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Commercial High Performance 10

Air Curtain Series #CHD10

Sanitation Certified High Performance 7

Air Curtain Series #SHD07

When the door is open™, BERNER AIR CURTAINS



ANSI/NSF 37
Air Curtain Fans
for Customer Entry
12CS
SHD07

Installation & Maintenance Instructions

TABLE OF CONTENTS

I. UNCRATING..... 2

II. GENERAL MOUNTING INSTRUCTIONS 4

III. WALL MOUNTING 5

IV. SUSPENDED MOUNTING 6

V. ELECTRICAL CONNECTIONS 7

VI. FIELD CONNECTIONS 7

VII. OPERATING INSTRUCTIONS 8

VIII. MAINTENANCE AND CLEANING..... 9

IX. SERVICE 9

X. TROUBLESHOOTING 10

XI.WARRANTY 12

Thank you for choosing Berner.

Berner International has been saving energy and creating healthy, comfortable environments for our customers for over 60 years. Berner offers unmatched quality, performance, and dependability—not to mention our service. At Berner, we stand behind our products.

READ ALL INSTRUCTIONS BEFORE INSTALLING OR USING AIR CURTAIN

II-123D
June, 2020



Commercial High Performance 10 Air Curtain (Air Door)



Sanitation Certified High Performance 7 Air Curtain (Air Door)

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

- A. Read all instructions before installing or using this air curtain.
- B. Use this unit only in the manner intended by the manufacturer and described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons. If you have any questions, contact the manufacturer.
- C. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
- D. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable national and local codes having jurisdiction, including fire-rated construction. See page 7, ELECTRICAL CONNECTIONS (NEC Code ANSI/NFPA No. 70).
- E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
- F. To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the air curtain.
- G. This air curtain is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, etc. and curtains at least 1 inch from the top, back, front, sides and at least 6 feet from the discharge of the air curtain.
- H. Extreme caution is necessary when any air curtain is used by or near children or invalids, and whenever the heater is left operating unattended.
- I. Do not operate any air curtain after it malfunctions. Disconnect power at the service panel and have the air curtain inspected by a reputable electrician before reusing.
- J. To disconnect the air curtain, turn controls to "off", and turn off power to the air curtain circuit at main disconnect panel.
- K. Do not insert or allow foreign objects to enter any ventilation or discharge opening as this may cause an electric shock or fire, or damage the air curtain.
- L. To prevent a possible fire, do not block the air intake or discharge of the air curtain in any manner.
- M. The air curtain has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.
- N. This heater may include an audible or visual alarm to warn that parts of the heater are getting excessively hot. If the alarm sounds (or illuminates), immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. **DO NOT OPERATE THE HEATER WITH THE ALARM SOUNDING (OR ILLUMINATING).**

I. UNCRATING

Carefully examine the carton(s) for damage. If the carton is damaged, immediately notify the shipping company. **Do not delay in filing claim.** If the air curtain(s) were shipped on wooden skids, remove protective wood and banding straps securing the carton(s) to the skid. Open the carton(s) and remove all protective packaging.

Immediately verify that the electrical rating nameplate located on the cover matches electrical power supply available. Retain the shipping carton(s) until the air curtain(s) are installed and properly operating.

ACCESSORIES:

If the air curtain was ordered with a wall mounting plate, remove and save the two (2) locking screws from the back corners and detach the wall mounting plate. **See Figure 1.**

If the air curtain(s) were ordered with optional electrical accessories, the accessories will be found in the carton containing the air curtain or in a separate carton(s) accompanying the air curtain(s). Check all of the cartons/skids for accessories before discarding.

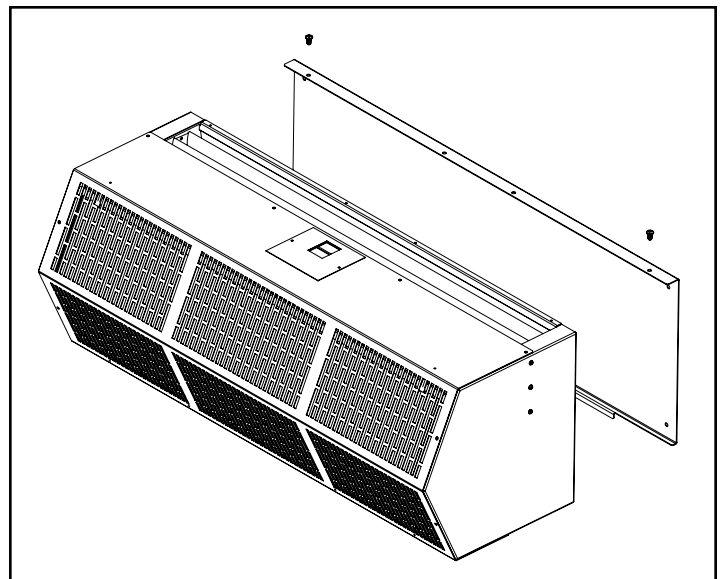
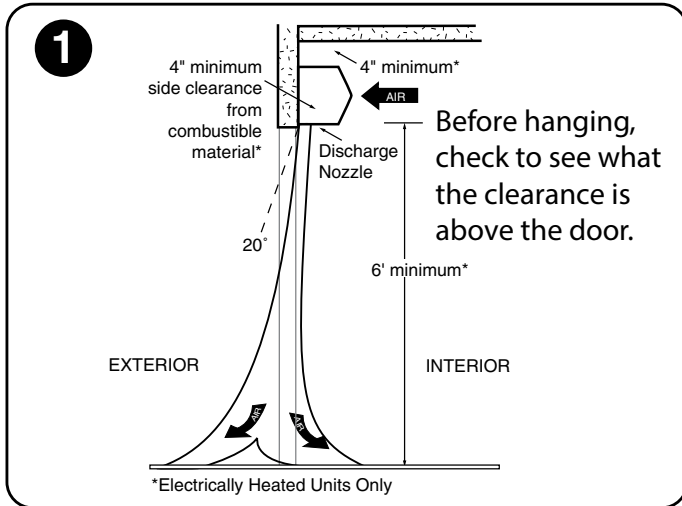


