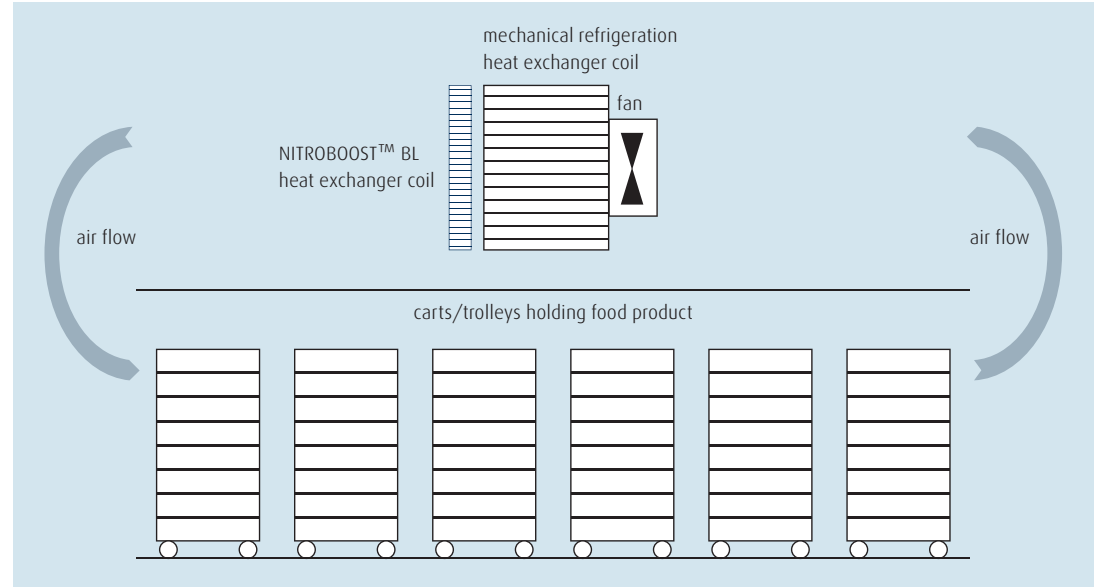




NITROBOOST™ BL supplemental refrigeration system for blast freezers

Compact, efficient way to boost freezer performance.



Example interior view of blast freezer equipped with NITROBOOST BL system.

Challenge Mechanical blast or shock freezers can struggle to reach their target operating temperature in an acceptable amount of time due to inadequate refrigeration capacity. In some cases, these freezers may not be able to reach their target operating temperature at all. Longer cool down times and/or warmer operating temperatures result in reduced production throughput and the potential for product quality issues. It is often difficult for food processors to address these issues, since replacing the freezer or upgrading the mechanical refrigeration system can be very expensive and require weeks of downtime.

Linde Approach Linde developed the NITROBOOST™ BL supplemental refrigeration system to answer this challenge. It installs on existing batch-style freezers and delivers a rapid, flexible increase to refrigeration capacity. The NITROBOOST BL system only operates when needed, making it a cost-effective option for optimizing refrigeration capacity without having to invest in expensive new equipment or facility renovation.

Added to a blast or shock freezer, this solution helps under-performing or overloaded freezers reach the desired operating temperature faster. It thereby helps processors keep their products within their temperature specifications and avoid the need to reduce freezer loading or operate additional hours or shifts.

How does it work? NITROBOOST™ BL heat exchanger coils use liquid nitrogen as the refrigerant rather than ammonia or freon, allowing them to remain compact in size while delivering substantial additional refrigeration capacity. The coils are small enough to fit within – or be mounted on – existing blast freezers. Liquid nitrogen travels through a closed-loop pipeline as it is conveyed to the coils from a storage tank and then nitrogen gas is vented safely to the outdoor atmosphere.

The NITROBOOST BL system starts when the blast freezer batch cycle starts and provides supplemental refrigeration capacity to assist the freezer in reaching the desired operating temperature more quickly. The NITROBOOST BL coils automatically defrost when the blast freezer coils defrost.



Example interior view of blast freezer equipped with NITROBOOST BL system.

- Benefits**
- Space-saving design fits in or on existing freezer so no additional production space required
 - Minimal downtime required to retrofit freezer with NITROBOOST™ BL system
 - Economical approach only boosts refrigeration when needed
 - Improved product quality due to a consistent cooling profile
 - Low maintenance system
 - Expert technical support for evaluation, design, installation, start-up and testing
- Features**
- Self-contained system, complete with coils, defrost mechanism and controls
 - Nitrogen stays within the pipeline and is safely vented directly outdoors
 - High cooling capacity with a compact size
 - Nitrogen coils defrost at same time as the mechanical freezer
 - No change to mechanical freezer operations

Linde
 10 Riverview Drive
 Danbury, CT 06810
 Phone 1.844.44LINDE (1.844.445.4633), Fax 1.800.772.9985; 716.879.2040
www.linde.com