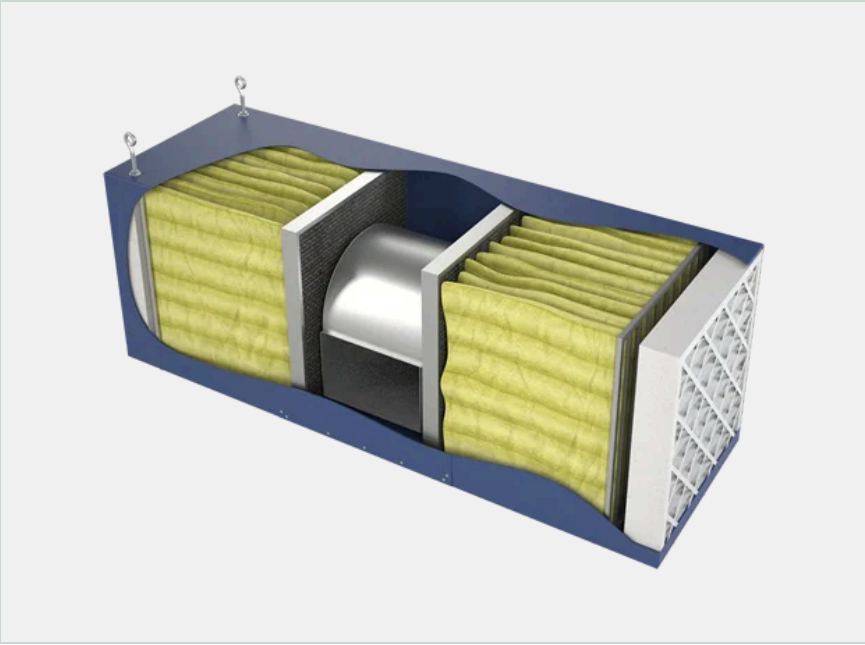
OWNER'S MANUAL

BlueOx OX3500C Series

BlueOx – OX3500C-CF

Commercial Air Filtration System



- Introduction
- Mounting
- Maintenance
- Specifications
- Electrical
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- Unpacking
- Operation
- Troubleshooting

IMPORTANT

This manual contains precautionary statements relating to worker safety. Read and save this manual completely and comply as directed. All the potential hazards of dust and mist control systems and equipment are impossible to list; therefore, obtain the services of a professional installer. A fire protection expert should be obtained in the event the product is intended for use that presents a potential risk of fire or fire propagation. Refer to appropriate authorities, and discuss your intended use with Air Cleaning Specialists, Inc. Workers handling equipment or systems should be instructed to conduct themselves in a safe manner.

Retain these instructions for future reference.

SPECIFICATIONS

OX3500C Series

Cabinet	16 ga cold-rolled steel
Finish	River Blue chemical-resistant powder coat
Size	72" L × 24" W × 26" H (wrap-a-round 108" L)
Power	208–230 / 460V, 6.0–5.8 / 2.9 A, 1250 W
Capacity	3500 CFM max
Motor	2 hp TEFC single speed, belt driven, pre-wired junction box (3 hp upgrade optional)
Speed	Single speed
Blower	Centrifugal, forward curve
Grille	Louver with four-way individually adjustable blades
Pre-filter	(2) 24" × 24" × 4", 35% pleated, beverage board frame (aluminum mesh optional)
Warranty	Two years on all parts (filters not included)

MODELS

Model	Configuration	CFM	Weight
OX3500C	Standard	3500	280 lbs
OX3500C-CF	Dual 2" carbon after-filters	3500	300 lbs
OX3500C-WA	Wrap-a-round filter	3500	350 lbs

BAG FILTER

- Standard / wrap-a-round — (2) 24" × 24" × 21", 65% or 95%, 8 pocket
- With carbon filter option — (2) 24" × 24" × 15", 95%, 12 pocket

OPTIONS

- Silencer with louver lowers fan exhaust noise 6–8 dB; silencer with grille 10–12 dB
- Magnehelic pressure gauge — indicates when to change filters
- Dual L-brackets — ideal for wall mounting
- Strut channel — 28" hanging brackets
- Drain plug — oil/mist drain via hose barb fitting
- UV light catalyst bar — kills airborne bacteria, mold, and viruses

Wrap-a-round option measures 108" L × 24" W × 26" H. Weights are per the manufacturer specification. Use them when sizing chain, hooks, and hardware (see page 4).