Figure 1

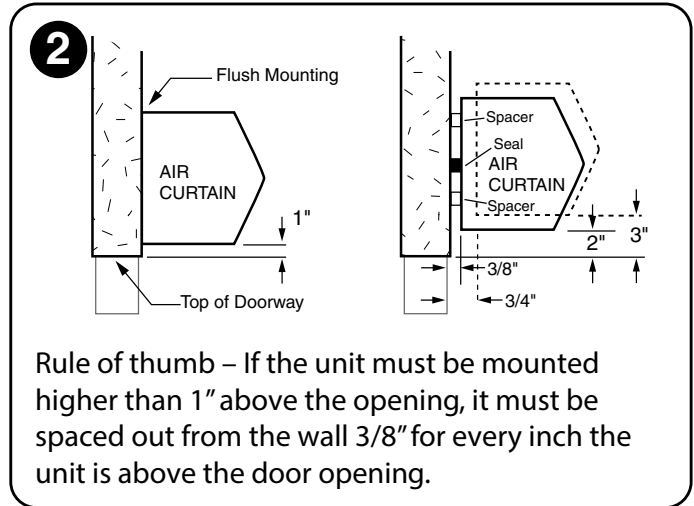


Simple to Install

Easy to operate & maintain

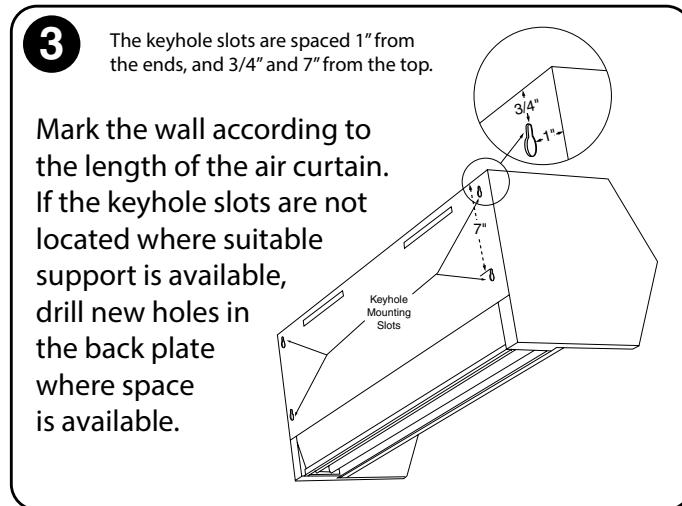


For more information see page 4

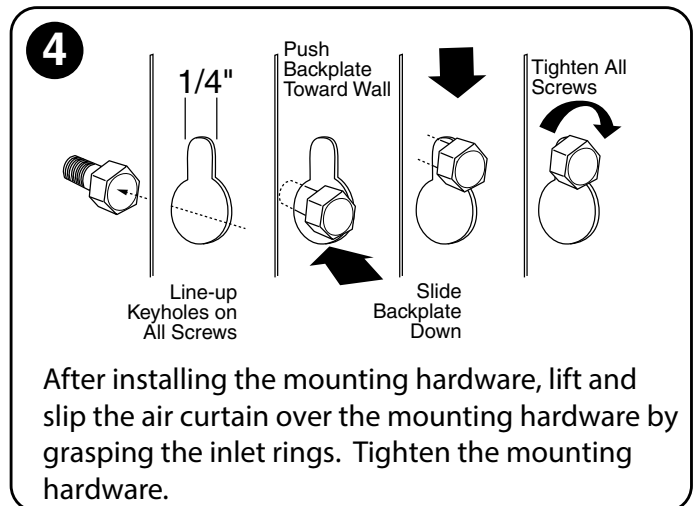


Rule of thumb – If the unit must be mounted higher than 1" above the opening, it must be spaced out from the wall 3/8" for every inch the unit is above the door opening.

