



BAPF1 + BAPF2

User Manual

Pro Filter

This manual provides information about safety, installation, operation, and maintenance. Prior to installing the Blade Air Pro Filter, be sure to thoroughly read through this manual to ensure optimal use of the product and avoid improper installation.

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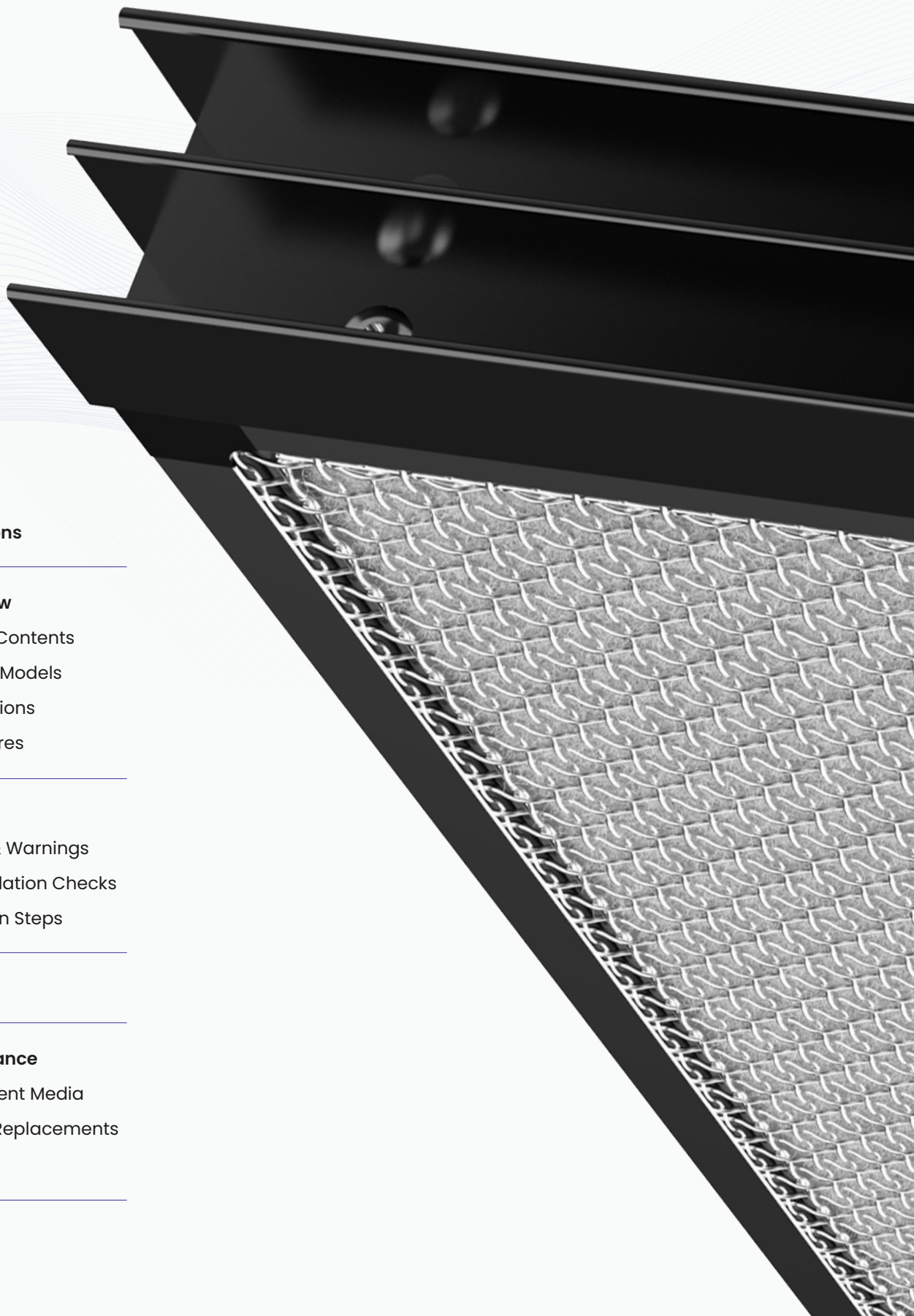
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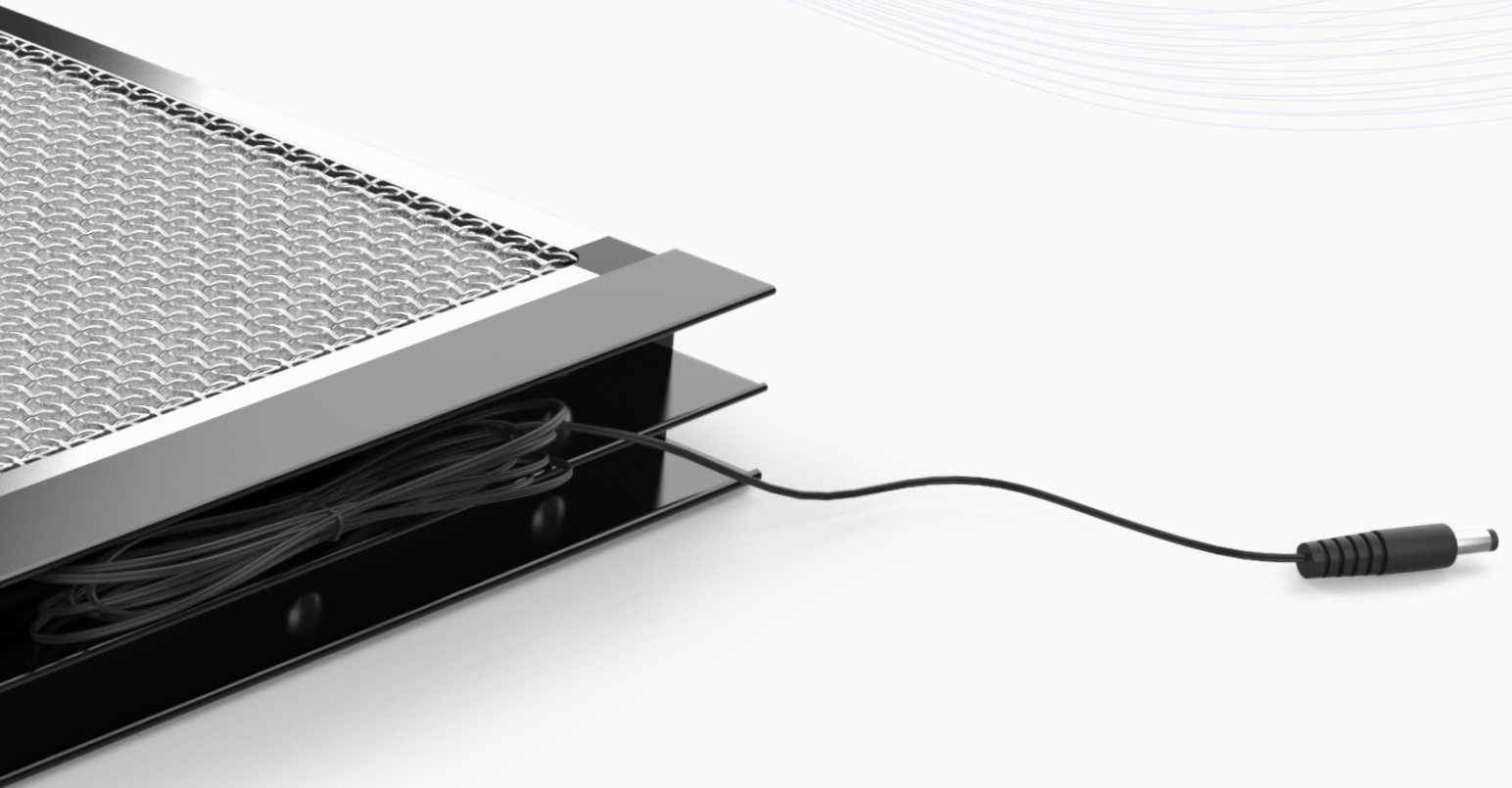
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Safety Precautions