SAFETY RULES

Follow all electrical and safety codes as well as the National Electrical Code (NEC), National Fire Protection Association (NFPA), and the Occupational Safety and Health Act (OSHA). Qualified personnel should perform all electrical connections and wiring only. NFPA standards require specific duct design and dust collector configuration when collecting potentially reactive metal dusts, such as aluminum, magnesium, and other materials. NFPA also covers other dusts such as grain and plastics. A guideline for determining the precautions to be taken can be found in NFPA 497. Other NFPA standards may apply to your specific application. Consult current NFPA standards, available from NFPA, 1 Batterymarch Park, Quincy, MA 02269, 800-344-3555, for applicable safeguards which may be required for the installation, operation, and service of this product. Additional references are the Uniform Building Code and the Uniform Mechanical Code.

WARNING

1. Avoid mixing combustible materials such as (but not limited to) buffing lint, paper or wood dust, aluminum, or magnesium with dust generated from the grinding of ferrous materials. This creates a potential for fire due to the mixing of sparks and combustible materials.
2. Under no conditions should the machine operator be allowed to put lit cigarettes or any burning object into this or any dust/mist control system.
3. Installation of this unit in applications where there is a chance for heated and/or flammable materials to enter the unit should be evaluated to determine if a fire protection/extinguishing system should be installed. Federal, state, or local codes, as required by organizations such as NFPA and Factory Mutual Insurance or your insurance carrier, may require such a system. CleanLeaf can offer basic guidelines for such an installation; however, final installation design is the responsibility of the filtration unit owner/user.
4. Explosion relief vents are required on some applications. Consult with an insurance underwriter or an NFPA manual to determine proper vent size ratio. Dust or mist collectors must be located outdoors unless otherwise indicated by NFPA standards. Dust and mist collectors DO NOT CONTAIN EXPLOSION RELIEF VENTS as shipped from the factory and must be field installed per NFPA standards.

Always use CleanLeaf replacement filters and parts to maintain warranty. To order replacement parts call (866) 999-9008 or email info@cleanleaf.com.

CLEANLEAF LIMITED WARRANTY

Air Cleaning Specialists, Inc. warrants all products sold, only to purchasers for use in business or for resale, against defects in workmanship or materials under normal use for two years after date of purchase from Air Cleaning Specialists, Inc. This two-year warranty does include standard warranties from purchased parts such as blowers, motors, and valves. All purchased items will fall under the manufacturers' standard warranty. Any part which is determined to be defective in material or workmanship and returned to Air Cleaning Specialists, Inc. or an authorized service facility, as Air Cleaning Specialists, Inc. designates, shipping cost prepaid, will be, as the exclusive remedy, repaired or replaced at Air Cleaning Specialists, Inc. option. Any liability for consequential and incidental damage is expressly disclaimed. Air Cleaning Specialists, Inc. liability, in all events, is limited to and shall not exceed the purchase price paid. Title and risk of loss pass to buyer on delivery to the common carrier. If product is damaged in transit, recipient must file claim with carrier. Air Cleaning Specialists, Inc. will make a good faith effort for prompt correction or other adjustments with respect to any product that proves to be defective within the warranty period.

DISCLAIMER

Although instructions and recommendations are included for installation of your mist or dust collector equipment, the manufacturer does not assume responsibility for the installation of this equipment, nor shall be held liable for direct or consequential damages resulting from improper methods, structural failure, or inadequate supports.

SAFETY

Read and save this manual completely and comply as directed. This manual contains precautionary statements relating to worker safety. Workers handling equipment or systems should be instructed to conduct themselves in a safe manner. All the potential hazards of dust and mist control systems and equipment are impossible to list; therefore, obtain the services of a professional installer. A fire protection expert should be obtained in the event the product is intended for uses which present a potential risk of fire or fire propagation. Refer to appropriate authorities, and discuss your intended use with Air Cleaning Specialists, Inc.