For more information see page 4

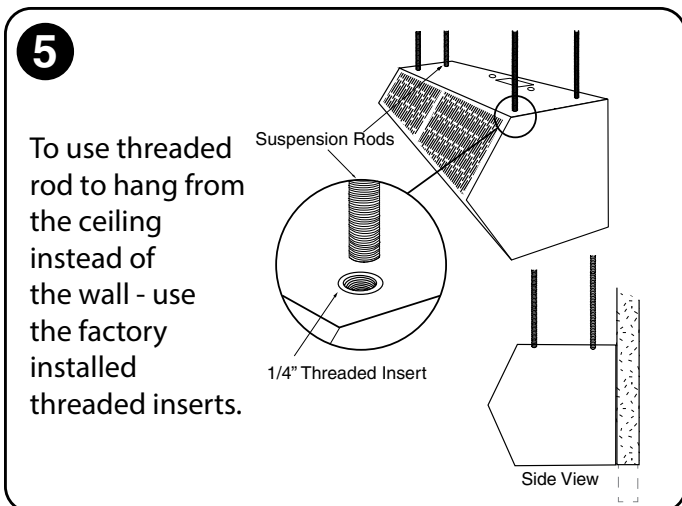


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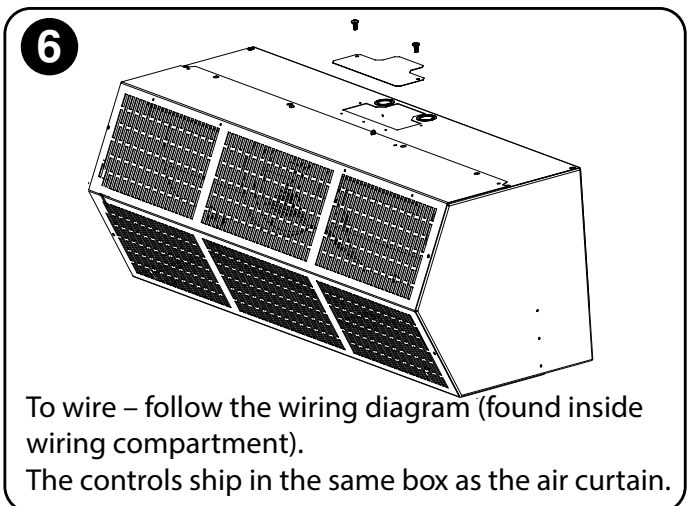


After installing the mounting hardware, lift and slip the air curtain over the mounting hardware by grasping the inlet rings. Tighten the mounting hardware.

For more information see page 5



For more information see page 6



To wire – follow the wiring diagram (found inside wiring compartment). The controls ship in the same box as the air curtain.

For more information see page 7

II. MOUNTING INSTRUCTIONS (General)

INDOOR MOUNTING - Environmental/ Insect/ Dust Control
OUTDOOR MOUNTING (Unheated Only) - Insect/Dust Control

The Commercial High Performance 10 & the Sanitation Certified High Performance 7 Air Curtains are designed to be an effective barrier against cold drafts in the winter and hot air in the summer, flying insects and airborne contaminants.

To achieve optimum protection, the air curtain should be mounted on the inside of the building, flush to the wall and as close to the top of the door opening as possible. To ensure peak performance, keep the air stream free of obstructions.

The air curtain will not perform properly if negative air pressure exists in the building. Under these conditions, a means for makeup air to the building must be provided so that the air pressure on both sides of the opening is in balance.

Before mounting the air curtain, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight of the air curtain(s). The mounting hardware (supplied by others) should be capable of supporting a minimum of three (3) times the weight of the air curtain.

See Table 1 or Table 2.

IMPORTANT: A minimum of 4" is required above the top of the air curtain for the installation and removal of the inlet screen and access to electrical compartment.

- A. When determining the mounting location for the air curtain(s), make sure that nothing interferes with the curtain of air developed when the discharge vanes are directed from 0° to 20° toward the door opening. If the air stream strikes any obstruction (the top edge of the doorway, a door opening device, etc.), the effectiveness of the air curtain will be greatly reduced. See Figure 2.
- B. For optimum performance, the bottom of the air curtain (discharge nozzle) should be no more than 1" above the top of the door opening with the air curtain(s) mounted flush to the wall. If the air curtain must be mounted higher, it must be spaced out from the wall 3/8" for every inch the air curtain is above the door opening. See Figure 3. For optimum protection, any void between the air curtain and the wall should be sealed along the full length of the air curtain.
- C. Do not block (obstruct) the air intake grill. Insufficient airflow can cause the unit to overheat.
- D. **Electric heated air curtain(s) shall:**
 1. Have a minimum clearance of at least 4" between the sides and top of the air curtain and any combustible material.
 2. Have a minimum clearance of at least 6' between the bottom of the air curtain and the floor.
 3. Be installed Indoors Only.
- E. Proceed to either Section III - Wall Mounting or Section IV - Suspended Mounting

