IMPORTANT INSTRUCTIONS

BERNER™ INTERNATIONAL CORP.

Saving energy and creating healthy, comfortable environments

READ AND SAVE THESE INSTRUCTIONS

No. II-260
Date July, 2015

Made in USA

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ARCHITECTURAL
High Performance 10
AIR CURTAIN SERIES AHC10

Installation & Maintenance Instructions

TABLE OF CONTENTS

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 4, 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 before opening. If the carton is damaged, immediately notify the shipping company. Open the carton and remove all protective packing. Remove the unit by lifting vertically. Place the unit upside down on end supports to avoid damage to the electrical junction box. If the unit will be wall mounted, remove and save the two (2) locking screws from the back corners and detach the wall mounting plate. **See Figure 1**

ACCESSORIES: If the unit(s) were ordered with optional electrical accessories (door switch, control panel, etc.), the accessories may be found in the carton containing the unit or in a separate carton(s) accompanying the unit(s). Check all of the cartons/skids for accessories before discarding.

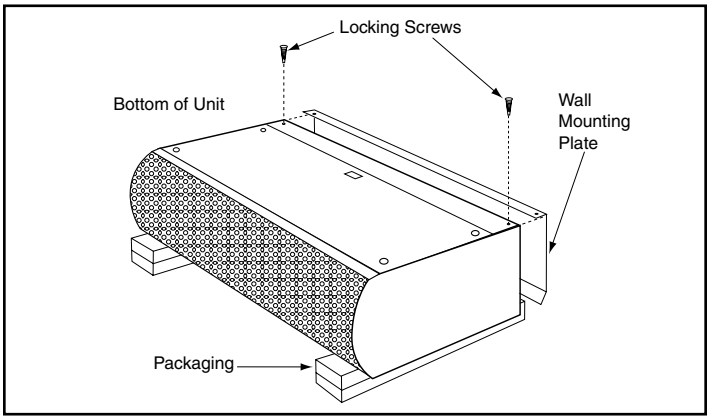

Figure 1

The ARCHITECTURAL HIGH PERFORMANCE 10 Air curtain is 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 unit 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 air stream free of obstructions. **See Figure 2.**

