

The AHR™-EFM Blower Module One-Year Limited Warranty

Subject to the following conditions, **Heat Pipe Technology, Inc. (HPT)**, warrants this product to be free from defects in material and workmanship for a period of ONE YEAR from the date of installation. This warranty is in lieu of all other warrants not expressly set forth herein, whether expressed or implied by operation of law or otherwise. In the event this product fails under normal use and service within the applicable period, HPT will correct, repair or, at its sole discretion, replace the defective product or refund the purchase price of products which are returned freight prepaid to HPT for inspection, when accompanied by proof of purchase and written claims of defect, and which upon inspection by HPT, do comply with the terms of this warranty.

This warranty applies to the first retail buyer and extends to any subsequent owners of the systems.

The cost of replacement parts or components shall be determined by the price schedule in effect at the time of submission of warranty claim.

Repair or replacement parts will be furnished F.O.B. factory in all cases.

If HPT elects to replace or provide a refund, the defective product must be returned to HPT free and clear of liens or other encumbrances.

Limitations on Liability

This warranty does not cover and no warranty is made with respect to:

- A. Failures not reported to HPT within the period specified above;
- B. Failures or damage due to misapplication, misuse, abuse, improper storage or handling, abnormal conditions of temperature, water, dirt, corrosive substances or other contaminants;
- C. Products which have been repaired with parts or materials not furnished or approved by HPT or by its authorized dealers or representatives, or products which have been in any way tampered with or altered;
- D. Products damaged in shipment or storage or otherwise without fault of HPT;
- E. Normal maintenance as outlined in the installation and servicing instructions or owners manual including coil cleaning, filter cleaning and periodic flushing of systems;
- F. Damage or repairs required as a consequence of faulty installation or application by others;
- G. Damage or repairs required as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration or improper operation;
- H. Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere or other conditions beyond the control of HPT;
- I. Damage resulting from freezing of domestic water or condensate, inadequate or interrupted water supply, use of corrosive water, fouling or restriction of the water circuit by foreign material or like causes;
- J. Damage resulting from operation with an inadequate supply of air or water;

HPT total responsibility for any claims, damages, losses or liabilities related to the product covered hereunder shall not exceed the purchase price of such product. In no event shall HPT be liable for any special, indirect, incidental or consequential damages of any character, including but not limited to loss of use of productive facilities or equipment, lost profits, property damage, transportation, installation or removal, lost production, or personal injury whether suffered by Purchaser or any third party. HPT disclaims all liability for any and all costs, claims, demands, charges, expenses or other damages, either direct or indirect, incident to personal injury or property damage arising out of any cause of action based on strict liability.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the exclusion or limitation above of consequential damages or the limitation of time above on implied warranties may not apply to you.

This warranty gives you specific legal rights and you may have other rights which may vary from state to state.

The Z-Coils™

INSTALLATION, OPERATION AND MAINTENANCE

Upon receiving the Z-Coil™, check for external damage. Open the carton and remove the coil and check for hidden damage. If damage is found, *notify the freight carrier. Do not return to HPT.* File your damage claim with the carrier within 48 hours after receipt and confirm in writing.

HPT Z-Coils™ are installed like any standard DX refrigeration coil. After removing the coil from the carton, take a sharp pointed punch or use a 1/8" drill bit to make a hole in the end cap of the suction line stub out. This will relieve the pressure of nitrogen gas installed at the factory.

CAUTION: Do not cut the refrigeration lines with tubing cutters or saw without first releasing the pressure.

Installation

1. Install the coil in the duct system using proper ASHRAE and ACCA installation practices, Unless instructed otherwise, coil is shipped vertically. To use horizontally, refer to *Conversion Instructions*.
2. Make sure that any duct connection transitions provide maximum air flow over the entire coil face.
3. Make sure the coil is level front to back and side to side. If not level, condensate may not drain properly.
4. Make sure air flow through the coil is in the direction of the arrow on top of the coil.
5. Connect all refrigeration and condensate piping.

