

KAP Series -Air Purification Unit

Installation, Operation and Maintenance Manual



Commercial Kitchen Ventilation Products

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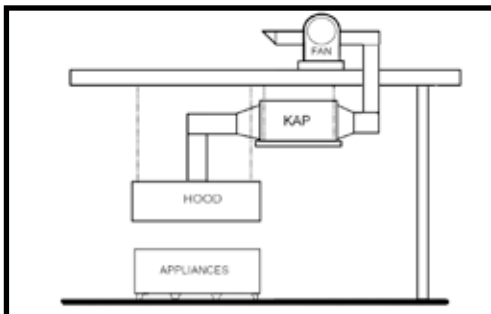
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DESCRIPTION

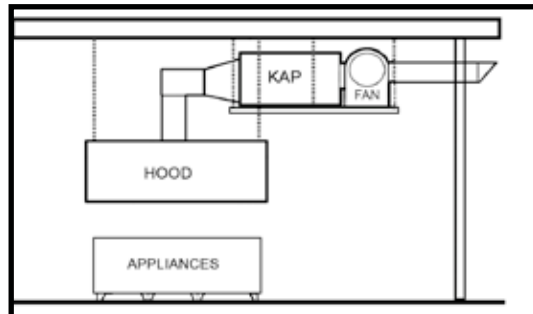
The listed air purification unit is suitable for the removal of smoke, grease laden vapors and odors in commercial cooking installations. Hood Depot KAP purification units are specified in CFM ratings from 5,000 to 40,000 CFM to handle all size kitchens with any cooking equipment configuration. Grease ducts must still conform to NFPA 96 and your local mechanical codes applicable to gauges, sizing and clean-out requirements.

If a grease fire has occurred, the system should be dismantled and inspected by a professional engineer. Hood Depot International™ cannot be held responsible for grease duct systems that are not properly maintained or have been subjected to a grease fire.

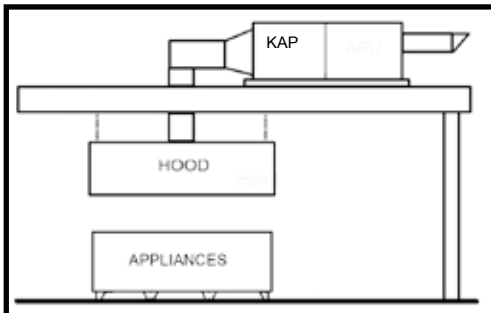
COMMON INSTALLATION FORMATS



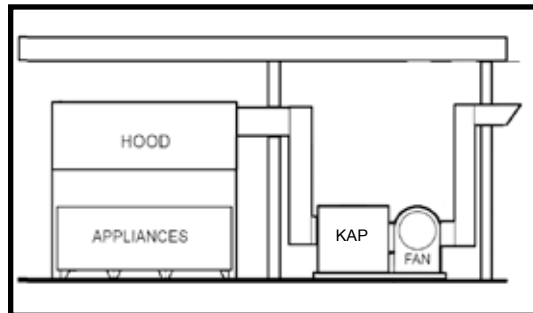
Interior Split Fan & Filter



Interior Horizontal Suspension



Exterior Roof Mounted



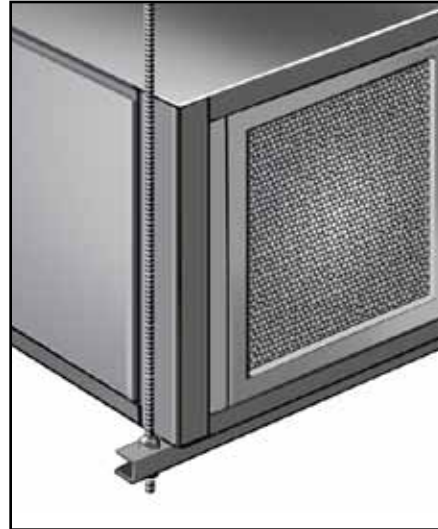
Interior Floor Mounted



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INSTALLATION

Installation must be done ***in strict accordance*** with the designed airflow, exhaust fan placement, filters and construction details required by this manual. Lifting the unit in place must be accomplished by using an equipment lift (rated above the unit weight) or by hoisting using the proper hoisting straps (see below).