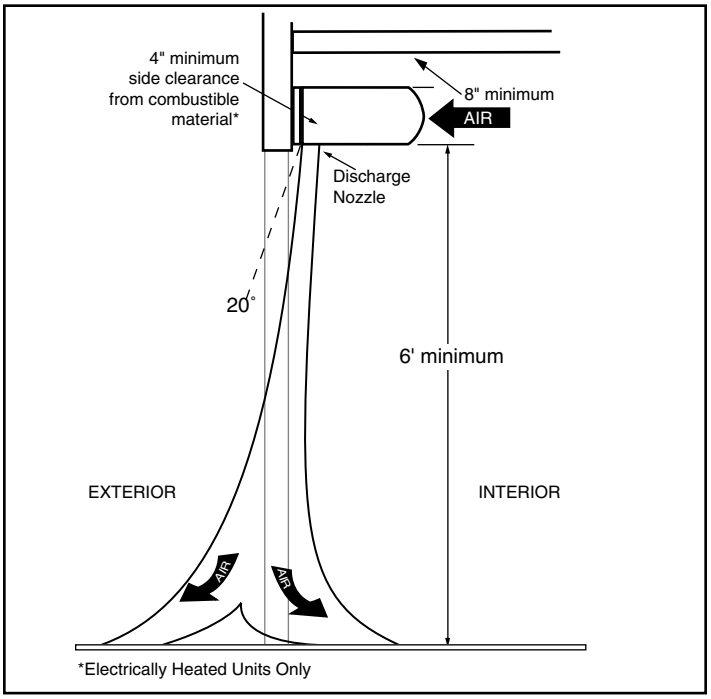

Figure 2

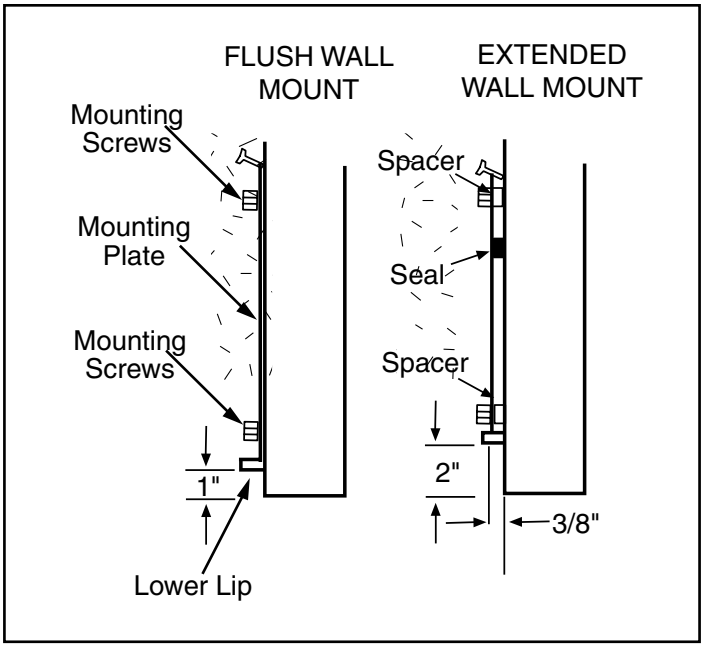

Figure 3

II. WALL MOUNTING - INDOOR INSTALLATION

Unit should be mounted no higher than 10' above the floor. For maximum efficiency, the unit should be mounted no higher than 8'.

1. Install the ARCHITECTURAL HIGH PERFORMANCE 10 Air curtain so that nothing interferes with the curtain of air when it is deflected 20° to either side. If the air stream strikes any obstruction, i.e. the top edge of the doorway, a structural beam, a door opening device, etc., its efficiency will be greatly reduced. **See Figure 2.**

2. The lower lip of the mounting plate should be no more than 1" above the door opening when the unit is 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 unit is above the door opening. For the best performance, any void between the Air curtain and the wall must be sealed (use foam, plastics or a similar packing). **See Figure 3.**

3. Do not block the air flow to or from the unit since this could cause overheating. **On electrically heated units there should be:**
   a. A minimum clearance of at least 4" between the side of the unit and any combustible material if the unit is enclosed in the ceiling or a decorative cover.

   b. A minimum clearance of 8" between the top of the unit and the ceiling in order to service the junction box(es).

   c. Do not install less than six feet (or 1.8 meters) from the floor to the unit. **See Figure 2.**

