



K-Pack™

4-Stage Filter

Kitchen Exhaust System

Bulletin No: PB19030210

Air Scrubbers introduces K-Pack, a new multi-stage filter system designed specifically to control kitchen exhaust emissions. 3-stages of industry standard air filters deliver maximum performance at minimal operating cost. The 4th stage uses a unique bonded activated carbon to remove cooking odors.



Controlling your kitchen exhaust air is important to your neighbors, the environment and your bottom line. Exhausting at roof level can be cost prohibitive. An alternative is to install K-Pack and exhaust through a sidewall discharge. With 4 stages of quality air scrubbing, you can co-exist with the community, protect the environment and keep local code officials at bay. One piece factory construction assures unit integrity and unlike some field assembled scrubbers, installation is quick and simple. Duct connection and electrical power to the blower is all that's required. Reliability, high performance and low operating cost make K-Pack an excellent choice for light to moderate cooking applications.

Key Features

- Uses industry standard filters
- 14 gage, solid welded construction meets NFPA 96
- Blower/motor/drives out of airstream, meets NFPA 96
- Each filter stage is individually monitored
- One piece unit construction no field assembly
- Extruded aluminum & gasketed filter tracks
- Thermo-set powder painted, inside & outside
- On-Off disconnect is factory wired to blower motor
- SWSI or inline blower available to meet performance
- ETL listed to UL Standard 710
- Blower assembly is listed to UL 867
- Filters are UL 900, Class I
- Rigid 4" channel iron perimeter base



[12,000 cfm K-Pack Rooftop Installation](#)

K-Pack Unit Description

Air Scrubbers K-Pack kitchen exhaust unit has been developed to filter the smoke and grease particles and remove odor molecules from cooking exhaust air. K-Pack is available in a variety of sizes to meet the required exhaust air volume. Units are of one piece construction, furnished on a common channel iron base. Therefore, costly field assembly is avoided. K-Pack must be used downstream of an approved exhaust hood.

Smoke & Grease Filtration

K-Pack uses 3-stages of air filters, constructed specifically for the removal of particulate from cooking exhaust air. All filters are constructed with metal frames to avoid melting as with plastic frame filters.

Stage 1: Pleated prefilter, 24" x 24" x 4",
30% per ASHRAE 52.1
MERV 8 per ASHRAE 52.2

Stage 2: Headered bag filter, 24" x 24" x 22", 10 pocket
95% per ASHRAE 52.1
MERV 14 per ASHRAE 52.2

Stage 3: Rigid final filter, 24" x 24" x 12",
95% per ASHRAE 52.2: E1, E2, E3
MERV 16 per ASHRAE 52.2

All 3 filter stages are individually monitored by factory installed pressure switches. As a filter becomes loaded, a signal is transmitted to the K-Pack's remote mounted Filter Status Indicator to signal that particular filter needs servicing. There is no guesswork as to which filter needs attention.

Filter change out is easy. Simply open the hinged access door and slide the filters out. Replacement filters slide in on extruded aluminum filter tracks, custom made specifically for that filter. Doors can also be lifted off the hinges.

All K-Pack air filters are UL 900, Class I listed and do not have plastic frames which are known to melt in kitchen exhaust applications.

Odor Control

Downstream of the smoke and grease filtration sections, K-Pack uses state-of-the-art bonded carbon panels to adsorb the odor molecules. These disposable panels have been developed to reduce the labor and cost of using refillable carbon trays.

And there is no carbon dusting. Formulations are available with a variety of impregnates to enhance adsorption efficiency, relative to the type food being cooked.

Stage 4: Bonded carbon panel, 24" x 24" x 1" minimum
application rate 100 lbs./1,000 cfm

Blower

SWSI or tubular inline blowers are standard and are selected to meet the air delivery and sound performance specified. All units include high temperature flex connection and housed spring isolators. Blowers are UL 762 listed, Power Ventilators in Restaurant Service. Motor and drives are located outside of the airstream per NFPA 96. Special blowers are available.

Unit Construction

K-Pack is furnished in a rugged 14 gage steel housing. All joints are continuous welded to conform with NFPA-96. Inlet transition, 4-stage scrubber section, outlet transition and blower assembly are constructed as one piece furnished on a rigid channel iron base. One piece construction eliminates costly field assembly. Other brand scrubbers require as many as 5 modules be assembled on site! The base has lifting lugs for convenient rigging. 3 side access doors make servicing the filter stages a snap.

Access doors are on lift-off hinges and use high temperature gasket on the interior to prevent air bypass around the filter stages.