PREPARATION

1. Installation site should be clear to safely lift unit into proper position. Be sure hoisting equipment and/or lifts are adequate to the weight load of the unit according to manufacturer's estimated weight.
2. Position unit to allow at least 34" of clearance on the access side of unit to open door, replace filters and perform maintenance.
3. Unit should be located as close to the space it serves as practical to avoid lengthy and complex duct runs. This will reduce total fire hazard exposure and amount of duct to be cleaned.
4. When the unit is ground or floor mounted, make sure it sits at least 6" (minimum) off the ground for interior location and 18" (minimum) above ground for exterior locations including roof mounted.
5. The exhaust fan must be located between the air purification unit and the discharge duct. DO NOT locate the fan between the hood and the air purification unit as this would cause the KAP to be under positive pressure.
6. It is recommended that the unit's grease drains are connected to the building grease interceptor or an approved building drain system.



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(INSTALLATION Cont'd.)

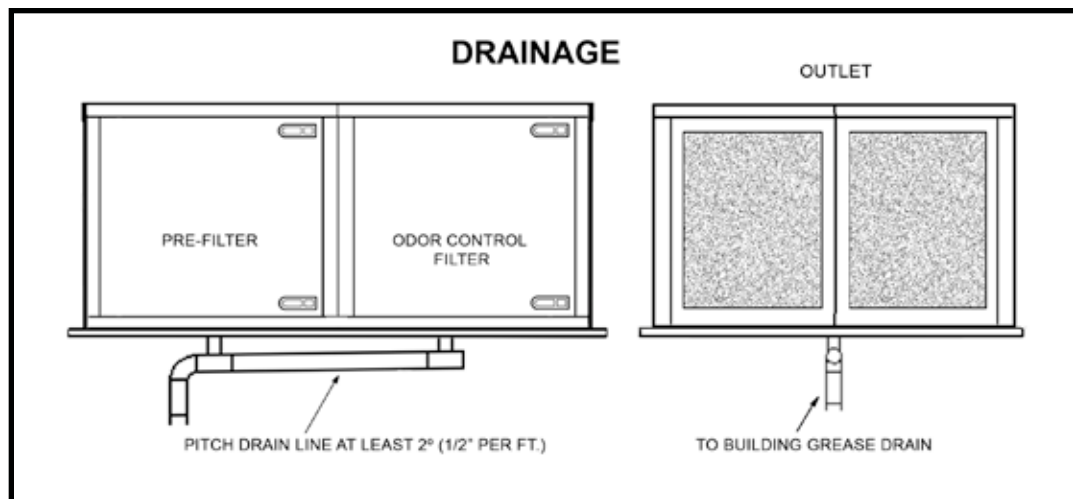
DUCTWORK

Performance of the air purification unit is highly affected by ductwork configuration, proper alignment and seals. The following airflow factors must be accounted for:

1. Any change in duct direction must be at least five duct diameters away from the unit inlet. The maximum velocity at the inlet of the unit must be less than 1,000 feet per minute.
2. The air purification unit requires commercial (NFPA 96) or Listed grease ductwork. Clearance ratings of any ductwork connected to the unit apply to the unit as well and must be installed in accordance with IMC, NFPA 96 and state and local codes.
3. All grease ducts before or after the KAP must be designed and installed as per NFPA 96, local mechanical/building codes, SMACNA and any/all state and local codes.

GREASE/WATER DRAINS

Each section of the unit contains a drain that should be connected to an approved grease interceptor or to an approved drainage point to allow water to drain away from the unit. If installed outdoors, the drains must be piped in such a way to avoid water build-up in pipes that could burst in freezing conditions. It is recommended that units located where freezing may occur have electric heat tape.



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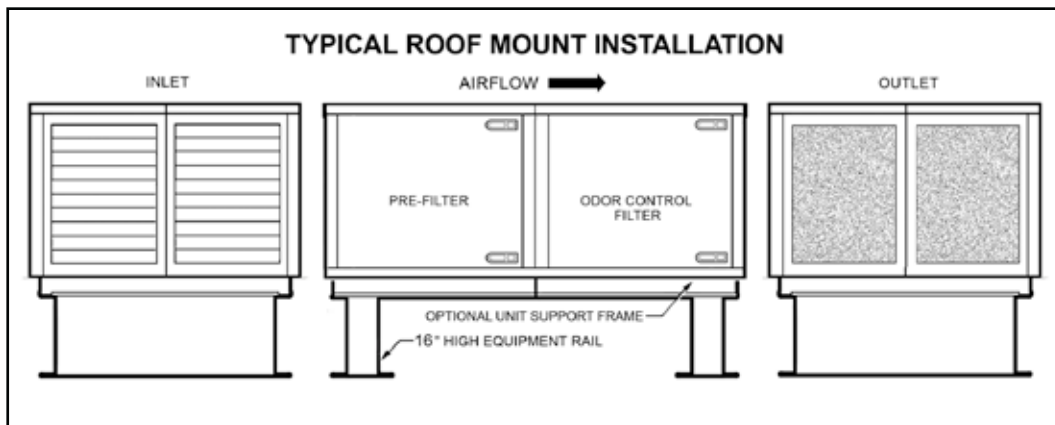
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(INSTALLATION Cont'd.)