01.

Do not connect unit directly to 110 Volts AC Power.

- > This unit is designed to operate from a supply of 24 Volts AC and 2VA.
- > Connecting the filter to a higher voltage than specified may cause damage and/or failure of equipment.
- > 110 Volt to 24 Volt adapters or transformers are available from Blade Air. Please see 'Available Models' section for more detail.

02.

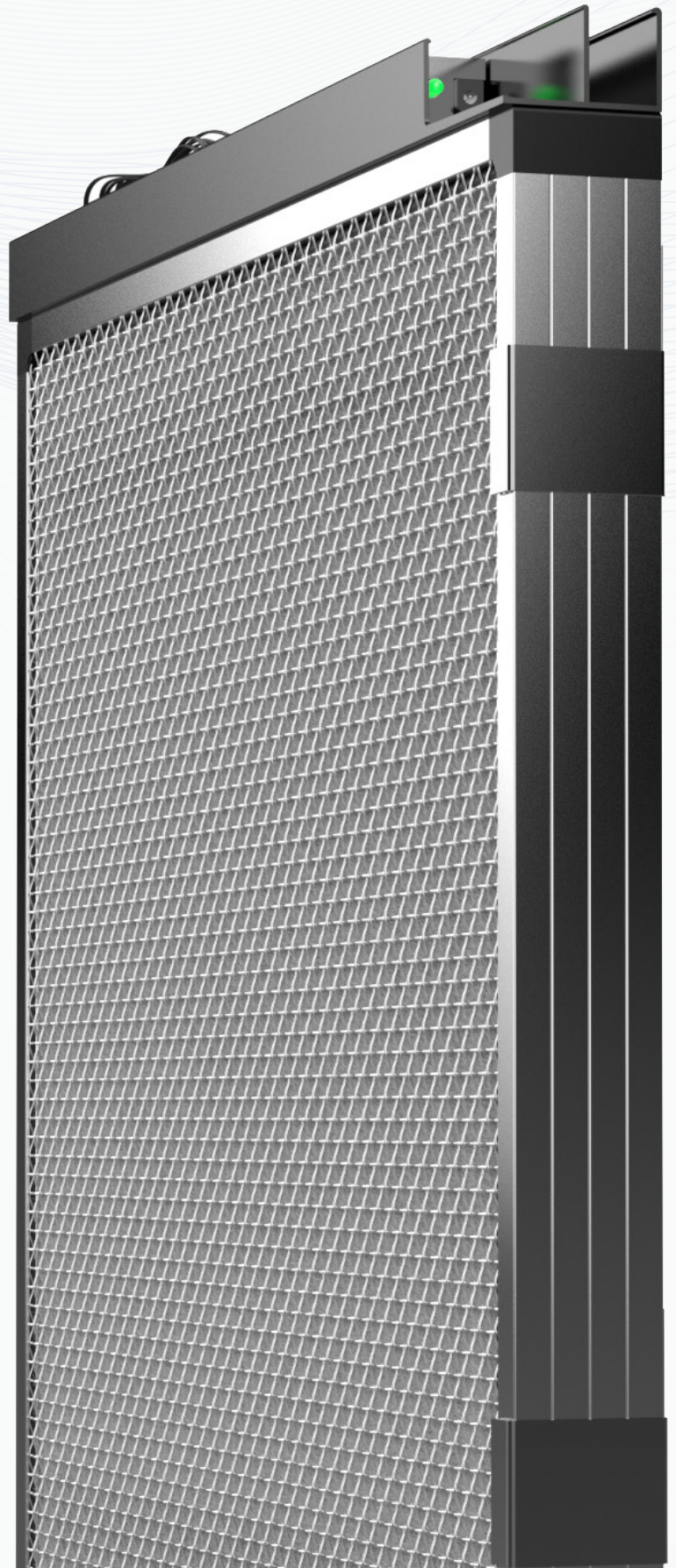
Disconnect power before installation or completing any maintenance.

Product Overview

Powered by advanced electromagnetic filtration technology, Blade Air Pro Filters capture particles 40 times smaller than traditional pleated filters and outperform HEPA filters at the viral range.

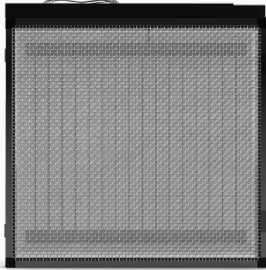
Crafted with breathable, lofted glass fiber, effortlessly reducing airflow restrictions and pressure drops, extending filter life and delivering substantial energy and operational savings. The Pro Filter series effectively improves indoor air quality while lowering building energy consumption and maintenance time.

The Pro Filter is guaranteed to fit any HVAC system with zero switching costs or expensive retrofits such as VBank systems, Air Handler Units, Furnaces, Filter Bags and more.

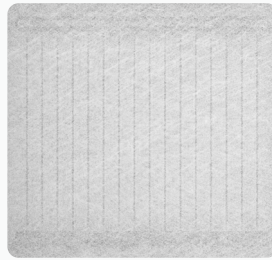


Pro Filter Package Contents

1



2



3



4A



4B

< OR >



1 Bar Configuration

2 Filter Pad

3 Tandem Wire

4A 24 VAC Power Adapter

4B 24 VAC Power Supply Cable

*Later sections will refer back to Power Adapter configurations **4A/4B** regarding installation steps and maintenance procedures.

ⓘ Important Note:

Blade air recommends using the power supply cable. Limiting factors may include available power and desired filter quantity.

