

MANUFACTURED FOR:
MITSUBISHI ELECTRIC US, INC.

Downflow Kit

DFK-S, DFK-M

For use with: Multi-position Air Handler

INSTALLATION MANUAL

FOR INSTALLER

For safe and correct use, please read this installation manual thoroughly before installing these components.

Table of Contents

- 1. Inspect shipment 3
- 2. Safety precautions 3
- 3. Checking parts: DFK-S, DFK-M 4
- 4. Downflow bracket installation instructions 5
 - 4.1. Directions for removing panels 5
- 5. Baffle installation instructions 8
- 6. Thermistor extension cable installation instructions 11
- 7. Changing blower external static pressure 13
- 8. Air filter 13
- 9. Fan performance 14

1. Inspect shipment

Damage claims should be filed with the carrier immediately. Claims of shortages should be filed with the seller within 5 days.

Upon receipt of equipment, carefully inspect it for possible damage. Take special care to examine the unit if the carton is damaged. If damage is found, it should be noted on the carrier's freight.

2. Safety precautions

Carefully read this section, always observe for safety, and securely install the optional parts.

- Be sure to observe the cautions described here. They include critical contents for safety.
- The following indications show the classifications for danger and possible consequences following incorrect handling.
- After installation, perform a test run and make sure that there is no abnormality, and ask your customer to keep this installation sheet with the indoor unit installation manual at all times. Also ask the customer to transfer these manuals to a new user if the user changes.

Symbols used in the text



WARNING

This symbol denotes incorrect handling could lead to death or serious injury



CAUTION

This symbol denotes incorrect handling could lead to injury or damage the house and household articles.



WARNING



- Ask the dealer or specialist for installation. - If installed incorrectly by user, water leak, electric shock, fire, etc. could result.
- Carefully install the kit according to this installation. - Incorrect installation could cause water leak, electric shock or refrigerant leak.

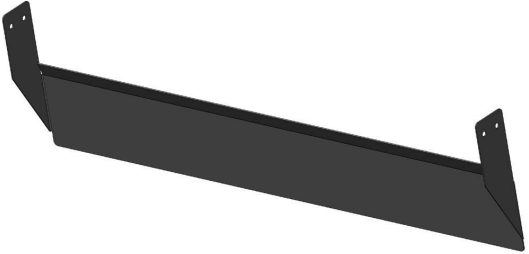



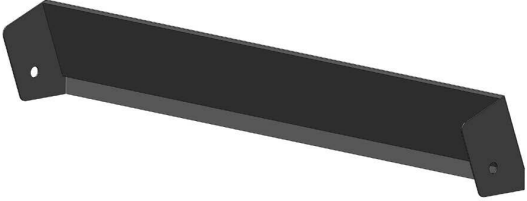
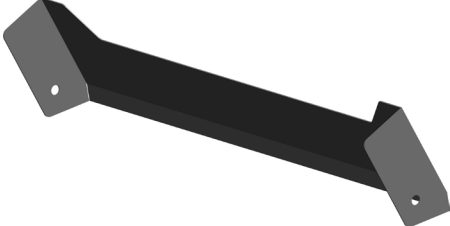
CAUTION

Do not place polyethylene bags in reach of young children. - Putting them over the head will block breathing passages, which could result in suffocation.

3. Checking parts: DFK-S, DFK-M

 <p>Downflow Bracket (A) Qty: 2</p>	 <p>Thermistor Extension Cable (B) Qty: 1</p>
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<p>Outer Coil Baffles Qty: 2</p>	<p>Screws #8-1/2" Slotted Hex Head Qty: 4</p>

<p style="text-align: center;">DFK-S</p> 	<p style="text-align: center;">DFK-M</p> 
<p style="text-align: center;">If you have DFK-S only Inner Coil Baffles Qty: 2</p>	<p style="text-align: center;">If you have DFK-M only Inner Coil Baffles Qty: 2</p>

Application guide

Downflow Kit	Nominal capacity BTU x 1000
DFK-S	12, 18, 24
DFK-M	30, 36

4. Downflow bracket installation instructions

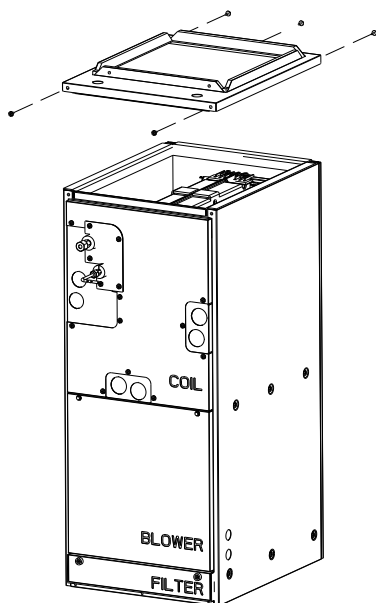
For downflow installation, remove the top panel followed by the COIL panel, the BLOWER panel and then the back panel. You have to remove the top panel before you are able to disassemble the back panel. Once all the necessary panels are removed, slide the coil assembly out and set it aside. After attaching the brackets, reassemble the cabinet and rotate it 180 deg. Ensure that the orientation of the coil assembly and the COIL panel is the same as in the vertical position.

