

# RISK MANAGEMENT

*'Keeping It Fresh from Farm to Fork'*



**Recommended best practices for product protection during loading, transportation and delivery.**



## Delivery Check List:

- Pre-Cooling Verification – Be sure both the product and trailer / body are at the desired temperature 'Before Loading.'
- Door Openings – Turn reefer unit 'Off' before opening. Minimize number and duration of door openings.
- Box Temperature Recovery – Give unit time to recover box temp. from when doors were open.
- Strip Curtains – When properly installed and maintained, strip curtains help reduce internal and external air exchange when doors are open.
- When delivering – Turn unit off, ensure tight seal between trailer / body and doors. Minimize product exposure to improper temperature areas. Move product quickly and efficiently.
- Turn reefer unit 'Off' before opening doors. Close doors when not at vehicle. Minimize the amount of time cargo is exposed to improper temperature areas.

Contact your Thermo King dealer with questions or for further information.

**7 Cross dock distribution:**  
Move product quickly. Minimize the time it will be exposed to 'improper temperature areas.'

**8 Ground delivery for:**

- supermarkets
- convenience stores
- restaurants
- direct store delivery

Turn refrigeration unit 'off.'  
Minimize door openings.  
Use strip curtains.



**4 Use strip curtains.**  
Strip curtains reduce internal and external air exchange. This helps to limit interior temperature changes.



**5 Non-refrigerated docks:**  
Turn refrigeration unit 'off.'  
Minimize product exposure to 'improper temperature areas.'  
Maintain an effective seal between trailer / body and dock.



**6 Refrigerated docks and refrigerated cross docks:**  
Back trailer / body tightly against docks seals before opening doors.  
Minimize door openings.



**1 Verify Pre-cooling.**  
Pre-cool product and trailer / body to desired temperature prior to loading.

Position trailer / body tight against dock seals when delivering. Supervise opening and closing of doors.

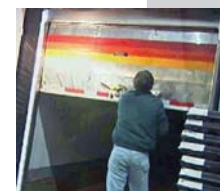


**2 Do not operate unit with doors open.**



Unit will blow conditioned air out and draw outside air in.

**3 Keep doors closed whenever possible.**



Keep door openings few and fast. Cold stays in, heat out.

Turn unit "Off" before opening doors.

Box temperature recovery time is significantly increased by the entry of outside air.

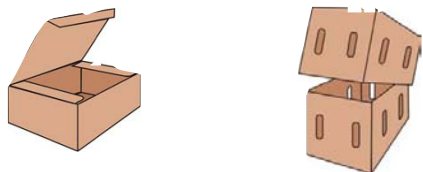


The greater the difference between set-point temperature and actual box temperature, the longer it will take to recover to set-point.

# 1 Proper Packaging is Essential.

Packaging should be:

- Crush-Proof
- Solid-Side for Frozen Products
- Vented-Side for Fresh Products



# 2 Pre-cool and store cargo at desired temperature to remove heat.

Confirm product is at desired temperature before loading. Refrigeration units are designed to maintain temperature, not change it.



# 3 Run Reefer Unit 20 Minutes in 'High Speed Cool.'

To remove residual trailer / body heat. Perform Automatic 'Pre-Trip' to confirm proper unit operation. Unit 'MUST' pass test.

If Auto Pre-Trip fails: follow your company's prescribed procedures or contact a Thermo King dealer for assistance.

# 4 Set unit controller to the desired temperature.

Verify the setting after changing it to confirm that it is correct.



# 5 Select Mode of Operation.

Continuous Run or CYCLE SENTRY. Refer to most recent CYCLE-SENTRY operation and diagnosis manuals for additional details. Do not guess.



# 6 Pre-cool trailer / truck body.

To desired temperature to remove residual heat.



# 7 Turn unit 'OFF' while loading.

To minimize heat & humidity entering trailer / truck body. Verify product is at proper temperature.



# 8 Load product quickly and efficiently.



Provide adequate air circulation around and through the entire load.

# 9 Close doors and start unit.

Re-confirm Continuous Run or CYCLE-SENTRY operating mode and set-point temperature. When box temperature is below 40F, initiate a defrost cycle. This will help clear the evaporator coil and ensure maximum cooling performance.

# 10 Strip curtains.

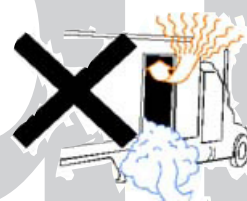
Always recommended in distribution.

Keep conditioned air in and outside air out.



# 11 Door openings.

Minimize the number door openings and their duration.



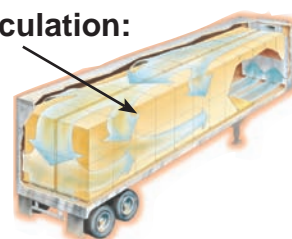
Ambient air migrates in and trailer / body air migrates out.

# 12 Proper airflow is CRITICAL.

Poor air distribution causes product deterioration, even with adequate unit capacity. Obstructions cause poor air flow and product hot spots.

## Proper air circulation:

Unobstructed paths on all 6 sides of load.



## Good airflow has 4 Key Factors:

1. Use three-way block pallets to help provide adequate air flow.



Do not install plastic wrap below top of pallet.

Do not obstruct floor under cargo. It prevents air from returning to the unit. Slip sheets and hand stacking are not optimal for temperature management.

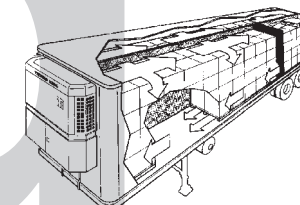
2. Inside of trailer / body must be clean to prevent contamination:

- T-Floor must be free of obstructions
- Debris can block air circulation
- Debris can be pulled into unit, resulting in insufficient cooling.

Use loading patterns that provide adequate air space.

3. Exercise Caution!

Provide adequate air space between top of the cargo and ceiling.



Products should be loaded evenly to avoid air flow restrictions.

4. Do not block unit evaporator air inlet (return air). It restricts air flow.

Do not load product tight against unit, walls or doors.

Do not load product to ceiling. It causes air to short cycle.

## Loading Check List:

- Product packaging should be:
  - Crush proof
  - Non-vented for frozen products
  - Vented for fresh products
- Pre-cool and store cargo at desired temperature 'Before' loading.
- Run Unit 20 minutes in High Speed Cool and perform an Auto Pre-Trip to confirm proper operation.
- Verify Set-Point temperature to ensure that it is set correctly.
- Ensure correct selection of Continuous Run or CYCLE-SENTRY operating mode to prevent hot spots and top freezing.
- Pre-cool trailer / body to desired temperature.
- Verify product temperature to confirm it is at the desired temperature.
- Turn unit 'OFF' while loading to minimize inside and outside air exchange.
- Load cargo quickly and efficiently, minimize air circulation obstructions / restrictions. Air circulation must be unobstructed around ALL six sides of load.
- Stabilize the load to minimize 'Load Shift' risk and resulting cargo physical damage.
- Initiate Defrost Cycle to clear evaporator coil and ensure maximum cooling performance.