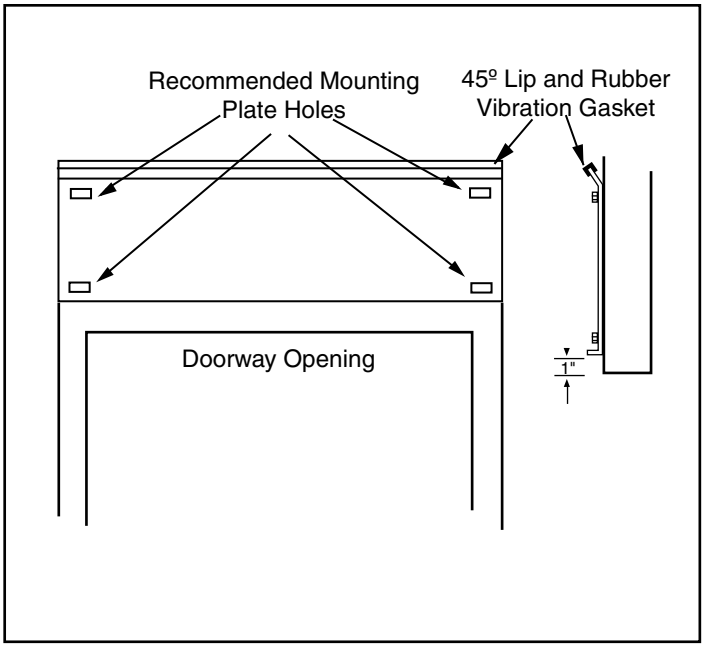

Figure 4

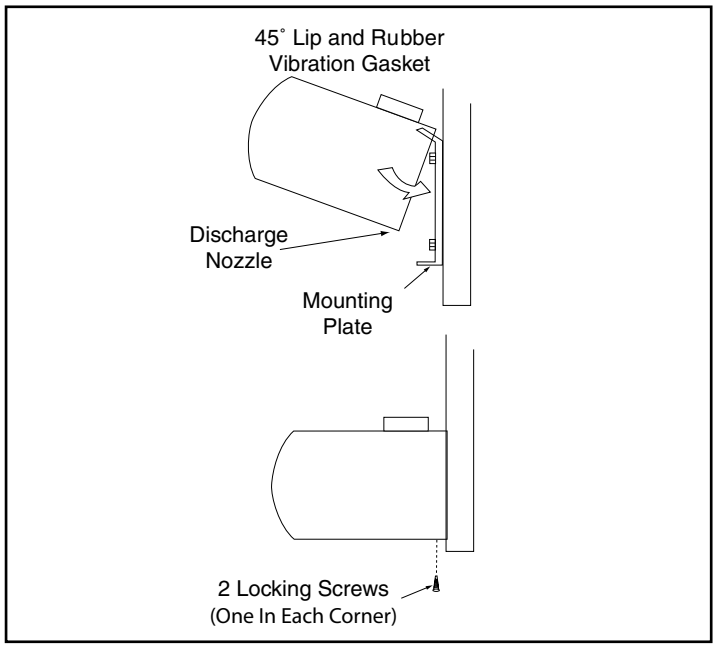

Figure 5

III. WALL PREPARATION

1. Position and center the mounting plate over the door opening. The mounting plate must be positioned with the 45° lip and the rubber vibration gasket on top. Drill mounting holes on the mounting plate. **See Figure 4.**

2. 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.** If the location of the marks on the wall do not provide suitable support, mark and drill additional holes.

3. 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).

IV. ATTACHING THE AIR CURTAIN TO THE MOUNTING PLATE

1. Raise the unit over the door (air discharge nozzle facing down) and on to the mounting plate. First, tilt the unit upward matching the top recessed edge of the unit to the top 45° angled lip on the mounting plate. **See Figure 5.**

2. Lower the unit into place, allowing it to rest on the lower lip of the mounting plate.

3. After the unit is securely attached to the mounting plate, reinstall the two (2) locking screws at the bottom corners. **See Figure 5.**

WEIGHT IN POUNDS			
Model	**Unheated**	**Electric**	**Steam/Hot Water**
AHC10-1036	65	71	98
AHC10-1042	68	74	104
AHC10-1048	70	76	109
AHC10-2048	95	107	134
AHC10-2060	125	137	171
AHC10-2072	130	142	181
AHC10-2084	140	152	197
AHC10-2096	145	157	208
AHC10-3096	165	183	228
AHC10-3108	170	188	240
AHC10-3120	175	193	248

TABLE 1 - Weight Chart

V. TOP MOUNTING - INDOOR INSTALLATION (CEILING SUSPENSION)

For top mounting suspension rods, four (4) factory installed 5/16" threaded inserts are located on the top of the unit. **See Figure 6.**

1. Install the ARCHITECTURAL HIGH PERFORMANCE 10 Air curtain so that nothing interferes with the curtain of air when it is deflected 20° to either side. If the air stream strikes any obstruction, i.e. the top edge of the doorway, a structural beam, a door opening device, etc., its efficiency will be greatly reduced. **See Figure 2.**

2. Follow instructions 2 and 3 under INDOOR INSTALLATION: WALL MOUNTING (on page 1) checking to assure the minimum clearances are met.