After you slide the coil assembly into the cabinet, connect the Thermistor Extension Cable (B).

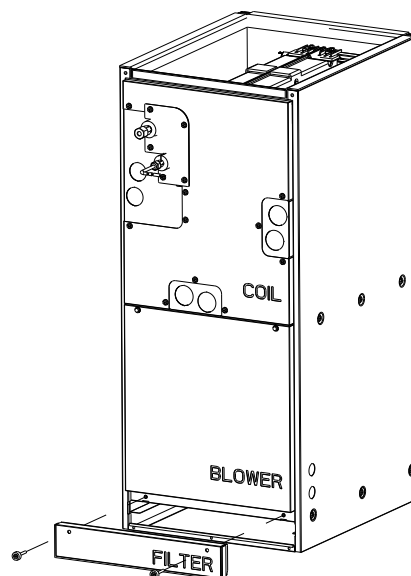
! IMPORTANT

The air handler unit installed and operated in the downflow configuration may lead to condensation blow off in certain circumstances, possibly due to environmental conditions or contaminants at the installation site.

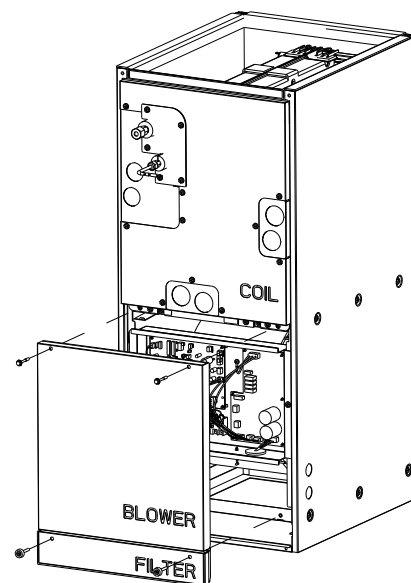
4.1. Directions for removing panels



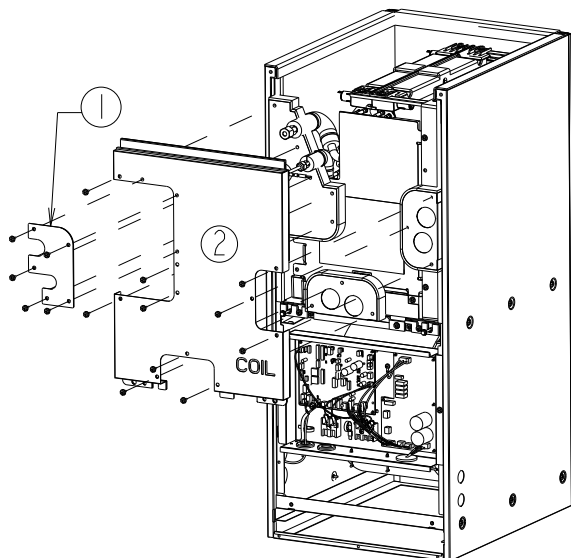
Step. 1 Remove the top panel by unscrewing (5) screws. Place screws aside for reassembly.



Step. 2 Remove the panel marked "FILTER".

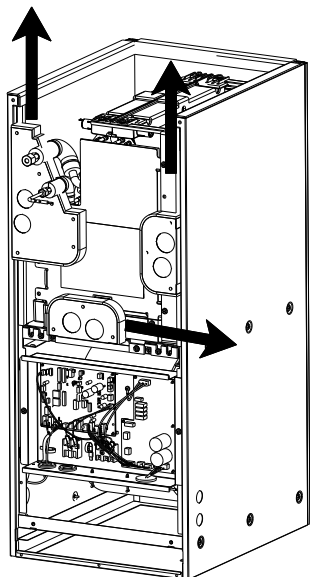


Step. 3 Remove the panel marked "BLOWER". Place screws aside for reassembly.

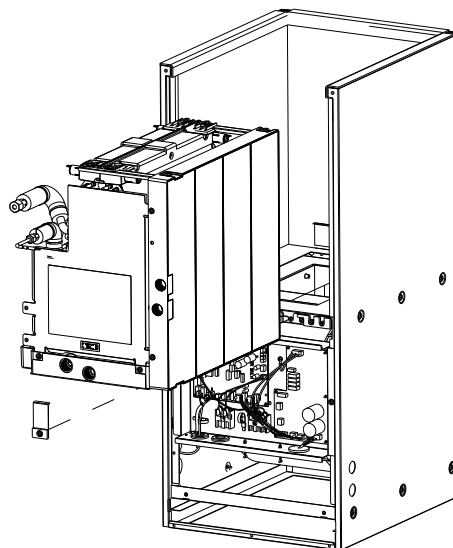


① 1st ② 2nd

Step. 4a Remove the screws securing the COIL panel to the cabinet (shown above). Remove the “1st” panel and “2nd” panel from the cabinet. Place screws aside for reassembly.