If there is a need for more than one power item, the request can be accommodated. Nevertheless, it is important to be aware that additional items are classified as accessory products and are subject to an additional surcharge.

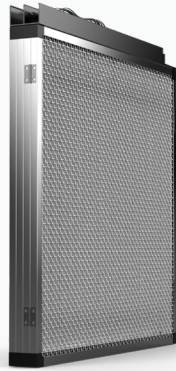
Please consult an electrician for more details.

Available Models



PART NUMBER
BAPF1

DESCRIPTION
1-Inch Pro Filter

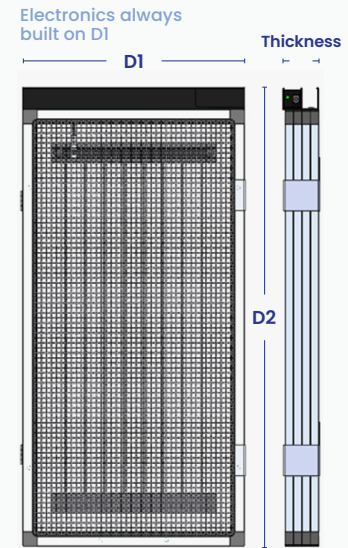


PART NUMBER
BAPF2

DESCRIPTION
2-Inch Pro Filter

Important Note:

Both standard and non-standard sizes are available. Any cross-sectional area (D1 X D2) greater than 576cm² becomes a custom option. Electronics will be built on the first dimension listed:



Supplying Power to filter via transformer

If a separate transformer is required, or ON-OFF capability is desired, bring 120VAC to the installation point and select a transformer to convert 120VAC to 24VAC. See suggested transformers below.



PART NUMBER
PSC40AB10

DESCRIPTION
**40VA Power Supply
120 to 24 VAC**



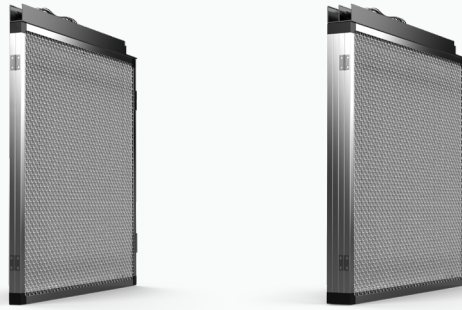
PART NUMBER
PSC100AB10

DESCRIPTION
**100VA Power Supply
120 to 24 VAC**

FILTERS REQUIRED	TRANSFORMER / POWER SUPPLY
1 UNIT	120V Receptacle or wire into air handler
2-19 UNITS	Select Model PSC40AB10, 40W Control Box
20-49 UNITS	Select Model PSC100AB10, 100W Control Box
50+ UNITS or a supply voltage other than 120V?	Please Contact Blade Air service@bladeair.com

Note: A common/typical selection is one box per air handler.

Pro Filter Specifications



PERFORMANCE

	BAPF1-R	BAPF2-R
Filter Type	Electromagnetic, Active Polarization	Electromagnetic, Active Polarization
MERV Rating with Power	MERV-13	MERV-13
MERV Rating without Power	MERV 6-8	MERV 6-8
Efficiency	0.007 Microns	0.007 Microns
Recommended Face Velocity	250-300 FPM	250-300 FPM
Pressure Drop @300FPM	0.11 in w.g.	0.17 in w.g.
VOC Reduction	46% in 48 Hours	46% in 48 Hours

PERFORMANCE

	BAPF1-R	BAPF2-R
Physical Dimensions	D1 x D2 x 1 Inch	D1 x D2 x 2 Inch
Weight	0.4 lbs	0.4 lbs
Media Material	Lofted Fiberglass	Lofted Fiberglass
Frame Material	Aluminum +PC/ABC	Aluminum +PC/ABC
Shipping Dimensions	Size Dependent	Size Dependent
Shipping Weight	2.9 lbs	2.9 lbs

PERFORMANCE

	BAPF1-R	BAPF2-R
Power Consumption Per Unit	2 Watts (VA)	2 Watts (VA)
Total Power Consumption	(#Blade Units) x (2 Watts)	(#Blade Units) x (2 Watts)
Nominal Input Voltage*	24 VAC	24 VAC
Voltage Range	18V min - 30V max	18V min - 30V max
Nominal Output Voltage	6kV	8kv
Current Consumption	0.08 amps	0.08 amps

*Transformers Available, if applicable see previous page for available models section.

APPLICATIONS

- Commercial In-Duct Filtration
- Seamlessly Replace any existing HVAC filters

KEY FEATURES

- No Ozone Creation, UL2998 Compliant
- Zero Retrofit
- Can daisy chain up to 6 units if required
- Improve IAQ by 2.25x
- Size is Customizable
- Up to 59% less static pressure than MERV-8
- Up to 71% less static pressure than MERV-13
- Third-party tested proved to reduce VOCs by 46%
- Outperforms HEPA at viral range
- 2X longer lasting filter life
- Filter pad made of 70% recycled material
- Reduce energy consumption by up to 15% through fan motor consumption

Pro Filter Installation

Carefully review this section before installing the Blade Air Pro Filter to ensure safe operation. **Failure to adhere to these instructions may result in product damage or hazardous situations.**