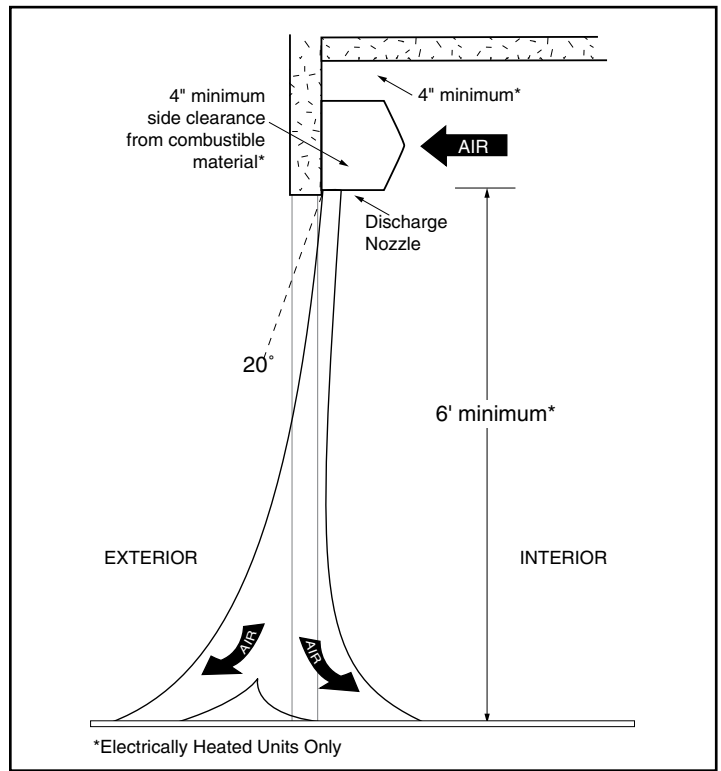


Figure 2

MODEL	Net Weight		MODEL	Net Weight
	CHD10 Ambient	CHD10 Electric		SHD07 Ambient
CHD10-1036	50	52	SHD07-1036	50
CHD10-1042	52	55	SHD07-1042	52
CHD10-1048	53	56	SHD07-1048	53
CHD10-1060	54	63	SHD07-2060	70
CHD10-2060	70	96	SHD07-2072	84
CHD10-2072	84	104	SHD07-2084	104
CHD10-2084	104	110	SHD07-2096	106
CHD10-2096	106	112	SHD07-3108	150
CHD10-3096	120	148	SHD07-3120	152
CHD10-2108	107	119		
CHD10-3108	150	156		
CHD10-2120	108	126		
CHD10-3120	152	159		

TABLE 2 - SHD07 Unit Weight

TABLE 1 - CHD10 Unit Weight

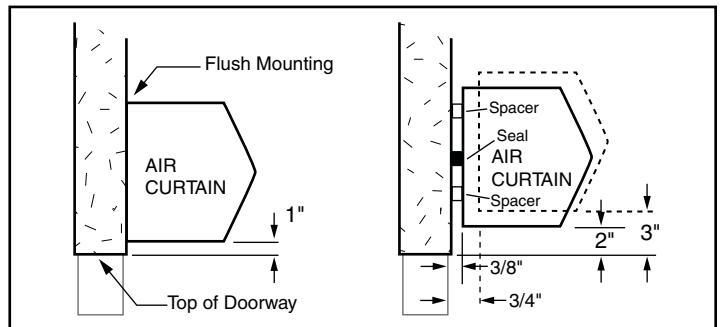


Figure 3

III. WALL MOUNTING

If a wall mounting plate was ordered with the air curtain, proceed to **B. Wall Mounting – using the wall mounting plate (sold separately)**, otherwise proceed:

A. WALL MOUNTING - without wall mounting plate

1. Making sure that the air curtain is centered over the opening, determine the exact mounting location of the air curtain.

NOTE: A minimum of 4" is recommended above the air curtain to provide clearance for installation and removal of the cover housing.

2. Remove the screen by removing screws from the top, bottom and front of the air curtain, and slide the screen away from the blower assembly.
3. The air curtain is equipped with four 1/4" keyhole mounting slots on the back of each unit for wall mounting. The slots are spaced 1" from the ends, and 3/4" and 7" from the top. **See Figure 4.**

4. Mark the wall according to the length of the air curtain. The wall must provide sufficient support for the air curtain. If the keyhole slots are not located where suitable support is available, drill new holes in the unit back plate where space is available.

5. The mounting hardware (supplied by others) must be capable of supporting a minimum of three times the net weight of the air curtain. **See Weight Chart, Table 1 or Table 2.**

6. **Keyhole Mounting:** Install the mounting hardware (supplied by others), allowing for space to hang the air curtain by not fully tightening. Without touching the blower wheels, lift and slip the air curtain over the mounting hardware by grasping the inlet rings of the blower housing. Tighten the mounting hardware. **See Figure 5.**

7. **Drilled Mounting Holes:** Lift the air curtain by grasping the inlet rings on the blower housing, without touching the blower wheels, and install the mounting hardware (supplied by others) through the drilled holes.

