


## Installation Instructions

**NOTE:** Read the entire instruction manual before starting the installation.

### SAFETY CONSIDERATION

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing. Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and current editions of the National Electrical Code (NEC) NFPA 70. In Canada, refer to current editions of the Canadian electrical code CSA 22.1.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand these signal words; DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **would** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

### CAUTION

#### CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

### INTRODUCTION

#### WARNING

##### ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.

The filter cabinet is designed for use with upflow, horizontal, and some downflow furnaces. It provides access to a filter external to the furnace blower compartment. The filter cabinet is designed for use with a 4-5/16 in. wide, high-efficiency filter, and is also supplied with hardware to use the 1-in. filter supplied with the furnace.

**NOTE:** An airflow reduction of up to 7 percent may occur when using the 4-5/16 in. wide, high-efficiency media filter. For best furnace efficiency when using the 4-5/16 in. wide media filter, adjust the blower speed tap to near the mid-point of the rise range.

### INSTALLATION

#### Step 1 — FILTER CABINET ASSEMBLY

1. Remove the contents of the box. The parts are listed in Table 1.
2. Identify the size filter cabinet by reading the label on the box, or by measuring the long, inside dimension of the front. The cabinet is referred to by this size. Table 2 shows the cross match of furnace width to filter cabinet size.
3. Prepare parts for assembly. The front, back, and sides require tabs to be bent prior to assembly. (See Fig. 1, 2, 3, and 4.) To ensure the tabs are bent in the proper direction, orient the parts as shown prior to bending the tabs.

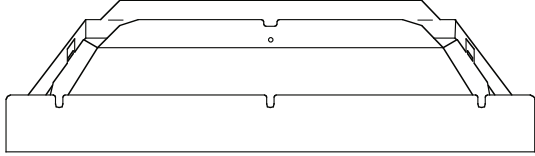
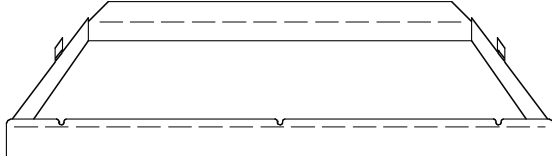
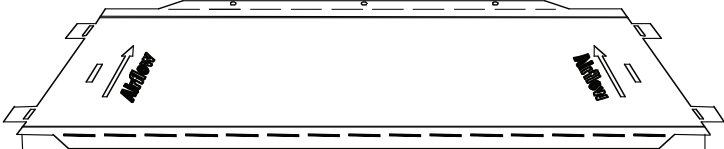

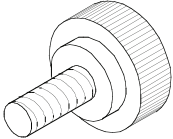

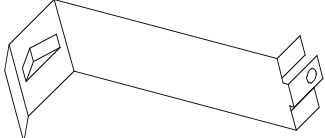
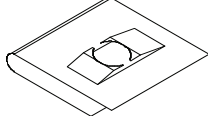
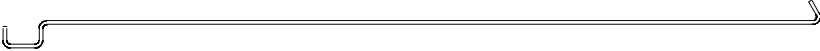
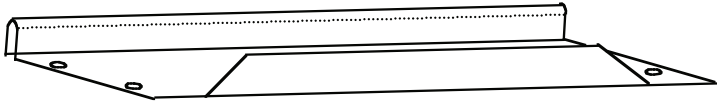
**NOTE:** Sides 3a and 3b are two identical parts. The tabs on 3a are bent opposite of tabs on 3b. (See Fig. 1.)

4. Align airflow arrows. The front, back, and sides have airflow arrows that must point in the same direction when assembled. Assemble the parts using the assembly guide. (See Fig. 5.)
5. Install bracket (1-in. filter option). The bracket is installed when using the 1-in. filter that comes with the furnace. It can be removed later when the 4-5/16 in. wide media filter is used. Two brackets are provided with the 24-in. filter cabinet. Determine which side of the filter cabinet to place the filter. The bracket is attached to the front on the opposite side as the filter. (See Fig. 6.) Use the sheet metal screws provided to attach the bracket. Install 2 brackets on 24-in. filter cabinets.

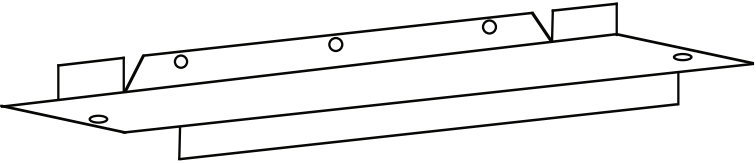
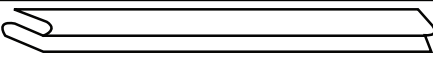
6. Install filter wire (1-in. filter option). The filter wire is used with the brackets when the 1-in. filter option is desired. The filter wire is inside the furnace-blower compartment or inside the filter cabinet carton. Remove the wire from the furnace. Cut the wire to a length of 25-in. if the wire is longer. (See Fig. 7.) Drill a 3/16-in. hole (2 holes on 24-in. filter cabinet) in the back at the dimple on the

same side that the filter is located. Install the straight end of the filter wire in the hole and hook the other end through the lance in the bracket. (See Fig. 8.) For upflow bottom return, downflow installations, or horizontal installations, use a pair of pliers and pinch the lance slightly around the wire to help hold the wire in place.

