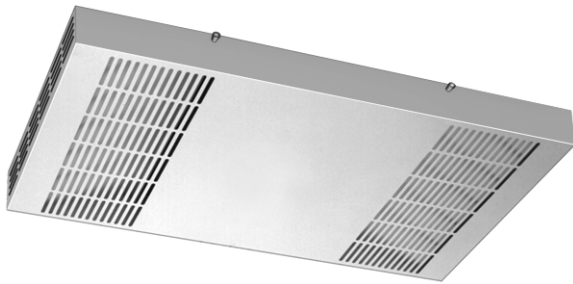


Honeywell

F111 (Series 3) In Ceiling Media Air Cleaner

PRODUCT DATA



APPLICATION

The F111 (Series 3) Ceiling Media Air Cleaner is a media air cleaner that uses a three-speed direct drive forward curve blower motor with particle filter. When equipped with CPZ™ modules (2), gases and odors are adsorbed from the air passing through the unit. The air cleaner removes airborne particles such as dust, soot, mold spores, pollen and some cooking smoke from the air circulated through the filter.

FEATURES

- Three levels of filtration:
 - 99.97% High Efficiency Particulate Air (HEPA)
 - Hospital grade filter 95% efficient at 0.3 micron (MERV 16)
 - 95% ASHRAE (MERV 12)
- Circulates up to 1250 cfm.
- Designed to overcome the increase in air flow resistance normally caused by filter loading.
- White or black color cover to complement the ceiling.
- CPZ™ module removes up to 95% of the space odors for up to 24 months.
- 3-Speed remote wall switch.

Contents

Application	1
Features	1
Specifications	2
Ordering Information	2
Planning the Installation	3
Installation	4
Operation	7
Service	8
Parts List	9



68-0198-05

SPECIFICATIONS

IMPORTANT

The specifications given in this publication do not include normal manufacturing tolerances. Therefore, this unit may not exactly match the listed specifications. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Models: Refer to Table 1 for model descriptions.

Grill Color: White (standard) or Black.

Blower/Motor: Three speed ('-3S' to the end of the model number) direct drive forward curve.

Dimensions: See Fig. 1 for dimensions.

Table 1. F111 (Series 3) Description.

Model	Input Power	Efficiency		Gas, V.O.C. and Odor Control Modules (2)	Air Volume in cfm, High Speed (m ³ /hr)	Grill Color
		Filter Rating	V.O.C./Odor (Most Gases/ Odors First Pass Average)			
F111A1020B-3S	120 Vac, 60 Hz, 7.5A	95% at 0.3 micron (MERV 16)	n/a	n/a	1050 (1780)	Black
F111A1020W-3S	120 Vac, 60 Hz, 7.5A	95% at 0.3 micron (MERV 16)	n/a	n/a	1050 (1780)	White
F111A1063B-3S	120 Vac, 60 Hz, 7.2A	99.97% HEPA	n/a	n/a	950 (1610)	Black
F111A1063W-3S	120 Vac, 60 Hz, 7.2A	99.97% HEPA	n/a	n/a	950 (1610)	White
F111A1253B-3S	120 Vac, 60 Hz, 8.5A	95% ASHRAE (MERV 12)	n/a	n/a	1250 (2120)	Black
F111A1253W-3S	120 Vac, 60 Hz, 8.5A	95% ASHRAE (MERV 12)	n/a	n/a	1250 (2120)	White
F111C1003B-3S	120 Vac, 60 Hz, 7.0A	99.97% HEPA	85%	CPZ™ modules	825 (1400)	Black
F111C1003W-3S	120 Vac, 60 Hz, 7.0A	99.97% HEPA	85%	CPZ™ modules	825 (1400)	White
F111C1012B-3S	120 Vac, 60 Hz, 8.0A	95% at 0.3 micron (MERV 16)	85%	CPZ™ modules	1125 (1910)	Black
F111C1012W-3S	120 Vac, 60 Hz, 8.0A	95% at 0.3 micron (MERV 16)	85%	CPZ™ modules	1125 (1910)	White
F111C1073B-3S	120 Vac, 60 Hz, 7.5A	95% ASHRAE (MERV 12)	85%	CPZ™ modules	1150 (1950)	Black
F111C1073W-3S	120 Vac, 60 Hz, 7.5A	95% ASHRAE (MERV 12)	85%	CPZ™ modules	1150 (1950)	White

Table 2. F111 Air Volume Specifications for 3 Speed Models (Series 3).

