REZNOR®

Form I-RBL (Version A)

Obsoletes Form I-RBL/RBA/RBHA

INSTALLATION / OPERATION

Applies to: Blower Cabinet Model RBL

Model RBL, Indoor/Outdoor Blower Cabinet, 5000 - 15000 CFM

Table of Contents

1.0 General

1.1 Hazard Labels and Notices

There are warning labels on the blower cabinet and throughout this manual. For your safety, read the definitions below and comply with all boxes labeled **CAUTION**, **WARNING**, and **DANGER** during installation, operation, maintenance, and service of this unit.

Definitions of Hazard Intensity Labels in this Manual

HAZARD INTENSITY LEVELS of Warnings in this Manual

1. **DANGER: Failure to comply will result in severe personal injury or death and/or property damage.**
2. **WARNING: Failure to comply could result in severe personal injury or death and/or property damage.**
3. **CAUTION: Failure to comply could result in minor personal injury and/or property damage.**

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury or death. Read the installation, operation, and maintenance instructions thoroughly before installing or servicing this equipment.

1.2 General Information

A Model RBL blower cabinet is engineered for use with Reznor® duct furnaces when design considerations do not permit the use of a packaged system. The cabinet is weatherized with an integral curb cap base for outdoor installation, but may also be installed indoors. The blower cabinet has standard horizontal inlet and outlet air openings equipped with duct flanges and may have an optional bottom air inlet. Model RBL is available with a downturn plenum which provides a bottom outlet for supply air.

This booklet includes installation and operation information. Installation should be done by a qualified agency in accordance with the instructions in this manual and in compliance with all codes and requirements of authorities having jurisdiction. Before beginning installation, review the instructions in this booklet and become familiar with the required procedures.

1.0 General (cont'd)

1.3 Warranty

Refer to the limited warranty information on the Warranty Form in the "Owner's Envelope" shipped with the unit.

2.0 Uncrating

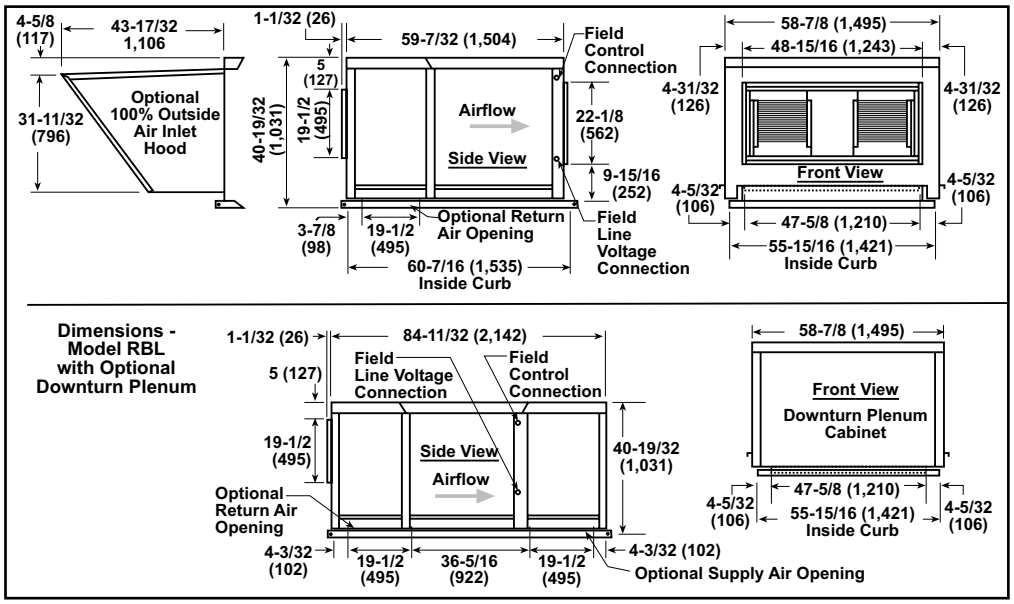
Immediately upon uncrating the unit, check for any damage that may have been incurred during shipment. If damage is found, document the damage with the transporting agency and contact your Reznor Distributor. This unit was inspected at the factory immediately prior to crating.

Check the blower cabinet plate to be sure that the electrical characteristics of the blower cabinet are compatible with the installation site.

Be sure all shipped-separate options for the installation are available. Shipped-separate options could include a roof curb, an outside air hood, a disconnect switch, an evaporative cooling module, and/or freeze protection kit for an evaporative cooling module.

3.0 Dimensions

FIGURE 1 - Model RBL Dimensions - inches (mm)



Duct Opening Dimensions

Model RBL Air Openings (with duct flange)	inches	(mm)
Standard Horizontal Inlet Air Opening	19-1/2 x 47-5/8	495 x 1210
Optional Bottom Return Air Inlet Air Opening	19-1/2 x 47-5/8	495 x 1210
Standard Horizontal Discharge Air Opening	22-1/8 x 48-15/16	562 x 1243
Btm Discharge Air Opening w/Downturn Plenum Cabinet	19-1/2 x 47-5/8	495 x 1210

4.0 Suspending and Mounting

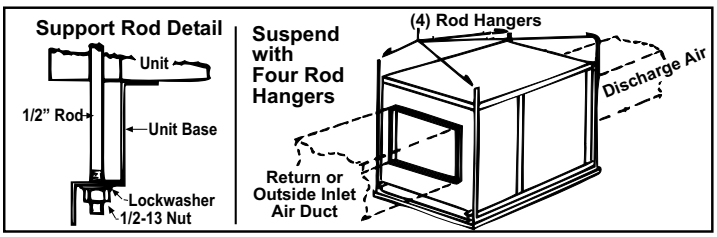
Weight - Before installing the blower cabinet, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight. Model RBL weighs 488 lbs (221 kg).

Depending on the building structure and its use, determine whether or not measures should be taken to reduce the effect of blower vibration and/or noise. Determining the need for and installing vibration isolation is the responsibility of the installer.

Suspending Indoor Cabinet

Blower cabinets may be suspended using field-furnished rod hangers. Insert 1/2" rods into the holes at the corners of the curb cap. Attach rods to the unit as illustrated in **FIGURE 2.** Attach rods to the building structure. Proper suspension of this cabinet is the responsibility of the installer.