CAUTION & WARNINGS

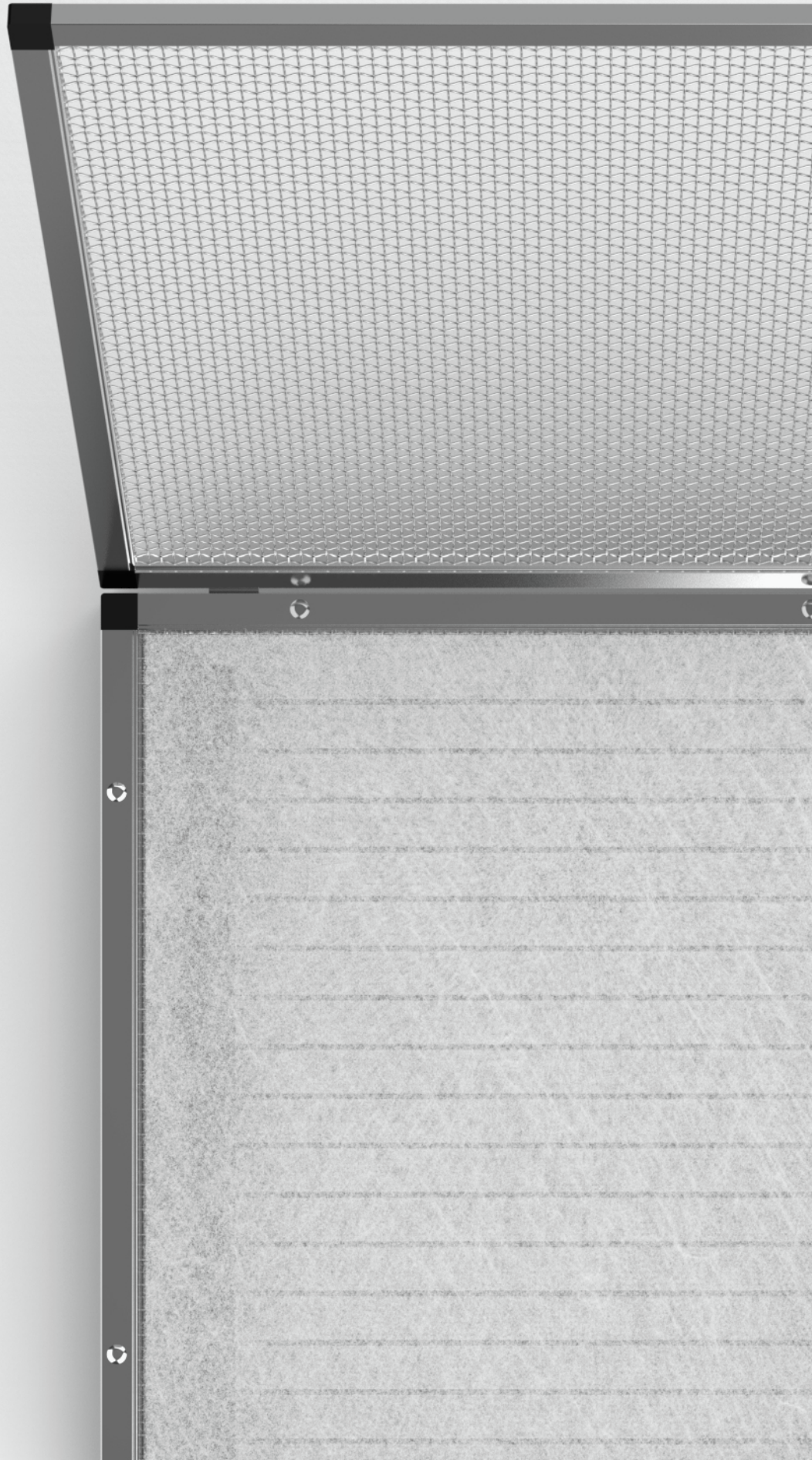
Do not connect unit to 110VAC Power supply.

Ensure that the HVAC systems power is disconnected prior to installation.

Only qualified, experienced technicians should install the Blade Air Pro Filter.



We recommend having a test meter available during installation.



Pre-Installation Checks

01. Confirm Filter Size

Take an exact measurement of the existing filter being replaced and verify the sizing of the filter racks to ensure that the Blade Air units can fit.

Blade Air Pro Filters are made from a rigid aluminum frame and cannot be bent to fit into a filter rack.

Blade Air Pro Filters are designed to be slightly undersized for ease of installation, with specific under sizing based on thickness.

Filter Thickness	1"	2"
D1 & D2 Reductions	3/8"	5/8"
Nominal	20" x 20"	20" x 20"
Actual	19.625" x 19.625"	19.375" x 19.375"

ⓘ Important Note:

This under sizing applies only to the filter's D1 and D2 dimensions, not its thickness; ensuring a proper fit within your HVAC system.

02. Confirm Face Velocity

Confirm face velocity is less than 500 FPM. If the FPM is above 500, please contact the Blade Air Team (service@bladeair.com)

03. Determine Electrical Load

To determine the Pro Filter's total electrical load, multiply the number of Blade Air units being installed by 2 Watts. See Below for a sample calculation:

(Electrical Load = Blade Units x 2 Watts)

Electrical Load = 10 Blade Units X 2 Watts
Electrical Load = 20 Watts

04. Confirm Power Source

Pro Filters are designed to operate with a total load of 2 Watts per filter.

Most commercial HVAC systems have a 24 VAC control circuit transformer to which Blade Air's Pro Filters can be safely connected to.

Before connecting the unit to a power source, positively identify that it is a 24-volt (max 30 Volts) AC source. Either consult an electrician or check the Air Handler Unit user manual for more detail.

**If Applicable:* See Available Models Section for details regarding supplying power via transformer.

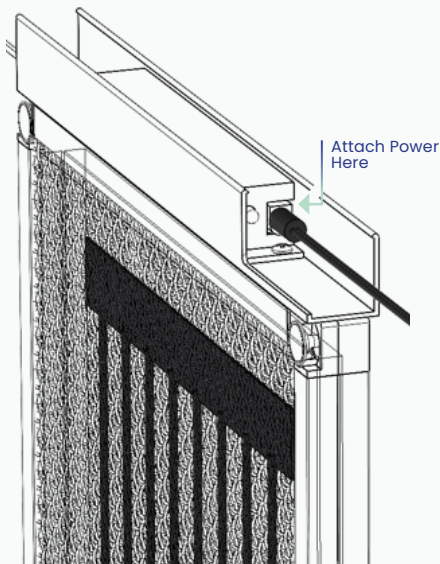




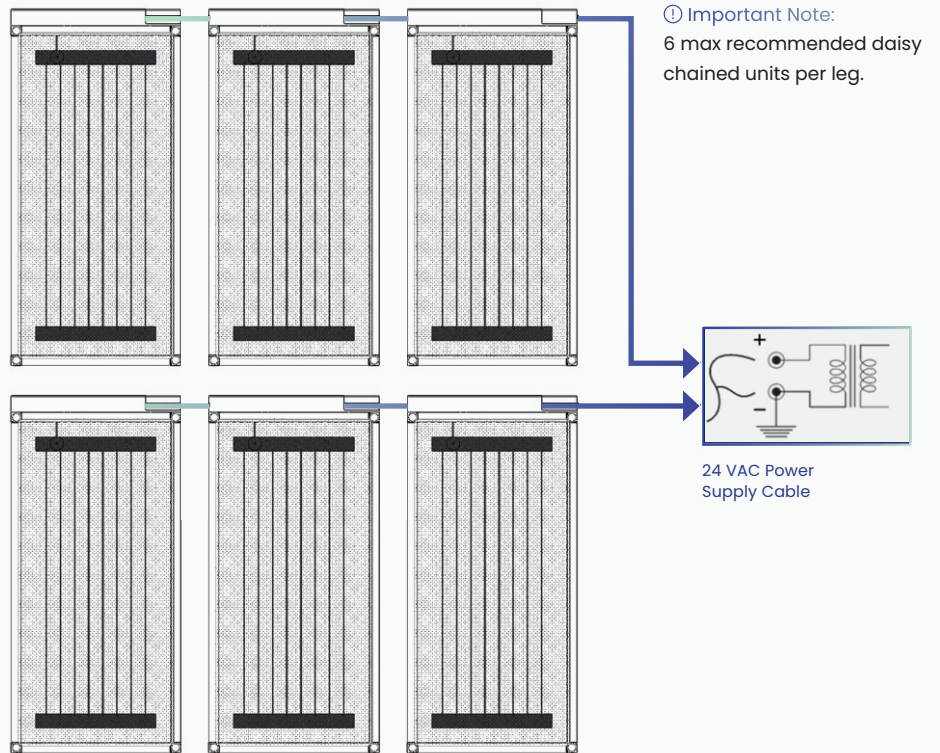
Pro Filter Video Installation Guide.