3. Attach 5/16" threaded rods, or other suitable hardware to the top mounted threaded inserts.

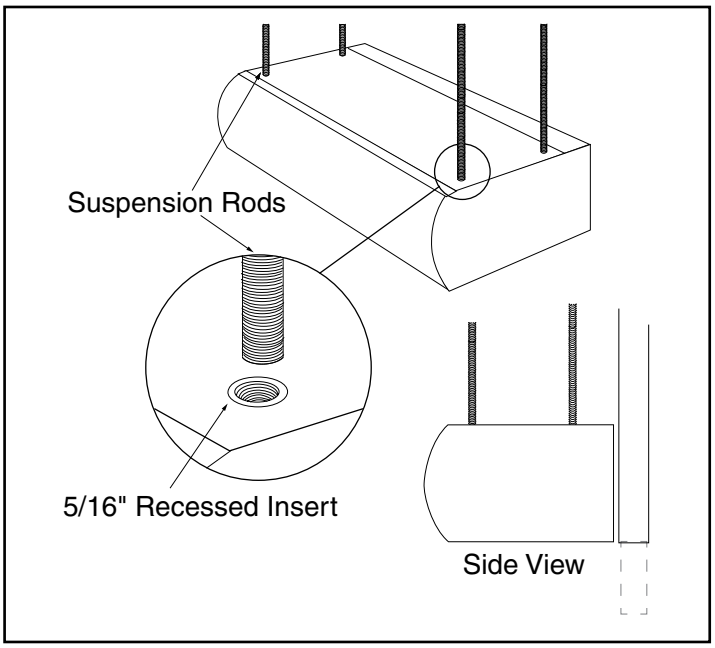

Figure 6

VI. 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.**

The ARCHITECTURAL HIGH PERFORMANCE 10 Air curtain is internally wired to the junction box(es) on top of the of the unit.

1. Run the proper size cable from the source to the junction box and connect the leads.
2. Wiring diagrams are located inside the junction box. For amp rating, See the name plate on the unit.

VII. ELECTRICALLY HEATED MODELS

The heater circuit may be controlled by a remote thermostat, a built-in thermostat or a manual on/off heater switch located on the discharge side of the unit. **See Figure 7.**

1. If a thermostat is used, connect the proper leads located in the junction box to the leads of the thermostat. (See wiring diagram located in the junction box)

2. If a manual heat on/off switch is used, factory wiring is supplied from the heating coil to the unit mounted heat on/off switch. Overheat protection is provided by thermal cutouts built into the heater coil assembly. (See the wiring diagram located in the junction box.)

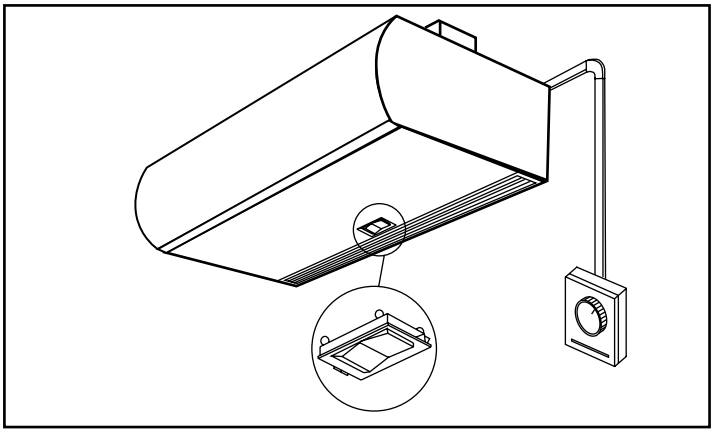

Figure 7

VIII. STEAM OR HOT WATER HEATED MODELS

Piping should be done in accordance with local codes, regulations and standard practice.