FIGURE 2 - Blower Cabinet Suspended by Four Rod Hangers



Mounting Outdoor Cabinet

Model RBL blower cabinet is equipped with a load bearing curb cap which forms an integral part of the unit. This curb cap is welded at all joints and has a "skirt" which fits over a roof curb to provide a weatherproof installation. Use the lifting lugs provided.

The blower cabinet may be mounted on an optional roof curb, a field-supplied roof curb, or field supplied supports. If the system has a downturn plenum and/or a bottom return air opening, a roof curb is recommended to provide a weatherproof installation as well as more workable clearances for ductwork. The blower cabinet curb cap is not designed to be placed directly on the roof surface. When positioning rooftop equipment, it is recommended that the air inlet does not face into the prevailing wind.

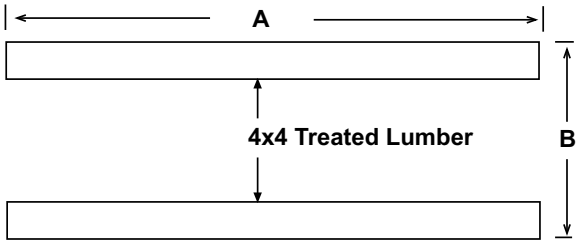
Mounting on Field Supplied Supports (without a roof curb) - Prior to installation, be sure that the method of support is in agreement with all local building codes and is suited to the climate. If considering this type of installation in snow areas, it is recommended that the 4x4 wooden rails underneath the unit be on cross-support structure at least 12" (305mm) higher than the roof surface. Whether the supports are being mounted directly on the roof or being placed "up" on additional structure, the horizontal length of the unit should be supported by two 4x4 treated wooden rails. Cut the rails to the appropriate length (Dimension "A") in **FIGURE 3**. (NOTE: Although dimensions are included for units with a downturn plenum cabinet, it is strongly recommended that a roof curb be used on an installation with a downturn plenum cabinet and/or a bottom return air duct.) Space the 4x4 wooden support rails (See "B" Dimension in **FIGURE 3**) so that the curb cap "skirt" will fit over the edge of the boards with the rail setting inside the horizontal length of the curb cap.

If the rails are being laid directly on the roof, position them as shown in **FIGURE 3**. Set the unit on the rails. **NOTE**: It is recommended that there be a minimum of 14" between the bottom of the inlet air hood (see Paragraph 5.1.2) and the mounting surface.

If the treated wooden rails are not placed directly on the roof surface, cross supports should be placed underneath the rails at the ends of the cabinet. The field-supplied, weather-resistant cross-support structure must be adequate for the weight of the unit and run the entire width of the cabinet supporting the 4x4 wooden rails.

FIGURE 3 - Support Rail Dimensions

Configuration	A	B
Standard Model RBL	59-1/16" (1500mm)	53-9/16" (1361mm)
Model RBL with Downturn Cabinet	82-1/16" (2084mm)	53-9/16" (1361mm)



Mounting on a Roof Curb - Whether using an optional roof curb available for the cabinet or a field-supplied curb, the curb must be square and level and a minimum height of 14" (356mm). The top surface of the roof curb must be caulked with 1/4" x 1-1/4" sealant tape or 1/4" beads of suitable sealant. The cabinet must be sealed to the curb to prevent water leakage into the curb area due to windblown rain and capillary action. Except for the curb assembly details, the information and requirements in this section apply to both an optional curb and a field-supplied curb. See **FIGURE 5** and curb installation instructions.

Bottom Duct Connections - Both the optional return air opening and the opening in the downturn plenum have duct flanges. Duct opening sizes and spacing in relation to an optional roof curb are shown in **FIGURE 4.**

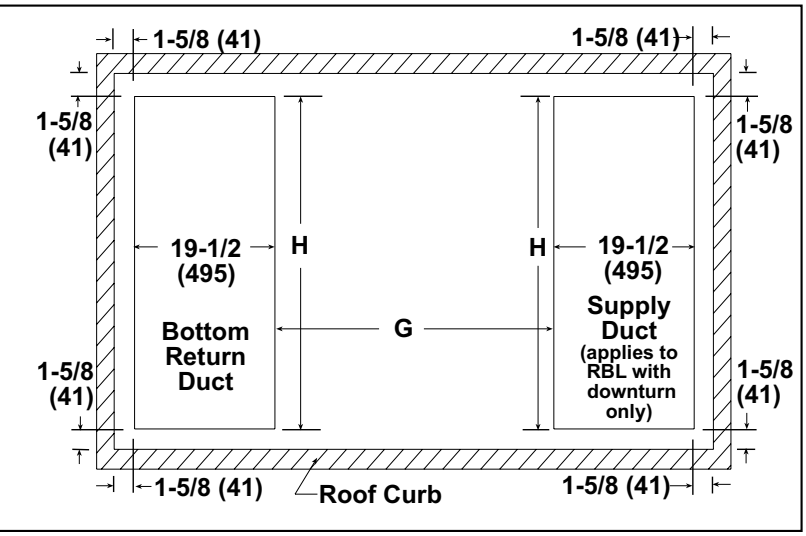
FIGURE 4 - Roof Curb and Optional Duct Opening Dimensions - inches (mm)

Return and Supply Duct Dimensions and Locations are in relation to Reznor Optional Roof Curbs.)

1-5/8" (41mm) is measurement from duct opening to **inside** edge of roof curb.

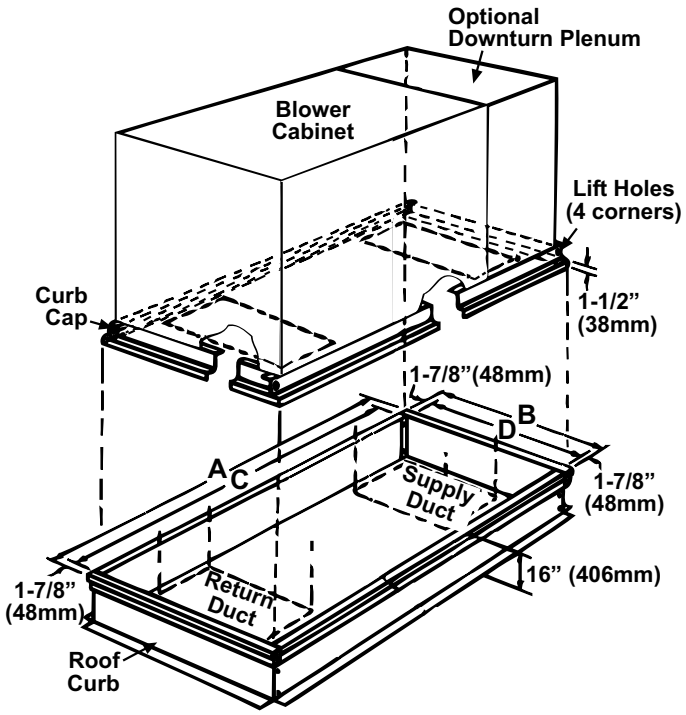
NOTE: Cut duct openings 1" (25mm) larger than the duct size for installation clearance.