Installation Steps

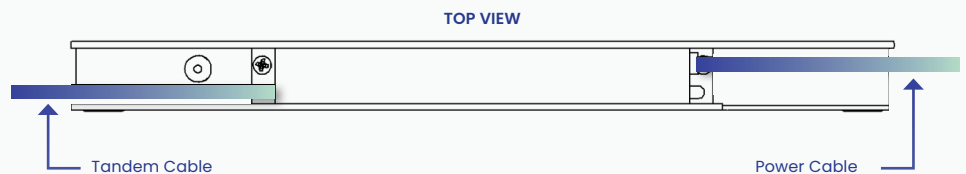
- 01.** Before installing filter, ensure that the HVAC system's power is disconnected.
- 02.** Clean the area thoroughly before installing the filter, remove existing dust from blower or ducts.
- 03.** Carefully remove the existing filter that is being replaced with the Blade Air Pro Filter (if applicable).
- 04.** Dispose of the previous filter by placing it in a suitable disposable bag.
- 05.** Before inserting the Blade Air Pro Filter into the HVAC system, connect the power supply cable to the filter:



- 06.** When installing multiple Blade Air units in the same filter rack, individual filters in a single row should be connected in series with each other using a daisy chain configuration. Connect the filters with the tandem cables to ensure synchronous operation and enhanced filter capabilities. Each row of Blade Air units should be wired to the power source in parallel to adjacent rows. See below:



- ⓘ Important Note:** All power heads should be positioned across the top of filters to ensure quick access to power connections and increase ease of media replacement.

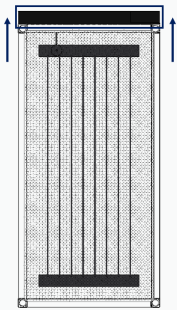




Installation Steps

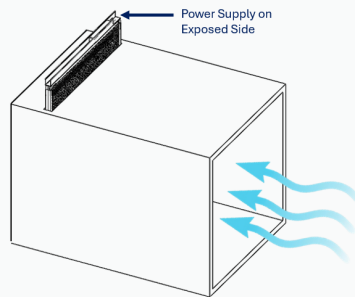
07.

Gently place Blade Air filter into the HVAC system in the correct orientation:



A.

Make sure the Blade Air Pro Filters Power Supply is Facing Upwards.



B.

Power Supply should be on the exposed side, if applicable. (slide in installation for example)

08.

Once it is confirmed that the existing air handler unit can handle the additional electrical load, connect the other end of the power supply cable directly into the 24VAC wiring terminal on the air handler unit using the 24 VAC Power Input Cable wire, or connect to 120V power receptacle if using 24VAC Power Adapter.

4A

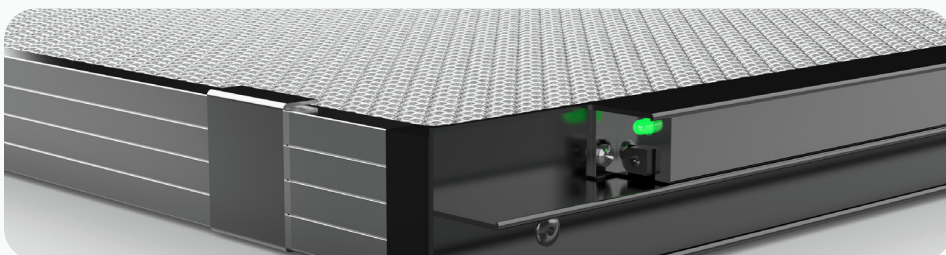


4B



09.

Optional: Add gasketing to better seal airflow.

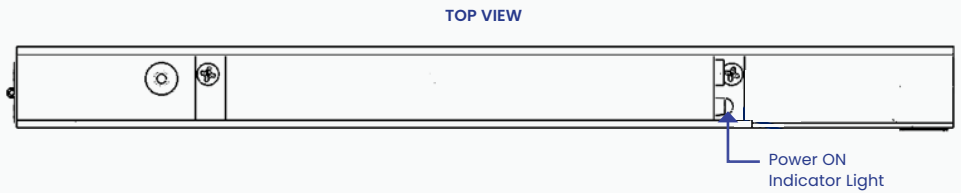


10.