1. Connect the supply & return to the 1" MPT nipples on the heating coil. **See Figure 8.**

2. Temperature controls to be supplied by others.

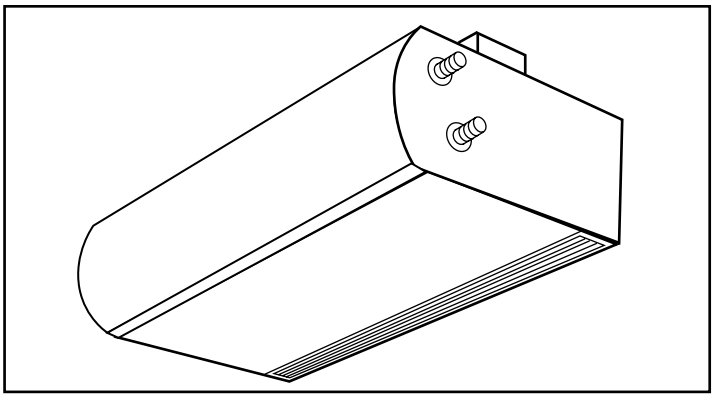

Figure 8

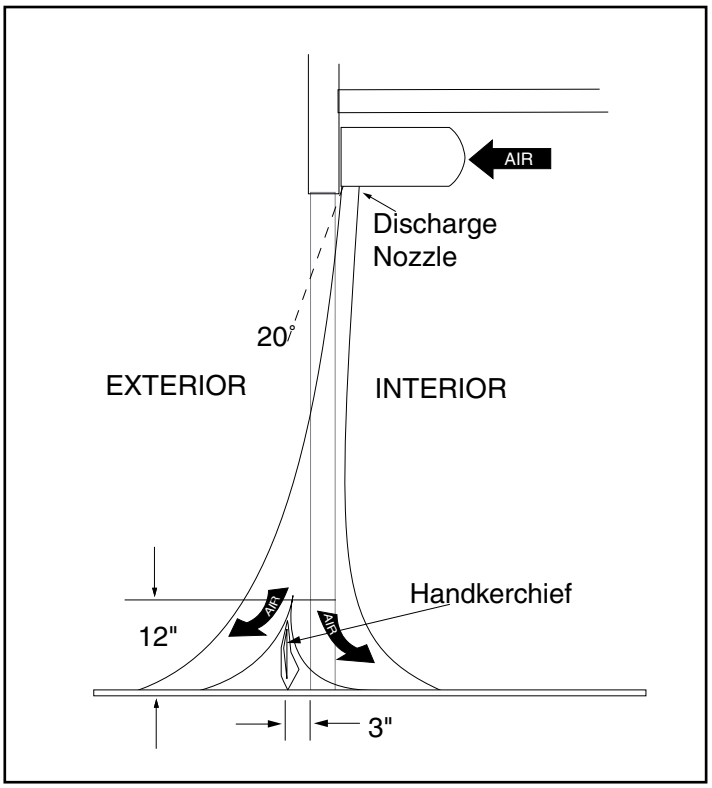

Figure 9

IX. 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.

1. Control packages control the unit'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.
   a. Basic Control Package – The unit is activated by a door or selector switch. Either switch may be line voltage or low voltage (24V).
   b. 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.
   c. 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.

2. Unheated units 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 multiple fan speeds which require either a unit or remote mounted switch (Off, High, Med, Low).

3. Heated units will have fans activated by a door or selector switch or sensor, but may also be activated by the thermo stat in Comfort Plus Mode. The unit may be single speed and controlled by either a unit or remote mounted switch (Fan, Off, Heat), or may have multiple fan speeds which can be set by either a unit or remote mounted switch (Low, Med, High, Off, Low heat, Med Heat, High Heat).

4. Heat activation is controlled by either a unit or remote mounted thermostat, and a unit or remote mounted switch.

B. AIR STREAM ADJUSTMENT

1. 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.

2. 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 9**. The split location is indicated where the handkerchief is vertical with minimal or no fluttering.

3. 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.

X. MAINTENANCE AND CLEANING

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

Keep your air door operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grille. 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. To access the interior of the unit:

1. **Disconnect the power to the unit.**

2. Remove the intake grille by removing the locking screw on each end of the unit. Lift the intake grille up and then towards you. **See Figure 11.**

3. Remove the bottom access panel. Remove Phillips head screws on the bottom of the unit. 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 grille.