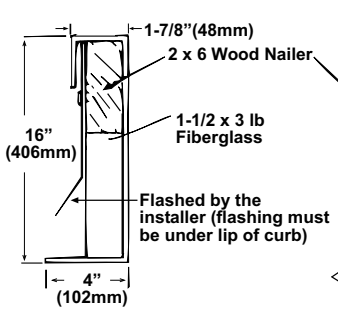
Dimensions	G	H
Standard RBL Cabinet	NA	47-5/8" (1210mm)
RBL w/Downturn Plenum	55-13/16" (1418mm)	47-5/8" (1210mm)



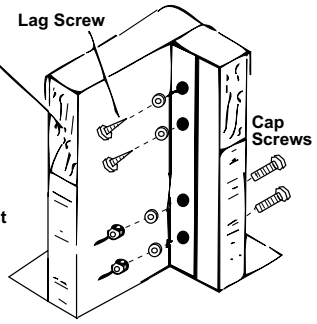
4.0 Suspending and Mounting (cont'd)

FIGURE 5 - Roof Curb Dimensions (inches/mm) and Installation

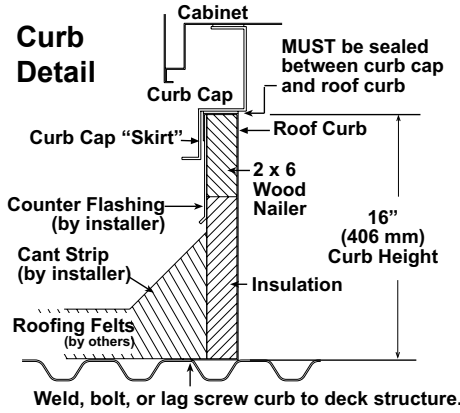




Curb Section



Curb Corner Detail



See FIGURE 5.	Model RBL without Optional Downturn Plenum - Roof Curb Option CJ1	Model RBL with Optional Downturn Plenum Cabinet (Option AQ5 or AQ8) - Roof Curb Option CJ2
A	59-1/16" (1500mm)	82-1/16" (2084mm)
B	53-9/16" (1361mm)	28-13/16" (732mm)
C*	55-5/16" (1405mm)	78-5/16" (1989mm)
D*	49-13/16" (1265mm)	49-13/16" (1265mm)

*** C and D are roof opening dimensions.**

Optional Roof Curb Installation Instructions (See FIGURE 8)

The curb is shipped unassembled. Field assembly and mounting on the roof are the responsibility of the installer. Hardware to assemble the corners is supplied, Before installing the roof curb, verify that the size is correct for the cabinet being installed.

1. Position the curb cross rails and curb side rails as shown in **FIGURE 5**. Fasten curbing pieces at all corners with bolts and lag screws as shown in the Corner Detail illustration.
2. Check the assembly for squareness. Adjust the roof opening so that the diagonal measurements are equal within a tolerance of ± 1/8" (3mm).
3. Level the roof curb. To ensure a good weathertight seal between the integral curb cap and the roof curb, the roof curb must be leveled in both directions with no twist end to end. Shim level as required and secure curb to roof deck before proceeding with flashing.
4. Install field-supplied flashing (See Curb Detail in **FIGURE 5**).
5. Before placing the unit on the curb, apply furnished 1/4" x 1-1/4" foam sealant tape to the top surface of the curb, making good butt joint at the corners. The cabinet must be sealed to the curb to prevent water leakage into the curb area due to blown rain and capillary action.

5.0 Mechanical

5.1 Unit Inlet Air

5.1.1 Filter Rack and Filters, Option AW7, AW9, or AW11

Filter racks and filters are optional equipment. Filters are 2" and may be either disposable, permanent aluminum, or pleated disposable.

Filter Pressure Drops (" w.c.)

RBL CFM	2" Disposable Filters (Option AW7)	2" Permanent Filters (Option AW9)	2" Pleated Filters (Option AW11)
5000	0.04	0.08	0.10
6000	0.06	0.12	0.14
7000	0.08	0.16	0.19
8000	0.10	0.21	0.25
9000	0.13	0.26	0.31
10000	N/A	0.33	0.39
11000	N/A	0.40	0.47
12000	N/A	0.48	0.56
13000	N/A	0.56	N/A
14000	N/A	0.65	N/A

Disposable Filter Range -- 0 to 400 FPM

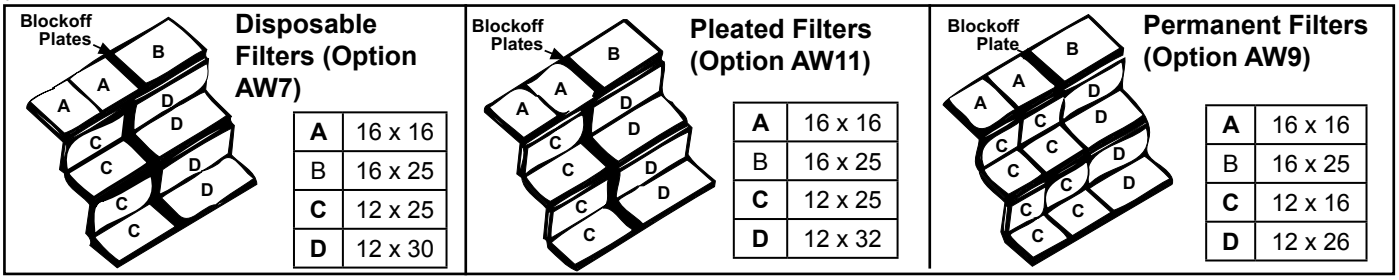
Pleated Filter Range -- 0 to 500 FPM

Permanent Aluminum Filter Range -- 0 to 600 FPM

Type of Filters		Average Efficiency	Average Arrestance
Disposable	2"	Less than 20%	80%
Permanent	2"	Less than 20%	64% to 67%
Pleated Disposable	2"	30% to 35%	90% to 93%

FIGURE 6 - Filter Arrangements

NOTE: If the unit was manufactured prior to 9/91; filter sizes and arrangements are different; refer to Parts Replacement Form P-RG/RP/RBL or contact your distributor.