**Table 1 – Filter Cabinet Parts**

PART REF NO.	PART NAME	QUANTITY	DIAGRAM
1	Front	1	
2	Back	1	
3	Side	2	
4	Door	1	
5	Thumbscrew	1	
6	Retainer	1	
7	Filter Bracket	1 or 2	
8	Sheetmetal Screw	2	#8 x 1/2" Hex Head
9	T-Clip	1	
10	Filter Wire	1 or 2*	
11	4 in. Block Off Plate	1†	

**Table 1 – Filter Cabinet Parts (Cont.)**

PART REF NO.	PART NAME	QUANTITY	DIAGRAM
12	Filler Plate	2‡	
13	'S' Cleat	1**	

\* Obtain filter wire from furnace blower compartment or from media cabinet carton. Some filter wires have an offset at mid length or may not have 60° bend on end.

\*\* 'S' Cleat supplied with some filter cabinets.

† Supplied with 20-in. filter cabinets only.

‡ Supplied with some 16-in. with filter cabinets. For use with 14-in. wide furnaces.

**Table 2 – Bottom Return Furnace Flange Bend Direction**

FURNACE SIZE (WIDTH)	FILTER CABINET SIZE	FURNACE FLANGE BEND DIRECTION*
14 in.	16 in.	90° Inward
17-1/2 in.	16 in.	90° Outward
21 in.	20 in.	90° Outward
24-1/2 in.	24 in.	90° Inward

\*See Flange Bend Direction Diagram, Fig. 13

7. Prepare door. Use the retainer to attach the thumbscrew to the door. (See Fig. 9.)
8. Attach T-Clip. Determine the side of the filter cabinet it is desired to have the thumbscrew. Attach the T-Clip over the hole provided on the side. (See Fig. 10.)
9. Attach Door. 2 tabs on the door on the opposite end from the thumbscrew insert into the 2 front slots on the side opposite the T-Clip. (See Fig. 10.)

10. When installing a filter that is shorter than the Media Cabinet, install an 'S' cleat on the inside flange (furnace side) to prevent bypass flow  
(See Fig. 11.) 'S' Cleat may require trimming to fit (See Fig. 12 and Table 3.)

**Table 3 – Modify 'S' Cleat**

MEDIA CABINET	A
16	15-3/4
20	19-3/4
24	23-3/4

**Step 2 — FILTER CABINET ASSEMBLY**

**NOTE:** Use only 1/2-in. long screws (not supplied) when driving screws into filter cabinet flanges. Screws that are too long will interfere with sliding the filter media into or out of the filter cabinet.

**A. Bottom Return**

**NOTE:** Be sure the bottom return is open and unobstructed to airflow per the furnace installation instructions.

**NOTE:** Horizontal and Downflow furnace installations must use the return opening specified in the furnace installation instructions.

- a. Determine the furnace casing width. Measure across the back of the furnace and round to the nearest 1/2-in.
- b. Refer to the airflow direction arrows and locate filter cabinet flanges that mount to furnace. These furnace mounting flanges have mounting holes or slots.
- c. Fig. 13 shows the furnace mounting flange bend direction. Table 2 shows which direction to bend the furnace mounting flange for different size furnaces as determined in Step a. Bend the furnace flange as directed in table.
- d. Remove the blower door and lay furnace on its back or on its side.

- e. Align the back of the filter cabinet with the back of the furnace and center the cabinet from side to side on the furnace. Be sure the airflow arrows point to the furnace. 14-in. furnaces require 1 or 2 filler plates (provided) and may be offset to one side if desired; see next section.
- f. Four self-tapping, 1/2-in. sheet metal screws (not provided) are necessary to attach the filter cabinet to the furnace. Install 2 screws through the back flange of the filter cabinet, and into the bottom flange of the furnace. (See Fig. 14.) Install 2 screws from inside the blower compartment, through the bottom panel and into the front flange on the filter cabinet. (See Fig. 15.) If necessary, pre-drill screw holes using a 1/8-in. diameter drill bit.

**B. Bottom Return for 14-in. Furnaces**

**NOTE:** Follow instructions in Step 2 for bottom return. Prior to A.-d. of Step 2, proceed with this section.

- a. Furnace centered on filter cabinet (optional). Install a filler plate on both sides of the filter cabinet. (See Fig. 16.)
- b. Furnace offset on filter cabinet (optional). Install 1 filler plate on the filter cabinet opposite side from the desired furnace location. Fig. 17 shows this installation option offset to the right.
- c. Attach Filler Plate. Drive 2 self-tapping, 1/2-in. screws (not provided) through the holes into the front and back

flanges of the filter cabinet. Repeat this step for the second filler plate for the furnace centered option. See Step a.

- d. Continue with A.-d. of Step 2, bottom return, instructions using the filter cabinet and filler plate(s).
- e. For the furnace offset mount (see Step b), drive 3 self-tapping, 1/2-in. screws (not provided) into the furnace through the holes in the flange. (See Fig. 17.)