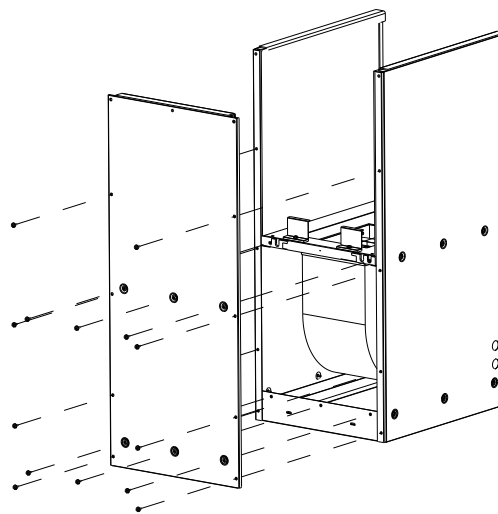


Step. 4b Remove the smaller panels (3) covering the drain holes and refrigerant lines by first sliding in the direction indicated above.

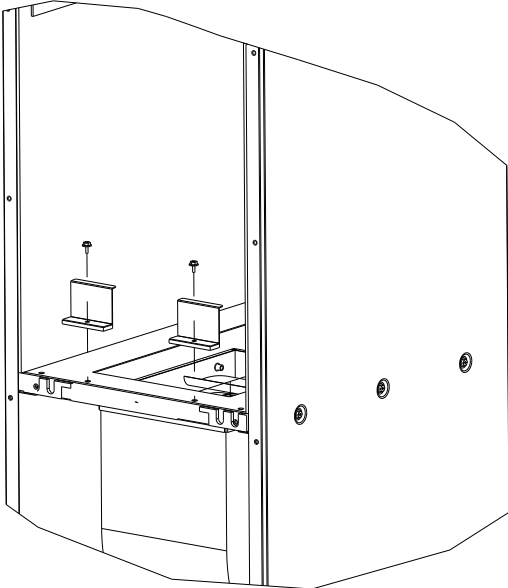


Step. 5

- A. Disconnect the waterproof thermistor harness and leak sensor harness inside the coil portion of the cabinet.
- B. Remove the brackets which secure the coil assembly.
- C. Slide the coil assembly out of the air handler cabinet.



Step. 6 Remove back panel on air handler unit. Place screws (qty: 17) aside for reassembly.



Step. 7a Locate both small brackets and remove by taking out the (2) screws. Place screws aside to be re-used for Downflow Bracket (A).

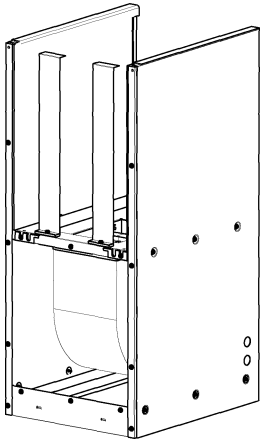


Figure 1: Downflow Bracket (A) attached to the chassis of the fan cabinet

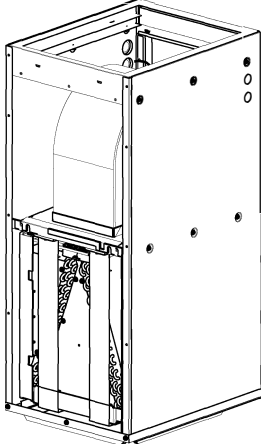


Figure 2: HEX assembly supported by Downflow Bracket (A)

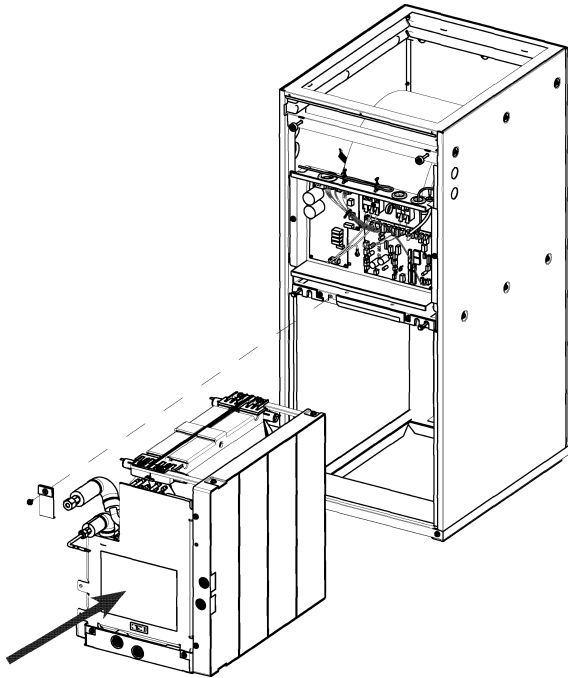
Step. 7b Screw in Downflow Bracket (A) as shown in Figure 1. Figure 2 shows how the HEX assembly will be supported by the Downflow Bracket (A) when in the final installation orientation.