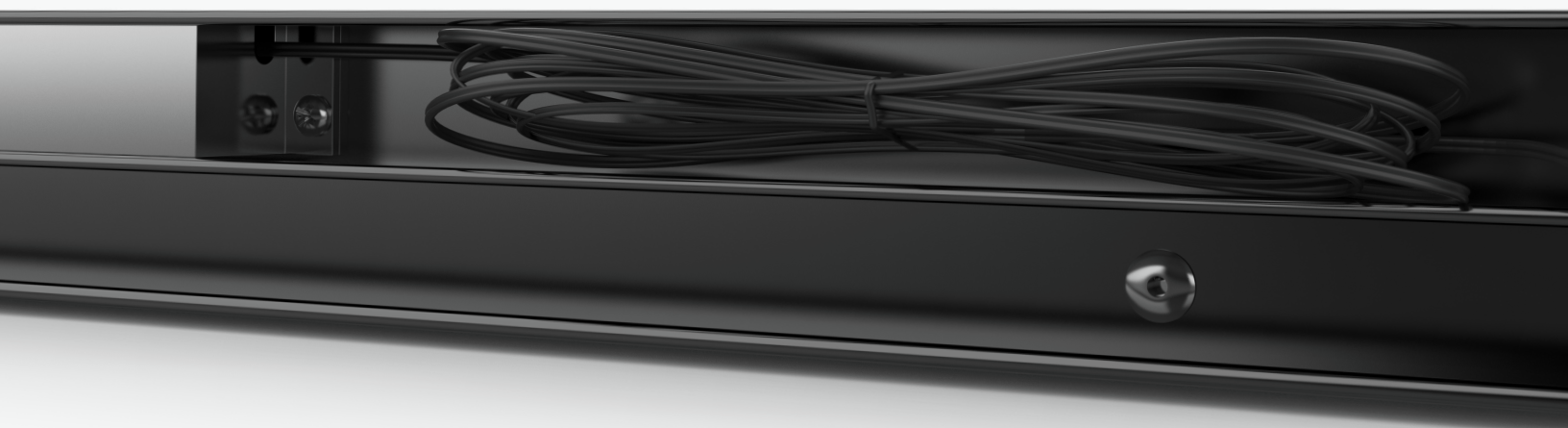
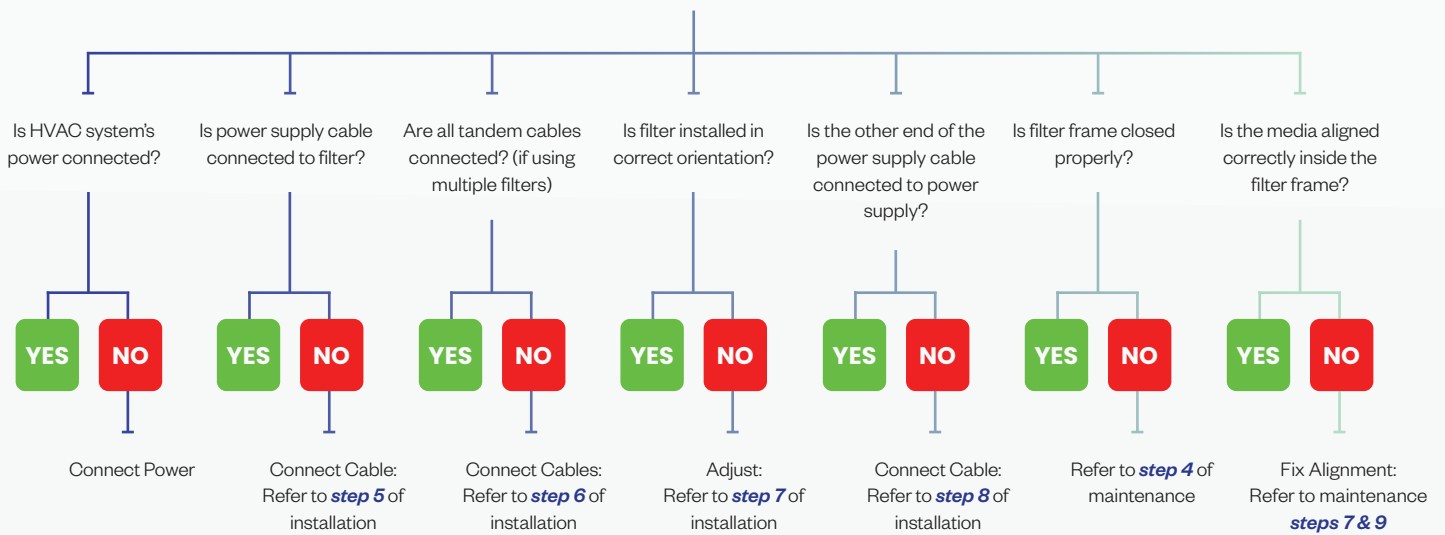
Power up the HVAC system where Blade Air Pro Filters are used and ensure that the green power indicator light is on for each filter.

Pro Filter Troubleshooting

If the indicator light is not "ON" when connected to power, the filter is not working. Follow troubleshooting steps listed below.



INDICATOR LIGHT IS NOT ON



Pro Filter Operation

No specific steps required for daily operation. Once the filter is installed, if the green power light indicator is on, the filter is functioning effectively.

ⓘ Important Note:

If the answer to all the questions above is yes and the light still doesn't turn on, contact the Blade Air team, service@bladeair.com.



Quick & Effective
Maintenance Tips.

Care & Maintenance

Ordering Replacement Media

The Blade Air Pro Filter should be replaced about every 6 months depending on the building's specific conditions.

When the time comes to order replacement media, please specify quantity and the dimensions of the media as follows:

D1 X D2 X THICKNESS [inches], noting that the first dimension specified is the side the power supply will be built on.

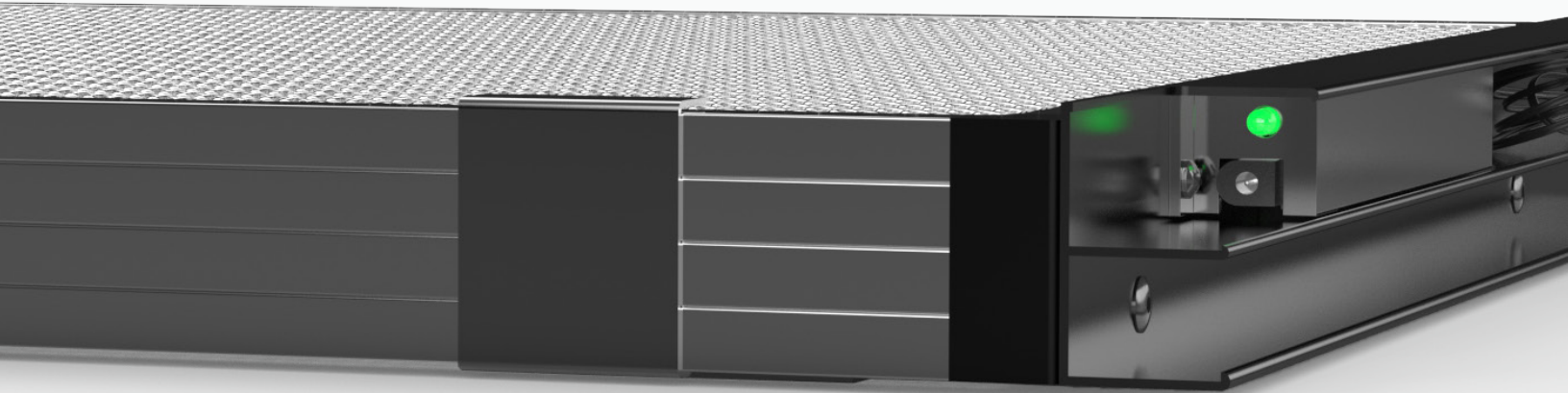
Contact info@bladeair.com or see the 'Contact Us' page of the Blade Air Website here and select maintenance department to place an order.

Department *

- Maintenance
- General
- Sales
- Media
- Support
- Maintenance**

It is also possible to order replacement media through one of Blade Air's resellers. See the distribution portal of the Blade Air Website.