Model	Input Power	Filter Rating	Gas, V.O.C. and Odor Control Modules (2)	High in cfm (m ³ /hr)	Medium in cfm (m ³ /hr)	Low in cfm (m ³ /hr)
F111A1020B-3S	120 Vac, 60 Hz, 7.5A	95% at 0.3 micron (MERV 16)	n/a	1050 (1780)	800 (1360)	450 (760)
F111A1020W-3S	120 Vac, 60 Hz, 7.5A	95% at 0.3 micron (MERV 16)	n/a	1050 (1780)	800 (1360)	450 (760)
F111A1063B-3S	120 Vac, 60 Hz, 7.2A	99.97% HEPA	n/a	950 (1610)	775 (1310)	450 (760)
F111A1063W-3S	120 Vac, 60 Hz, 7.2A	99.97% HEPA	n/a	950 (1610)	775 (1310)	450 (760)
F111A1253B-3S	120 Vac, 60 Hz, 8.5A	95% ASHRAE (MERV 12)	n/a	1250 (2120)	800 (1360)	450 (760)
F111A1253W-3S	120 Vac, 60 Hz, 8.5A	95% ASHRAE (MERV 12)	n/a	1250 (2120)	800 (1360)	450 (760)
F111C1003B-3S	120 Vac, 60 Hz, 7.0A	99.97% HEPA	CPZ™ modules	825 (1400)	700 (1190)	450 (760)
F111C1003W-3S	120 Vac, 60 Hz, 7.0A	99.97% HEPA	CPZ™ modules	825 (1400)	700 (1190)	450 (760)
F111C1012B-3S	120 Vac, 60 Hz, 8.0A	95% at 0.3 micron (MERV 16)	CPZ™ modules	1125 (1910)	825 (1400)	450 (760)
F111C1012W-3S	120 Vac, 60 Hz, 8.0A	95% at 0.3 micron (MERV 16)	CPZ™ modules	1125 (1910)	825 (1400)	450 (760)
F111C1073B-3S	120 Vac, 60 Hz, 7.5A	95% ASHRAE (MERV 12)	CPZ™ modules	1150 (1950)	800 (1360)	450 (760)
F111C1073W-3S	120 Vac, 60 Hz, 7.5A	95% ASHRAE (MERV 12)	CPZ™ modules	1150 (1950)	800 (1360)	450 (760)

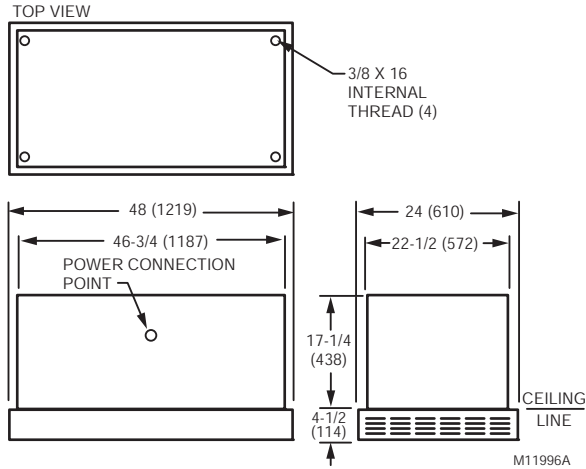


Fig. 1. Approximate dimensions of F111 (Series 3) in in. (mm).

Installation Weight:

Approximately 115 lb to 155 lb (52.16 kg to 70.3 kg) depending on the filter configuration. Refer to Table 3.

Table 3. Sorbent Module Weight.

Media	Weight in lb (kg)
CPZ™ modules (2)	43 (20)

Sound Level at 3.3 ft (1m):

Low speed: 53 dBA
 Medium speed: 57 dBA
 High speed: 61 dBA

Grille Type: Perforated metal.

Mounting: Recesses into opening on the ceiling.

Approvals:

Underwriters Laboratories Inc.: Listed.
 Canadian Standards Association: Listed.

Accessories:

Remote 3-Speed Wall Switch

Replacement Parts See Parts List, Table 5.

PLANNING THE INSTALLATION

The number of F111 (Series 3) air cleaners that are needed is determined by taking into account the number of occupants and the volume of the space. Type of contamination, outdoor air quality and use of the area are also factors. Refer to Table 3 for general guidelines when determining how many air cleaners are needed.

EXAMPLE: One air cleaner can provide 2.5 air changes per hour in a 24,000 cubic feet (720 cubic meters) no smoking area. Table 3 suggests two air cleaners for a 24,000 cubic feet area because most areas have contaminants that require more units to provide quality air.

If any questions should arise concerning determining the number of air cleaners needed for an area, consult your local Honeywell Commercial Air Cleaner Distributor.