NOTE

When tightening the screw, make sure the Downflow Bracket (A) aligns with the chassis of the fan cabinet.

Reinstall the back panel, then secure the top panel with original screws removed in step 1.



Step. 8 Rotate the cabinet 180 deg vertically to the downflow position. Slide the coil back into the unit. Make sure to keep the cable connector from getting wedged on the side of the coil when sliding in. Cable connection is located at the bottom right side of cabinet. Once the coil is in, it should be in-line with the insulation.

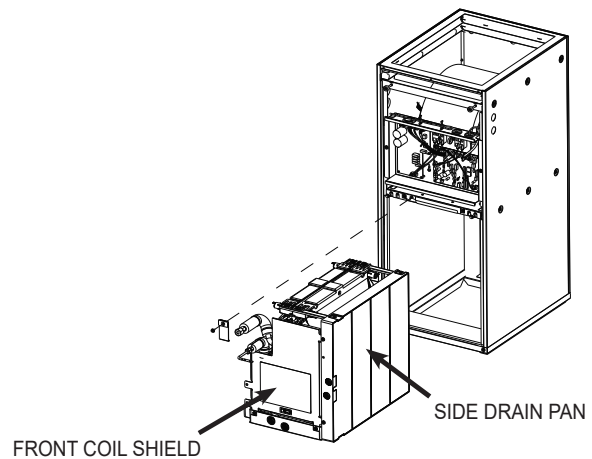





NOTE

When installing Outer and Inner Coil Baffles, coil assembly needs remain outside of cabinet (Refer to Section 5 Baffle installation instructions).

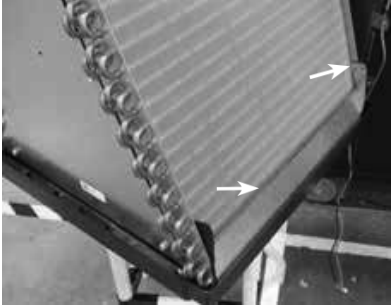

5. Baffle installation instructions

A. Remove the coil assembly from the unit per Section 4 Downflow bracket installation instructions [5] of this installation manual.

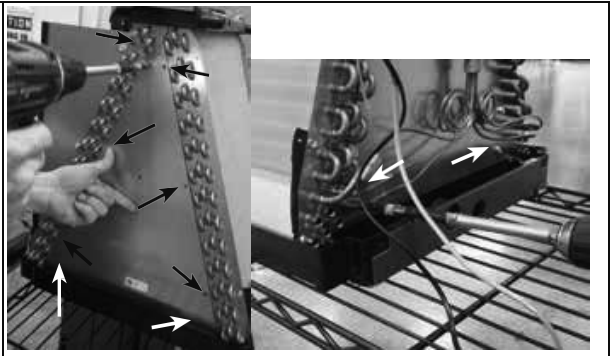
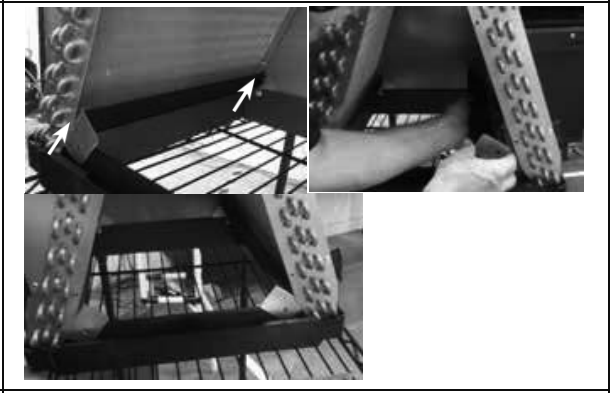
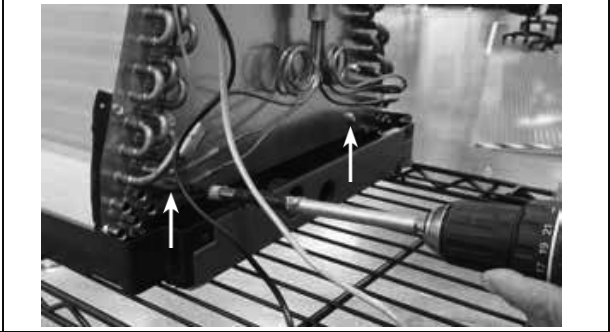
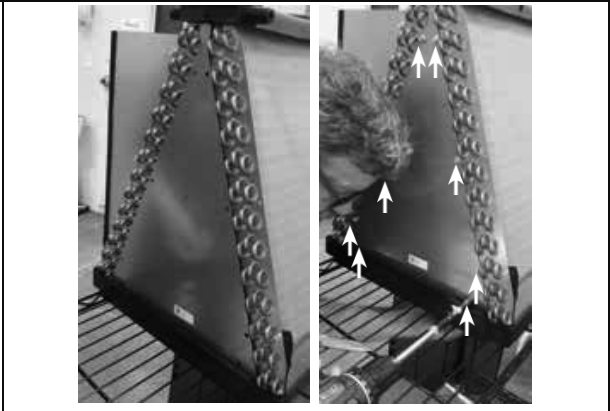