Note: When tightening a fitting on the condensate drain nipple, be sure to provide backup on the nipple to prevent twisting it off in the drain pan. **KEEP IN MIND: A properly sized condensate trap is required.**

IMPORTANT

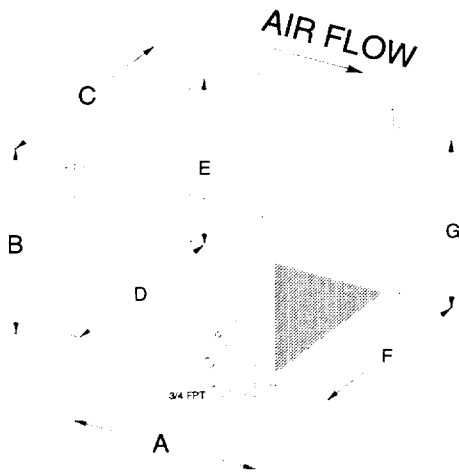
Heat pump applications require the following refrigerant line sizes (based on 25 ft. length). *This sizing is necessary for proper operation in the heating mode.*

Model	Straight Cooling	Heat Pump
Z-22	5/8 Suction, 3/8 Liquid	3/4 Suction, 3/8 Liquid
Z-33	3/4 Suction, 3/8 Liquid	7/8 Suction, 3/8 Liquid
Z-44	7/8 Suction, 3/8 Liquid	1 1/8 Suction, 1/2 Liquid
Z-55	1 1/8 Suction, 1/2 Liquid	1 1/8 Suction, 1/2 Liquid

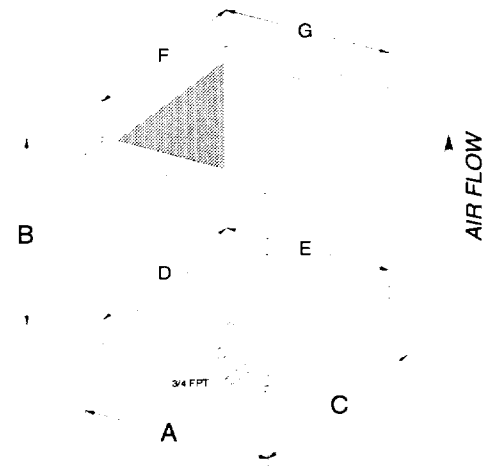
Note: Above 25 ft. length, use one size larger tubing. Do not run longer than 75'.

6. Remove Main Access Panel. Remove TXV clamp. Pull the TXV bulb through the hole in the access panel and clamp to the suction line. Insulate the TXV bulb to prevent condensation.
7. Charge the system to the manufacturer's specifications.
8. Complete the enclosed check-out sheet and make a copy for your files. Send original to HPT (Required for warranty coverage).
9. Return the completed warranty registration form to HPT.

