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Dallas, Texas USA

AIR CLEANERS/ FILTERS

504,638M
09/2003

HEALTHY CLIMATE® BOX MEDIA AIR CLEANER

INSTALLATION INSTRUCTIONS FOR LENNOX MODELS BMAC-12C, BMAC-14CE*, BMAC-20C, BMAC-20CE*

*CE Models are upgradeable to a Healthy Climate® Electronic Air Cleaner

Introduction

The Lennox Box Media Air Cleaner (BMAC) is shipped with either a 3" or 5" MERV 8 media air filter depending on the model. The 5" filter must be replaced every year and the 3" filter must be replaced every 6 months to ensure maximum efficiency of both the air filter and air handler. Applications with higher dust levels may require more frequent replacement. Upgrade kits are available for BMAC-14CE and BMAC-20CE models to replace media filters with electronic air cleaner components.

Please read instructions before installing and using the Healthy Climate® Box Media Air Cleaner.

⚠ CAUTION

Risk of equipment damage and/or high energy usage.
Dirty air filters will cause high energy usage and/or damage to the ventilation system.
Replace filters at recommended intervals.

⚠ WARNING

Risk of property damage, injury or death.
Installation, adjustment, alteration, service and maintenance must be performed by a qualified service technician.

Required Tools

- Tin Snip
- Straight Screwdriver
- Rule or Tape Measure
- Drill

Box Media Air Cleaner Models

BMAC-12C (X0577) is designed for use with air handlers which deliver 1000 to 1600 cfm. BMAC-12C is equipped with a 3" filter media (X0581) and cannot be upgraded.


BMAC-14CE (X0578) is designed for use with air handlers which deliver 1000 to 1600 cfm. BMAC14CE is equipped with a 5" filter media (X0584) and may be upgraded to Healthy Climate electronic air cleaner using kit X0598.

BMAC-20C (X0589) is designed for use with air handlers which deliver 1600 to 2200 cfm. BMAC-20C is equipped with a 5" filter media (X0586) and cannot be upgraded. It also has rails that can be removed to accommodate a 5" filter media (X1152).

BMAC-20CE (X0580) is designed for use with air handlers which deliver 1600 to 2200 cfm. BMAC-20CE is equipped with a 5" filter media (X0587) and may be upgraded to Healthy Climate electronic air cleaner using kit X0599.

Rules for Safe Installation and Operation

1. Read this Owners Manual and the Rules for Safe Operation carefully. Failure to follow these rules and instructions could cause a malfunction of filter or unsatisfactory service.
2. Follow a regular service and maintenance schedule for efficient operation.
3. Maximum static weight for cabinet: 400 lbs.

	⚠ WARNING
	Electrical shock hazard.
	Can cause injury or death. Disconnect all remote electrical power supplies before servicing.

⚠ WARNING
Risk of carbon monoxide poisoning.
Can cause injury or death.
Do not operate without access panel in place. Operation of this equipment without the access panel in place may cause gas fumes from the heating system to be drawn into occupied spaces.

⚠ CAUTION
Sharp edges hazard.
Equipment sharp edges can cause injuries.
Use protective gloves when grasping equipment edges.

Shipping and Packing List

Package 1 of 1 contains:

- 1 - Box Media Cabinet
- 1 - Box Media Filter
- 1 - Cabinet Door
- 1 - Fastener Screw
- 1 - Installation Instructions
- 1 - IAQ Guide and Warranty

Lennox Industries, Inc.
Dallas, Texas
1-800-9-LENNOX
www.lennox.com

Air Filter Operation

Unfiltered air flows through the return air ducts and into the BMAC cabinet. As the air flows across the MERV 8 filter, it captures dust mites, pollen, mold spores, pet dander and other contaminants that are 0.3 microns or larger.

The filtered and conditioned air is distributed throughout the living space through the supply air ducts.