5.1.2 Outside Air Hoods

NOTE: Either a manufacturer designed optional air inlet hood as shown in Paragraph 5.1.2 or an evaporative cooling module as shown in Paragraph 5.1.4 is required to ensure complete weather resistance.

100% Outside Air Hood, Option AS2 - Outside air hood (Option AS2) is a weatherized, screened hood designed to be field assembled and installed around the horizontal inlet air opening of the blower cabinet. The air hood includes a louver assembly designed to help eliminate moisture from the inlet air. Complete installation instructions are packaged with the air hood option.

CAUTION: It is recommended that the inlet to the outside air hood NOT be facing into the prevailing wind. Allow 14" minimum clearance from the bottom of the air hood to the mounting surface.

Installation Instructions - 100% Outside Air Hood (See FIGURE 7B)

To avoid possible damage, it is recommended that the outside air hood be installed after the cabinet has been placed on the roof. The air hood should be installed before the blower is operated. Do not install the hood while the blower is in operation. All screw ends except those across the bottom are inside the air hood.

1. **Top Panel** -- On the air inlet side of the blower cabinet, remove the factory-installed screws attaching the blower cabinet top. Slide the air hood top panel underneath the edge of the blower cabinet top. **The edge of the air hood top panel must be between the blower cabinet top and the end panel.** Reinsert all of the sheetmetal screws.
2. **Side Panels** -- Slide the air hood right side panel into the groove in the blower cabinet end panel. Be sure that the side panel is underneath and to the inside of the air hood top panel. Attach to the blower cabinet and the air hood top using the required number of sheetmetal screws. Repeat with the left side panel.
3. **Bottom Panel** -- Position the air hood bottom panel so that it is to the **inside** of the two side panels and **above** the factory-installed support angle. Attach to the side panels.

   If the bottom panel does not rest tightly against the support angle, follow these instructions to adjust the position of the support angle:

   a) Slightly loosen (do not remove the screws).

   b) Slide the support angle up so that it is against the bottom panel.

   c) Tighten the screws.

5.0 Mechanical (cont'd)

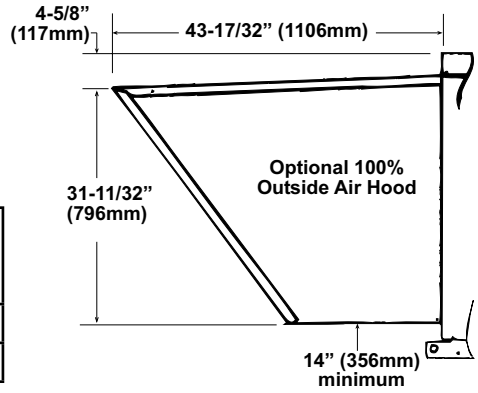
5.1 Unit Inlet Air (cont'd)

5.1.2 Outside Air Hoods (cont'd)

Attach the support angle to the air hood bottom panel. The bottom panel of the air hood and the support angle should be tight together; do not draw with the sheetmetal screws.

4. **Louver Assembly** -- With the intake screen toward the inside of the hood, position the pre-assembled vertical louver assembly in the inlet opening of the air hood. Using the remaining sheetmetal screws, attach the louver assembly to the air hood side panels using the holes provided.

FIGURE 7A - Dimensions of Optional Outside Air Hood



Width of Outside Air Hood
58-7/8"
1495mm

(NOTE: The width of the outside air hood is the same as the width of the blower cabinet.)

FIGURE 7B - Assembly Drawing of Option AS2 Outside Air hood

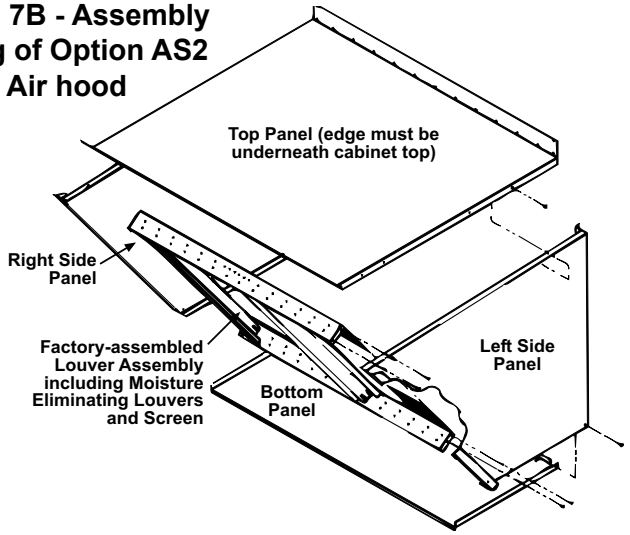
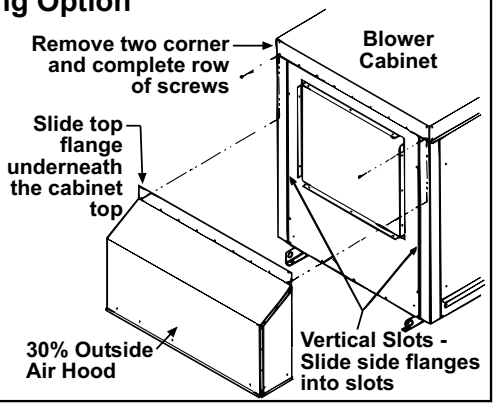


FIGURE 8 - Installation of Air Hood with 30% Outside Air Opening Option

Screened Inlet Air Hood for 30% Outside Air Opening, Part of Inlet Air Options AR6 and AR7) -The assembled outside air hood included in the air inlet options that have a 30% outside air opening (Option AR6 or AR7) is shipped separately for field installation.