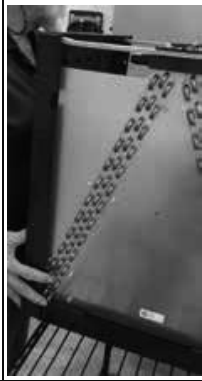

	Instructions	Illustration
A1	Remove the screws and the front coil shield, saving the screws to put them back.	
A2	Remove the lower screw from the rear coil shield and discard the screw.	
A3	Remove the side drain pan, saving the screws to put them back.	

B. Install the outside baffles as shown below.

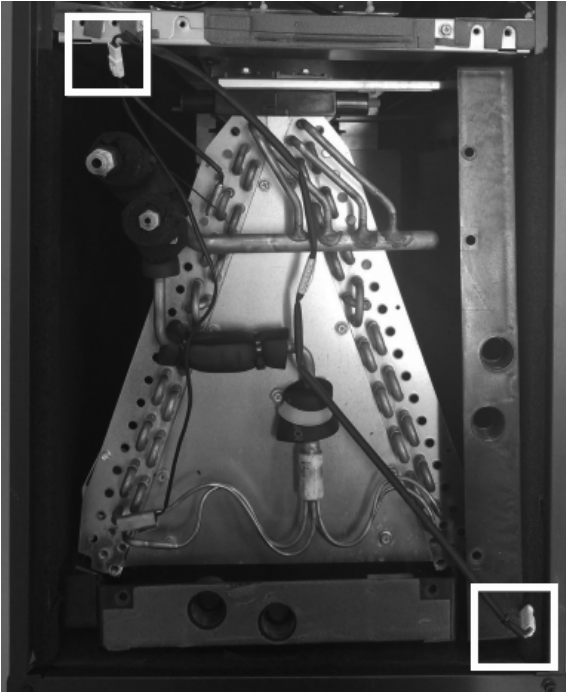
	Instructions	Illustration
B1	The baffle should rest against the coil fins and the bottom drain pan, and fit tightly between the coil end plates.	
B2	Install the 2 provided screws from the outside to hold the baffle in place. Repeat the outside baffle installation on the opposite side.	

C. To install the inside baffles follow the steps below.

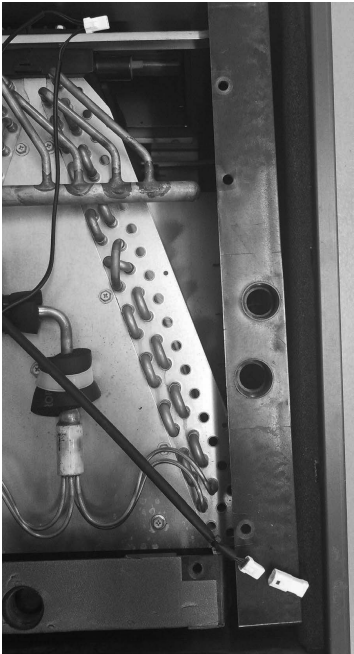
	Instructions	Illustration
C1	Remove the triangular cover from the rear coil shield. Then, remove the 2 lower screws on the pipe connection side of the front coil shield, saving the screws to put them back.	
C2	Slide the baffles over the lip of the pan on both sides, aligning the screw holes with the drain pan holes.	
C3	Replace the 2 lower screws on the pipe connection side of the front coil shield. The screws should go through the baffles' screw holes and NOT under the baffles themselves.	
C4	Replace the triangular cover on the rear coil shield. The screws should go through the baffles' screw holes and NOT under the baffles themselves.	

	Instructions		Illustration
C5	Install the coil assembly into the unit.		