8. Reinstall the screen using hardware removed in Step 2.

9. Proceed to **Section V - Electrical Connections.**

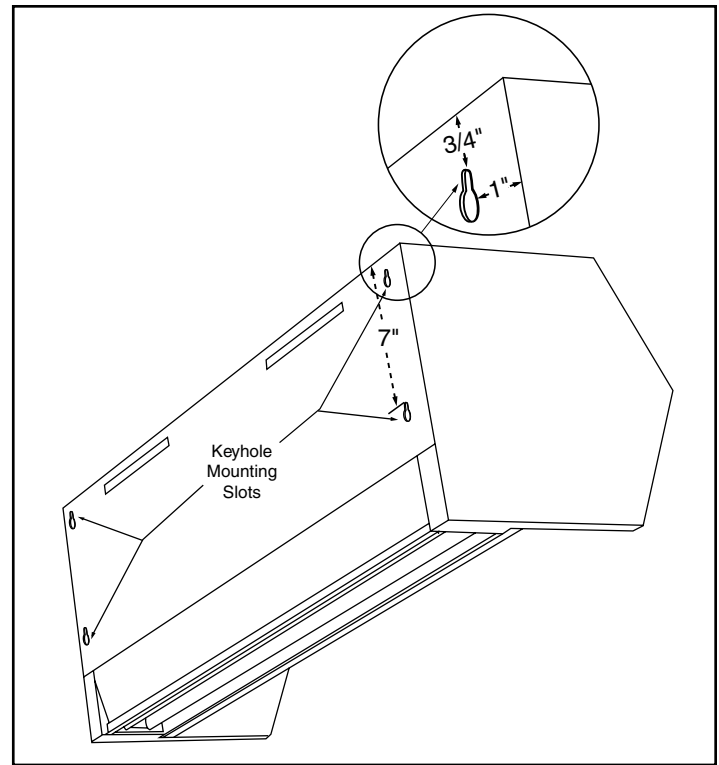


Figure 4

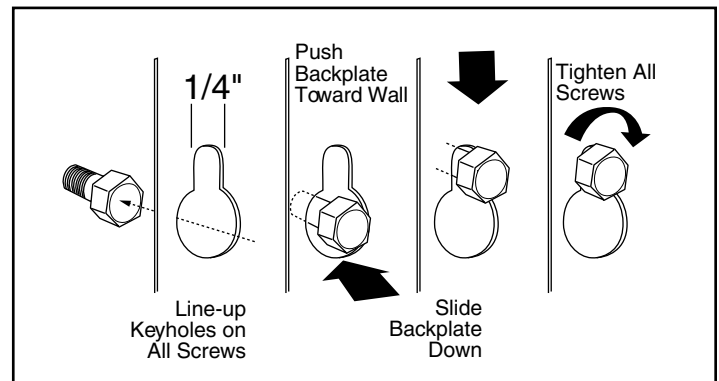


Figure 5

B. WALL MOUNTING – using the wall mounting plate (sold separately)

1. PREPARATION

- a. Position and center the mounting plate over the door opening. The mounting plate must be positioned with the “Z” lip on top. Drill mounting holes on the mounting plate. **See Figure 6.**
- b. Mark the wall in the center of each mounting plate hole. The wall must provide sufficient support for the air curtain. The mounting hardware (supplied by others) must be capable of supporting a minimum of three times the net weight of the air curtain. **See Weight Chart, Table 1 or Table 2.** If the location of the marks on the wall do not provide suitable support, mark and drill additional holes.
- c. Drill the four holes as marked on the wall and attach the mounting plate with anchors (if used) and the four mounting screws (provided by others).

2. ATTACHING THE AIR CURTAIN TO THE MOUNTING PLATE

- a. Raise the air curtain over the door (air discharge nozzle facing down) and on to the mounting plate. First, tilt the unit upward matching the rectangular openings to the “Z” lip on the mounting plate. **See Figure 7.**
- b. Lower the air curtain into place, allowing it to rest on the lower lip of the mounting plate.
- c. After the air curtain is securely attached to the mounting plate, re-install the two (2) locking screws at the bottom corners. **See Figure 7.**