[Distribution Portal >](#)

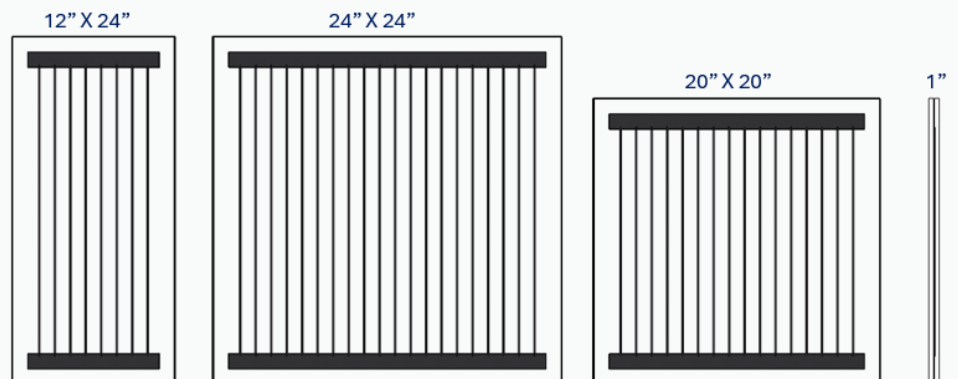


Example Order

I would like to place an order for 5X Blade Air Pro Replacement Filter Media with the following dimensions: 12" X 24" X 2".

ⓘ Important Note:


In this example, the electronics would be built on the 12" side.





Installing Replacements


Review below for the correct steps to take when performing maintenance.

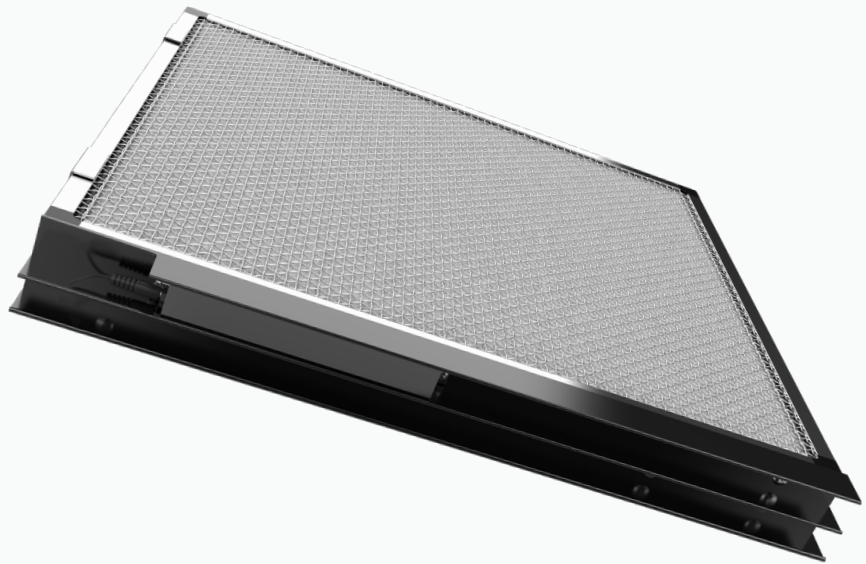
REQUIRED TOOLS

-  Blade Air Pro Filter Replacement Media

-  Disposable Bag

-  Protective Gloves

-  Protective Eyewear



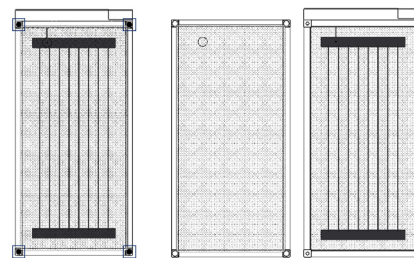
01. Ensure HVAC systems power is disconnected before beginning maintenance.

02. Before removing the filter, be sure to unplug the power supply cable.

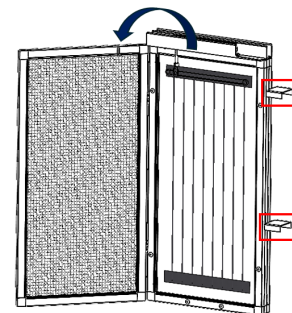
03. Carefully remove the filter from its position within the HVAC system.

04. Depending on which Pro Filter frame you have, to access exhausted filter media, choose either A,B or C:

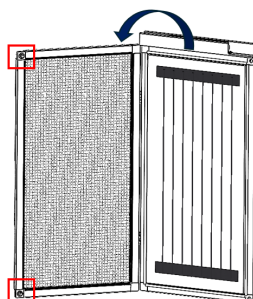
A. Gently pop up the 4 corners of the filter's outer housing and fully remove top half of frame.



C. Swing open 2 metal clips and open frame




B. Gently pop up 2 corners and open the Pro Filter frame





Installing Replacements


Review below for the correct steps to take when performing maintenance.

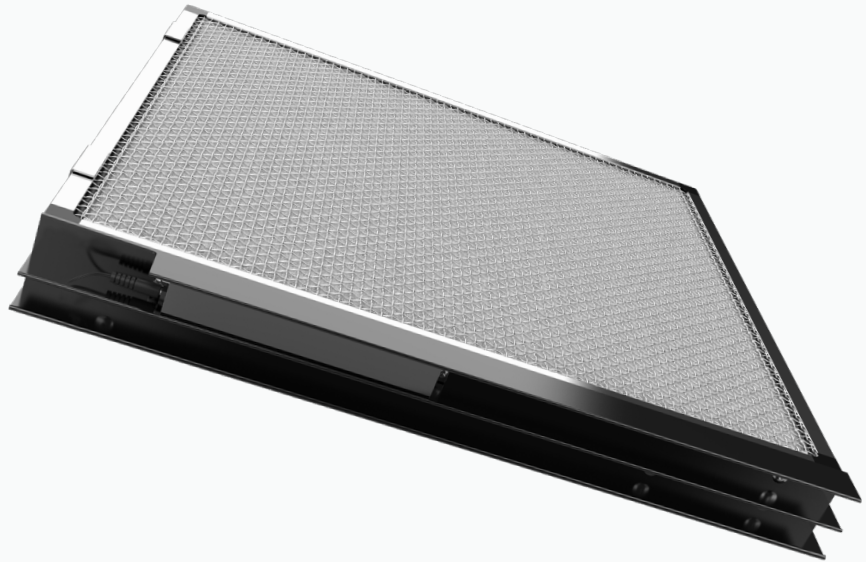
REQUIRED TOOLS

-  Blade Air Pro Filter Replacement Media

-  Disposable Bag

-  Protective Gloves

-  Protective Eyewear



05.

Carefully remove the exhausted filter pad and transfer to suitable disposal bag.

06.

Always handle used filters with gloves to prevent contamination.

07.

When installing new filter media, to ensure proper alignment, ensure plastic bar is aligned with the strip found inside the filter media to effectively provide power.

08.