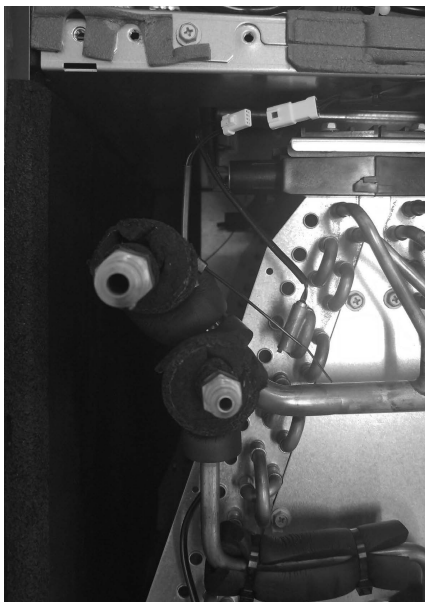
6. Thermistor extension cable installation instructions



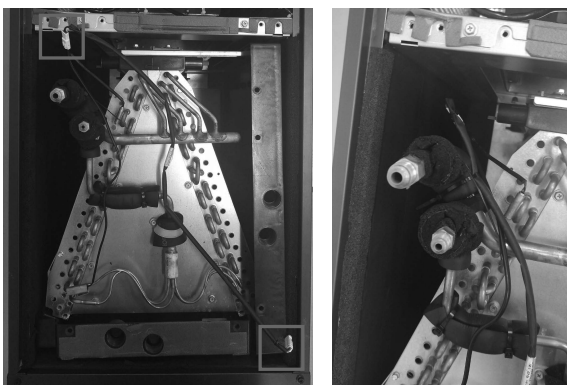
Step. 1 With the coil in place, cut any plastic ties that are securing the extra wiring for the thermistor and refrigerant leak sensor.



Step. 2a Connect male end of the Thermistor Extension Cable (B) to the cable connection on the bottom right side of cabinet.



Step. 2b Connect female end of the Thermistor Extension Cable (B) to the male thermistor cable on the coil.



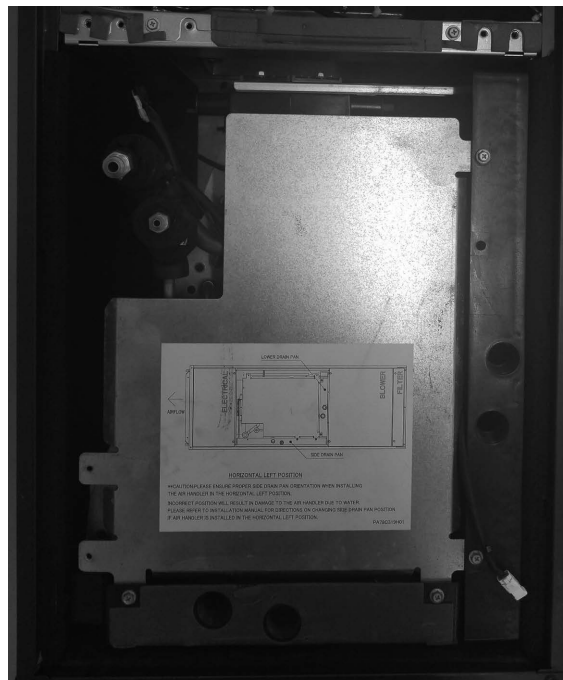
Step. 3 Run the Thermistor Extension Cable (B) across the heat exchanger, as shown.



NOTE

For nominal capacity 12 thru 24 (BTU x 1000) models, it may be necessary to zip-tie thermistor extension cable also shown above.

Also, cut the plastic ties that secure the extra wiring for the refrigerant leak sensor and reconnect to the harness.



Step. 4 Reinstall the front coil shield with the Thermistor Extension Cable (B) running behind it.

Step. 5 Reinstall the coil assembly along with the bracket(s) that secure(s) it. Failure to reinstall the brackets will result in capacity loss and condensation formation inside the cabinet. Refer to section 4 steps 1 to 4 to reassemble the panels. Ensure the proper knockouts are removed for drainage and electrical connections.

7. Changing blower external static pressure

Mode/Function 10/110 setting must be set to "2" for Downflow position.

The air handler's static pressure can be changed through the mode/function settings in the controller. Please refer to the installation manual for the controller on how to change this option. Depending on the controller used, the mode/function will be either 08 for mode (MA remote controllers) or 108 for function (CN105 remote controllers). Please notice there are different settings when installing the air handler in the downflow position.