### C. Side Return Using 16-in. Filter Cabinet

**NOTE:** Side return is approved only for upflow furnace installations.

**NOTE:** 16-in. filter cabinet is approved only for installations that require airflow for 4-tons or less of air conditioning (AC) capacity. For more than 4-tons of AC capacity, use a 20- or 24-in. filter cabinet; see Sections 4 and 5.

**NOTE:** For condensing type, high-efficiency furnaces, remove blower shelf shipping screw at 1-in. from the back on the return side of the casing. For right side return and right side venting (see furnace installation instructions), cut the filter cabinet flange at the notch (See Fig. 18) and bend the short flange inward. (See Fig. 13.)

- a. Bend furnace side flanges outward. (See Fig. 13.)
- b. Determine side of furnace for return air. Filter cabinet may be placed on either side. Remove furnace side cutout per the furnace installation instructions.
- c. Align the filter cabinet side flange with the bottom of the furnace. Align back of the filter cabinet with back of furnace.
- d. Install 12 self-tapping, 1/2-in. screws (not provided) as shown in Fig. 18. Screws for front and back flanges should be located at the provided notches.

### D. Side Return Using 20-in. and 24-in. Filter Cabinets

- a. When 4-tons or less AC capacity airflow is required, flush mount side return (Section 3) may be used. (See Fig. 19.)

**NOTE:** Right side return on high-efficiency, condensing type furnaces will interfere with right side venting and furnace vent hole must be sealed.

- b. Determine side of furnace for return air. Filter cabinet may be placed on either side. Remove furnace side cutout per the furnace installation instructions.
- c. A 4-in. Block Off Plate is provided with 20-in. filter cabinets. This Block Off Plate may be used for 4-tons of AC airflow capacity or less. It is used to adapt the duct connection side of the filter cabinet (See Fig. 19) to a 16-in. return boot.
- d. For more than 4-ton AC capacity airflow go to Step e, or to Section 5.
- e. The filter cabinet must be mounted with a transition duct using a transition angle of 45° from horizontal, or less. (See Fig. 20.)

**NOTE:** This type of installation may interfere with some right side vent installations.

### E. Side Return Flush Mount with Bottom Return Plenum

**NOTE:** 8-in. and 4-in. bottom return plenum is an available accessory. See distributor or local MicroMetl™ parts outlet.

**NOTE:** This installation will not interfere with the right side vent option of most high-efficiency, condensing type furnaces.

- a. Fig. 21 shows the filter cabinet flush mounted to the furnace side. For this installation, an 8-in. bottom return plenum is required. A similar 4-in. bottom return plenum may be used with the 20-in. filter cabinet.
- b. Determine side of furnace for return air. Filter cabinet may be placed on either side. Remove furnace side cutout per the furnace installation instructions.

**NOTE:** For 20-in. filter cabinets using an 8-in. bottom return plenum, the furnace side return cut out height must be 10 1/2-in. This is 4-in. shorter than indicated by the furnace installation instructions and by the side return indicator embosses in the furnace cabinet.

- c. Follow the 8-in. bottom return plenum kit instructions for mounting the plenum to the bottom of the furnace.

**NOTE:** When using bottom return plenum, remove bottom closure from the furnace per the furnace installation instructions.

- d. Follow installation instructions in Section 3 for mounting the filter cabinet to the furnace and bottom return plenum. Exception to Step c: Section 3, align the filter cabinet side flange with the bottom of the plenum rather than bottom of the furnace.

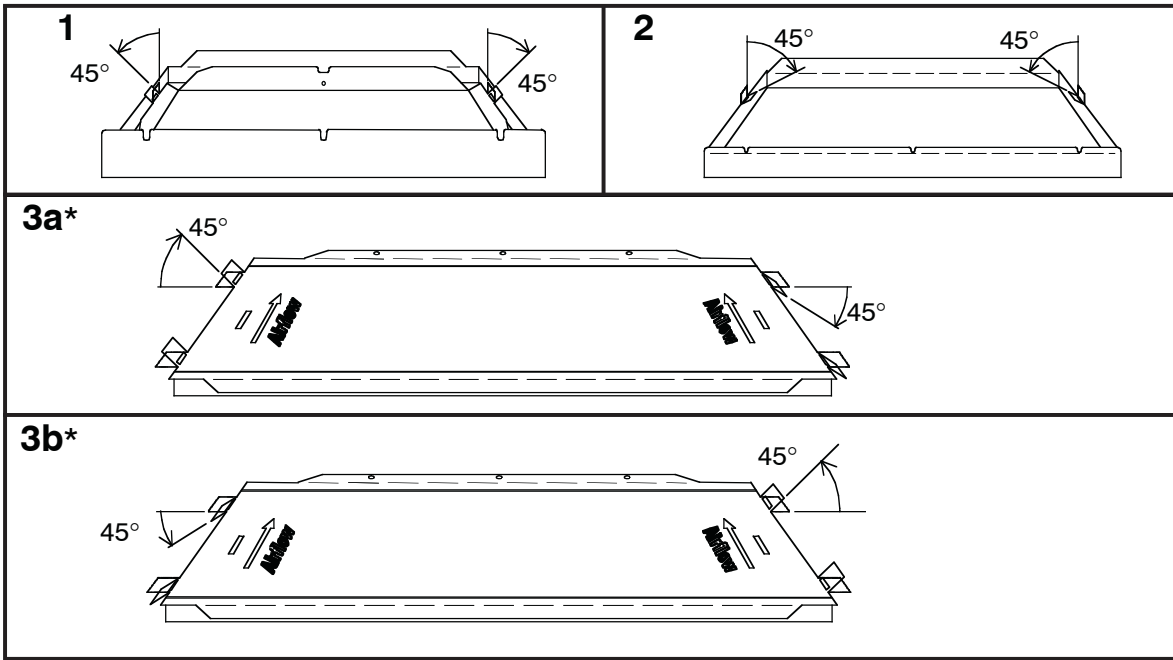
### F. Alternate Filter Cabinet Installations