Table 4. Determining the Minimum Number of Air Cleaners Needed for a Space.

Space Volume (L x W x H) in Cubic Feet (Cubic Meter)	Number of Persons Present	Minimum Number of Air Cleaners
12000 to 18000 (360 to 540)	30 to 60	1
18001 to 35000 (540 to 1050)	61 to 90	2
35001 to 51000 (1050 to 1530)	91 to 120	3
51001 to 65000 (1530 to 1950)	121 to 180	4
65001 to 80000 (1950 to 2400)	181 to 240	5
80001 to 95000 (2400 to 2850)	241 to 300	6

! WARNING

TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use This Unit Only In The Manner Intended By The Manufacturer. If You have Questions, Contact The Manufacturer.
2. Before Servicing Or Cleaning Unit, Switch Power Off At Service Panel And Lock Service Panel To Prevent Power From Being Switched on Accidentally. When The Service Disconnecting Means Cannot Be Locked, Securely Fasten a Prominent Warning Device, Such As A Tag, To The Service Panel.
3. Installation Work And Electrical Wiring Must Be Done By Qualified Person(s) In Accordance With All Applicable Codes And Standard, Including Fire Rated Constructions.
4. When Cutting Or Drilling Into The Wall Or Ceiling, Do Not Damage Electrical Wiring And Other Hidden Utilities.
5. If This Unit Is To Be Installed Over A Tub Or Shower, It Must Be Marked As appropriate For The Application and be connected to a GFCI (Ground Fault Circuit Interrupter) - protected branch circuit.
6. Never Place A Switch Where It Can Be Reached From A Tub Or Shower.

Choose Location

Choosing the correct location for the air cleaner affects the overall performance of the unit. The bidirectional airflow pattern must flow into the longest reaches of the zone being cleaned. See Fig. 2.

NOTE: The F111 Has Not Been Investigated For Use In Fire Resistance Rated Construction.

The air cleaner is designed to be suspended centrally in a space and mounted into or on a ceiling. The cleaning footprint of the air cleaner is rectangular with air patterns that move clean air to the corners of the area while drawing contaminated air up from the center of the area. See Fig. 2.

When multiple air cleaners are installed, the allotted areas to be cleaned should be equal. The air throw in one direction is approximately 55 ft (17m). Air velocity at 90 ft per minute (27m per minute) is considered end of throw

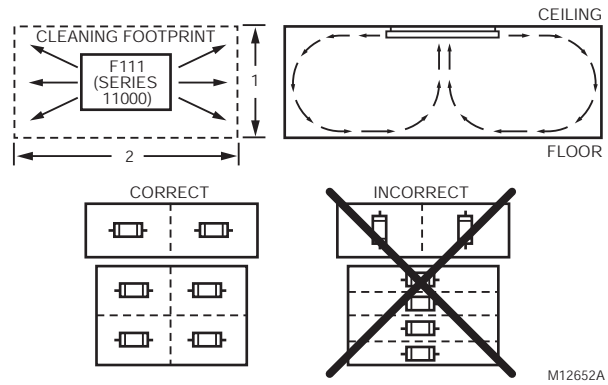


Fig. 2. Correct Positioning of the air cleaner for optimum cleaning.

IMPORTANT

Never hang the air cleaner higher than 16 ft (5m) above the floor.

INSTALLATION

! WARNING

Explosion Hazard Possible.

Can cause personal injury or equipment damage.

Do not install or use the F111 (Series 3) air cleaner where there is any danger of gas, vapor or dust explosion.

IMPORTANT

This air cleaner has not been investigated for use in the ceilings of fire-resistant assemblies.

! CAUTION

Electrical Hazard.

Can cause personal injury or equipment damage.

Turn off power before installing or servicing the air cleaner.

IMPORTANT

Stand on a stable platform when working with the air cleaner.

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

Unpack the Air Cleaner

Check that all components are included. The unit consists of:

- Cabinet and grille/door assembly,
- Media modules,
- Literature.
- Latches (2)
- 3-speed switch module

Make Opening (if Mounting in a Drop Ceiling)

1. Size the opening to fit the air cleaner cabinet as closely as possible.
2. Frame the opening to provide adequate support for the cabinet. The cabinet must fit snugly in the opening; allow no more than 1/4 in. (6 mm) from the opening to each side of the cabinet.
3. Cover the framing and any unused portion of the opening with wallboard, plywood, or other material and finish to match the ceiling.

Electrical Hookup

All wiring must comply with applicable codes and ordinances. The power source must agree with the model type: 120V, 60 Hz.