Downflow external static pressure setting

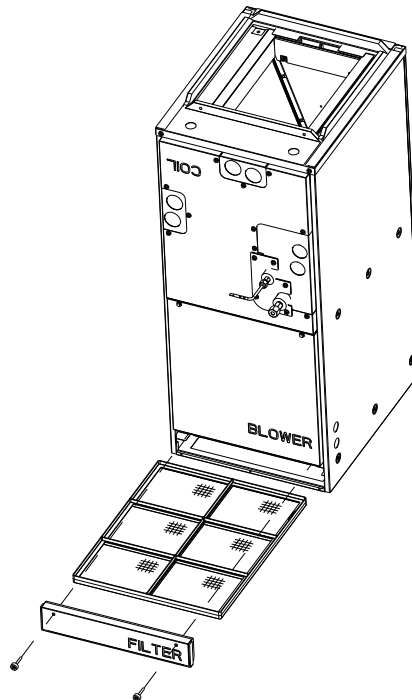
External Static Pressure	Setting No. of Mode/Function 08/108	Setting No. of Mode/Function 10/110
0.3 in. WG [75Pa]	1	2
0.5 in. WG [125Pa] ¹	2	2
0.8 in. WG [200Pa] ²	3	2

¹Factory setting: Mode/Function 08/108 = 2, Mode/Function 10/110 = 1

²Nominal capacity 36 (BTU x 1000) models in Downflow External Static pressure: Max. 0.60

8. Air filter

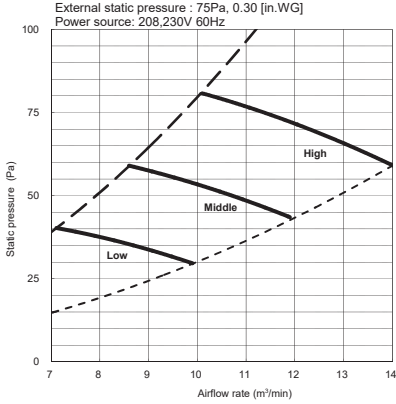
A washable (reusable) air filter is provided with the air handler unit. The filter can be installed once the unit has been removed from its packaging. It is recommended the air filter be cleaned once per month. The pressure drop is to be determined by the installing contractor based on the overall static pressure performance of the system including supply and return ductwork sizing. The factory static pressure performance is 0.50 [in. W.G.] esp. A field selectable 0.30 [in. W.G.] esp and 0.80 [in. W.G.] esp is available. See instructions for changing to 0.30 [in. W.G.] esp or 0.80 [in. W.G.] esp in the electrical section of the multi-position unit installation manual.