Horizontal Installation



Vertical Installation

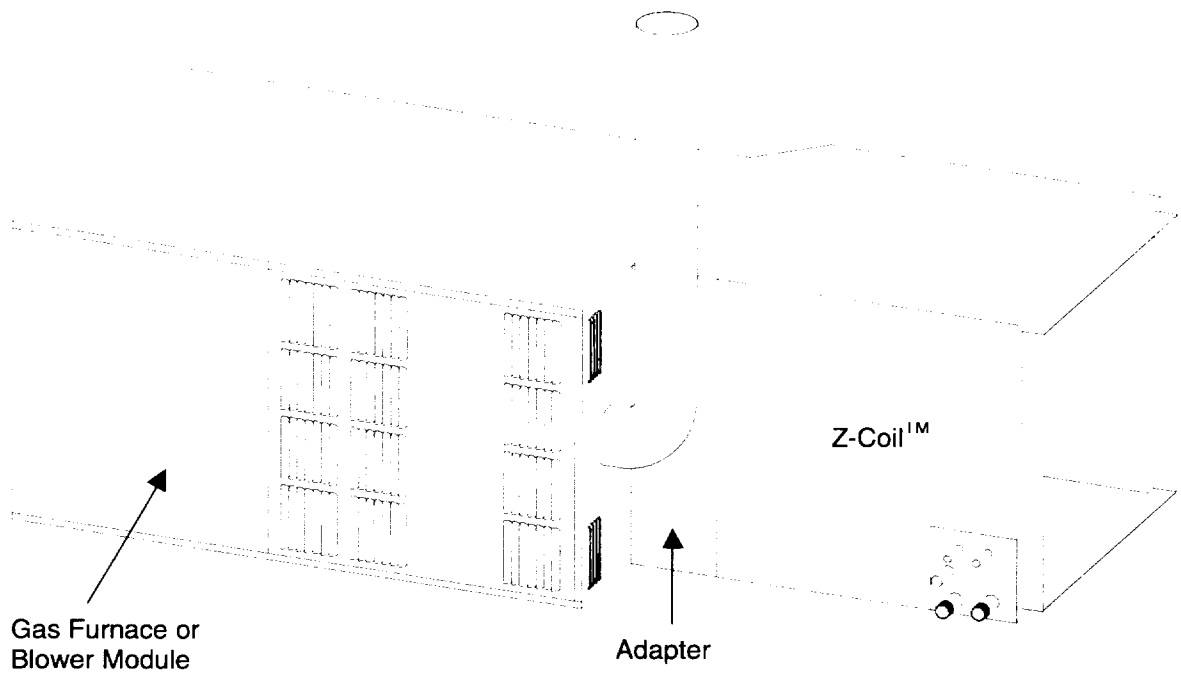


	Z-22	Z-33	Z-44	Z-55
A Overall Width	21	21	21	21
B Overall Height	21	21	21	21
C Overall Depth	16	22	28	34
D Inlet Width	14	20	26	32
E Inlet Height	19	19	19	19
F Outlet Width	14	20	26	32
G Outlet Height	19	19	19	19
<i>Cooling Capacity*</i>	22,000 BtuH	33,000 BtuH	44,000 BtuH	55,000 BtuH
<i>Heating Capacity</i>	22,000 BtuH	33,000 BtuH	44,000 BtuH	55,000 BtuH
<i>Nominal Evap. Temp.</i>	45°F	45°F	45°F	45°F
<i>Nominal Air Flow</i>	700 CFM	1100 CFM	1400 CFM	1800 CFM
<i>Air Pressure Drop</i>	0.30" H ₂ O	0.30" H ₂ O	0.30" H ₂ O	0.30" H ₂ O
<i>Blower Required</i>	1/5 to 1/4 HP	1/4 to 1/3 HP	1/3 to 1/2 HP	1/2 to 3/4 HP
<i>Shipping Weight</i>	55 lbs.	60 lbs.	70 lbs.	80 lbs.

*Cooling and heating capacity may vary with different equipment combinations. Refer to the ARI Directory for equipment performance, SEER ratings, and matching.

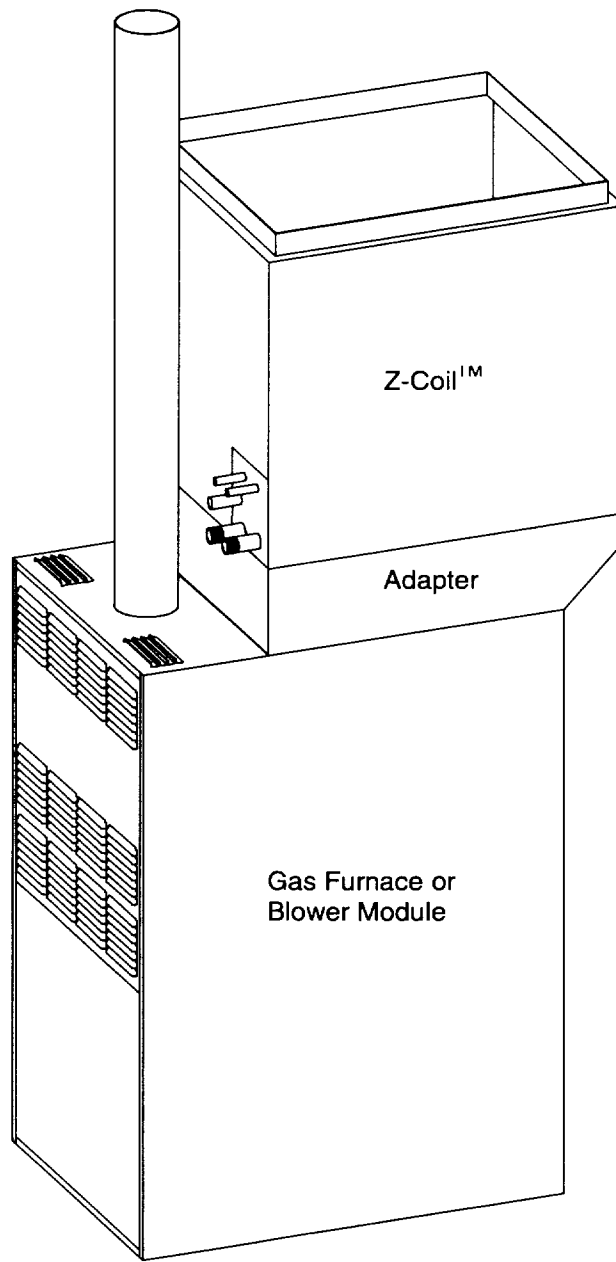
Typical Horizontal Z-Coil™ Installation with Gas Furnace or Blower Module

