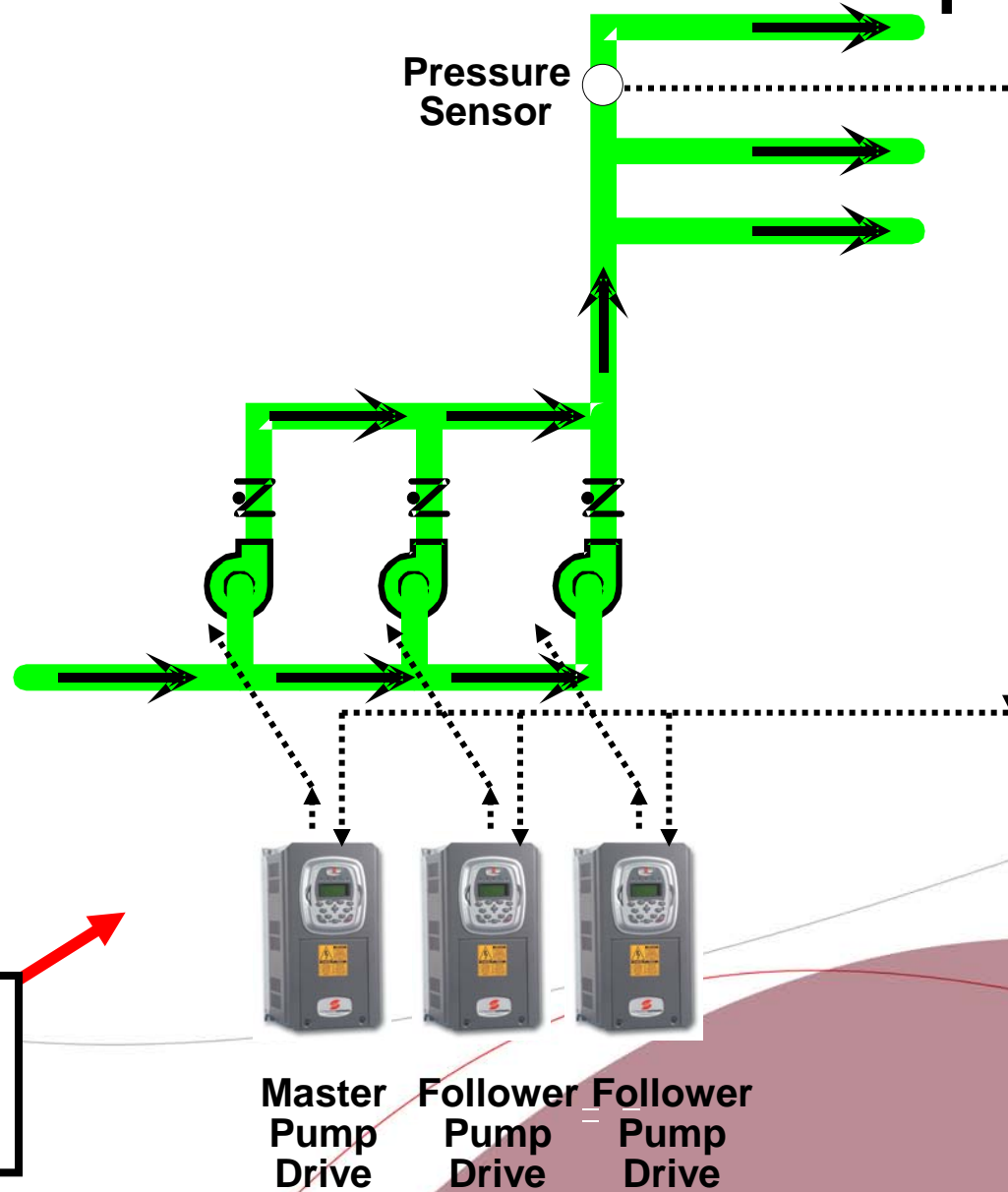
Cooling Tower Fan



Condenser Water Pumps