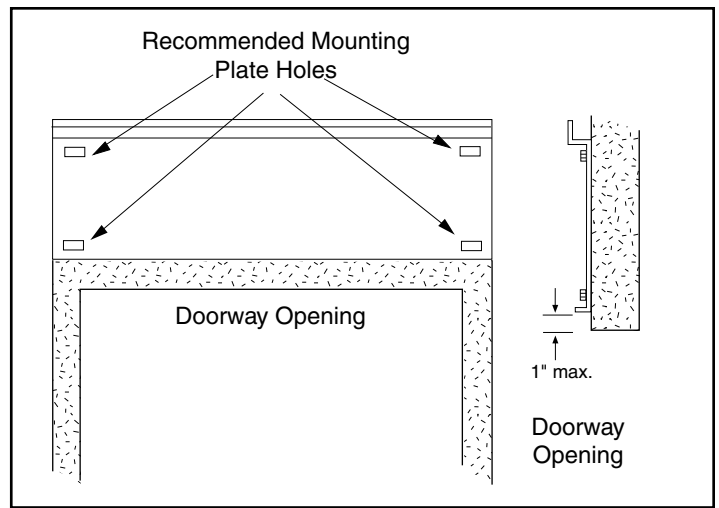


FIGURE 6 - Positioning of Mounting Plate

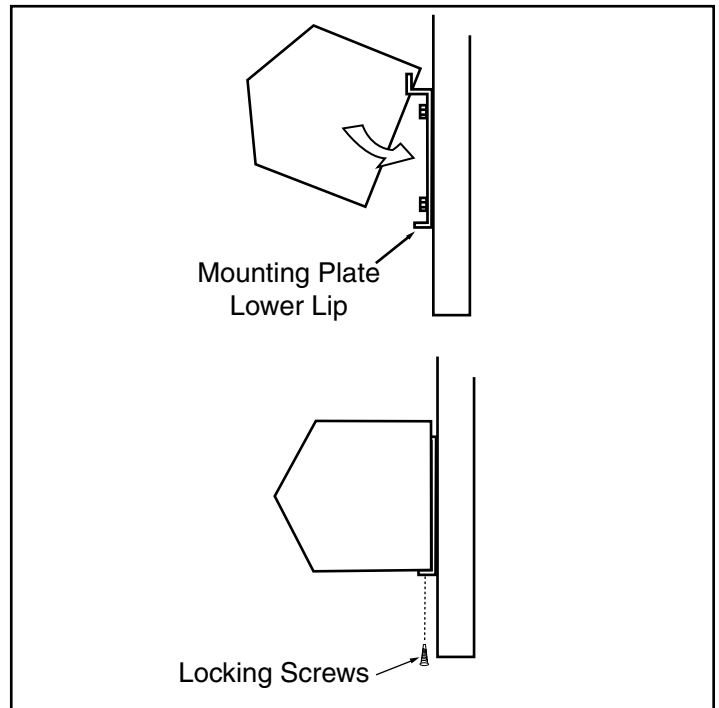


FIGURE 7

IV. SUSPENDED MOUNTING

- A. For top mounting using suspension rods, four (4) factory installed 1/4" threaded inserts are located in the top of the air curtain. **See Figure 8.**
- B. Install 1/4" threaded rods, or other suitable hardware at a location with sufficient support for the air curtain. The mounting hardware (supplied by others) must be capable of supporting a minimum of three times the net weight of the air curtain. **See Weight Chart, Table 1 or Table 2.**
- C. Attach threaded rods, or other suitable hardware to the top mounted threaded inserts.
- D. Proceed to **Section V – Electrical Connections**

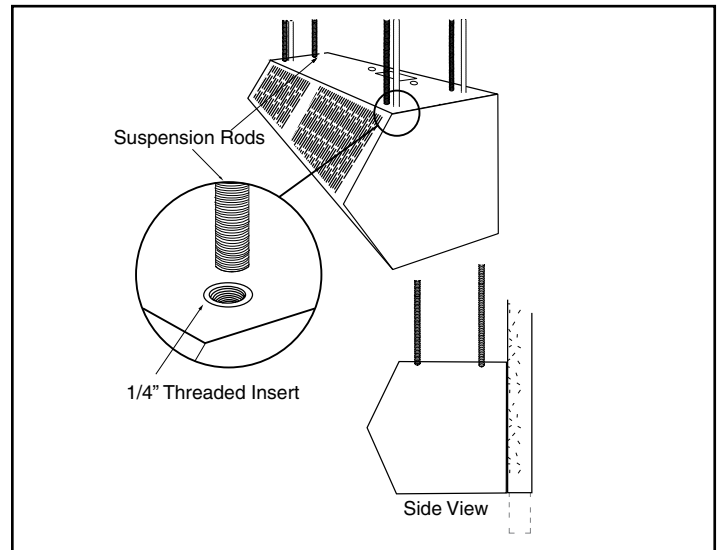


FIGURE 8 - Suspended Mounting

V. ELECTRICAL CONNECTIONS

All electrical wiring and connections **MUST** be performed by qualified personnel in accordance with the latest edition of the National Electrical Code ANSI/NFPA No. 70 or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1 and local codes and regulations.

MAKE SURE THE CORRECT VOLTAGE AS MARKED ON THE UNIT IS USED.

- A. A separate line voltage supply with a suitable branch circuit protection device should be run directly from the main electrical panel to the unit. A disconnect switch for each branch circuit is a required part of this installation. See the voltage label on the unit for circuiting and total electrical load. The wiring diagram is located in the wiring compartment.
- B. All field wiring must be copper with a minimum insulation of 60°C within approved conduit. If any of the wire supplied with the unit must be replaced, it must be replaced with copper wiring with a minimum insulation of 90°C.
- C. Remove the wiring compartment cover on top of the air curtain. **See Figure 9.**
- D. The top of the air curtain has knockouts on each side of the wiring compartment. Remove the required knockout and connect the power supply to the air curtain. Connect all supply and control circuit wires according to the wiring diagram provided.

NOTE: For Electrically heated air curtains provided with the optional remote thermostat, mount and wire the thermostat according to thermostat instructions and wiring diagram.

For Electrically heated air curtains proceed to **Section V - Field Connections**, otherwise proceed to **Section VI - Airflow Adjustments**

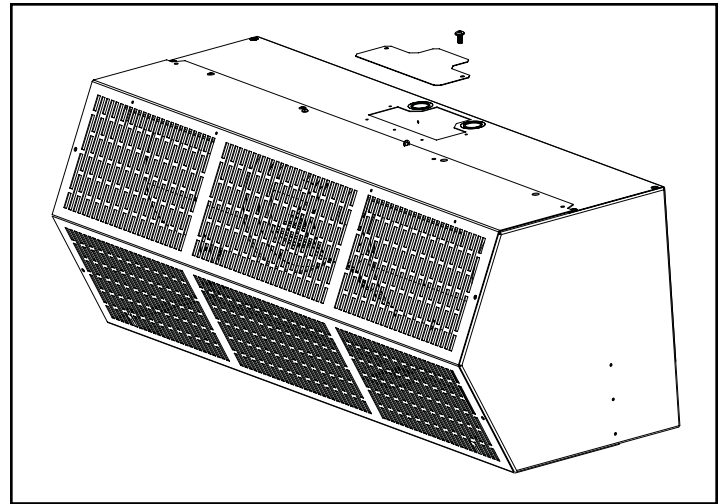


FIGURE 9

VI. FIELD CONNECTIONS

A. ELECTRICALLY HEATED MODELS

The heater circuit may be controlled by a remote thermostat, manually through a unit mounted or remote mounted three position - fan only/off/fan with heat switch. Overheating protection is provided by auto reset thermal cutouts built into the blower assembly (see wiring diagram). Proceed to **Section VII - Operating Instructions.**

VII. OPERATING INSTRUCTIONS

A. GENERAL OPERATION

Air curtain operation may be divided into four areas: control package, fan activation, fan speed selection, and heat activation. Depending on the type of controls ordered one or more of the following may be applicable. The air curtain must be properly installed before it is used.