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.**

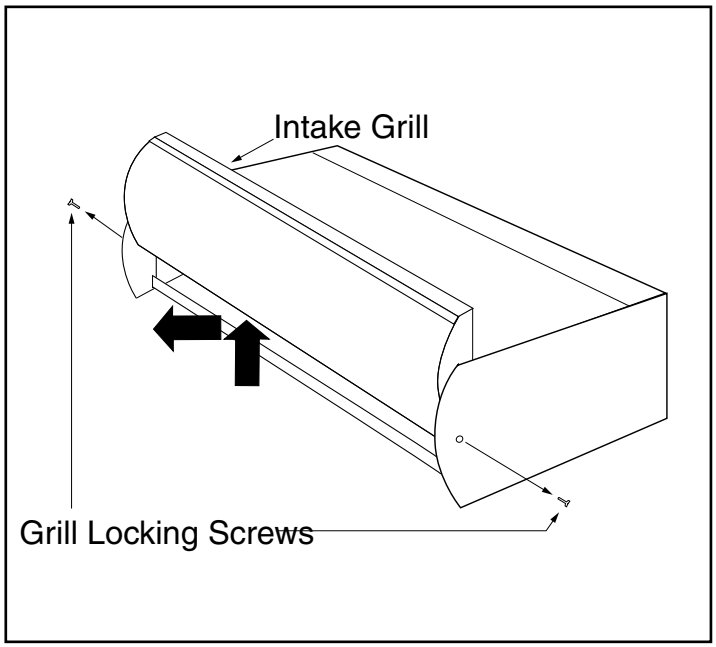

Figure 11

XI. SERVICE

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

Any service performed on the ARCHITECTURAL HIGH PERFORMANCE 10 *Series air door* ***MUST*** *be done by qualified personnel.* Berner air doors 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.

TROUBLESHOOTING

SYMPTOMS	CAUSE	REMEDY
NO AIR	• Power supply line open (no power)	• Check power source, check method of control in ON position
	• Fuse blown/circuit breaker tripped	• Replace fuse(s)/reset breaker
	• Motor overload tripped	• Internally protected motor - should reset automatically after cool-down, if not, replace motor.
	• Failed switch	• Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	• Broken or damaged flexible hub	• Replace fan sleeve/reengage coupling
	• Shaft rotating inside fan	• Tighten set screws/tighten fan on shaft
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	• Selector switch is in off position	• Turn switch to "ON" position
	• Door limit switch not operating	• Repair or replace limit switch
MINIMUM AIR	• Air directional discharge vanes mis-adjusted	• Adjust vanes to proper position, see instructions
	• Inadequate intake clearance	• Move air curtain or remove obstruction
		• Provide adequate space for air curtain
	• Blower motor operates below speed	• Improper voltage
	• Fan rubbing against housing	• Free fan from housing
	• Fan wheels clogged with dirt	• Clean and vacuum fan wheels
	• Fan in backwards	• Check fans for blade curve toward discharge
AIR IS NOT HITTING FLOOR	• Air stream too weak	• Adjust nozzle to proper position, adjust motor speed; see installation instructions
	• Air steam hits obstruction	• Remove obstruction or reposition air curtain (move out 3/8" for every 1" up from the door)
	• Negative pressure	• Relieve negative pressure by providing makeup air
UNEVEN AIR	• Shaft rotating inside fan	• Tighten set screws
	• One motor not operating	• Repair or replace motor
EXCESSIVE AIR MOVEMENT AT DOOR-WAY	• Nozzle not angled out far enough	• Adjust nozzle angle to outside
	• Unit too powerful	• Adjust motor speed
	• Air movement too cold	• Add auxiliary heat to overcome wind chill factor
	• Pushing air outside building	• Adjust discharge angle back into building, adjust motor speed
	SEE **AIR IS NOT HITTING FLOOR** SYMPTOMS	
ELECTRICALLY HEATED MODELS		
NO HEAT	• Switch turned to "ON" position	• Replace switch or check wiring
	• Thermostat not set properly	• Change thermostat setting
	• Coils burned out due to lack of air	• Correct airflow problem; replace coils
	• Automatic reset thermal cutout failed in open position	• Replace automatic thermal cutout
	• Manual reset thermal cutout tripped (if supplied)	• Reset manual thermal cutout
MINIMAL HEAT	• Thermostat in wrong location - thermostat too close to discharge	• Move thermostat away from air stream
	• Improper voltage	• Supply proper voltage
	• Thermostat not set properly	• Change temperature setting
EXCESSIVE HEAT	• Incorrect speed range	• Set dip switch to electric heated speed range
	• Thermostat in wrong location	• Move the thermostat closer to air stream
	• Thermostat not set properly	• Change temperature setting
	• Insufficient air over coil	• Remove restriction on intake
	• Improper voltage	• Supply proper voltage
STEAM/HOT WATER HEATED UNITS		
EXCESSIVE HEAT	• Too high steam/hot water pressure	• Reduce steam pressure/hot water flow
	• Inadequate air flow, fins plugged up, dirty coils	• Clean intake and coils
MINIMAL HEAT	• Insufficient removal of condensation (steam)	• Increase trap size
	• Not enough steam pressure/water temperature too low	• Raise pressure for steam/increase water flow
	• Intake air below design temperature	• Increase steam pressure/increase water flow

XII. 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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MADE IN U.S.A.