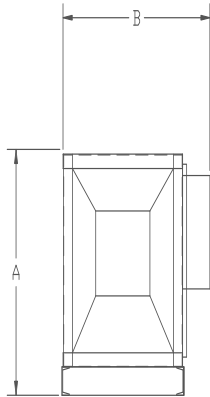
Fire System

K-Pack is available with either Ansul or Amerex brand systems. Detectors and nozzles are factory installed and pre-piped according to the respective manufacturers instructions.

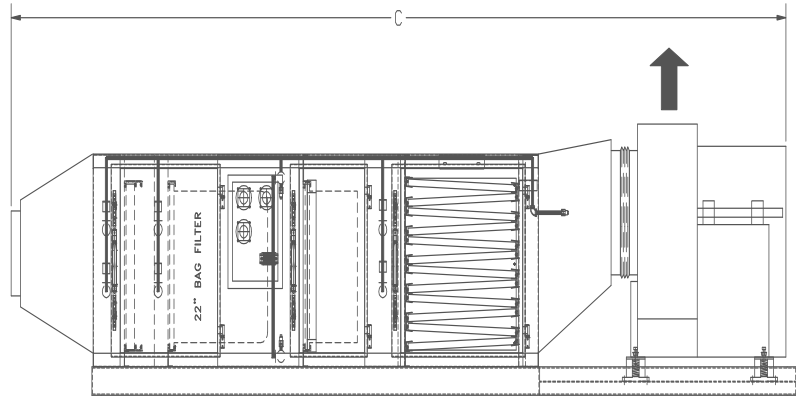
Unit Operation

Once the K-Pack is set in place, ductwork and fire system connected and blower powered, the unit is ready for operation. The only routine service needed is replacing the filters. When a particular stage of filter becomes loaded with grease and smoke particulate a signal is sent from K-Pack to the filter indicator panel, located in the kitchen. An LED will light, signaling that a particular stage of filters needs attention. There are individual LED's for all 3 filter stages.

K-Pack™ Unit Selection Table



Inlet Elevation

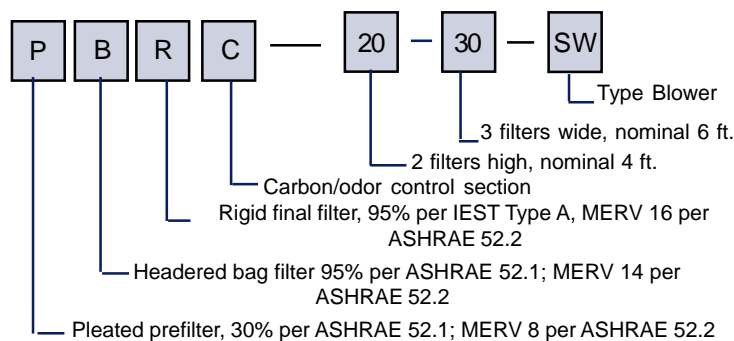


Side Elevation

| K-Pack Model PBRC | Air Volume CFM (1) | | Dimensions (in) | | | Weight (lbs.) |
|-------------------|--------------------|---------|-----------------|-----|-----|---------------|
| | Minimum | Maximum | A | B | C | |
| PBRC - 10 - 10 | 1000 | 1500 | 34 | 33 | 173 | 1100 |
| - 10 - 20 | 1500 | 3000 | 34 | 56 | 173 | 1600 |
| - 10 - 30 | 3000 | 4500 | 34 | 80 | 173 | 2150 |
| - 20 - 20 | 4500 | 6000 | 58 | 56 | 201 | 2600 |
| - 20 - 30 | 6000 | 9000 | 58 | 80 | 201 | 3500 |
| - 20 - 40 | 9000 | 12000 | 58 | 104 | 201 | 4200 |
| - 30 - 30 | 12000 | 13500 | 82 | 80 | 227 | 4700 |
| - 30 - 40 | 13500 | 18000 | 82 | 104 | 227 | 5700 |
| - 40 - 40 | 18000 | 24000 | 106 | 104 | 235 | 7300 |
| - 40 - 50 | 24000 | 30000 | 109 | 130 | 235 | 8300 |

- (1) Maximum cfm is based on 375 fpm velocity across the face of each filter stage and 1000 lbs. of carbon per 1,000 cfm.
 (2) The type and volume of cooking/cooking fuel must be factored in when selecting unit. Consult factory for final selection.