Initial inspection

If your new CleanLeaf units were shipped in by truck, inspect the carton for damage or possible shortages. If there are any signs of possible shipping damage, unpack the units and make a note of the shortage or damage on the freight bill before signing it. If the carton is opened at a later time and there is damage to the unit, file a concealed damage claim with the delivery carrier. They are responsible for any damages in shipment or for shortages of items that were actually shipped.

Installing your new CleanLeaf units

All installations must meet all electrical or mechanical building codes that may apply in your particular area. If there are no local requirements, follow the national requirements. If the optional drain plug was installed in your unit, you can connect an appropriate 3/8" I.D. rubber hose for oil/mist routing.

All chains, hooks, bolts, or other items used in the installation must be at least strong enough to support **four times** the weight of each unit. Unit weights are as follows:

OX3500C	**OX3500C-CF**	**OX3500C-WA**
280 lbs	300 lbs	350 lbs

Methods for mounting your OX3500C unit

There are many different ways to install your units. The most common method is to support them from the ceiling structure with four chains. If you use this method, have four holes drilled down through the top of the unit approximately 6" from each end and 1" from each side of the unit. The factory will then install eyebolts that can be used to attach chain or rod. An eyebolt kit is available at additional cost and includes 5’ sections of chain and Q-links.

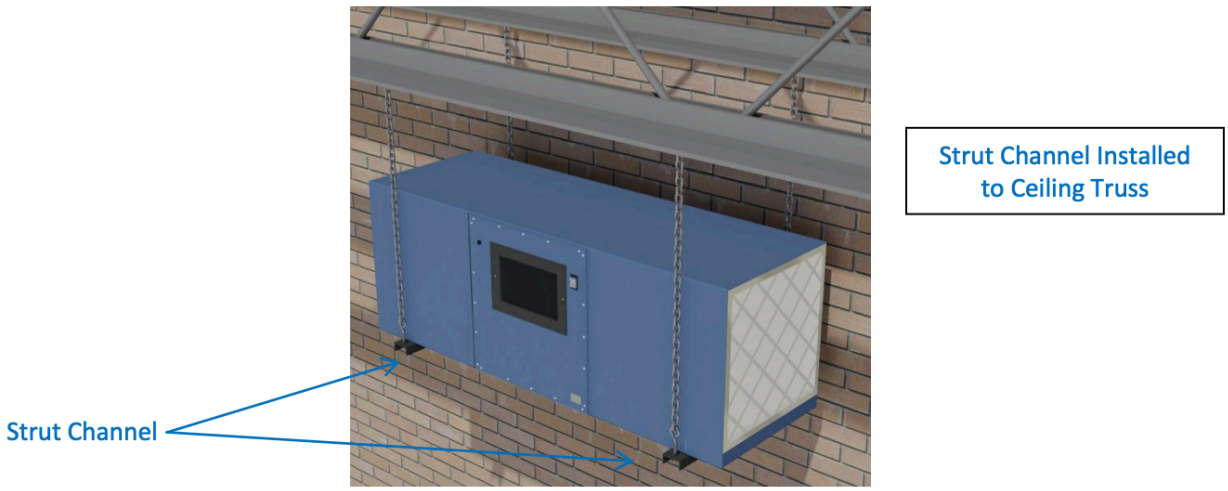
Another available option is strut channel, which is placed underneath the unit and then hung with appropriate steel chains and Q-links. The top end of the chains must be secured to the ceiling structure in a safe and acceptable manner. The last typical method is a dual L-bracket mount, which is ideal for wall mounting.

The next pages include sketches indicating possible methods of mounting your OX3500C cabinets. Ensure all installations are secure and meet all local, state, and federal codes. Be sure your unit is connected to the proper voltage and is protected by correctly sized fuses or breakers.

MOUNTING OPTIONS

Option 1 — mounting on strut channel

Two 28" strut channels are placed underneath the cabinet and hung with steel chain and Q-links secured to the ceiling truss.



Strut channel

Both 28" brackets seat under the cabinet and carry the unit weight.