1. Locate the prepunched hole in the side of the cabinet.
2. Remove the air cleaner lid.
3. Remove the connection box cover plate on the bottom, underneath the tray.
4. Refer to Fig. 3 for typical electrical diagrams.

WARNING

Risk of Fire or Electric Shock.

Can cause personal injury or equipment damage.

Use only Honeywell 190097C Remote Speed Switch to regulate air cleaner speed. Using a different speed switch may void the warranty.

IMPORTANT

- Be sure the air cleaner is grounded for correct operation and safety.
- Canadian installation: NEVER install in ceilings with thermal insulation value greater than R-40.

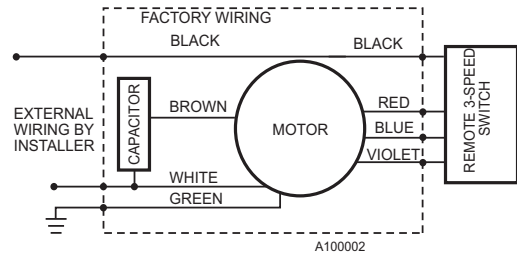


Fig. 3. Typical F111 Series 3, 120V, 60 Hz wiring diagram.

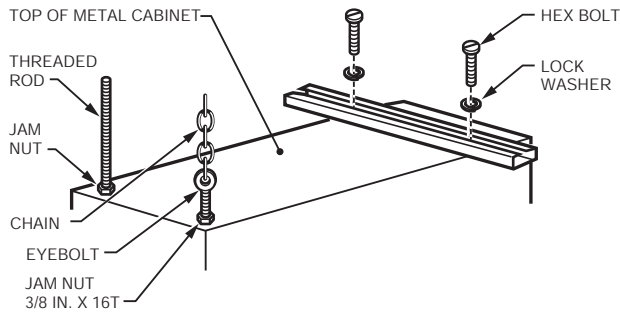
Mount Air Cleaner Cabinet

The air cleaner can be mounted in a drop ceiling system or hung in an open area. Both mounting methods require the air cleaner to be level and positioned facing downward for correct operation.

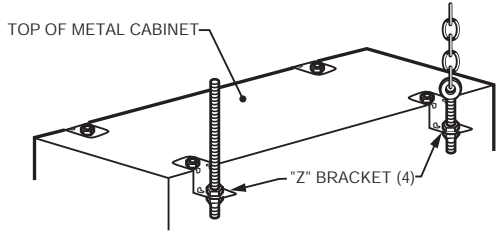
1. Remove the lid from the air cleaner and set it aside.
2. Remove all filters.
3. Fit the cabinet into the prepared ceiling opening or position on the ceiling.
4. Use the four 3/8 x 16T internal nuts (one at each corner) to fasten the cabinet to a structural support (bar joist, concrete slab or timber framing). See Fig. 4.

NOTES:

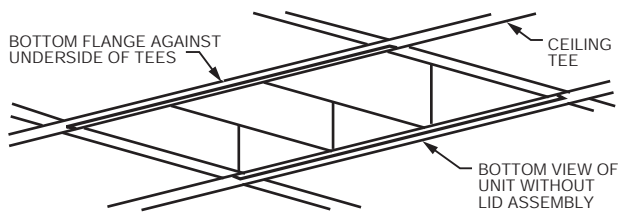
- All external hardware is furnished by the installer.
 - When using the suspension system of mounting, be sure to include a means for leveling adjustment after installation.
 - Never rest the air cleaner on the T-bar.
5. Level the air cleaner.
 6. Turn the air cleaner power on and check for proper operation for 2 to 3 minutes. There should be a smooth, powerful blower sound and air discharging from both ends of the air cleaner.
 7. Turn off the power.
 8. Install the particle filter. Note airflow direction arrows if present. Install the filter with the direction arrow pointing towards the motor.
 9. Lock and secure the particle filter into place by closing both latches.



OR USING OPTIONAL "Z" BRACKETS



NOTE:
FASTEN SECURELY TO STRUCTURAL SUPPORT SYSTEM, I.E. BAR JOIST, CONCRETE SLAB OR TIMBER FRAMING.



M10892

Fig. 4. Fasten cabinet to a structural support.

IMPORTANT

Do not touch the pleated filter media. Handle only the filter frame to prevent damage to the filter media.