- Control packages control the air curtain's sequence of operation. Unit modes/control packages are built into the unit and may not be changed in the field. Refer to your wiring diagram for specifics about activation connections and sequence of operation.
 - Basic Control Package** – The unit is activated by a door or selector switch. Either switch may be line voltage or low voltage (24V).
 - Deluxe Control Package** – The unit is activated by a door or selector switch, but has a factory installed time delay allowing the unit to keep running for a period of time after the door closes.
 - Comfort Plus Control Package** – Available only on heated units, the unit is activated by a door or selector switch AND a thermostat to provide supplemental heating. NOTE: Not available with 575V motors.
- Unheated air curtains will have the fans activated by a door or selector switch or sensor. The unit may be single speed and require no fan speed selector (On/Off), or may have three fan speeds which require either a unit or remote mounted switch (Off, High, Med, Low).
- Heated air curtains will have fans activated by a door or selector switch or sensor, but may also be activated by the thermostat in Comfort Plus Mode. The unit has three fan speeds which can be set by either a unit or remote mounted switch (Low, Med, High, Off, Low heat, Med Heat, High Heat).
- Heat activation is controlled by either a unit or remote mounted thermostat, and a unit or remote mounted switch.

B. AIR STREAM ADJUSTMENT

- With the air curtain operating and the door in its full open position, check to see that nothing is obstructing the airflow at the discharge nozzle vanes.
- Find the air stream split location. Hold a handkerchief by its corners, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. **See Figure 10.** The split location is indicated where the handkerchief is vertical with minimal or no fluttering.
- The split location should be approximately 3" outside the doorway. If necessary adjust the discharge nozzle vanes by de-energizing the unit, loosening the nozzle vane locking screws and adjusting vanes.

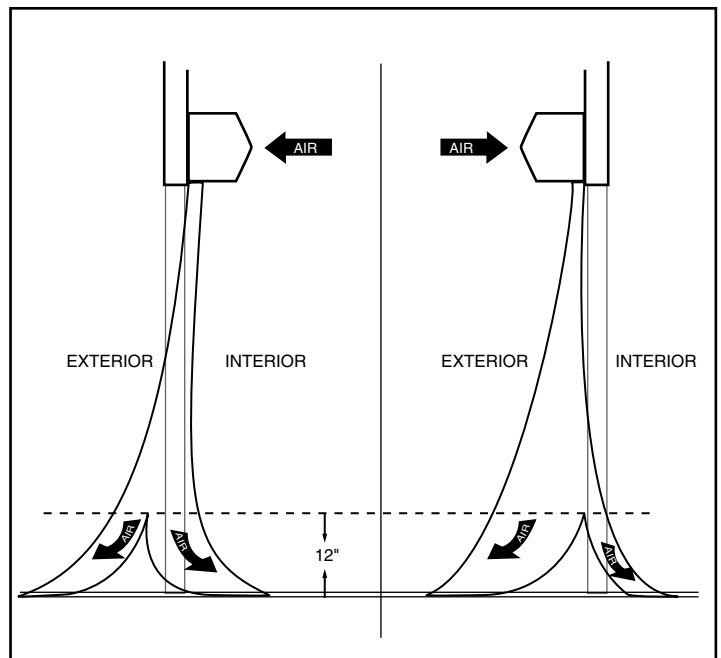


FIGURE 10

VIII. MAINTENANCE & CLEANING

CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

Keep your air curtain operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grill. Buildup of dust on the blower wheels can cause vibration, noise and excessive wear on the motor bearings. The frequency of cleaning will depend on the environment where the unit is operating.

Dirty, dusty or greasy environments could require a cleaning schedule of once every two months. If the environment is not that dirty, the unit(s) should be scheduled for cleaning a minimum of once every (6) months.

A. PERFORMING PREVENTIVE MAINTENANCE

1. **Disconnect and lockout power to the unit.**
2. Remove the intake screen by removing the machine screws located around the bottom, front and top of the screen **See Figure 11.**
3. Vacuum and scrape (if necessary) to remove the build-up of dirt and debris. The motor(s) are permanently lubricated and require no additional lubrication. Re-install the cover and intake grill.
4. Switch the power on after cleaning.

CAUTION: STAND CLEAR OF THE UNIT OR WEAR SAFETY GOGGLES AS LOOSE DEBRIS MAY BE PRESENT AND MAY EXIT THE NOZZLE.