The filter cabinet may be mounted in the return air duct work, upstream from the furnace. These installations must follow local codes and must adhere to good design practice. Good design practice includes using transitions with no greater than 45° angles from parallel to the airflow, and using turning vanes in tight bends leading into or leading out from the filter cabinet.

### Step 3 — SEALING THE FILTER CABINET

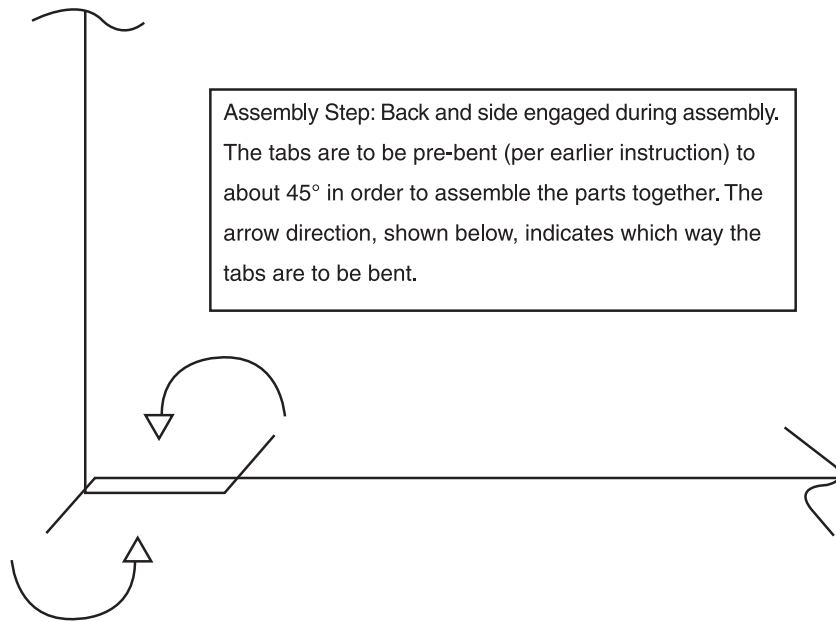
**NOTE:** Some localities have special requirements to minimize duct leakage. The filter cabinet has open corners and seams which may allow small amounts of air to leak into the return air. These openings and all duct work connections may be sealed using code approved methods. Some methods include the following (refer to local codes for sealing methods best for your locality):

- a. Silicone sealant, mastic, or other permanent and safe material applied to joints and openings.
- b. Foam tape gasket may be used around the flanges prior to mounting the furnace, and on the door. Foam tape works best when compressed between two flat, mating surfaces.
- c. Tapes may be used for sealing some openings such as filter cabinet tab slots. Tapes should not be considered to be permanent unless specified as such by the tape manufacturer.