Model Number Development



Unit Selection Guide

- From the Size Selection Table above, select the size with Air Volume and Dimensions that meet the required efficiency and arrangement
- Two units of the same height may be arranged side-by-side to create a larger, multi-section unit with RH and LH access doors.
- K-Pack is designed for light or medium cooking applications. Consult factory for unit selection and sizing.
- Each unit is shipped as one piece. Alternately, K-Pack can be shipped in separate sections if required.

K-Pack

4-Stage Filter

Kitchen Exhaust System

Specification

A. General

Furnish a kitchen exhaust air pollution control system in a progressive efficiency, 3-stage mechanical filter arrangement, 4th stage odor control section and blower, as described below and shown on the submittal drawings.

B. Equipment Description

The system shall be furnished as a single, factory assembled unit, consisting of: pleated prefilter, bag filter, final filter, odor control section, outlet transition and blower/motor, all mounted on a 4" x 5.4 lb./ft. structural steel support base. The base shall have lifting lugs at the 4 corners and along the length as needed. The unit shall be furnished in a side access housing fabricated from 14-gage steel, continuous welded pre-treated and powder coated with thermo-set powder paint, inside and outside. Side access doors shall be provided to service all internal components. The access doors shall be on lift-off hinges, full perimeter high temperature gasketed and use multi-point closure latches. The system shall be ETL listed to UL 710 Exhaust Hoods for Commercial Cooking Equipment and shall conform to NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.

1. The multi-stage filter section shall contain the following:

- a. Pleated prefilters, 4" deep, 30% per ASHRAE 52.1; MERV 8 per ASHRAE 52.2
- b. 10 pocket bag filter, 22" deep, 95% per ASHRAE 52.1; MERV 14 per ASHRAE 52.2
- c. Final filter, 12" deep, 95% per ASHRAE 52.2: E1 - E3 MERV 16 per ASHRAE 52.2
- d. All filters shall be held in place with extruded aluminum tracks with replaceable bulb seal gasketing.
- e. Filter frames shall be metal or die cut. Plastic frames are not acceptable.
- f. Filters shall be sealed with high temperature gasketed pressure plate to prevent air bypass.

2. The odor control section shall contain the following:

- a. Bonded Activated Carbon, furnished in a self-supporting, bonded granular briquette panel with galvanized steel perimeter frame and covered on both sides with spun bonded scrim. Carbon is composed of virgin coconut shell granular activated carbon with a minimum carbon tetrachloride activity of 60% per ASTM D-3467, is 4 x 8 US mesh size, and impregnated with active ingredients to enhance cooking odor molecule adsorption.

Bonded carbon shall have a minimum bulk density of 30 lbs/ft³, and applied at the rate of 100 lbs. minimum/1,000 cfm for a minimum residence time of 0.15 seconds. Carbon panels shall be held in place with extruded aluminum tracks with replaceable bulb seal gasketing.

3. Outlet transition shall be factory installed, connecting the housing to the blower, fabricated from 14 gage CRS and finished to match the housing. Transition to blower connection shall be made with high temperature flex fabric.

4. Blower/motor assembly shall be the centrifugal SWSI__ or tubular inline__ type, belt drive with backward inclined wheel sized to deliver ___cfm @ ___" w.g. total (___"w.g. external resistance allowed)< operate on ___V, ___ PH, ___ Hz, ___ HP and shall be UL 762 listed for Power Ventilators in Restaurant Service. A factory mounted ON-OFF disconnect switch shall be furnished and pre-wired to the blower motor. Motor starter to be provided by others. The blower assembly shall be mounted on housed, spring isolators

5. The complete assembly shall be factory mounted on 4-inch x 5.4 lbs/ft. structural steel, C-channel base frame.

6. Fire system shall be Ansul ___ or Amerex___ with factory installed detector and prepiped nozzles. Detector and nozzle arrangement shall be according to the respective manufacturers instructions. 3/8" IPS field connection, tanks, controls and commissioning of the fire system shall be provided on site by others. The AHJ may require other protection in order to comply with local codes.

7. A remote mounted Filter Status Indicator panel shall be furnished to indicate when each individual stage of filter requires servicing. The panel shall be NEMA 4X with LED indicators. Signal to the LED's shall be provided from pressure switches, factory mounted on the scrubber housing. Each filter stage shall have a dedicated pressure switch.

8. The kitchen exhaust scrubber shall be the K-Pack, Model _____ as manufactured by Air Scrubbers, Inc.



Commercial & Industrial Air Pollution Control • Air Filtration Systems • Kitchen Exhaust Specialists

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