Horizontal Installation



Typical Vertical Z-Coil™ Installation with Gas Furnace or Blower Module

Vertical Installation



Matching Z-Coils™

HPT residential Z-Coils™ can be matched to air conditioning or heat pump condensing units. Depending on the application, the installer may choose to match for maximum dehumidification or maximum SEER. Use the table below as a guideline.

Model	Max. Dehumidification Straight AC	Max. SEER And Heat Pumps
Z-22 Z-33 Z-44 Z-55	2 Ton CU 3 Ton CU 4 Ton CU 5 Ton CU	1.5 Ton HP 2.5 Ton HP 3 Ton HP 4 Ton HP
Remarks	60% sensible/ 40% latent Derate capacity 10% Derate SEER 5%	70% sensible/ 30% latent Full capacity Full SEER

IMPORTANT: Please select blower to provide at least 0.3" static across the coil, or a minimum of 350 CFM per ton.

Note: A time delay relay is required to meet ARI certification data.

Heat pump applications require the following refrigerant line sizes (based on 25' length). This sizing is necessary for proper operation in the heating mode.

Model	Straight Cooling	Heat Pump
Z-22 Z-33 Z-44 Z-55	5/8 Suction, 3/8 Liquid 3/4 Suction, 3/8 Liquid 7/8 Suction, 3/8 Liquid 7/8 Suction, 1/2 Liquid	3/4 Suction, 3/8 Liquid 7/8 Suction, 3/8 Liquid 1 1/8 Suction, 1/2 Liquid 1 1/8 Suction, 1/2 Liquid
NOTE: Over 25 ft. length, use one size larger tubing. Do not exceed 75 ft.		

Call the factory for special applications or system performance not listed in the ARI Directory.

The AHR-Z-Coils™ Five-Year Limited Warranty

Subject to the following conditions, **Heat Pipe Technology, Inc. (HPT)**, warrants this product to be free from defects in material and workmanship for a period of FIVE YEARS from the date of installation. This warranty is in lieu of all other warranties not expressly set forth herein, whether expressed or implied by operation of law or otherwise. In the event this product fails under normal use and service within the applicable period, HPT will correct, repair or, at its sole discretion, replace the defective product or refund the purchase price of products which are returned freight prepaid to HPT for inspection, when accompanied by proof of purchase and written claims of defect, and which upon inspection by HPT, do comply with the terms of this warranty.

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- C. Products which have been repaired with parts or materials not furnished or approved by HPT or by its authorized dealers or representatives, or products which have been in any way tampered with or altered;
- D. Products damaged in shipment or storage or otherwise without fault of HPT;
- E. Normal maintenance as outlined in the installation and servicing instructions or owners manual including coil cleaning, filter cleaning and periodic flushing of systems;
- F. Damage or repairs required as a consequence of faulty installation or application by others;
- G. Damage or repairs required as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration or improper operation;
- H. Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere or other conditions beyond the control of HPT;
- I. Damage resulting from freezing of domestic water or condensate, inadequate or interrupted water supply, use of corrosive water, fouling or restriction of the water circuit by foreign material or like causes;
- J. Damage resulting from operation with an inadequate supply of air or water;
- K. **Z-Coil, DHP and Hot Plate when used in a non-residential application.**

HPT total responsibility for any claims, damages, losses or liabilities related to the product covered hereunder shall not exceed the purchase price of such product. In no event shall HPT be liable for any special, indirect, incidental or consequential damages of any character, including but not limited to loss of use of productive facilities or equipment, lost profits, property damage, transportation, installation or removal, lost production, or personal injury whether suffered by Purchaser or any third party. HPT disclaims all liability for any and all costs, claims, demands, charges, expenses or other damages, either direct or indirect, incident to personal injury or property damage arising out of any cause of action based on strict liability.