9. Fan performance

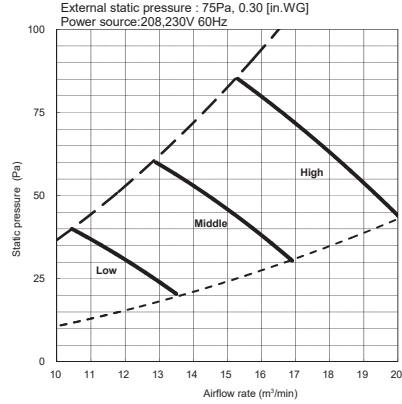
Nominal capacity 12 (BTU x 1000) models

Down flow

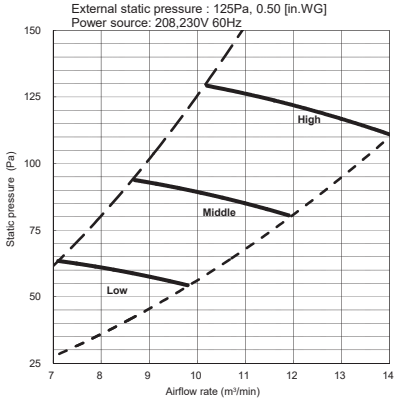


Nominal capacity 18/24 (BTU x 1000) models

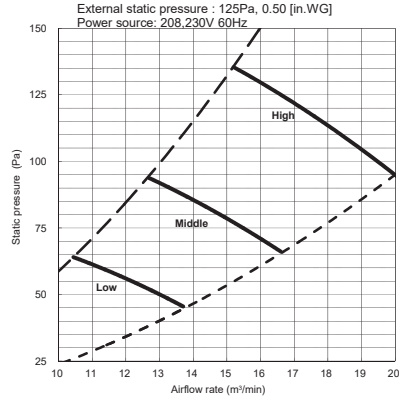
Down flow



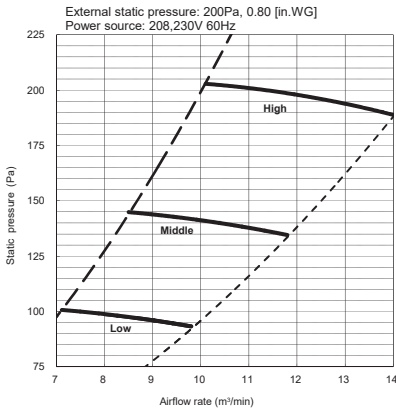
Down flow



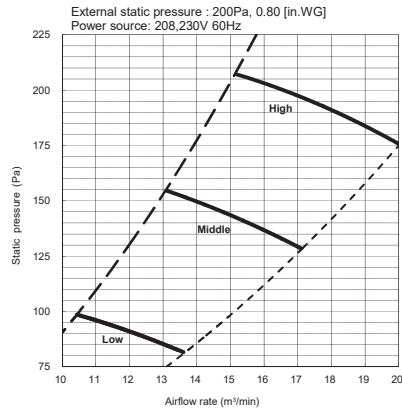
Down flow



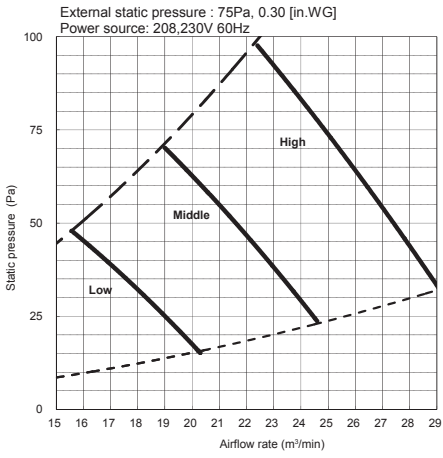
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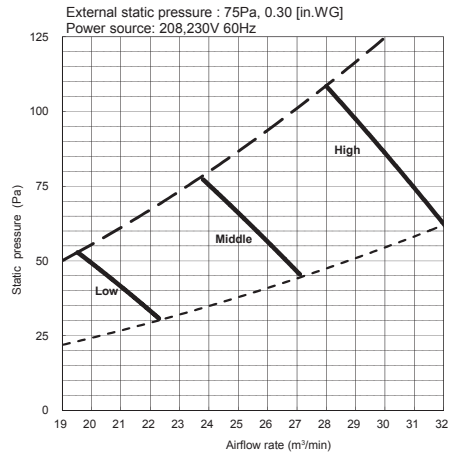
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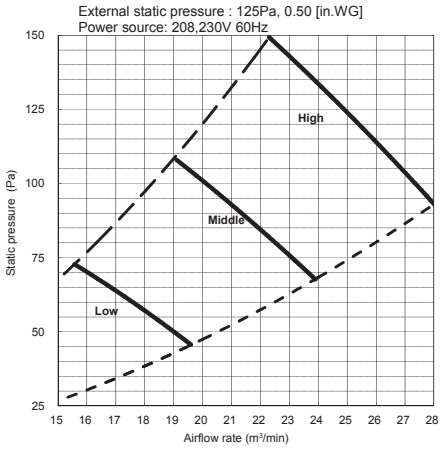
Nominal capacity 30 (BTU x 1000) models
Down flow



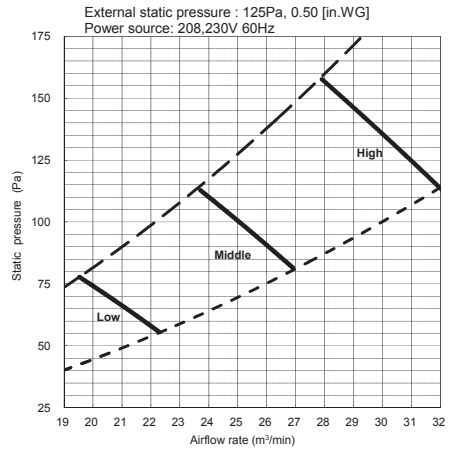
Nominal capacity 36 (BTU x 1000) models
Down flow



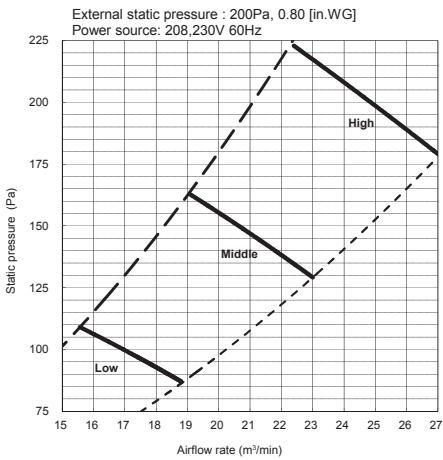
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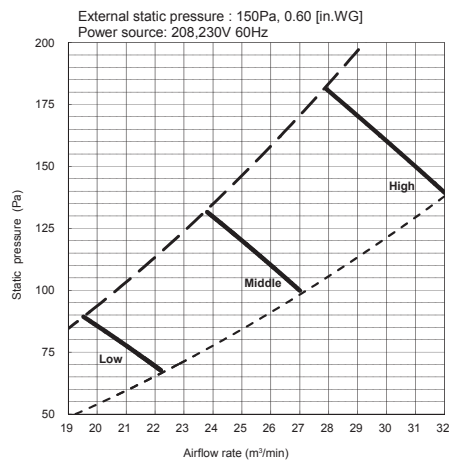
Down flow



Down flow



Down flow



This product is designed and intended for use in the residential environment.

Manufactured for:
mitsubishi electric us, inc.



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