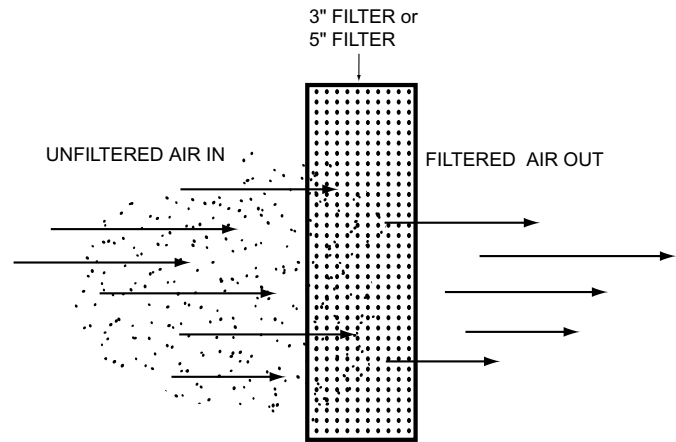


Figure 1

Box Media Air Cleaner Construction

The BMAC box media air cleaner is easy to install and maintain. The basic components of the air cleaner are detailed below and are shown in figure 2.

NOTE: The BMAC-20C unit has two rails that are clipped inside the cabinet (see Fig 2A). These rails can be removed to allow the cabinet to accommodate a 5" filter media (X1152). Use a screwdriver to pop out the clips to remove the rails. The 5" filter media will slide into the cabinet.

The air filter cabinet is installed in the existing return air duct system and houses either the supplied filter media on "C" models or the upgrade components (electronic air cleaner cells) on the "CE" models.

NOTE - An upgrade kit is available for use with CE models. (CE models do not have removable rails.) Electronic air cleaner cells are provided in the kit to replace the existing MERV 8 media filter.

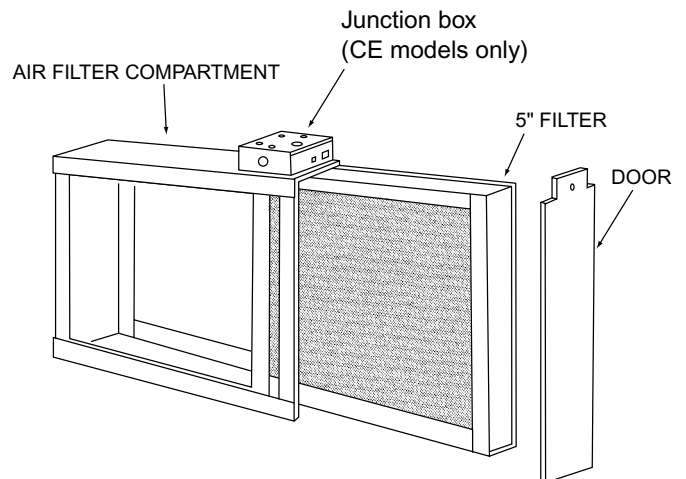


Figure 2

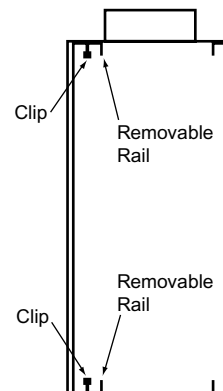


Figure 2A

Box media air filter location

LOCATING THE AIR CLEANER

Install the air cleaner in the return air duct (air entering side) of the furnace or air handler as shown in figure 3.

Install the air cleaner in such a way that the face of the filter is at a right angle to the air stream. Do not install the air cleaner in the discharge or supply air duct system.

Allow 25" clearance in front of the air cleaner to accommodate removal of media filters or air cleaner cells. Refer to figure 4 for dimensions.

If air handler return air, or air entering, opening is not large enough to accommodate air filter, install a field fabricated sheet metal transition. Transition reduction should be no more than 4 inches per linear foot, creating an angle of approximately 20 degrees. Refer to figure 4.

SPECIAL INSTALLATION NOTES:

Atomizing spray-type humidifier (if used) must be installed downstream of the air cleaner.

UV germicidal light (if used) must be installed a minimum of 6 ft. from the air cleaner when the two are installed in direct line of sight to one another. If there is a 90 degree bend or turn in the air duct between the air cleaner and UV light, a 3 ft. installation clearance is required between the two.