Installation Instructions - 30% Outside Air Hood

1. On the inlet air side of the blower cabinet, remove the factory installed screws attaching the blower cabinet top.
2. Slide the air hood top flange underneath the lip of the blower cabinet top and the sides into the vertical slots. The air hood flange must be between the blower cabinet top and the cabinet end panel.
3. Reinsert all of the sheetmetal screws.



5.1.3 Optional Dampers and Damper Controls

FIGURE 9 - Location of Controls for 30% Outside Air Hood (FIGURE 8) and Damper Option AR6 or AR7

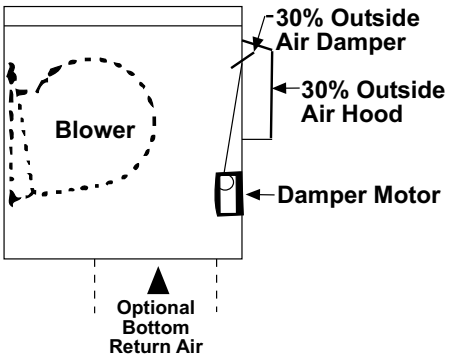
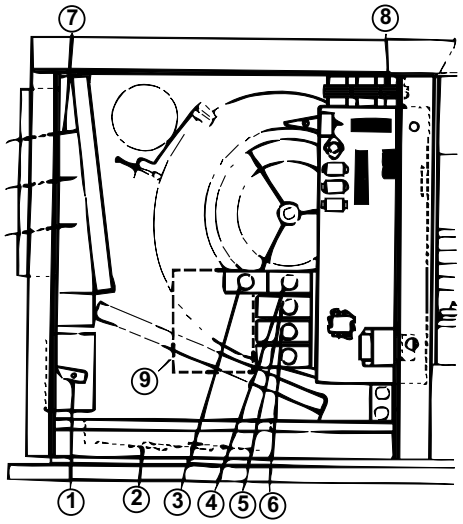


FIGURE 10 - Control Locations for 100% Outside Air and 100% Return Air Damper Options

1) Damper Motor
2) Return Air Damper
3) Potentiometer
4) Potentiometer
5) Mixed Air Controller
6) Warm-up Control
7) Outside Air Damper
8) Damper Motor Transformer

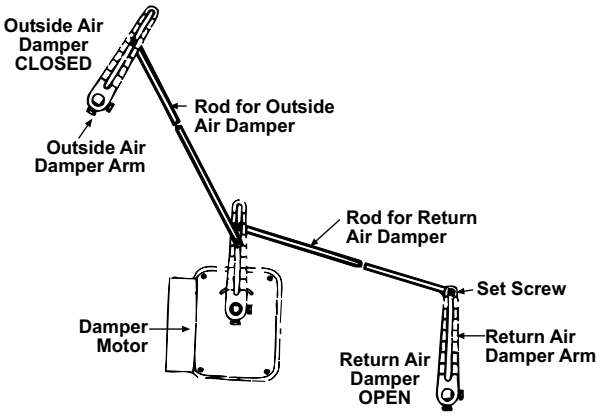


NOTE: The illustrations in **FIGURES 9 & 10** are intended to show location only of various air control accessories and do not represent suggested combinations of accessories.

FIGURE 11 - Example of Outside Air and Return Air Damper Linkage

Damper Linkage Instructions -- When units are equipped with dampers, the dampers are closed during shipment. When there are both return air and outside air dampers, the return damper linkage must be adjusted prior to use.

1. Loosen the set screw on the return air damper rod at the damper arm.
2. Manually open the return air dampers. While the dampers are opening, the damper rod and arm will automatically move to their correct positions.
3. Tighten the set screw.



Pressure Null Switch (Used to control Outside Air Dampers in Inlet Air Option AR23)

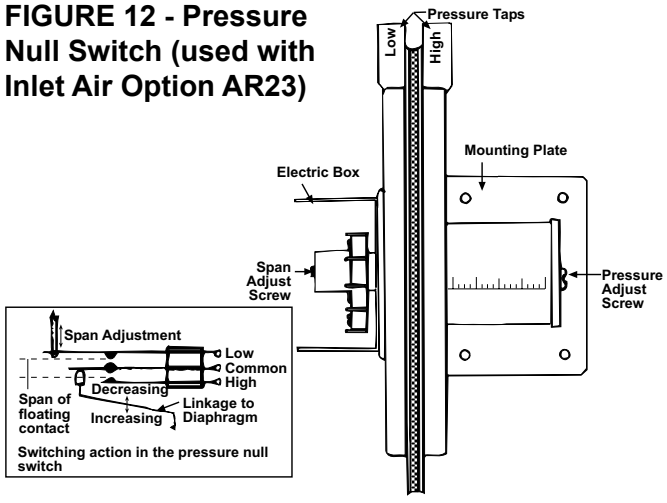
The pressure null switch used in Option AR23 is a Dwyer #1640-0 with a range of .01-.20" w.c. It is shipped separately for field installation. Refer to the following paragraphs and the manufacturer's installation instructions included with the switch.

Description and Application (See FIGURE 12) - The pressure null switch is a diaphragm operated differential pressure switch used in makeup air applications to control building pressure. It maintains a selected positive or negative pressure setpoint by changing the amount of outside air being introduced to the building through the modulating outside air dampers. As more pressure is required in the building, the pressure null switch activates the damper motor driving the outside air damper towards the full open position and the recirculated air damper towards the closed position. Conversely, as less pressure is required, the switch drives the dampers in the opposite direction.

