THERMO KING

# Installation Instructions

# PrimAir™ Air Management Systems for Precedent™ Units

## Installation

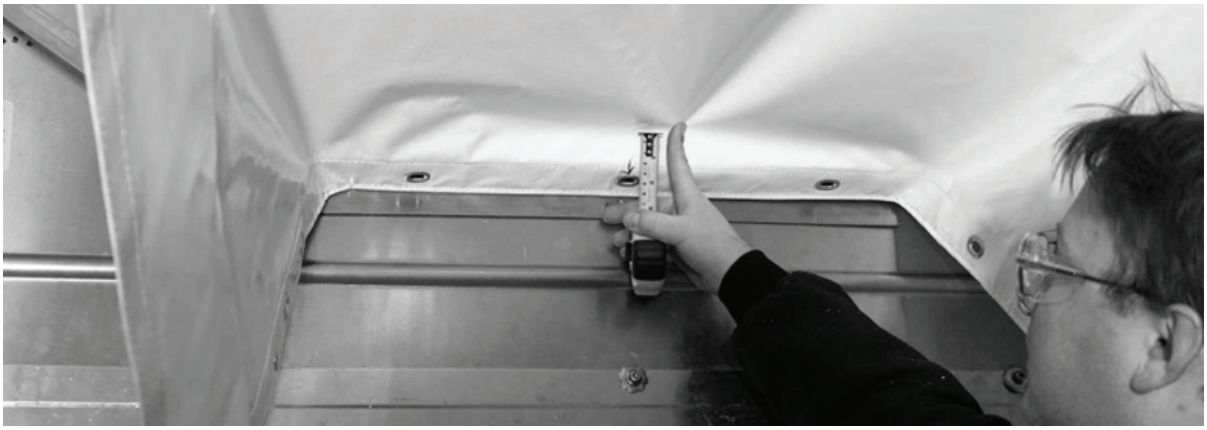
***Note:*** *The patented PrimAir chute is designed to provide better air distribution in the trailer while also reducing the risk of being damaged or torn down. For each new trailer design you will have to determine, using these instructions, the optimal install dimensions.*

1. Attach the supplied adapter bracket to the rear of the evaporator housing using the existing three bolts and flat washers. Tighten hardware securely.
2. Secure the chute to the bottom of the bracket with Velcro as shown.
3. With the chute held up to ceiling, measure and mark the distance from the rear of the unit back to the first set of grommets on the **straight section** of the chute.

**Figure 1. Adapter bracket with chute attached to rear of unit shown.**

RCS2109

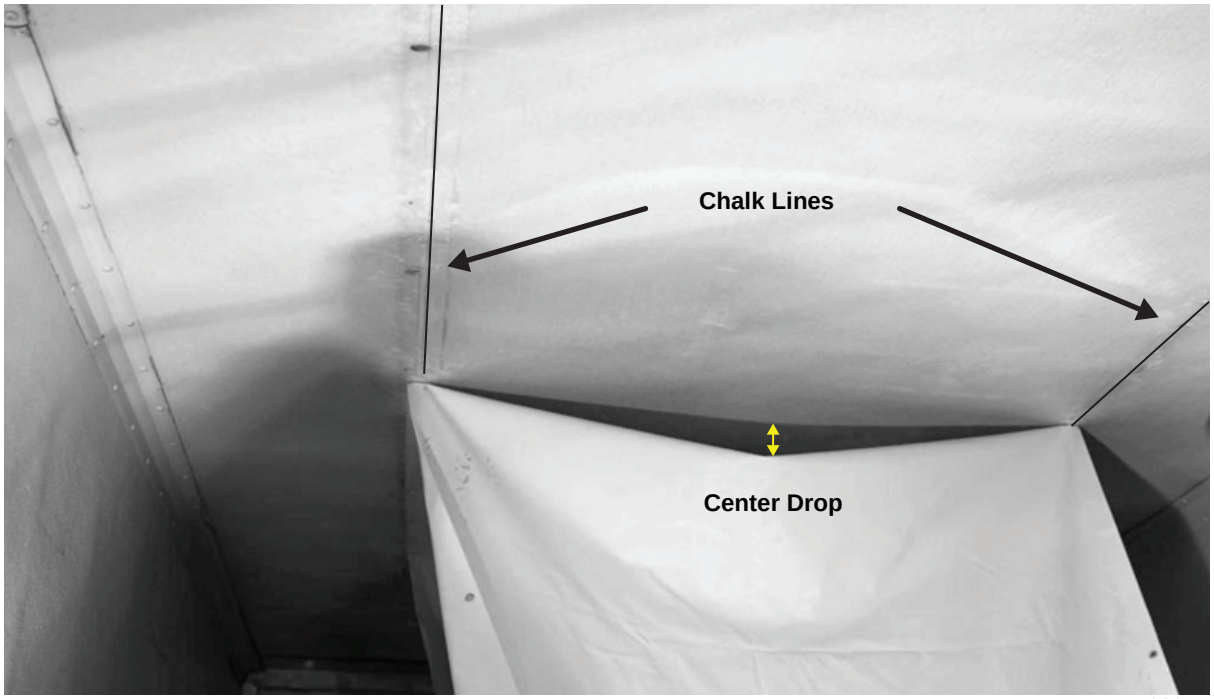
**Figure 2. Chute slack in front of air outlet should be 1.00 in. to 2.00 in.**



RCS2110

4. Pull the chute up to the ceiling and measure the material slack in the front of the air outlet: 1.00 in. is preferred, but no more than 2.00 in. This is important to minimize chute flutter.
5. Attach the first set of grommets on each side of the **straight section** of the chute to the ceiling with rivets. Center the chute in the trailer. The grommet to grommet width should be 54.00 in.
6. Measure the center drop from the ceiling and make sure you have 6.00 in. to 7.00 in., if not, adjust until you do.
7. Using the first grommets, mark chalk lines on the ceiling down the length of the trailer.