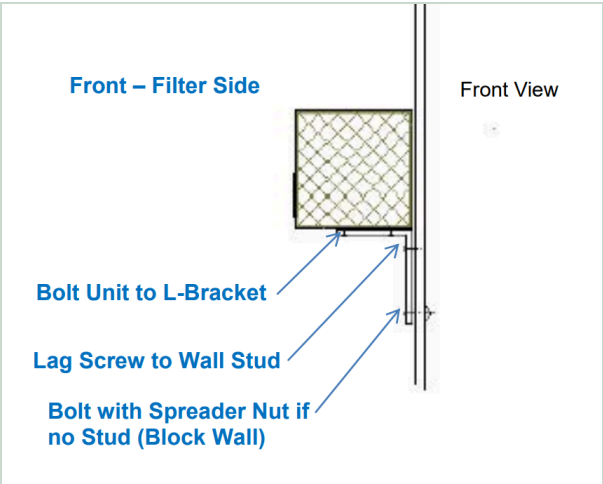
Chain

Steel chain and Q-links run from each channel end to the truss above.

Rating

Chain and hardware must support four times the unit weight.

Option 2 — wall mounting with L-brackets



Bolt unit to L-bracket

Fasten the cabinet to each bracket through the factory hole pattern.

Lag screw to wall stud

Anchor into structural framing rated for four times the unit weight.

Block wall

Where there is no stud, bolt through with a spreader nut.

Bracket spacing

L-brackets sit 6" from the ends of the unit, then secure to the wall.

OPERATION AND MAINTENANCE

CleanLeaf products are designed to improve your environment. The OX3500C Series collects dust, smoke, oil mist, oil smoke, and other atmospheric pollutants in industrial plants, shops, schools, and factories with high-efficiency two- or three-stage filtration. It is a complete air filter packaged unit that installs easily and can be used as a free-hanging unit to clean ambient pollutants, smoke, and haze.

The OX3500C consists of a 4" pleated pre-filter that traps dust and larger particles. The second stage, a micro-glass multi-pocket bag filter, has 98% arrestance and either 65% or 95% efficiency on the atmospheric dust spot test depending on the application, removing smoke and other sub-micron particles from the air. Changing the filters requires no tools. The 4" pre-filter pulls from the unit and is replaced. The main filter is located directly behind the pre-filter and pulls out as well. For light odors, an optional 2" 50% bypass carbon after-filter is available.

Motors

The OX3500C is a belt-driven unit. The motor must be protected externally via breaker and disconnect switch.

Operation

Do not operate your units without a filter for more than a few minutes at a time.

Magnehelic pressure gauge option

This option helps determine when to change the filters. As the bags fill with contaminants, the needle on the gauge will rise. We recommend changing the bags between 1.25" and 1.50" above the reading taken with clean filters. It is normal to change the pleated filter twice (or more) as often as the inside bag filter. After the pleated filter has been changed and there is no longer a drop in pressure, it is time to change the main filter. The reading may vary depending on the contaminants. Consult your sales engineer for further information.

Louvers

Four-way louvers are provided on all units to let you direct the discharge air away from pilot lights on heaters and to help you obtain the best air flow pattern for maximum cleaning.

Filters

All units are equipped with replaceable media filters. In some cases, where the contaminants being picked up are dry, it is possible to blow out the pre-filters and reuse them. Filters are available in a number of different efficiencies. The filters in your new CleanLeaf unit have been selected by your representative to best collect your particular type of contaminant.

Media filters actually become more efficient as they load with contamination. However, as the filters load up, the air flow volume decreases and eventually reaches a point where they must be replaced to restore the original air flow. Changing the filters in your new CleanLeaf air cleaner is easy: old filters are simply pulled out of the entrance end of the unit and new filters are installed. No tools are required. Turning the unit on when installing new filters will help pull them into place.

Cleaning and inspection of the cabinet

After the dirty components have been removed, inspect the cabinet interior. Remove foreign material, wipe the interior, and clean all filter seating surfaces.

When installing new filters, the opening in the bag filter and the pre-filter should be in a vertical position. Be sure the cloth part of the bag does not bunch up between the bag header and the angle iron filter stops on the cabinet. The pre-filter should be installed with the wire mesh to the inside of the unit. Replacement filters can be supplied by your representative.