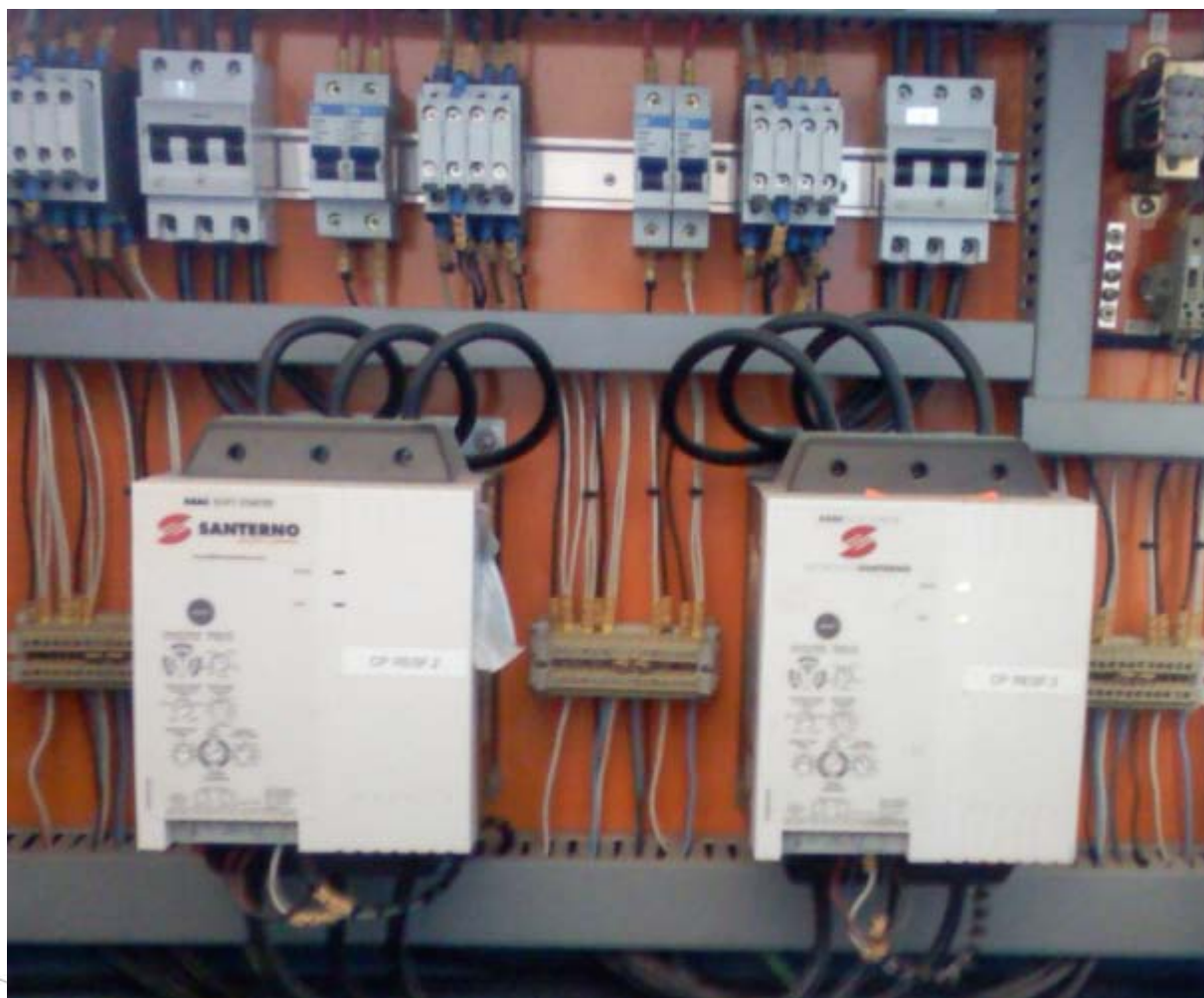
Pressure Booster Pump



Exemplos:













