



**Hill PHOENIX**  
REFRIGERATION SYSTEMS

## Second Nature® Low Temp

# SNLT2

*Leading the Way in Secondary  
Coolant Refrigeration Systems*

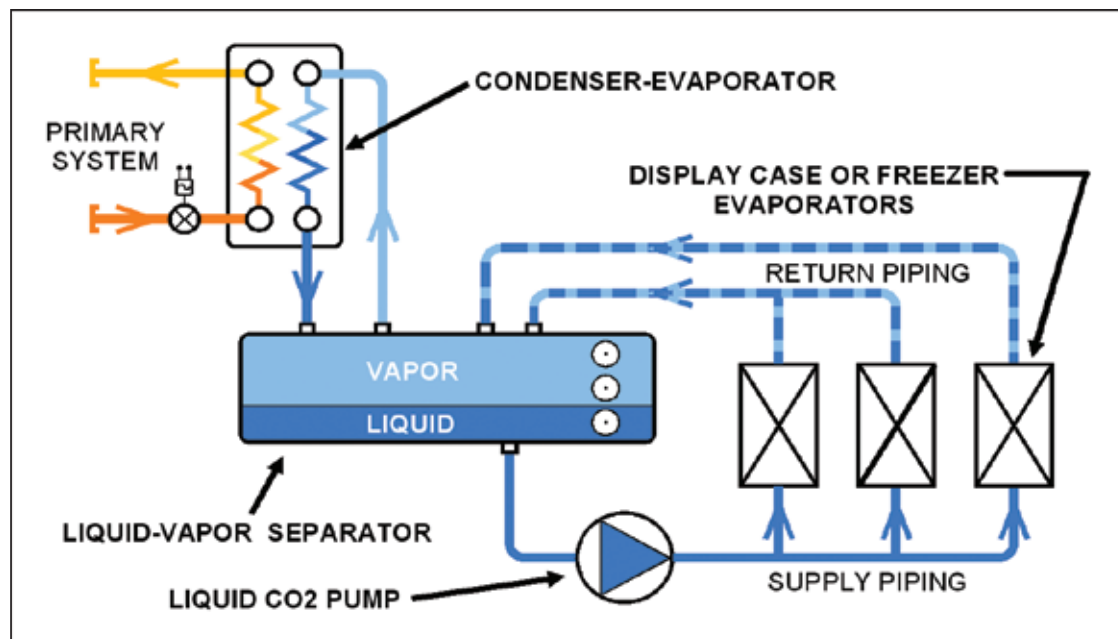


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Second Nature® Low Temperature (SNLT2) is a new Hill PHOENIX refrigeration technology that offers significant sustainability benefits when compared to conventional refrigeration technologies. It is the most energy efficient, environmentally-friendly, low temperature refrigeration system available in the industry today.

SNLT2 systems utilize CO<sub>2</sub> as the heat transfer fluid. Since CO<sub>2</sub> has excellent thermodynamic and transport properties, the CO<sub>2</sub> secondary refrigerant removes heat

from display cases and walk-in freezers via copper piping that is significantly smaller than what is typically required in traditional, direct expansion (DX) systems. And, since HFC refrigerant is confined to the primary system located in the machine room, the total refrigerant charge and the potential for leaks are greatly reduced. SNLT2 systems allow for significant reductions in the amounts of copper and HFC refrigerants required, providing sustainability benefits that will pay dividends throughout the life of the system.



Heat is absorbed in the display case through evaporator coils similar to those used in traditional DX systems. The CO<sub>2</sub> does not completely evaporate in the coil and is returned to a separator as a mixture of liquid and vapor. The liquid portion of the CO<sub>2</sub> in the separator is available to be pumped to the display

cases and the vapor portion returns to the condenser-evaporator to be condensed back into a liquid. This is the point where the heat absorbed in the display cases is transferred from the secondary system to the primary system.

If your company, as a responsible corporate citizen, is pursuing innovative sustainability initiatives that lead to a smaller carbon footprint, Second Nature® LT2 systems will suit your needs.



A few of the many SNLT2 benefits

- Reduction in HFC charge; as much as 75%
- Reduced line sizes equate to reduction in copper piping used and lower installation costs
- Avoid costly refrigerant retrofits that also impact sales floor activity
- CO<sub>2</sub> is an inexpensive fluid with an extensive distribution network
- Low return gas temperature in a close-coupled system equals improved energy performance
- More efficient use of coils since they are flooded and oil is eliminated from the system
- Reduced system complexity lowers maintenance costs



SNLT2 Advantages

- Faster pull-down after defrost – improved frozen food product quality
- No TXV's required in display cases; standard refrigeration solenoids used – simplified maintenance
- Hill PHOENIX SmartValve™ incorporated on the CO<sub>2</sub> condenser-evaporators for superior superheat control

SNLT2 addresses environmental concerns

- CO<sub>2</sub> is 3,700 times less harmful to the environment than R404A
- Experience of use of SNLT2 in an actual store:
  - reduced energy cost - proven 2-3% lower energy usage when compared to traditional DX systems
  - reduced copper usage - for example, 45% reduction in installed weight of copper pipe = 948lbs or the equivalent of 3,655 lbs (1.8 Tons) of CO<sub>2</sub> emissions
  - reduced refrigerant charge - 70% less LT refrigerant charge = 900 lbs. less R-507 which will avoid emissions equivalent to 4,331 tons of CO<sub>2</sub> over 10 year life
  - reduced refrigerant leaks - helping you avoid excessive maintenance costs.

About Hill PHOENIX

Hill PHOENIX leads the industry in the development of refrigeration systems that offer our customers alternatives to conventional DX systems and HFC refrigerants. Using CO<sub>2</sub> as a secondary refrigerant is just one example of our commitment to furthering the development and commercial viability of environmentally-friendly refrigeration systems.

Ask your Hill PHOENIX representative how you can utilize a Second Nature® LT2 system in your next project.





**Hill PHOENIX**<sup>®</sup>

REFRIGERATION SYSTEMS

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