Installation Instructions for Pressure Null Switch

1. Select an indoor location free from excessive vibration where oil or water will not drip onto the switch and where ambient temperature will be within a range of -30°F (dry air) to 110°F.
2. **Mount the switch with the diaphragm in a vertical plane.** The switch is position sensitive and is calibrated to operate properly when the diaphragm is vertical. Mount switch securely.
3. Connect the pressure taps on the top of the switch to sources of air pressure differential. Metal tubing with 1/4" O.D. is recommended, but any tubing system which will not unduly restrict the air flow may be used. To maintain a positive building pressure, vent the low pressure tap to the outdoors and allow the high pressure tap to monitor building pressure. To maintain a negative building pressure, reverse the functions of the high and low pressure taps. In either case, be sure that the outdoor vent is protected from the wind and screened from insects.
4. **Adjustment of the Switch** - The "HIGH" actuation point of the null switch is indicated on a calibrated scale secured to the transparent range screw enclosure. Building pressure is set by turning the adjustment screw. The "Low" actuation

FIGURE 12 - Pressure Null Switch (used with Inlet Air Option AR23)



IMPORTANT: To eliminate shipping damage to the switch contacts, the manufacturer reduced the span adjustment to zero before shipping. The span should be adjusted prior to using the switch. (If the switch has been installed, disconnect the vent tube so that the null switch is in a neutral position.) Remove the electrical box cover and while observing the contacts, turn the span adjustment screw slowly in a clockwise direction. Continue turning the adjustment screw until you are able to see gaps between the common and both the low and high contacts. A minimum gap provides the greatest sensitivity. The wider the gap the lower the sensitivity.

5.0 Mechanical (cont'd)

5.1 Unit Inlet Air (cont'd)

NOTE: Evaporative cooling module installation and maintenance information is in Form I-OPT-EC shipped with the evaporative cooling module. Follow the instructions to install, become familiar with the maintenance requirements, and keep Form I-OPT-EC for future reference.

5.1.3 Optional Dampers and Damper Controls (cont'd)

point is set by adjusting the span of the null by turning the span adjustment screw. The span range is .01 to .03" w.c.

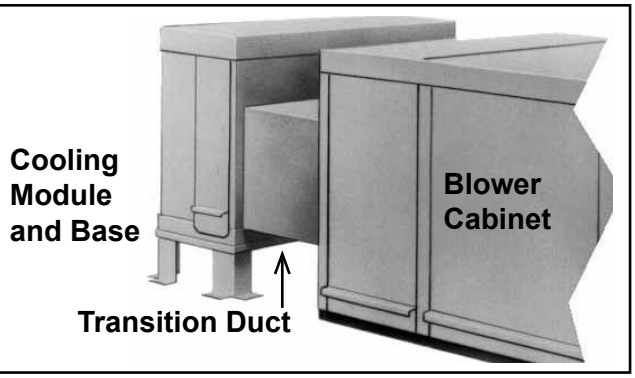
5. Refer to the wiring diagram to make electrical connections.

5.1.4 Optional Evaporative Cooling Module

Evaporative cooling provides comfort cooling at low initial equipment and installation costs and low operating and maintenance costs. Direct evaporative cooling works solely on the principle that water in direct contact with a moving airstream will eventually evaporate if the droplets have long enough exposure. This evaporative cooling module uses wetted rigid cellulose or rigid glass fiber media to retain water in order to allow time for evaporation.

The evaporative cooling module for a Model RBL cabinet is factory assembled but is not attached to the blower cabinet at the factory. It is shipped separately for field attachment to the system blower cabinet. The base support for the cooling module and the transitional ductwork between the cooling module and the blower cabinet inlet are shipped separately and must be field assembled and installed. Installation instructions including water and electrical connections are included with the evaporative cooling module package.

FIGURE 13 - Optional Evaporative Cooling Module for Model RBL Blower Cabinet is factory-assembled for field attachment to the blower cabinet (duct and base are shipped knocked down for field assembly)



Included in the cooling module installation booklet is a preparation checklist. All items in that checklist should be consulted prior to beginning installation of the optional evaporative cooling module. Four of those items are listed below.

☐Make certain the roof or platform is capable of handling the additional load of a full cooling module reservoir.
Module with 12" rigid cellulose media (Option AS4) weighs 431 lbs.
Module with 12" rigid glass fiber media (Option AS6) weighs 514 lbs.

☐Make certain the surface is level and free of debris where cooling module will be mounted.

☐Do not mount directly on soft tar roofs where the legs could sink and tilt the cooler. Provide a weather-resistant, solid wood or metal base under cooling module support legs.

☐Make certain that there will be adequate clearance between the bottom of the reservoir and the roof (or platform) to allow for drain and overflow pipe connections.

5.2 Duct Connections

NOTES: For systems with a downturn cabinet, the type of duct installation to be used depends in part on the type of construction of the roof (whether wood joist, steel bar joist, steel truss, precast concrete) and the ceiling (whether hung, flush, etc.).

For cabinets without a downturn, a minimum horizontal duct run of 24 inches (610mm) is recommended before turns or branches are made in the duct system, to reduce losses at the furnace outlet.

Make certain return air ductwork and grills have a free area equal to the return duct size connection. See Paragraph 3.0 for duct opening dimensions.

Suggestions for Installing Ducts

A. The type of duct installation to be used depends in part on the type of construction of the roof (whether wood joist, steel bar joist, steel truss, precast concrete) and the ceiling (whether hung, flush, etc.). Duct connections should be mechanical.

B. Rectangular duct should be constructed of not lighter than No. 26 U.S. gauge galvanized iron or No. 24 B & S gauge aluminum.

C. All duct sections 24 inches (610mm) or wider, and over 48 inches (1219mm) in length, should be cross broken on top and bottom and should have standing seams or angle-iron braces. Joints should be S and drive strip, or locked.

CAUTION: An external duct system static pressure not within the limits shown on the rating plate, or improper motor pulley or belt adjustment, may overload the motor.

D. No warm air duct should come in contact with masonry walls. Insulate around all air ducts through masonry walls with not less than 1/2 inch (13mm) of insulation.

E. Insulate all exposed warm air ducts passing through an unheated space with at least 1/2 inch (13mm) thickness of insulation.

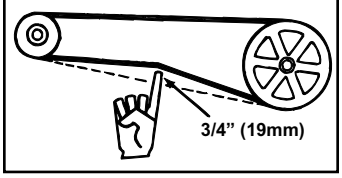
F. For optional bottom openings, insert ducts from below roof deck through roof opening into cabinet. Form 1" (25mm) flanges, fold over, and fasten with sheetmetal screws. Gain access by removing side panels from blower and downturn plenum sections.

G. Duct Supports -- Suspend all ducts securely from adjacent buildings members. Do not support ducts from unit duct connections.