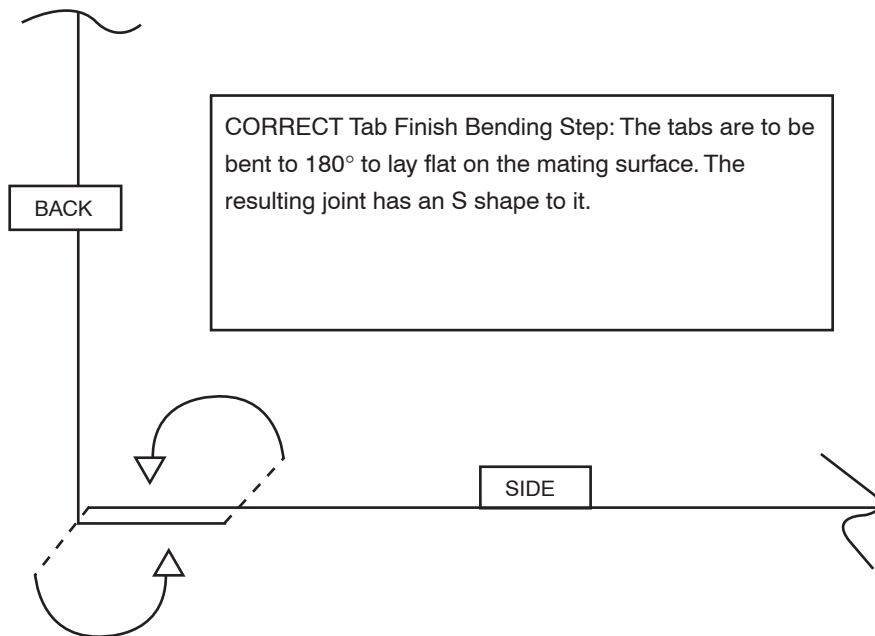
**Fig. 1 - Tab Pre-Bend Instructions**

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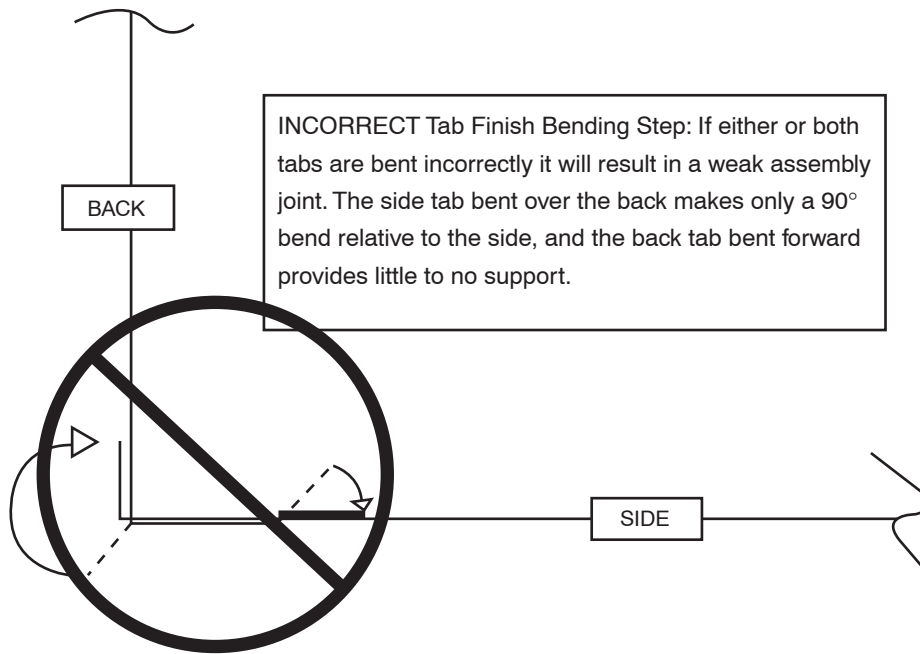
**Fig. 2 - Filter Cabinet Side and Back Assembly**

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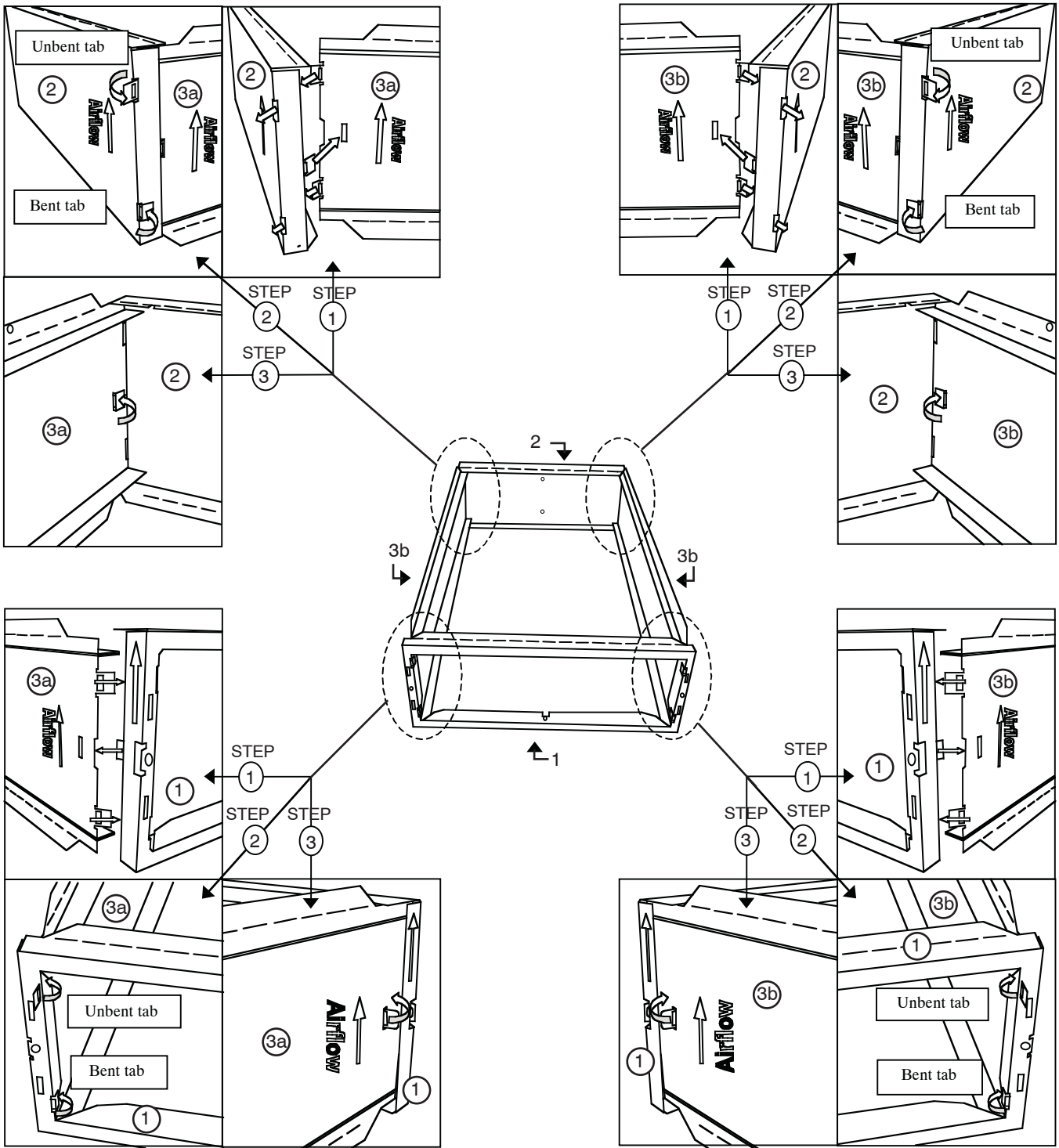
**Fig. 3 - Correct Tab Finishing Bending Step**