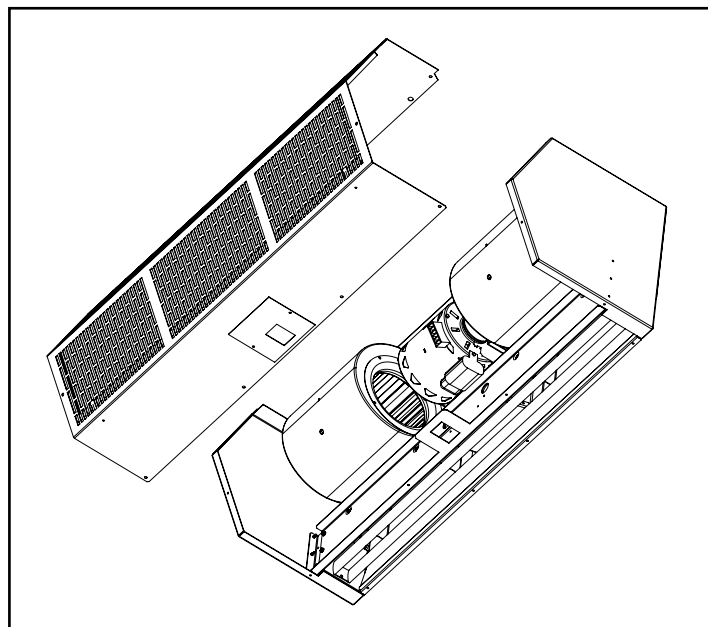


FIGURE 11

IX. SERVICE

*Any service performed on the air curtain **MUST** be done by qualified personnel.*

Berner air curtains require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve bearings and require no maintenance.

X. TROUBLESHOOTING

SYMPTOMS	CAUSE	REMEDY
NO AIR	<ul style="list-style-type: none"> • Electrical Power supply line open (no power) • Fuse blown/circuit breaker tripped • Motor overload tripped • Failed switch 	<ul style="list-style-type: none"> • Check power source, check method of control in ON position • Replace fuse(s)/reset breaker • Internally protected motor - should reset automatically after cool-down, if not replace motor. • Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	<ul style="list-style-type: none"> • Broken or fan hub • Shaft rotating inside fan • Broken/Loose coupling 	<ul style="list-style-type: none"> • Replace fan • Tighten set screws/tighten fan on shaft • Replace/Tighten coupling
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	<ul style="list-style-type: none"> • Selector switch is in off position • Door limit switch not operating 	<ul style="list-style-type: none"> • Turn switch to "ON" position • Repair or replace limit switch
MINIMUM	<ul style="list-style-type: none"> • Air directional discharge vanes misadjusted • Inadequate intake clearance • Blower motor operates below speed • Fan rubbing against housing • Fan wheels clogged with dirt 	<ul style="list-style-type: none"> • Adjust vanes to proper position, see instructions • Move air curtain or remove obstruction Provide adequate space for air curtain • Improve voltage • Free fan from housing • Clean and vacuum fan wheels
AIR IS NOT HITTING FLOOR	<ul style="list-style-type: none"> • Air stream too weak • Air stream hits obstruction • Negative pressure 	<ul style="list-style-type: none"> • Adjust nozzle to proper position, adjust motor speed; see installation instructions • Remove obstruction or reposition air curtain (move out $\frac{3}{8}$" for every 1" up from the door) • Relieve negative pressure by providing make-up air
UNEVEN AIR	<ul style="list-style-type: none"> • Shaft rotating inside fan • One motor not operating 	<ul style="list-style-type: none"> • Tighten set screws/Replace fan • Repair or replace motor/Check electrical connections
EXCESSIVE AIR MOVEMENT AT DOORWAY	<ul style="list-style-type: none"> • Nozzle not angled out far enough • Air movement too cold • Pushing air outside building <p>SEE AIR IS NOT HITTING FLOOR SYMPTOMS</p>	<ul style="list-style-type: none"> • Adjust nozzle angle to outside • Add auxiliary heat to overcome wind chill • Adjust discharge angle back into building
ELECTRICALLY HEATED MODELS		
NO HEAT	<ul style="list-style-type: none"> • Switch turned to "OFF" position • Thermostat not set properly • Coils burned out due to lack of air • Automatic reset thermal cutout failed in open position • Manual reset thermal cutout tripped • Defective switch 	<ul style="list-style-type: none"> • Turn switch on • Change thermostat setting • Correct airflow problem; replace coils • Replace automatic thermal cutout • Reset manual thermal cutout • Replace switch
NOT ENOUGH HEAT	<ul style="list-style-type: none"> • Thermostat in wrong location - thermostat too close to discharge • Improper voltage • Thermostat not set properly 	<ul style="list-style-type: none"> • Move thermostat away from air stream • Supply proper voltage • Change temperature setting
TOO MUCH HEAT	<ul style="list-style-type: none"> • Thermostat in wrong location • Thermostat not set properly • Insufficient air over coil • Improper voltage 	<ul style="list-style-type: none"> • Move thermostat closer to air stream • Change temperature setting • Remove restriction on intake • Supply proper voltage

XI. WARRANTY

Berner International ("The Company") warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) on unheated models and two years (2 years) on heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to The Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of The Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but The Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by The Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HERE OF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

SERIAL NUMBER	MODEL NUMBER	DATE PURCHASED
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Saving energy and creating healthy, comfortable environments

BERNER INTERNATIONAL
New Castle, Pennsylvania

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Berner reserves the right to alter specifications without prior notice.