PARTS

Always use CleanLeaf replacement filters and parts to maintain warranty. To order replacement parts:

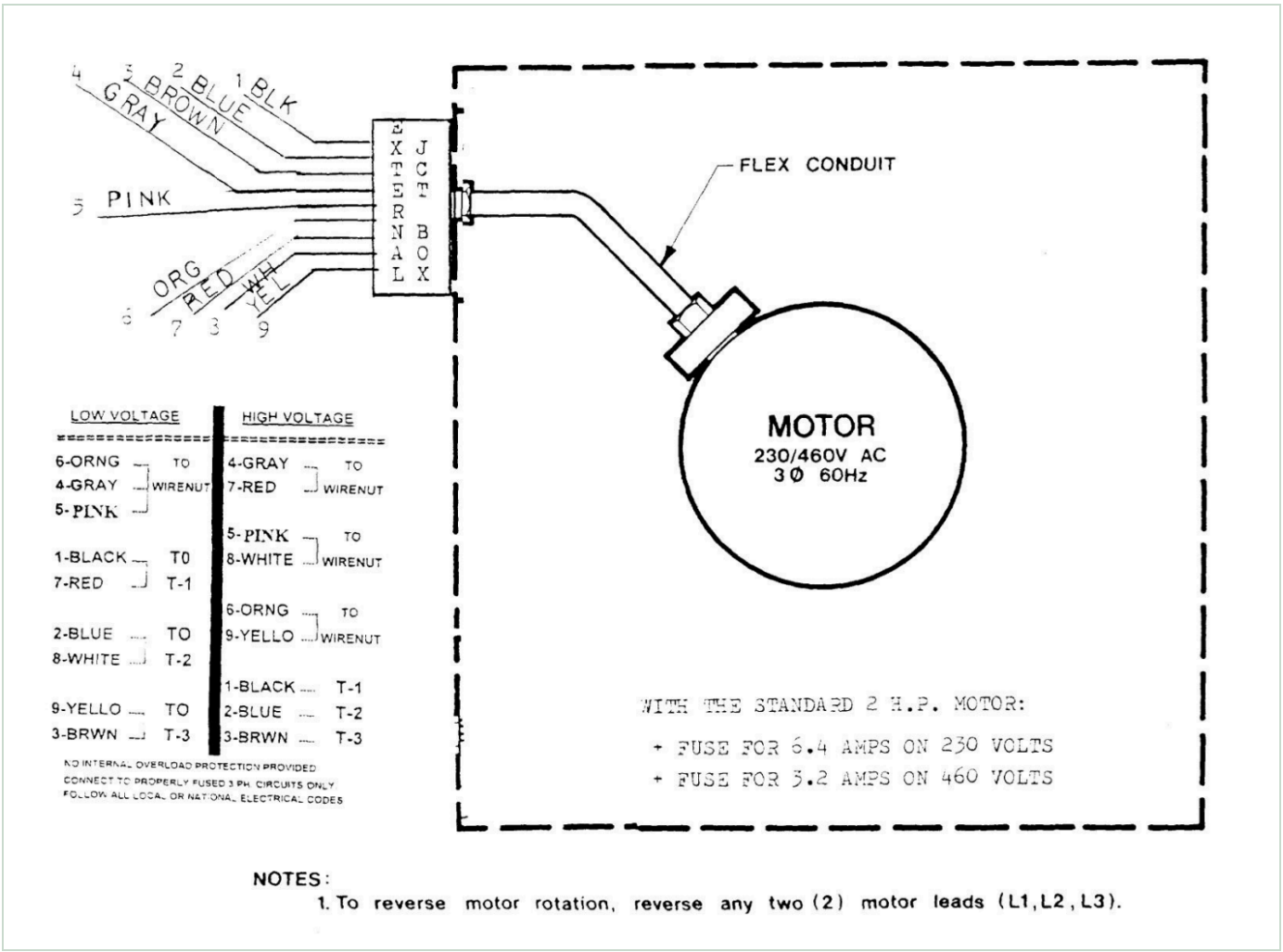
Call (866) 999-9008 | email info@cleanleaf.com