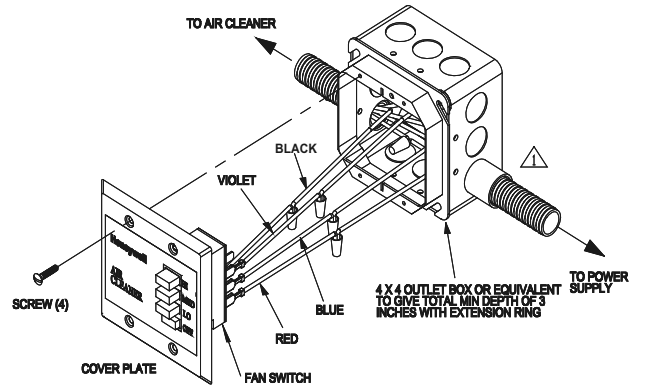
10. Remove CPZ™ sorbent modules (select models) from their packaging and install one module into each cavity.
11. Be sure both catches are turned down and filter rests firmly on catches.
12. Install the prefilter in the air cleaner lid. Position the prefilter so that the Air Flow Direction Arrow is facing upward when the lid is closed.

Remote 3 Speed Wall Switch

The 190097C Remote Wall Switch Assembly allows control of the F111 model air cleaners from a location separate from the air cleaner. The assembly includes a remote switch with an outlet box cover, outlet box, extension ring, and a wire harness. Wiring to connect the remote switch and air cleaner must be furnished separately.

CAUTION

- This installation to be performed only by a qualified installer.
- All wiring to comply with local electrical codes.
- Disconnect power to air cleaner at fuse or breaker before beginning work. Failure to do so can result in shock hazard endangering equipment and personal safety of installer.
- Only one air cleaner can be connected to a remote switch



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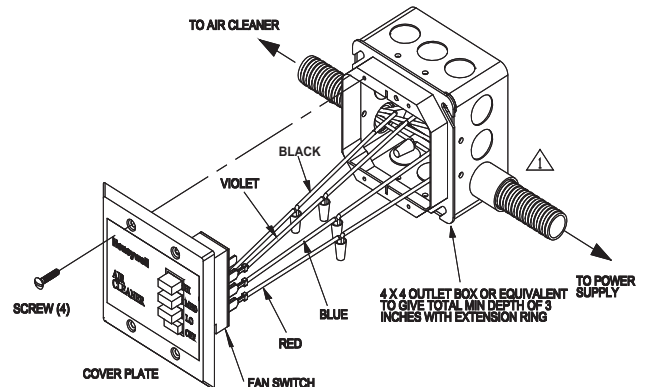
OPTIONAL CONNECTION USE IF POWER SUPPLY LEADS ARE RUN IN CONDUIT

Fig. 5. Wiring F111 Series 3 Air Cleaner

1. Disconnect power to air cleaner.
2. Mount 4" x 4" outlet box at desired remote location.
3. Attach 3/4" extension ring to outlet box.
4. Run five conductor, color-coded, 18-gauge wires from the remote switch location to the air cleaner.

At REMOTE SWITCH:

5. Use three wire nuts to connect three color-coded, wires on the remote switch to three color-coded wires running to the air cleaner. (Red, Blue, Violet)
6. Use one wire nut to connect white color-coded, wire running to the air cleaner to the Neutral wire from the power source/electrical panel. (White)



A100001

OPTIONAL CONNECTION USE IF POWER SUPPLY LEADS ARE RUN IN CONDUIT

Fig. 6. Wiring 3-Speed Remote Switch

7. Connect the ground wire from the power source / electrical panel to the ground stud of the outlet box.(Green)
8. Connect the ground wire from the air cleaner to the ground stud of the outlet box.(Green)
9. Use one wire nut to connect the black color-coded, lead wire on the remote switch to the black color-coded wire from the power source/electrical panel.
10. Fold wires into box and mount remote switch on outlet box. Leave switch in OFF position.

At AIR CLEANER:

11. On the air cleaner remove two screws on wiring compartment cover and open
12. Run the five conductor, color coded, 18 gauge wires from the remote switch through the air cleaner access opening into the wiring compartment. Strip ends of these lead wires.
13. Connect three wires from air cleaner to remote switch lead wires with wire nuts following color code used at remote switch. (Red, Blue, Violet)
14. Connect the white wire on air cleaner to power source/electrical panel Neutral wire with a wire nut following color code used at remote switch. (White)
15. Connect the ground wire from the remote switch to a ground stud of the wiring compartment cover.(Green)
16. Fold wires into wiring compartment. Replace wiring compartment cover.
17. Turn on power to air cleaner at power source/electrical panel.
18. Check operation by turning air cleaner at HIGH, MEDIUM, and LOW. Note that only the remote switch will operate the air cleaner.

6. To remove the lid, swing it into the open position. Slide safety catch to off position. Move the lid to the side to disengage the hinge pins. Reverse the procedure to replace the lid. Make sure safety catch is in safe position.