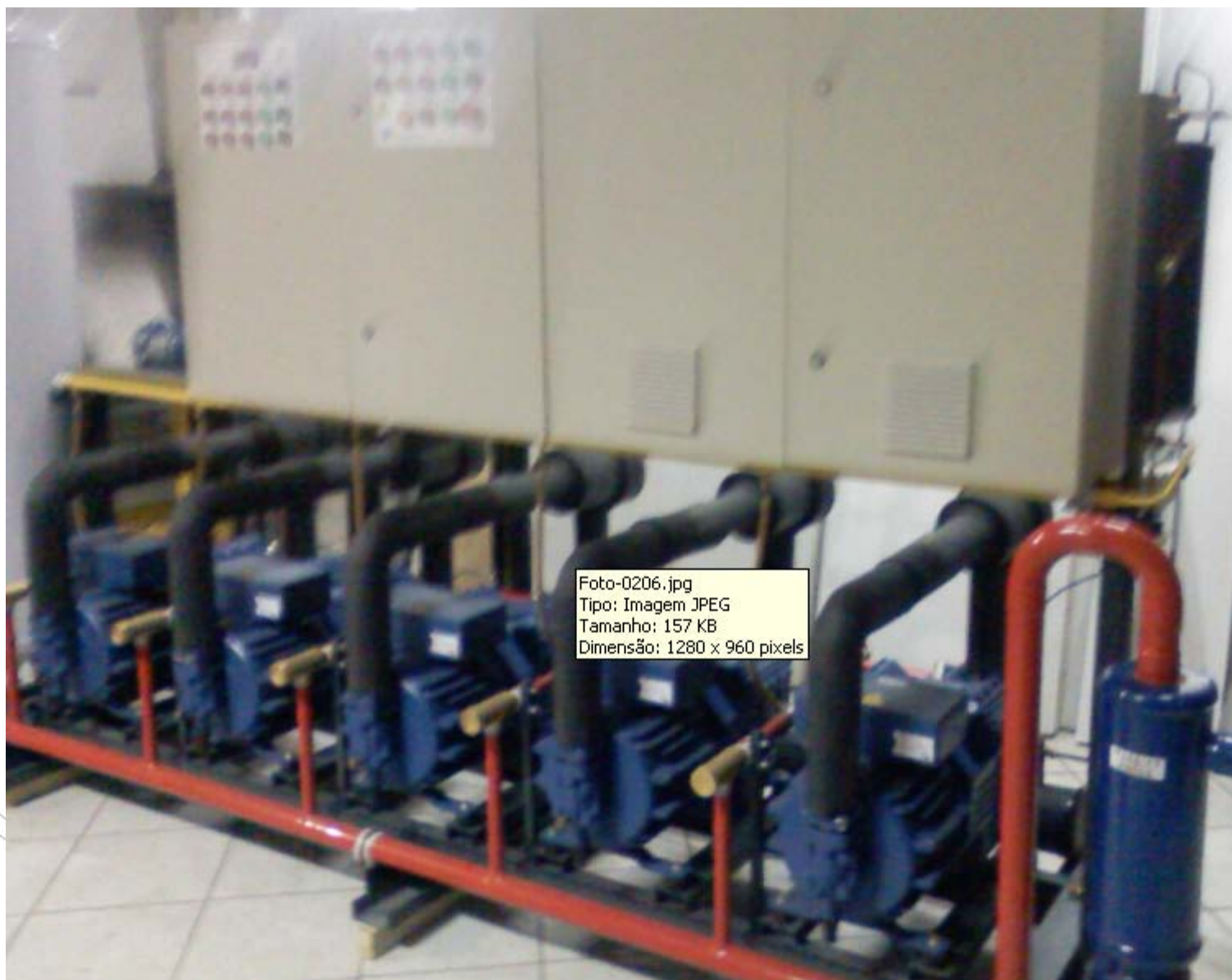


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Dimensão: 1280 x 960 pixels



Foto-0271.jpg
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Dimensão: 1280 x 960 pixels