H. Duct Sizing -- Proper sizing of the warm air ductwork is necessary to ensure a satisfactory heating installation. The recognized authority for such information is the Air Conditioning Contractors Association, 2800 Shirlington Road, Suite 300, Arlington, VA 20036 (www.acca.org). A manual covering duct sizing in detail may be purchased directly from them.

5.3 Blowers, Belts and Drives

FIGURE 14 - Check Belt Tension



Check belt tension. Proper belt tension is important to the long life of the belt and motor. A loose belt will cause wear and slippage. Too much tension will cause excessive motor and blower bearing wear. Adjust the belt tension by turning the adjusting screw on the motor base until the belt can be depressed 3/4" (19mm). (See **FIGURE 14**.) After correct tension is achieved, re-tighten the locknut on the adjustment screw. Be sure that the belt is aligned in the pulleys.

Adjusting Blower Speed - The system is set at the factory for the RPM required to meet the CFM and external static pressure specified on the order. If estimated external static pressure is incorrect, or changes were made to the duct system, the blower RPM may have to be adjusted.

Motors are equipped with adjustable pitch pulleys which permit adjustment of blower speed.

To make adjustments to units with less than a 5HP motor, follow these instructions.

1. Loosen belt tension and remove the belt.
2. Loosen the set screw on the side of the pulley away from the motor.
3. **To increase the blower speed,** turn the adjustable half of the pulley inward. **To decrease the blower speed,** turn the adjustable half of the pulley outward. One turn of the pulley will change the speed 8-10%.
4. Tighten the set screw on the flat portion of the pulley shaft.
5. Replace the belt and adjust the belt tension. Adjust tension by turning the adjusting screw on the motor base until the belt can be depressed 3/4". (See **FIGURE 14**.) Re-tighten the lock nut on the adjusting screw. Be sure that the belts are aligned in the pulley grooves properly and are not angled from pulley to pulley.
6. Check the motor amps with an amp meter. The maximum motor amp rating on the motor nameplate must not be exceeded.

For units with 5 HP and larger motor, follow these instructions for adjusting RPM:

1. Slack off all belt tension by moving motor towards driven shaft until belts are free of grooves. For easiest adjustment, remove the belts from the grooves.
2. On the outer locking ring, locate the two locking screws that are directly across from each other. Loosen these two screws, but do not remove them. Do not loosen any other screws.
3. Adjust sheave to desired pitch diameter by turning the outer locking ring. One complete turn of the outer locking ring will result in .233" change in pitch diameter. To decrease blower speed, increase diameter; to increase blower speed, decrease diameter.

CAUTION: Sheaves should not be adjusted in either direction to the point where movable and stationary flanges are in contact.

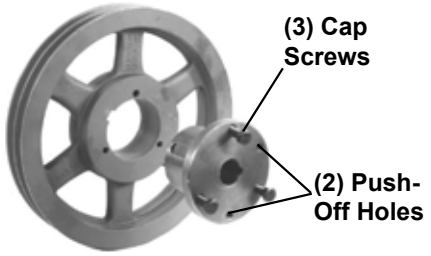
4. After completing adjustment, tighten both locking screws in the outer locking ring (loosened in Step 2).
5. Replace belts and move motor away from the driven shaft to apply sufficient belt tension to prevent slippage. (See **FIGURE 14**.) Proper belt tension is important to the long life of the belt and motor. A loose belt will cause wear and slippage. Too much tension will cause excessive motor and blower bearing wear. Be sure that the belts are aligned in the pulley grooves and are not angled from pulley to pulley.
6. Check motor amps with an amp meter. The maximum motor amp rating on the nameplate must not be exceeded.

5.0 Mechanical (cont'd)
5.3 Blowers, Belts, and Drives (cont'd)

Blower Pulley - Some blower pulleys require the use of a split taper bushing in the blower pulley. These split taper bushings must be loosened in order to remove the pulley. Follow these instructions to loosen the bushing:

a) Notice that there are three cap screws in the bushing and two holes without screws, called push-off holes.
b) Remove the three cap screws.
c) Put two of the cap screws into the two push-off holes. Tighten these two screws evenly until the pulley is loosened.
d) Pulley may now be removed from the shaft.

FIGURE 15 - Split Taper Bushing



CAUTION: If the blower is unused for more than three months, bearings with a grease fitting should be purged with new grease prior to start-up.

Blower Bearings - The blower bearings on systems with less than a 10 HP motor (standard blower) are permanently lubricated cartridge ball bearings and do not require greasing.

The blower bearings on systems equipped with 10-20 HP motor are pillow block ball bearings and are equipped with a grease fitting. (**NOTE:** Units manufactured prior to 1/91 with a 10 HP motor may have permanently lubricated ball bearings.) These bearings should be lubricated twice a year with a high temperature, moisture-resistant grease. (Type NLGI-1 or -2 standard grease is recommended.) Be sure to clean the grease fitting before adding grease. Add grease with a handgun until a slight bead of grease forms at the seal. Be careful not to unseat the seal by overlubricating. NOTE: If unusual environmental conditions exist (temperatures below 32°F or above 200°F; moisture; or contaminants), more frequent lubrication is required.

Blower Rotation - Each blower housing is marked for proper rotation. Rotation may be changed on single-phase motors by re-wiring in the motor terminal box. Three-phase motors may be reversed by interchanging two wires on the 3-phase supply connections.

Motors - Use an amp meter to check motor amps. The chart below lists full load amps for various HP and voltages. Amps may be adjusted downward by reducing blower RPM or by increasing duct system static pressure.

This chart should not be interpreted as the exact amps. See the motor rating plate for specific amps.

Full Load Amps - Blower Motors (Open)						
(Single Speed- Average Values)						
HP	208/1	230/1	208/3	230/3	460/3	575/3
1	7.5	6.5	3.7	3.2	1.6	1.1
1-1/2	8.3	7.5	5.6	5.0	2.7	1.6
2	10.0	10.2	7.0	6.6	3.5	2.1
3	14.0	12.4	9.0	8.6	4.3	3.6
5	28.0	26.0	13.4	13.2	6.6	5.4
7-1/2	35.0	32.0	22.5	19.4	9.7	7.8
10	42.0	38.0	30.0	26.0	13.0	10.4
15			43.1	39.0	19.5	16.0
20			58.7	53.0	26.5	21.2

6.0 Electrical Supply and Connections

CAUTION: If any of the original wire as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 105°C.