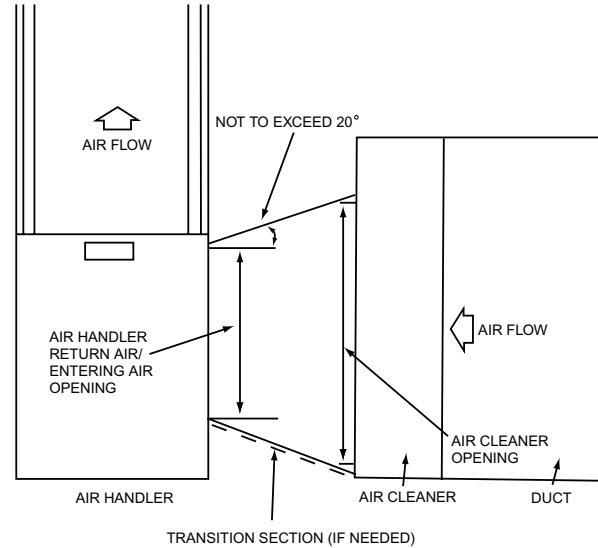


Figure 3

Dimension/Specifications

Filter Media Dimensions Nominal in Inches (Millimeters)

Model No.	Filter Size	Catalog No.
BMAC-12C	16 x 25 x 3 (406.4 x 635 x 76.2)	X0581
BMAC-14CE	16 x 26 x 5 (406.4 x 660.4 x 127)	X0584
BMAC-20C	20 x 25 x 5 (508 x 635 x 127)	X0586 X1152
BMAC-20CE	20 x 26 x 5 (508 x 660.4 x 127)	X0587

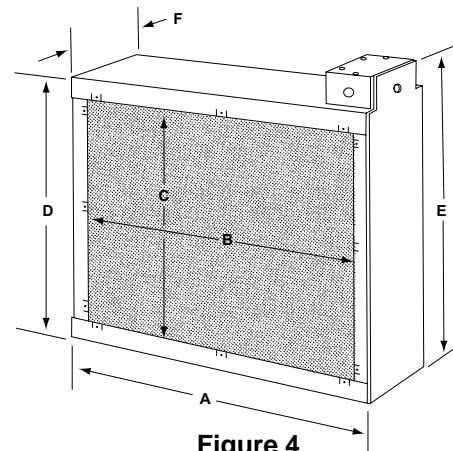


Figure 4

Dimensions in Inches (Millimeters)

Model No.	A	B	C	D	E	F
BMAC-12C	24-5/8 (625.5)	21-29/32 (556.4)	13-1/2 (342.9)	16-15/32 (418.3)	17-13/32 (442.1)	4-15/16 (125.4)
BMAC-14CE	26-3/8 (669.9)	23-5/8 (600.1)	13-9/16 (344.5)	16-15/32 (418.3)	19-15/32 (494.5)	6-15/16 (176.2)
BMAC-20C	24-5/16 (617.5)	22-5/16 (566.7)	17-3/16 (436.6)	20-3/16 (512.8)	21-5/32 (537.4)	6-15/16 (176.2)
BMAC-20CE	26-11/32 (669.1)	23-5/8 (600.1)	17-3/4 (450.9)	20-21/32 (524.7)	23-21/32 (600.9)	6-15/16 (176.2)

Specifications subject to change without notice.

Typical Applications

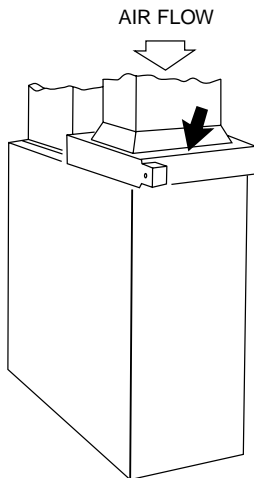


Figure 5

BASEMENT AIR HANDLER (LOWBOY) (Figure 5)

Air cleaner is mounted horizontally in return plenum, just above air handler.

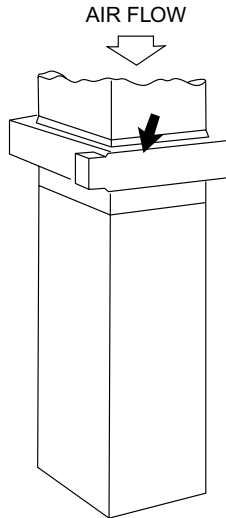


Figure 6

DOWNFLOW AIR HANDLER (Figure 6)

Air cleaner is mounted horizontally in return duct or plenum, just above air handler.