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**Fig. 4 - Incorrect Tab Finishing Bending Step**

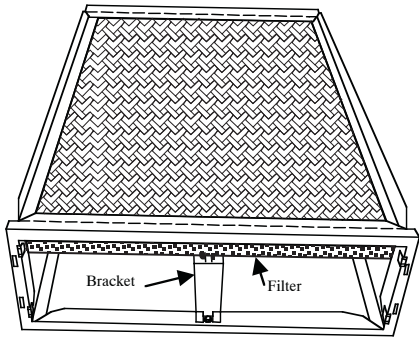
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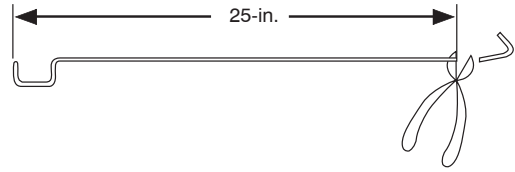
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**Fig. 5 - Assembly Guide—Numbered Arrows Indicate Steps for Assembly of Each Connection**



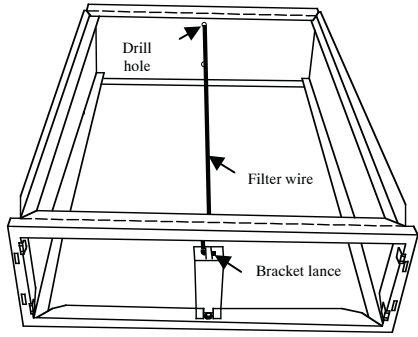
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**Fig. 6 - Filter Cabinet with Bracket and 1-in. Filter Option**



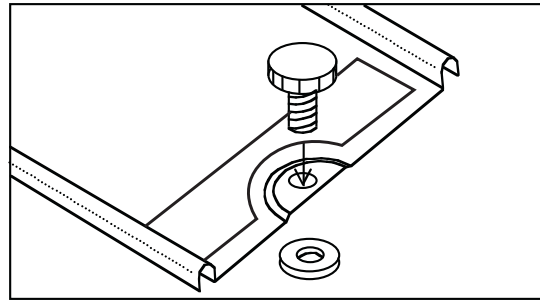
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**Fig. 7 - Modify Filter Retainer Wire (if necessary)**



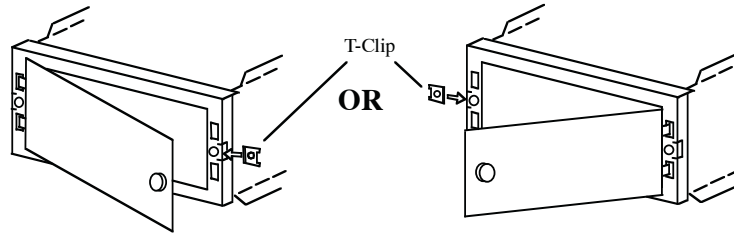
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**Fig. 8 - Filter Wire Installation for 1-in. Filter Option (if necessary)**



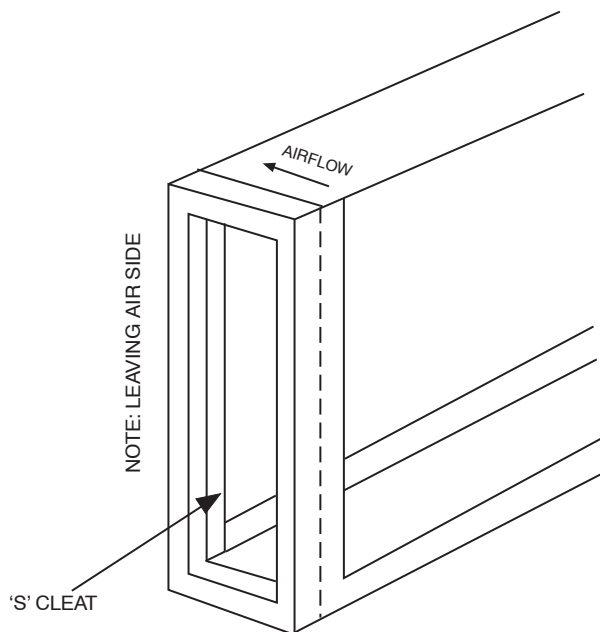
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**Fig. 9 - Thumbscrew Attachment**