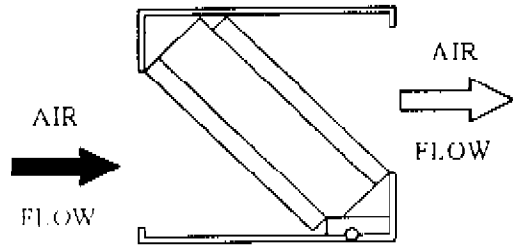
Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the exclusion or limitation above of consequential damages or the limitation of time above on implied warranties may not apply to you.

This warranty gives you specific legal rights and you may have other rights which may vary from state to state.

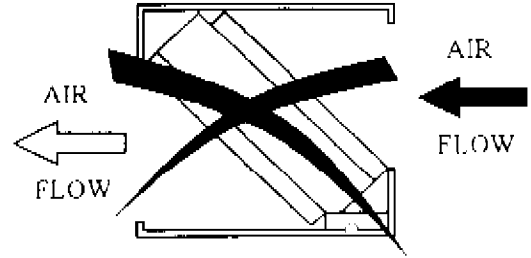
Installation Tips

50-400 CFM Per Ton

For Horizontal Installation

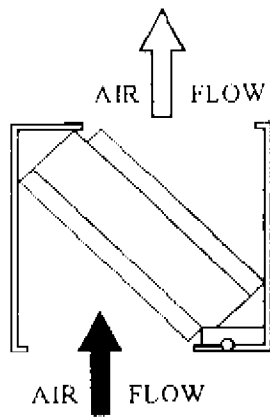


RIGHT

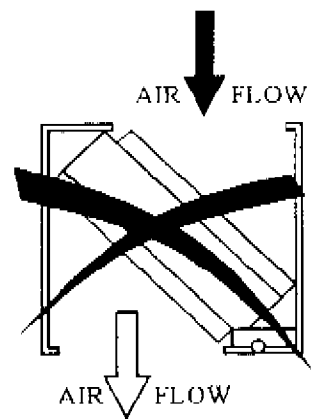


WRONG

For Vertical Installation

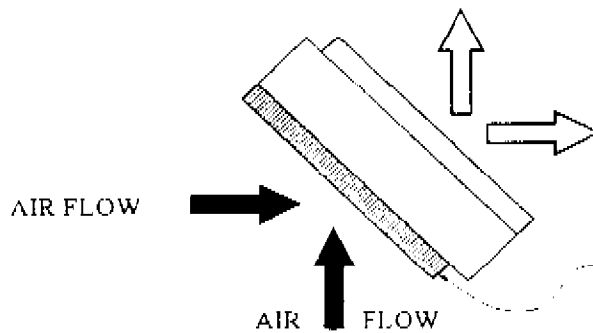


RIGHT



WRONG

CONCLUSION



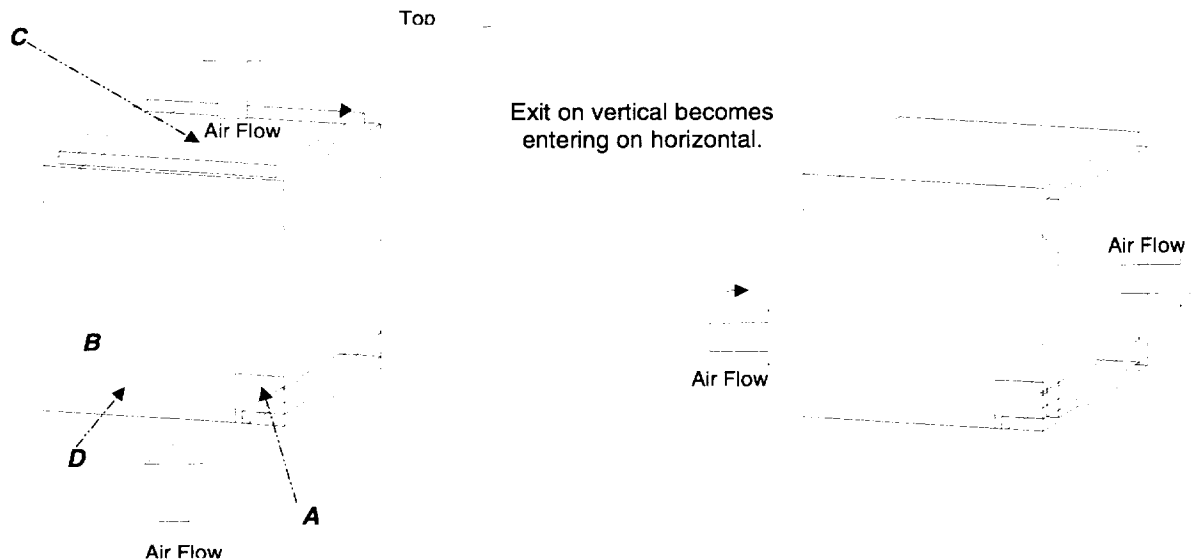
AIR ALWAYS ENTER AT THE LOWER HEAT PIPE FIRST

When Introducing Fresh Air (Up to 10%):

When introducing fresh air into the air conditioner or heat pump system, the following is recommended:

1. Introduce the fresh air connection into the return air stream ahead of the Z-Coil™.
2. Fresh air must be filtered.
3. Install a damper in the fresh air intake for balancing.
4. Design the AC or heat pump system to handle the additional sensible and latent cooling loads.

Conversion Information



Instructions for Vertical to Horizontal Conversion

1. Remove access panels A and B, and braces C and D.
2. Remove coil and drain pan. Then peel off and discard drain pan insulation.
3. Rotate cabinet 1/4 turn.
4. Reinstall coil and drain pan assembly, and top and bottom braces.
5. Install screws in predrilled top and bottom end plates.
6. Block old screw holes with blind rivets.
7. Reinstall access doors.

Maintenance Consideration for Homeowner

The Z-Coil™ is a passive, whole house dehumidification system. The basic design of the dehumidifying coils eliminate the need for special controls and additional service, other than normal semi-annual checks by your AC contractor.