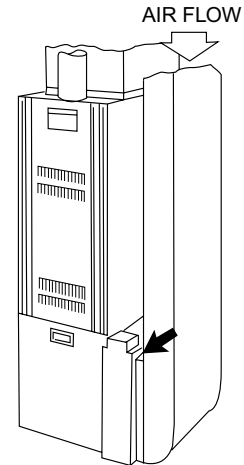
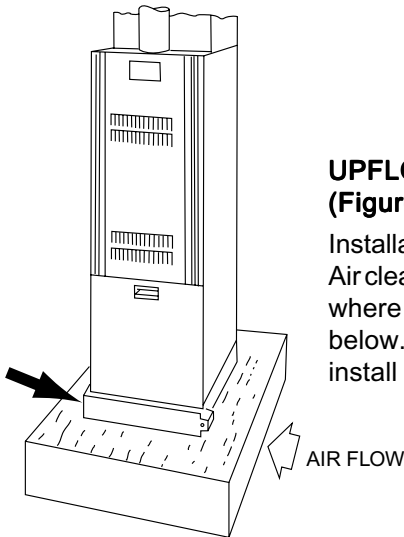


Figure 7

UPFLOW AIR HANDLER (Figure 7)

Side installation. Air cleaner is mounted vertically, where return air enters side inlet of air handler.



UPFLOW AIR HANDLER (Figure 8)

Installation beneath air handler. Air cleaner mounts horizontally, where return air enters from below. Raise air handler and install beneath base.

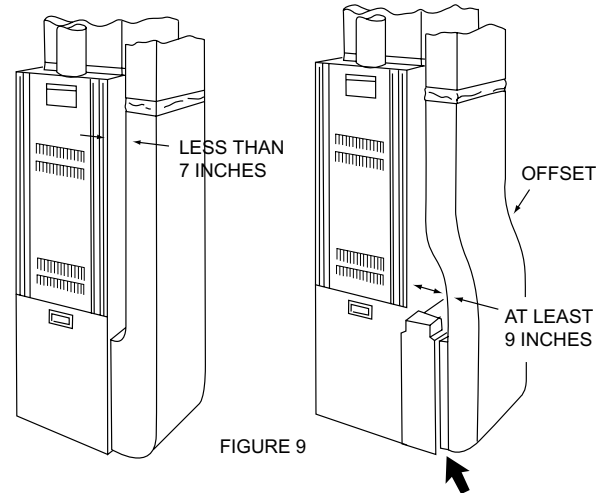


FIGURE 9

OFFSET INSTALLATION (Figure 9)

Typical use of duct offset to match air cleaner opening. If duct connection to air handler allows less than nine inches for mounting the air cleaner, shorten the lateral trunk, or attach an offset fitting to the elbow.

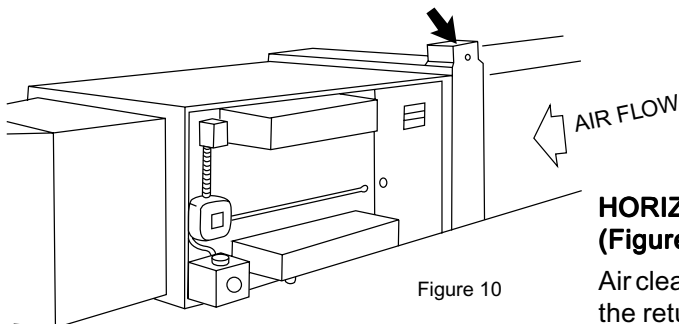


Figure 10

HORIZONTAL AIR HANDLER (Figure 10)

Air cleaner is mounted vertically in the return duct near air handler.

Installation

▲WARNING

Risk of property damage, injury or death.

Installation, adjustment, alteration, service and maintenance must be performed by a qualified service technician.

REMOVE OLD FILTER AND DISCARD (Figure 11)

NOTE: This filter may be mounted in the air handler cabinet.