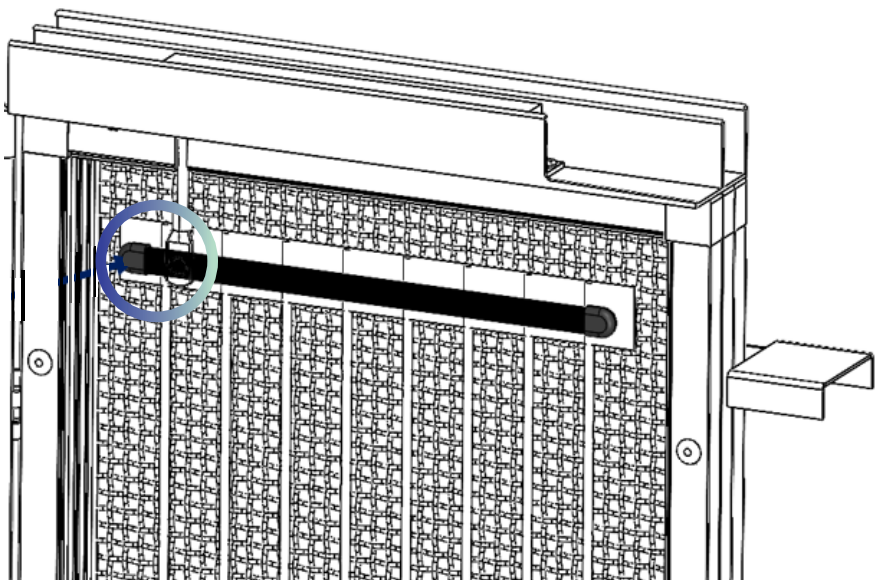
Close and secure the Blade Air Pro Filter frame.

09.

Maintenance is now complete, and the Blade Air Pro Filter can be placed back into the building's HVAC system.

10.

Once reinstalled, reconnect power to the HVAC system.



↑ Ensure bar is aligned with carbon strip.

Cleaning Instructions

As the air cleaner operates, the glass filter pads in the air cleaner will become embedded with dirt.

Please follow the below steps approximately every 4-6 months (subject to change depending on the buildings conditions).



Remove filter from the heating or cooling unit.

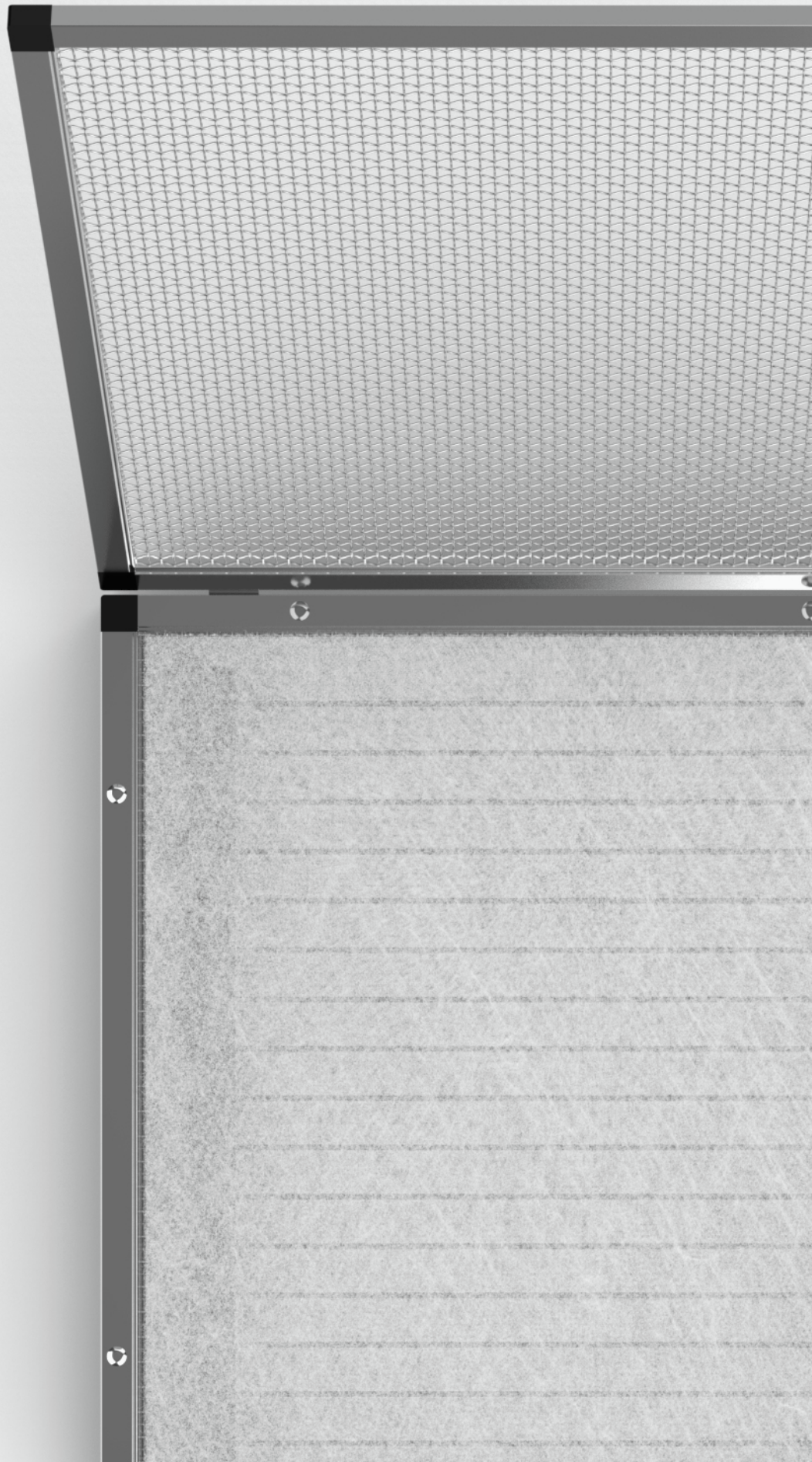
Disconnect the power cord.

Vacuum any heavy dust accumulation from the outside screens or with a soft brush and wipe clean with a damp cloth.

Let the units completely dry before reattaching power.

ⓘ Important Note:

Neither the unit nor filter pads can be cleaned by washing or immersing in water. If you wish to clean the frame, disconnect the power cord and wipe with a damp cloth. Let the units completely dry before reattaching power.





Product Warranty

Blade Air Inc. warrants the electrostatic filters for a period of three (3) years from the date of purchase to the original purchaser. Blade Air Inc. will repair free of cost to the customer any part of the product which, after an examination, is found to be defective in workmanship or material. Shipping charges to and from Blade Air Corp. and/or its authorized agent shall be borne by the purchaser. This warranty does not apply to mechanical or structural damage such as may be due to but not limited to dropping, improper handling, misuse, or abuse during installation and usage. No person or representative of the firm is authorized to commit Blade Air Inc. to further liability or obligation.

For Customer Service Inquiries

✉ service@bladeair.com

☎ 416.701.0201

🔗 bladeair.com/support