11088 Gravois Industrial Court, St. Louis, MO 63128

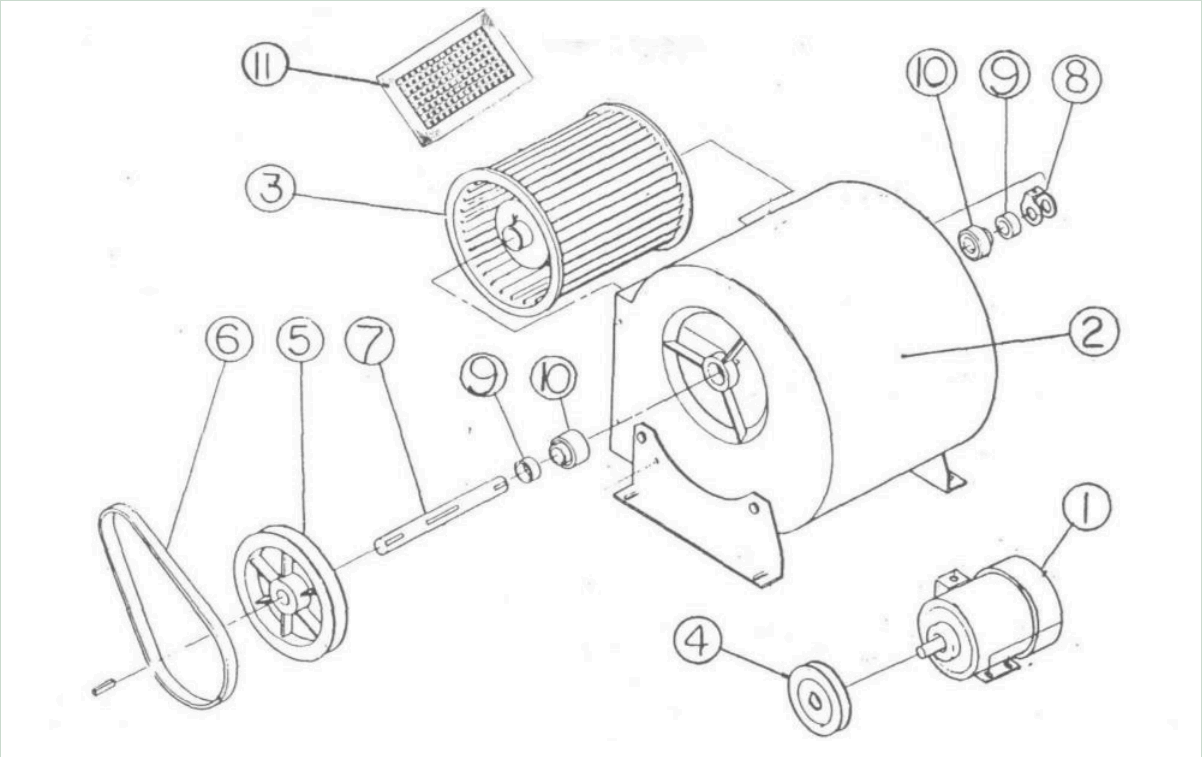
ELECTRICAL

OX3500C wiring diagram

230/460 VAC three phase, 60Hz, 6.0–5.8/2.9 A at 1250 W. With the standard 2 hp motor, fuse for 6.4 A on 230 V or 3.2 A on 460 V. No internal overload protection is provided — connect to properly fused three-phase circuits only. To reverse motor rotation, reverse any two motor leads. Use a qualified electrical technician to create your circuit, install your disconnect, and wire the motor junction box.



REPLACEMENT PARTS



Item	Part #	Description
1	**30C-3000**	2 hp TEFC three-phase motor
2	**30C-3001**	10" complete blower assembly
3	**30C-3002**	Blower wheel
4	**30C-3003**	Adjustable motor pulley
5	**30C-3004**	Blower pulley
6	**30C-3006**	V-belt
7	**30C-3007**	Blower shaft, 3/4"
8	**30C-3008**	Bearing retainer
9	**30C-3009**	Neoprene washer / spacer
10	**30C-3010**	Ball bearing with neoprene retainer
11	**30C-3011**	4-way adjustable louver