CLEAN BLOWER COMPARTMENT

NOTE: The air filter cannot remove dirt from blower and ducts.

INSTALLATION

The following is a typical installation of the air cleaner on an upflow air handler (Figure 7).

1. Place the air cleaner cabinet on the floor. Stand it upright with the door facing you (Figure 2). If a horizontal installation is being planned, lay the cabinet on its side, this will help you to visualize the relative location of all parts.
2. Unscrew the knob, remove the door (by grasping top and pulling door away from cabinet) and set it aside. Remove filter. Set in a safe location until the cabinet is installed.
3. Set the cabinet next to the air handler (if possible) to match the opening in the compartment.

If the air handler opening cannot be enlarged, a transition fitting should be used. (Figure 3).

The cabinet can be attached directly (Figure 12), or a starting collar can first be fitted to the furnace inlet. A butt or slip joint can be used.

Securely attach the cabinet to air handler inlet, using at least two of the mounting holes on each side of the cabinet.

4. Using butt joint, attach duct (normally an elbow) to the upstream side of air filter cabinet. (Note the use of the sheet metal turning vanes inside the elbow to improve air distribution.) (Figure 13)

NOTE: An optional method of attaching duct to the air cleaner cabinet is to modify the cabinet (Figure 14) by bending the tabs outward at a 90° angle and attaching duct to tabs.

High Humidity Environments: Wrapping cabinet with 2" foil faced insulation (foil on the outside) around the case (excluding the insulated door) will prevent condensation on the sides of the unit.

Transition Fittings

If the air duct does not fit the cabinet opening, a transition fitting should be used. Gradual transitions are preferred for greatest efficiency. Not more than four inches per linear foot (approximately 20° angle) should be allowed (Figure 3).

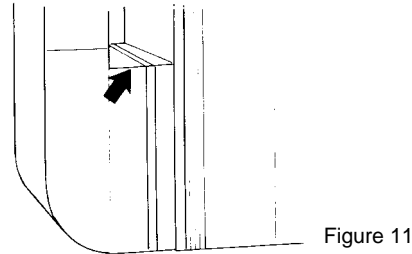


Figure 11

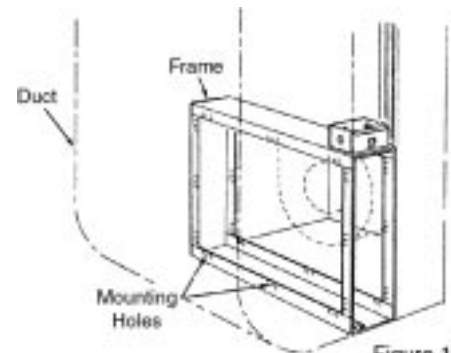


Figure 12

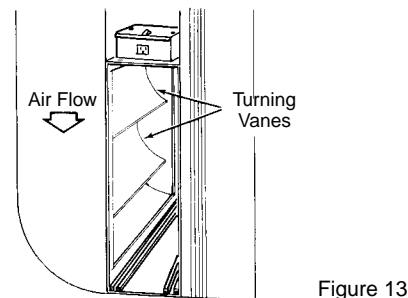
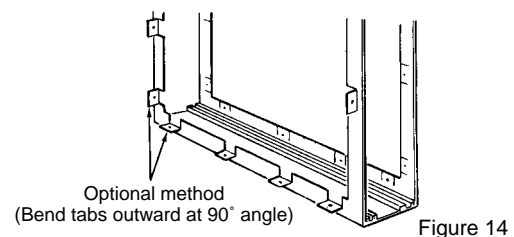


Figure 13



5. Connect the vertical duct section to the elbow. Wedge a wood block between floor and elbow for support (Figure 15).
6. Seal all joints in the return air system downstream from the air filter with duct tape to prevent dust from entering the air stream. Tape is usually applied on the outside of ducts, but may also be applied on the inside, or both.
7. With the air filter compartment installed, re-install 3" or 5" filter and door. (Figure 2)

NOTE: Please remove the plastic bag from the filter media prior to installing the filter media into the air cleaner cabinet. Proper disposal procedure of plastic materials should be followed.