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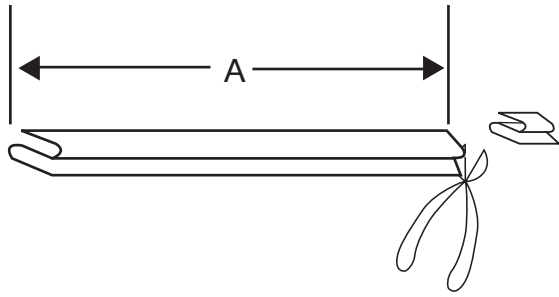
**Fig. 10 - Attach T-Clip and Door to Filter Cabinet**



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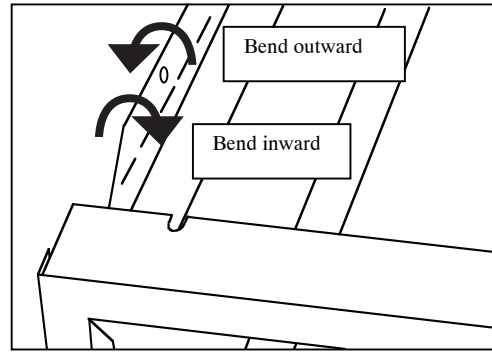
**Fig. 11 - 'S' Cleat Installation**





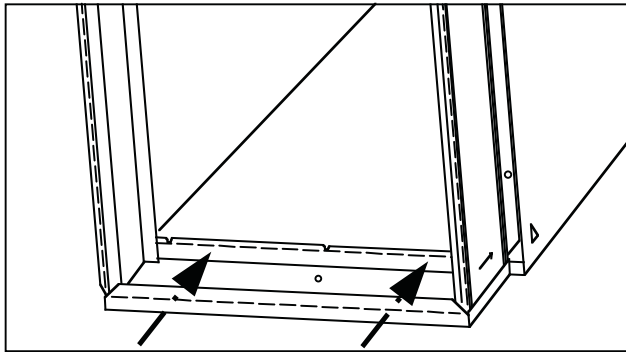
**Fig. 12 - Trimming 'S' Cleat**

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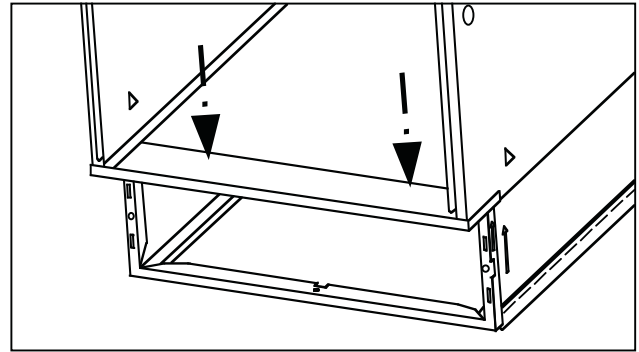
**Fig. 13 - Furnace Mounting Flange Bend Direction Diagram**

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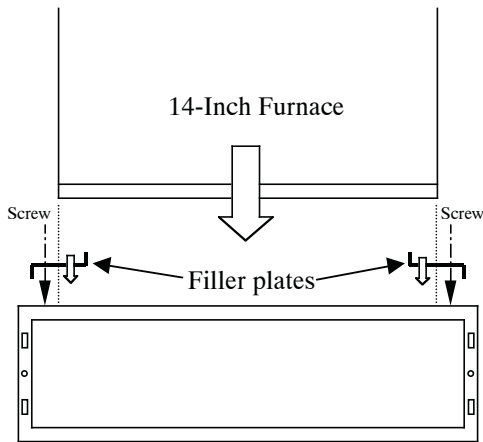
**Fig. 14 - Bottom Mount Rear Attachment**

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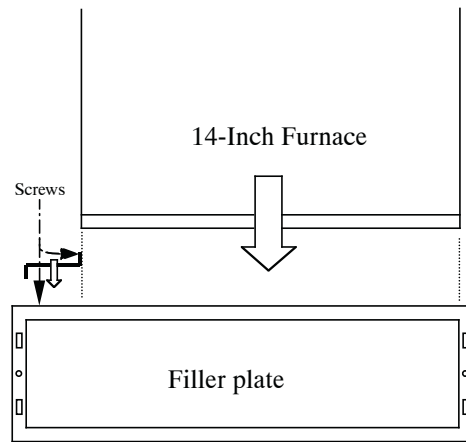
**Fig. 15 - Bottom Mount Front Attachment**

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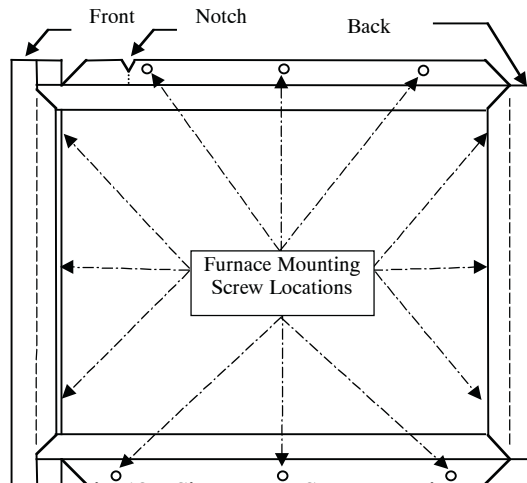
**Fig. 16 - 14-in. Furnace with Filler Plates, Centered**