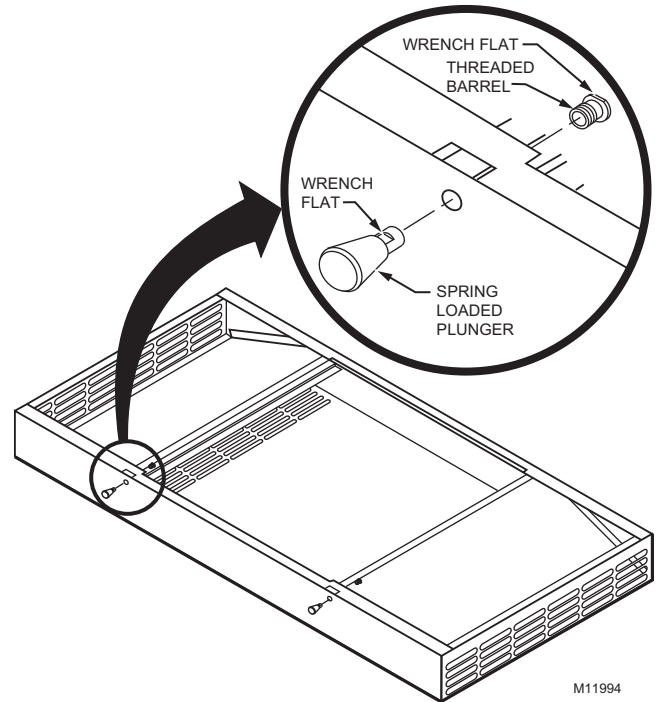


Fig. 7. Lid assembly.

Lid Assembly

The F111 lid is held in place by two separable hinges and two spring loaded plungers. To install the spring loaded plungers on the lid follow these steps:

1. Pull the plunger back and twist a quarter turn to reveal the wrench flat on the body of the spring loaded plunger (see Fig. 7.)
2. Turn the threaded barrel out of the spring plunger.
3. Insert the threaded barrel through the hole in the lid and turn the spring loaded plunger onto it.
4. Tighten the assembly with wrenches.
5. Repeat steps 1 through 4 for the second plunger.

Opening/Closing the Lid

To open the lid, pull the spring loaded plungers back to disengage the plunger. Carefully swing the lid open on the hinges while supporting the filter and/or adsorbent modules as required. To close, swing the lid into the closed position and engage the plungers.

Removing /Replacing the Lid

IMPORTANT

The lid is heavy. Make sure that it is supported before removing.

OPERATION

The F111 (Series 3) in Ceiling Media Air Cleaner has been engineered to improve indoor air quality for commercial and industrial applications. The filters are the most practical and effective filtering system for removing atmospheric dust, pollens, bacteria, viruses, mold spores, smoke, fumes, mists and aerosols. Refer to Fig. 8.

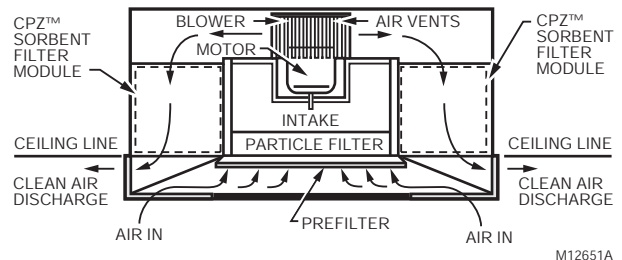


Fig. 8. F111 (Series 3) air cleaner operation.

The air cleaner is either operating (power on) or off (power off). There are no other operational options available. Even when the area is unoccupied, the air cleaner can be operated continuously to prevent buildup of airborne contaminants. Operate the air cleaner only when the area is occupied when specific activities produce contaminants.

The CPZ™ sorbent module has the ability to collect and hold gas-phase compounds and vapors typically found in commercial and light industrial facilities. These gases and vapors frequently appear as odors that, at times, can be annoying and irritating. The modules become saturated after collecting 25% to 50% of their weight in gaseous odors. The quantity of CPZ™ material provides adequate dwell time to ensure up to 95% collection efficiency in the first pass. This also provides a long maintenance-free service life.

The minimum recommended air exchange rate is 2.5 times per hour. In a heavily contaminated area, up to 15 air exchanges per hour can be necessary. The factors that determine what the rate of air exchange should be are:

- Generation rates of the various pollutants;
- Concentration level of the pollutants;
- Desired contamination reduction level.

Airborne contaminants will always be present in the air where contaminant generations take place. Air cleaning systems and ventilators do not eliminate airborne contaminants, they reduce the excessive accumulation of the contaminants. To eliminate the contamination, the source of contamination must be removed.