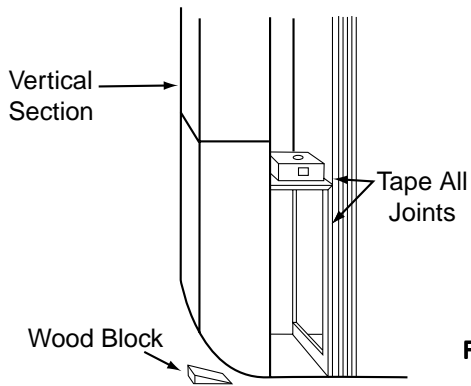


Figure 15

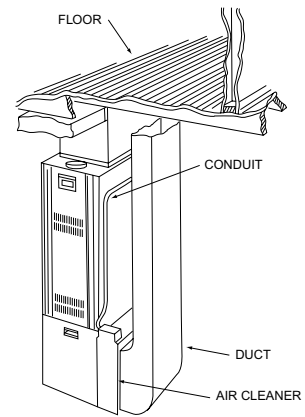


Figure 16

CAUTION

Risk of equipment damage and/or high energy usage.
Dirty air filters will cause high energy usage and/or damage to the ventilation system.
Replace filters at recommended intervals.

For maximum efficiency, your air filter should be inspected once a month and changed if dirt load is heavy. The 3" filter should be changed every 6 months and the 5" filter should be changed every 12 months. More frequent changes may be required in high dust environments.

When changing is required, the following procedure should be used:

1. Remove door from air filter cabinet by unscrewing the knob.

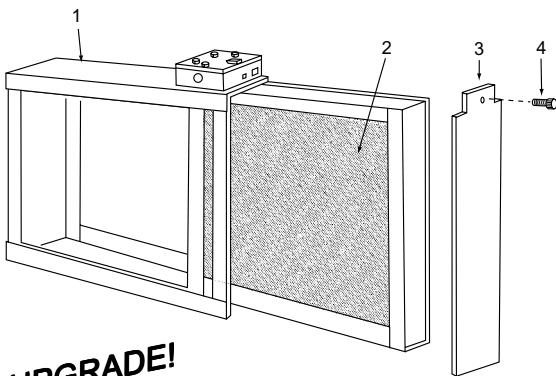
2. Remove 3" or 5" filter and throw away.
3. Replace 3" or 5" filter by sliding it into the cabinet. (Note direction of air flow.)
NOTE: Please remove the plastic bag from the filter media prior to installing the filter media into the air cleaner cabinet. Proper disposal procedure of plastic materials should be followed.
4. Re-attach door.

WARNING

Risk of carbon monoxide poisoning.
Can cause injury or death.

Do not operate without access panel in place. Operation of this equipment without the access panel in place may cause gas fumes from the heating system to be drawn into occupied spaces.

Repair Parts and Accessories



UPGRADE!



ELECTRONIC AIR CLEANER KIT

Models BMAC-14CE and BMAC-20CE can be upgraded to a High Efficiency Electronic Air Cleaner. Call your local Lennox dealer for details.

PARTS LIST FOR BOX MEDIA AIR CLEANER

When ordering repair parts, always give the following information as shown in this list.

1. The PART NUMBER
2. The PART DESCRIPTION
3. The MODEL NUMBER of the Box Media Air Cleaner

Always order by "PART NUMBER" . . . Not by "ITEM NUMBER"

Description	BMAC-12C	BMAC-14CE	BMAC-20C	BMAC-20CE
Air Cleaner	X0577	X0578	X0579	X0580

Item No.	Description	Part Number			
		BMAC-12C	BMAC-14CE	BMAC-20C	BMAC-20CE
1	Cabinet	X0588	X0589	X0590	X0591
2	Filter	X0581	X0584	X0586 X1152	X0587
3	Cabinet Door	X0592	X0593	X0594	X0595
4	Screw, Fastener	X0596	X0596	X0596	X0596

Description	BMAC-14CE	BMAC-20CE
Electronic Air Cleaner Upgrade Kit	X0598	X0599

- Contact your local Lennox dealer to order replacement parts. For the Lennox dealer nearest you, dial 1-800-9-LENNOX, or visit www.lennox.com