Keeping a clean air filter is very important. Filters should be changed (or cleaned) monthly. A periodic check of the drain pan during the cooling season to assure good condensate flow is advisable. With routine maintenance checks, your Z-Coil™ should provide years of trouble-free service and comfort.

Z-Coils™ Data Gathering Worksheet

Application:

House
 Office
 Manufacturing
 Assembly
 Other _____

<u>Condensing Unit or Heat Pump Manufacturer Brand Name</u>	
Condensing Unit Model No.: _____ Coil or Air Handler Model No.: _____	
<input type="checkbox"/> Vertical	<input type="checkbox"/> Horizontal
Seer rating required: _____	
Total capacity required: _____	
Is there a requirement for outside air? <input type="checkbox"/> Yes. <input type="checkbox"/> No. How much? _____	
Physical space for system: <input type="checkbox"/> garage <input type="checkbox"/> closet <input type="checkbox"/> attic	
If attic, what is the size of access opening? _____ width (in.) x length (in.)	
<input type="checkbox"/> Duct board	or <input type="checkbox"/> metal duct with insulation
Special conditions required: _____	
Temperature and humidity within $\pm 2^{\circ}\text{F}$ and $\pm 5\% \text{RH}$? <input type="checkbox"/> Yes. <input type="checkbox"/> No.	
Hazardous conditions requiring special coil coating: <input type="checkbox"/> Yes. <input type="checkbox"/> No.	
<u>Indoor Swimming Pools</u>	
Surface area of the pool: _____ sq.ft. width x length	
Activity rate: _____ hours/day	
Is there a spa? <input type="checkbox"/> Yes. <input type="checkbox"/> No.	
Air temperature desired: _____ $^{\circ}\text{F}$ Water temperature desired: _____ $^{\circ}\text{F}$	
Existing space conditioning: <input type="checkbox"/> Yes. <input type="checkbox"/> No. Will space conditioning be required? <input type="checkbox"/> Yes. <input type="checkbox"/> No.	