Local, Federal and professional ventilation engineering standards and codes prescribe minimum ventilation rates to dilute air contamination in specific applications. The ventilation rates usually assume the injection of outdoor air measured as air exchange rate. The use of the F111 (Series 3) air cleaner to comply with ventilation requirements is an acceptable alternative to ventilation with outdoor air. However, at least 20% of a specified ventilation rate or code must be derived from outdoor air. The F111 (Series 3) air cleaner filtered and recirculated air can be the remaining 80%.

SERVICE



CAUTION

Electrical Hazard.

Can cause personal injury or equipment damage.

Turn off power before installing or servicing the air cleaner.

IMPORTANT

Be sure to change filters as recommended to prevent reduced airflow in the air cleaner. Stand on a stable platform when working with the air cleaner.

The useful life of the CPZ™ sorbent modules may vary from 4 to 24 months, depending on the application. In most applications, the sorbent media life ranges from 12 to 18 months. The particle filter life ranges from 6 to 24 months with 12 to 24 months as an average. The modules and filters need to be changed more frequently in facilities that operate 24 hours a day.

Prefilter

The disposable prefilter collects large dust particulates and lint- type airborne fibers. Check the filter every two weeks to determine the replacement frequency:

1. Slowly open the lid, supporting the lid so the filters do not fall out.
2. Remove the dirty prefilter.
3. Install the new prefilter in the air cleaner lid. Position the prefilter so that the Air Flow Direction Arrow is facing upward when the lid is closed.
4. Close and latch the lid.

Particle Filter

The particle filter collects particulates that pass through the prefilter. The filter life is typically from 1 to 2 years. There is decreased air quality and a pulsing sound when the filter is filled with contaminants. The filter must be replaced when the pulsing sound is noticed.

NOTE: The filter must be replaced. Washing, vacuuming or reverse air blasting does not clean it.

1. Slowly open lid, supporting it so the filters do not fall out.
2. Open the securing strips and with both hands. Slide the filter toward you.
3. Place spent filter in a plastic trash bag and dispose of properly.
4. Inspect the motor brackets for loose fasteners and tighten as necessary.
5. Install the new filter noting the direction of airflow arrow.
6. Lock and secure the particle filter into place by closing both latches.

IMPORTANT

Do not touch the pleated filter media. Handle only the filter frame to prevent damage to the filter media.

7. Close and latch the lid.

CPZ™ Adsorbent Module

The CPZ™ adsorbent module is used to collect gases, vapors, odors and volatile organic compounds (V.O.C.) from the air that passes through the air cleaner. Adsorbents collect and hold 25% to 50% of their weight in odorous gases and vapors. The impurities are collected until the adsorbents reach saturation. At saturation, the adsorbents emit a continuous strong pungent odor. If the air cleaner is turned off for 8 to 10 hours, there will a temporary odor when it is turned back on. If the odor persists for 30 minutes, it is time to replace the filters.

NOTE: When tobacco smoke is a contaminant, both the particle filter and the adsorbent filter will need to be serviced at the same time.

1. Slowly open the lid, supporting the lid so the filters do not fall out.
2. Support the adsorbent module with one hand and turn open the catches.
3. Use two hands and slide the filter from the housing.

IMPORTANT

The module weighs about 26 lb (12 kg) and can be hard to handle.

4. Place the spent module in a plastic trash bag and dispose of properly.
5. Remove CPZ™ sorbent modules from their packaging and install.

6. Be sure both catches are turned down and filter rests firmly on catches.
7. Install 1 startup-filter in each end of grill.
8. Close and latch the lid.

On initial startup, a small amount of dust can blow from the air cleaner. This is normal and stops a few minutes after startup. The startup-filters will catch all the dust. The startup-filters are placed in the two exit outlets on the grill. After running the unit for 5 minutes, turn off the unit. Remove and discard the two start-up filters.

Parts List

Refer to Fig. 9 and Table 5 for replacement part information.

Table 5. Replacement Parts.