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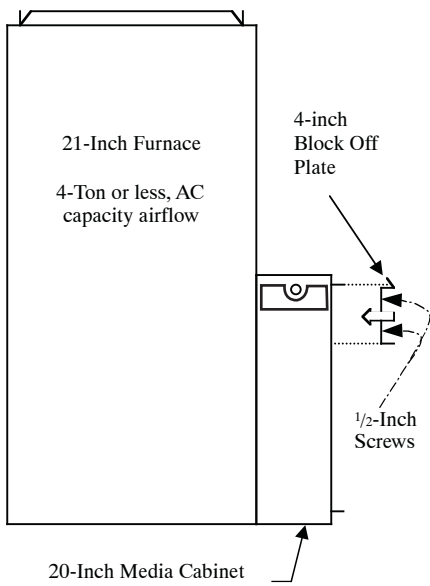
**Fig. 17 - 14-in. Furnace with Filler Plates, Off-Set to Right**

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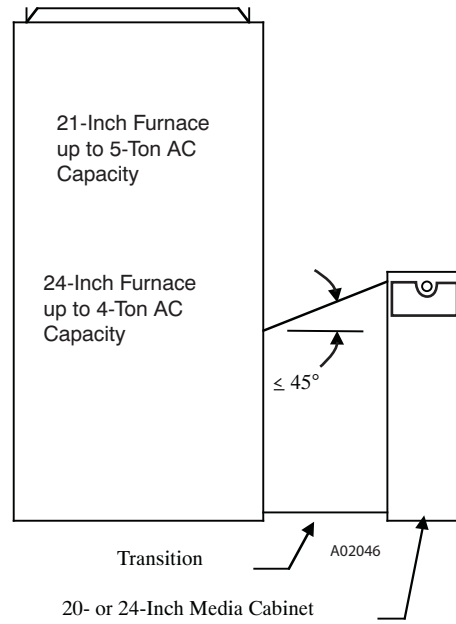
**Fig. 18 - Side Return Screw Locations**

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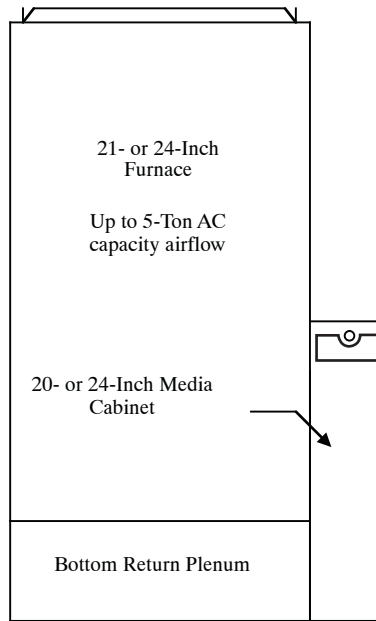
**Fig. 19 - 20-in. MC Installation Option for 4-Ton or Less A/C Capacity**

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**Fig. 20 - 20-or 24-in. MC Installation Option with Angled Transition**

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**Fig. 21 - 20-or 24-in. MC Installation Option for Combination Side and Bottom Return**

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## CARE AND MAINTENANCE

For continued high performance of your heating and cooling system and to minimize possible equipment damage, it is essential that periodic check and maintenance be performed on your air filtration equipment.

### **FILTER/FILTER CABINET**

1. Check filter/filter cabinet door for proper fit to front of cabinet. Make sure thumbscrew and tabs hold door on securely. Contact your local dealer for replacement of missing, damaged, or loose fitting door.



## **WARNING**

### **FIRE, PERSONAL INJURY, AND / OR DEATH HAZARD**

Failure to follow this warning could result in fire, personal injury, or death

Never operate unit without a filter or with the filter access door removed.

2. Check and repair if necessary any air seals (caulk, duct/metal tape, or foam tape) that may have been applied to filter/filter cabinet and door at time of installation. Consult your local dealer if you have questions on sealing requirements.

### **CLEANING AND/OR REPLACING AIR FILTER**

If 1-in. factory supplied cleanable filter is used, check and clean air filter each month or more frequently if required. Replace if torn. If factory specified disposable media filter is used, check or replace filter before each heating and cooling season. Replace disposable media filter at least once a year. To clean or replace filters, proceed as follows:

1. Turn off electrical supply to furnace.
2. Remove filter/filter cabinet door.
3. Slide filter out of cabinet.
4. If equipped with permanent, washable filter, clean filter by spraying cold tap water through filter in opposite direction of airflow. Rinse filter and let dry. Oiling or coating of the filter is not recommended.
5. If equipped with factory specified disposable media filter, replace only with media filter having the same part number and size.
6. Slide filter into cabinet.
7. Replace filter cabinet door.
8. Turn on electrical supply to furnace