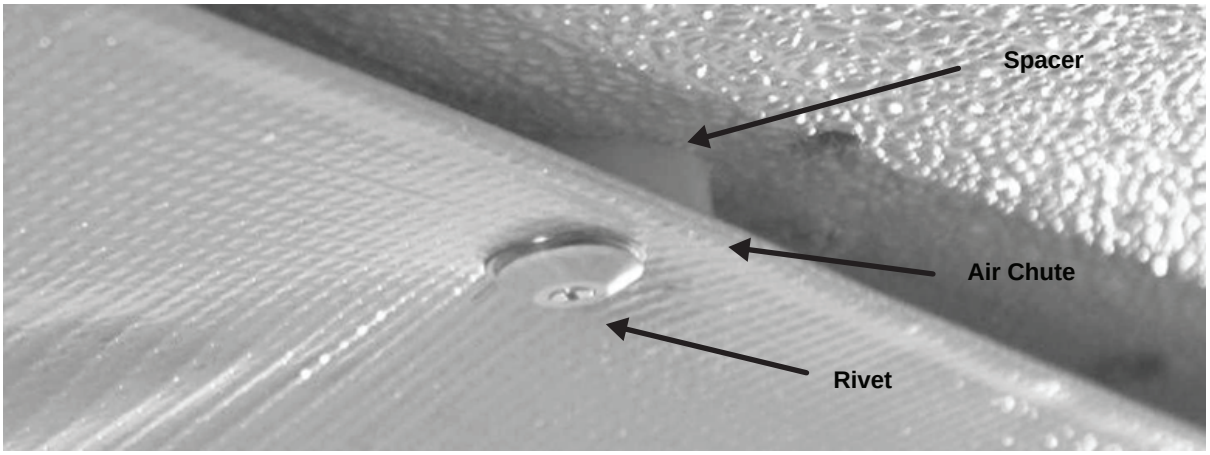
**Figure 3. Center drop of 6.00 in. to 7.00 in. shown.**




RCS2111

8. Begin securing the chute to the ceiling starting from the front and working towards the rear.
   - Pull each side as tight as possible, drill 1/4'' hole and install rivets.
   - Alternate side to side while pulling tight to keep chute fabric as crease free as possible.
   - After installing the first 3 rivets on each side, confirm the chute center drop maintains 6.00 in. to 7.00 in. Adjust chute and rivets as needed to maintain proper center drop.
   - Continue installing the rivets while maintaining proper center drop.
   - Begin installing the spacers when you get approximately 18 ft. back from unit. Spacers are designed to allow side air leakage, for better temperature distribution.

**Figure 4. Spacer shown installed between air chute and ceiling.**




RCS2112

9. Starting at the 4th grommet from the end of the chute, start flaring out the width so the end is wide enough to lay flat. **See Figure 5**.
10. Pull the end of the chute tight to the ceiling and secure with rivets or Velcro. At the junction between the chute's solid material and the start of the mesh the drop should be approximately 4.00 in. vertically from the ceiling. Pulling the chute to the ceiling prevents tear down and improves air distribution.

**Figure 5. End of air chute shown installed flat and properly secured.**


RCS2113

11. At the unit's air outlet, finish attaching the chutes transition section to the ceiling being sure to pull it tight.
12. Operate the unit and check for air leakage near the Reefer unit. Consider blocking off air leakage near the Reefer unit to reduce short cycling.
13. Operate the unit and check for flutter or movement. Excessive flutter or movement should be corrected or the chute may wear prematurely.
    - Pulling the material tighter and increasing back pressure in the chute will help reduce chute flutter.
    - If the chute flutters, first tighten the front chute transition section to the unit. Next go from the front to the rear and remove some side spacers to create more pressure in the chute.

**Figure 6. Completed air chute installation shown.**

RCS2114

## Air Chute Detect Controller Feature

Precedent trailer unit controllers have the ability to detect a blocked or improperly installed air chute when a Spare Sensor 1 is installed and the controller is programmed with the Air Chute Detect feature. Thermo King recommends this Air Chute Detect feature be enabled when installing an air chute system.

Parts Needed:

- Graded Sensor (400871)
- Sensor Harness 40 ft. (415490) or 60 ft. (415491)
- Maintenance and Diagnostic Manual (for your specific unit) for procedures to set the grade of the sensor and enable this feature.
- Hardware to mount sensor and harness - Dealer to supply.

## Air Chute Detect Operation Overview

When the Spare Sensor 1 is installed at the rear of the trailer directly in the air flow, the temperature detected by this sensor is compared to the temperature detected by the discharge air temperature sensor. If this temperate differential exceeds a user defined number of degrees for a user defined period of time, Alarm Code 46 (CHECK AIR FLOW) is generated as a check alarm. NOTE: This feature functions only during cool mode operation.

- If the trailer is equipped with a door switch and the feature is enabled, monitoring ceases when the door is opened and is resumed 45 minutes after the door is closed.
- When the unit enters a defrost cycle, monitoring ceases and is resumed 45 minutes after the defrost cycle terminates.
- Should the control discharge temperature sensor or spare sensor 1 fail, the air chute detect feature is disabled.

Refer to your specific unit manual for instructions on how to set the grade of the spare sensor 1 and program the controller for this feature.

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