All electrical wiring and connections, including electrical grounding MUST be made in accordance with the National Electric Code ANSI/NFPA No. 70 (latest edition) or, in Canada, the Canadian Electrical Code, Part I-C.S.A. Standard C22.1. In addition, the installer should be aware of any local ordinances or gas company requirements that might apply.

Check the plate on the cabinet for the supply voltage and current requirements. A separate line voltage supply with fused disconnect switch should be run directly from the main electrical panel, making connection to leads in the junction box. All external wiring must be within approved conduit and have a minimum temperature rise of 60°C. Conduit from the disconnect switch must be run so as not to interfere with the service panels of the cabinet. The unit must be electrically grounded in accordance with the national Electrical Code, ANSI/NFPA No. 70 (latest edition or CSA Standard C22.1 when installed, if an external electrical source is used.

If the installation includes field-installed options that require electrical connections, consult the instruction sheet and wiring diagram supplied in the option package. Optional shipped-separate controls could include system switches, potentiometer, a pressure null switch, or a combination of these controls. Install these according to the manufacturer's instructions packed with the cabinet.

Check the wiring diagram and literature supplied with the cabinet for operation of factory-installed optional controls. See **FIGURE 16** for location of electrical connections and available standard and optional controls.

Field-supplied Wiring Size from Disconnect to Electrical Box for Connection to Motor Contactor or Starter

Voltage /Phase	Motor HP	Wire Gauge	BX Cable
208/1 or 230/1	1 - 2	14	3/8"
	3	10	1/2"
	5	8	1/2"
	7.5	6	1"
	10	4	1"
208/3 or 230/3	1 - 4	14	3/8"
	5	12	3/8"
	7.5	10	1/2"
	10	8	1/2"
	15	6	1"
	20	4	1"
460/3	1 - 7-1/2	14	3/8"
	10	12	3/8"
	15	10	1/2"
	20	8	1/2"
575/3	1 - 7-1/2	14	3/8"
	10 - 20	10	1/2"

Disconnect Switch - A disconnect switch is a required part of this installation. Switches are available, as options or parts, or may be purchased locally. When ordered as an optional component, the disconnect switch is shipped separately.

The disconnect switch may be fusible or non-fusible. When installing, be careful that the conduit and switch housing are clear of cabinet panels. Allow at least four feet (1.2M) of service room between the switch and removable panels.

Convenience Outlet Option - When a convenience outlet (Option BC) is included, a separate power supply must be provided to the receptacle. This circuit MUST BE on a ground fault breaker to meet requirements. All wiring to the convenience outlet must meet National Electrical Code ANSI/NFPA No. 70 (latest edition) and any local or utility codes that apply.

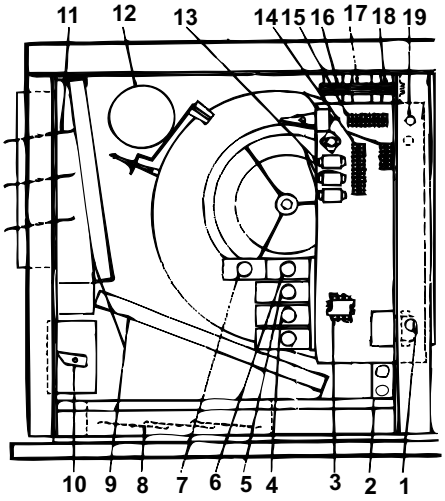
Control Wiring

Field Control Wiring - Length and Gauge		
Total Wire Length	Distance from Unit to Control	Minimum Recommended Wire Gauge
150 ft (46M)	75 ft (23M)	#18 gauge
250 ft (76M)	125 ft (38M)	#16 gauge
350 ft (107M)	175 ft (53M)	#14 gauge

FIGURE 16 - Location of Electrical Connections and Standard and Optional Controls

(Illustration is not an RBL cabinet but controls are in same location in a Model RBL.)

1) Line Voltage Connection (field)
2) Optional Convenience Outlet
3) Blower Motor Contactor or Starter
4) Optional Outside Air or Return Air Controller
5) Optional Mixed Air Controller
6) Optional Potentiometer
7) Optional Potentiometer
8) Optional Return Air Dampers
9) Optional Filters
10) Optional Two-Position or Modulating Damper Motor
11) Optional Outside Air Dampers
12) Blower Motor (Drive on opposite Side) - Available in Open, TEFC, Energy Efficient or Two-Speed
13) Optional Control Relays (as required - 8 maximum)
14) Low Voltage Terminal Strip
15) Line Voltage Terminal Strip
16) Control Transformer
17) Control Transformer (as required)
18) Optional Damper Motor Transformer
19) Low Voltage Connection (field)



7.0 Commissioning and Start-Up

Be certain electrical supply matches voltage rating on unit (see rating plate).

- ☐ Check all field wiring against wiring diagram. Be sure wire gauges are as required for the electrical load. This information appears on the wiring diagram.
- ☐ Be certain that electrical entries are sealed against the weather.
- ☐ See that fuses or circuit breakers are in place and sized correctly.
- ☐ Check blower pulley and motor pulley to be sure they are secure to shafts. Check belt tension; see Paragraph 5.3.
- ☐ If the unit is equipped with outside air and return air dampers, adjust the damper linkage. See Paragraph 5.1.3.
- ☐ Close all panels tightly.
- ☐ Return this book to the "Owner's Envelope" for future reference.

INDEX

INSTALLATION RECORD - to be completed by the installer:

Installer:

Name _____

Company _____

Address _____

_____

_____

Phone _____

Distributor (company from which the unit was purchased):

Company _____

Contact _____

Address _____

_____

_____

Phone _____

Model _____ **Serial No.**_____**Date of Installation** _____

SPECIFIC INSTALLATION NOTES: (i.e. Location, Amps, Voltage, Adjustments, Warranty, etc.)

_____

_____

BUILDING OWNER OR MAINTENANCE PERSONNEL:

For service or repair

- Contact the installer listed above.
- If you need additional assistance, contact the Reznor Distributor listed above.
- For more information, contact your Reznor Representative by calling 800-695-1901.

Reznor, LLC
150 McKinley Avenue
Mercer, PA 16137

www.ReznorHVAC.com: 1-800-695-1901

0514 Form I-RBL (Version A.1)