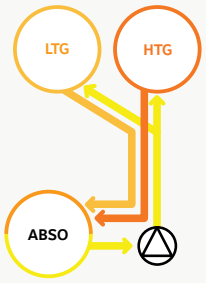
YORK® PARALLEL FLOW AND 2-STEP ABSORPTION CHILLER TECHNOLOGY

YORK INSTALL CONFIDENCE

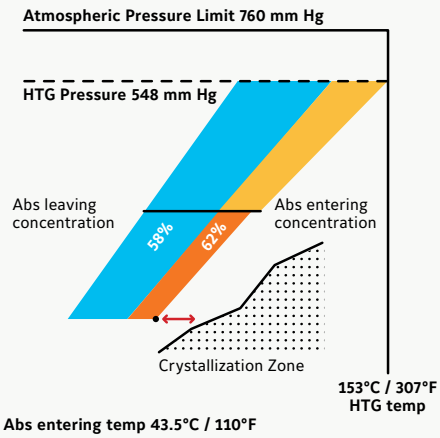
A challenge in absorption chiller design is engineering a unit that operates furthest from the crystallization line. Johnson Controls absorption engineers accepted the challenge with the development of a parallel flow and 2-step evaporator/absorber design technology.

Typical Industry Flow Cycles

PARALLEL

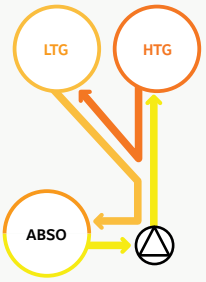


Divides the Lithium Bromide (LiBr) solution flow between the low-temperature and high-temperature generators into two parallel balanced paths.

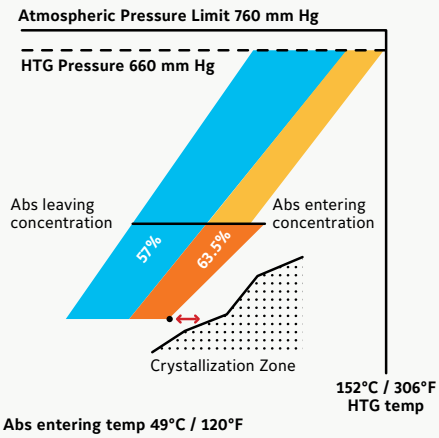


- Abs entering temp 43.5°C / 110°F
- ↔ Distance from Crystallization Zone 23.5°C / 42.3°F

SERIES

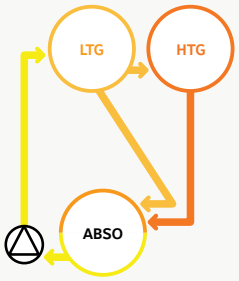


All of the Lithium Bromide (LiBr) solution from the absorber section flows first to the HTG, then to the LTG and back into the absorber section.

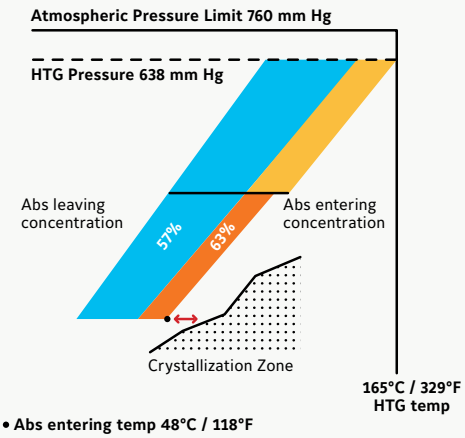


- Abs entering temp 49°C / 120°F
- ↔ Distance from Crystallization Zone 23°C / 41.4°F

REVERSE

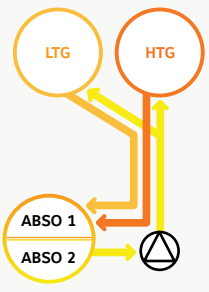


All of the Lithium Bromide (LiBr) solution from the absorber section flows first to the LTG, then to the HTG and back into the absorber section.

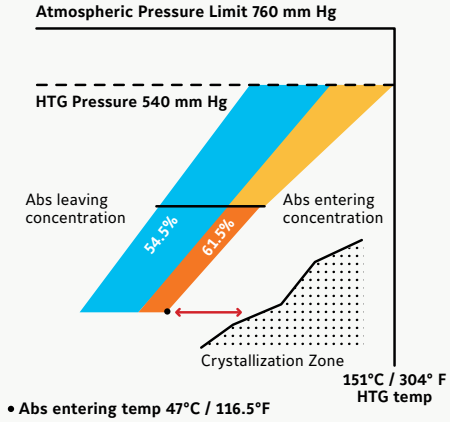


- Abs entering temp 48°C / 118°F
- ↔ Distance from Crystallization Zone 23°C / 41.4°F

Benefit of Combined Parallel Flow and 2-Step Evaporator/Absorber Technology



2-Step and Parallel Flow



- Abs entering temp 47°C / 116.5°F
- ↔ Distance from Crystallization Zone 29°C / 52.2°F

Combining these two technologies, our two-step and parallel flow design provides the lowest temperature, pressure and concentration. Because this design uses a lower LiBr concentration, it is easier to heat in the generator section. Therefore, it requires a relatively lower grade for the driving heat source, providing a high COP.

YORK® parallel flow and 2-step absorption chiller technology operates furthest from the crystallization zone for efficient and reliable operation compared to other designs.

Conditions: Chilled water entering/leaving: 12°C/7°C (53.6°F/44.6°F). Cooling water entering: 32°C (89.6°F).
"Absorption Chillers – Practice of new operation management – 2nd Edition, published by JRAIA, 2017."

Johnson Controls