Fig. Reference No.	Description	Pack Qty	Order Number
1	CPZ™ sorbent module (requires 2)—used with HEPA, 95% DOP, or 95% ASHRAE particle filters	1	32004078-003
	Charcoal sorbent module (requires 2)—used with HEPA, 95% DOP or 95% ASHRAE particle filters	1	32004078-002
	Permanganate sorbent module (requires 2)—used with HEPA, 95% DOP or 95% ASHRAE particle filters	1	32004078-004
2	Blower wheel	—	—
3	Motor capacitor; 120V, 60 Hz	—	—
4	Motor; 120 V, 3-Speed, 60 Hz, Series 3	—	—
5	99.97% HEPA media filter, 4.5", Series 3	1	32000204-002
	95% DOP / hospital grade filter	1	32000203-001
	95% ASHRAE particle filter	1	50004739-001
6	Prefilter (disposable)	12	32002307-001
7	Lid assembly with hinges and latches in White Color	—	—

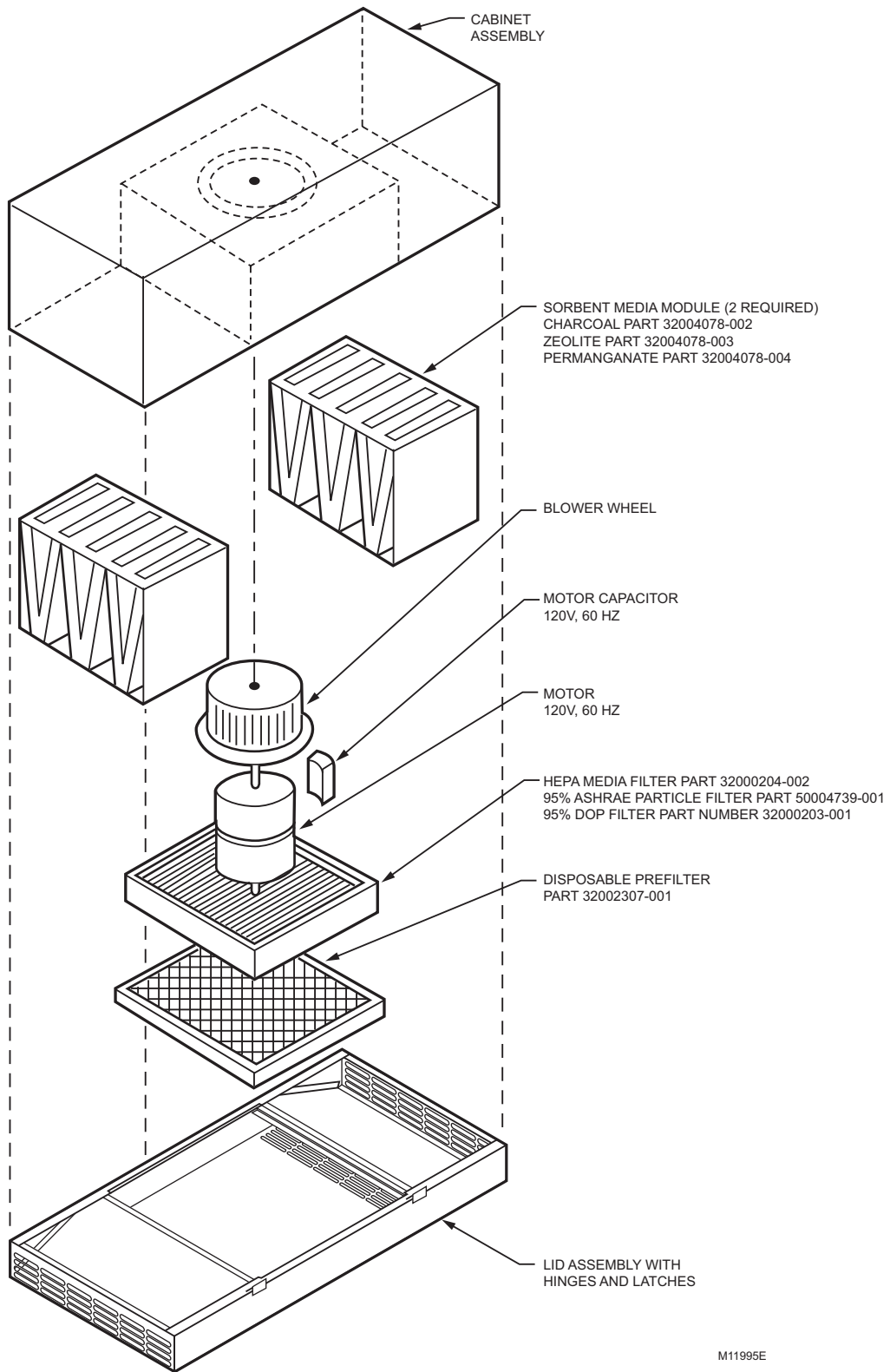


Fig. 9. Exploded view of F111 (Series 3) in Ceiling Media Air Cleaner components.

Honeywell Building Technologies

In the U.S.:

Honeywell

715 Peachtree Street NE

Atlanta, GA 30308

customer.honeywell.com

buildingcontrols.honeywell.com

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