REPLACEMENT FILTERS

OX3500C replacement filters

Item	Part #	Description
12	**BOF-4404**	24" × 24" × 4" pleated pre-filter (beverage board frame)
13	**BOF-4404-AM**	24" × 24" × 4" washable aluminum mesh pre-filter
14	**BOF-442268**	24" × 24" × 21" — 65% bag filter (8 pocket)
15	**BOF-442298**	24" × 24" × 21" — 95% bag filter (8 pocket)
16	**BOF-4415912**	24" × 24" × 15" — 95% bag filter (12 pocket)
17	**BOF-4402-CF**	24" × 24" × 2" carbon after-filter (9 lbs)

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TROUBLESHOOTING

Problem	Remedy
Motor starts with a whine and does not reach full speed.	If three-phase powered, stop the motor immediately. It may be single phasing and will overheat, possibly damaging internal windings. Check fuses and/or wires for an interruption in one of the lines. The motor may be operating on two phases only.
Motor makes a scraping or knocking noise.	Check the motor cooling fan and its cover. It may have been damaged or shifted in transit and the motor fan is rubbing. Check for a loose blower wheel on the motor shaft — tighten if necessary.
No suction or pressure, or some suction but not as required (low or no airflow).	Check and open all dampers, if installed. Check ducting for blockage, if installed. Check for dirty or blocked filters (refer to the maintenance section). Check rotation of the fan.
Excess vibration.	Check structural support members. Tighten all bolts on legs and cross braces. Make sure the entire structure is solid. Check for a loose blower wheel — tighten if necessary.
Contaminants blowing through the unit.	Check for torn or damaged filters. Check filter seals. If a carbon module is used, make sure the filter sock is in place. Check door seals.
Motor over-amping nameplate.	Access door open — close doors. Incorrect filters or no filters in the unit. Ductwork faulty.

If after performing the above troubleshooting the unit fails to perform to specifications, contact us for further assistance:

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MOTOR TROUBLE GUIDE

The purpose of this guide is to suggest common answers to electrical problems. The information is not all-inclusive and does not necessarily apply in all cases. When unusual operating conditions, repetitive failures, or other problems occur, consult an electric motor service firm for assistance.

Trouble	Cause — what to do
Motor fails to start.	**Blown fuses** — replace with time-delay fuses or circuit breakers. Check for grounded winding. **Low voltage** — use a higher voltage tap on transformer terminals, increase wire size. Check for poor connections. **Improper line connections** — check connections against the diagram supplied with the motor. **Overload tripped** — check and reset the relay in the starter. Check heater rating against motor nameplate current rating. Check motor load. If the motor has a manual-reset thermal protector, check whether it has tripped. **Motor may be overloaded** — reduce load or increase motor size. **Permanent split capacitor motor, capacitor open** — indicated by a humming sound. Replace the run capacitor; see nameplate for the correct value. **Defective motor or starter** — repair or replace.
Motor stalls.	**Overloaded motor** — reduce load or increase motor size. **Low motor voltage** — see that nameplate voltage is maintained.
Motor does not come up to speed.	**Not applied properly** — consult a motor service firm for the proper type. Use a larger motor.
Motor takes too long to accelerate.	**Excess loading; high inertia load** — reduce load or increase motor size. **Inadequate wiring** — increase wire size. Check for poor connections. **Applied voltage too low** — reconnect to a higher transformer tap. Increase wire size. Check for poor connections. **Defective motor** — repair or replace. **Inadequate starting torque** — replace with a higher horsepower motor.

Trouble	Cause — what to do
Motor vibrates or is excessively noisy.	**Motor misaligned** — realign. **High voltages** — check wiring connections and transformer. **Worn, damaged, dirty, or overloaded bearings** — replace; check loading and alignment. **Loose, defective, or out-of-balance air mover** — tighten set screws, repair, or replace.
Insufficient speed change.	**Insufficient motor load** — use a lower horsepower motor. Reduce system restrictions (blower). Increase system restriction (blower fan).
Motor overheats while running under load.	**Overload** — reduce load; increase motor size. **Dirt preventing ventilation** — clean the motor. **Faulty connection** — clean, tighten, or replace. **High or low voltage** — check voltage at the motor; it should not be more than 10% above or below rated. **Defective motor** — repair or replace.

Shop replacement filters and parts at cleanleaf.com

Or call (866) 999-9008

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