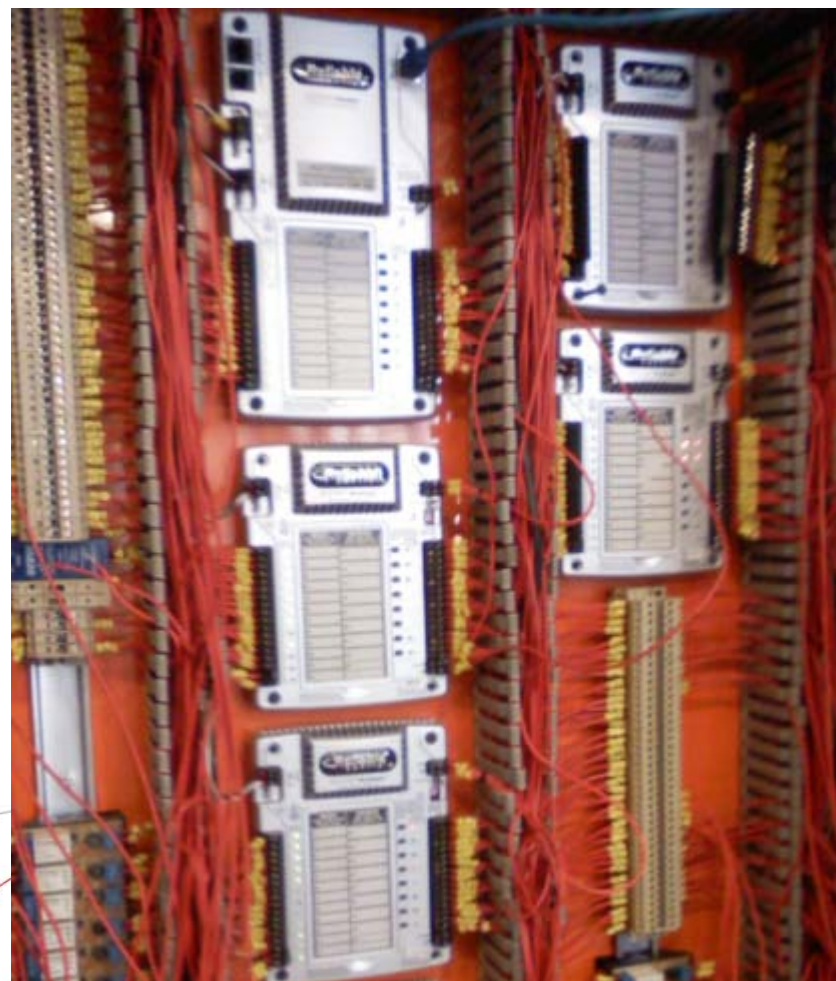






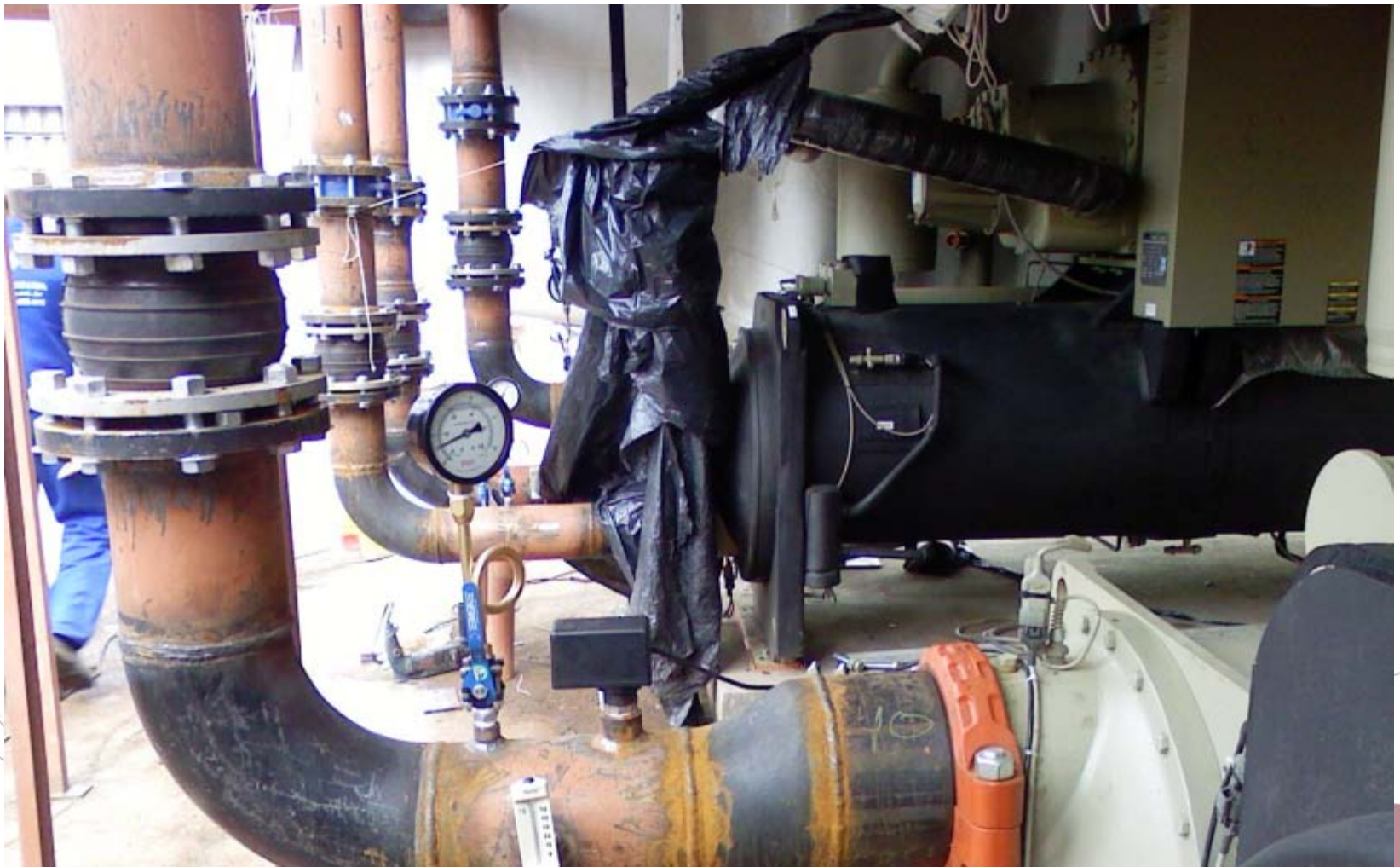
































THANK YOU!!

THE END