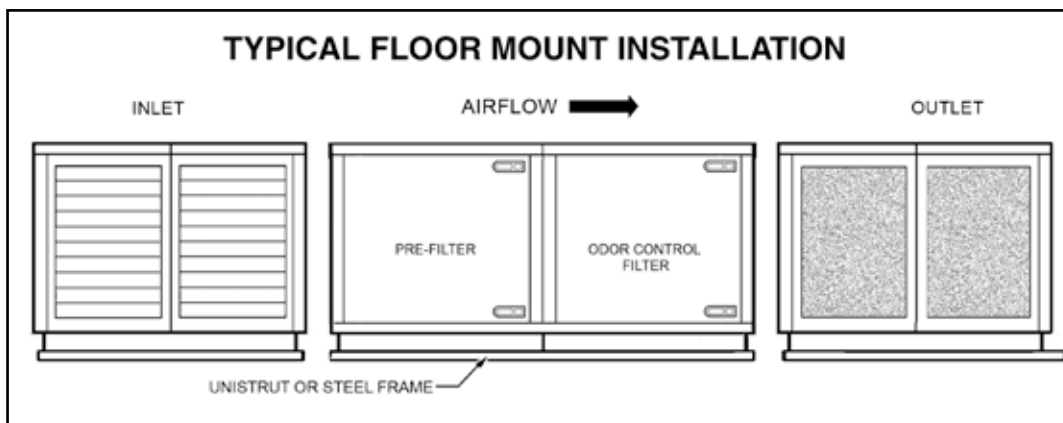
ROOF INSTALLATION

When roof mounting, the KAP unit should be mounted on a roof-curb or rail at least 18" above the roof surface. Secure the unit on a support frame with at least eight (8) #14 anchor bolts, welding 1" long every 12" or AHJ approved fasteners. Roof curb rail to be mounted according to federal, state and local codes. Drain lines and roof curb rails that penetrate the roof need to be properly flashed to avoid roof leaks. Be sure to allow proper clearances for service access doors (see page 4).



INDOOR/FLOOR MOUNTED INSTALLATIONS

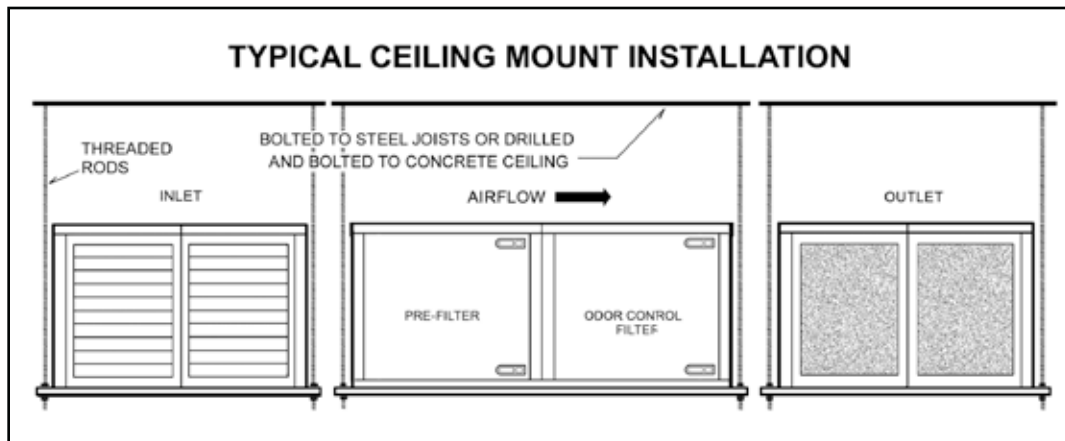
When mounting the KAP unit on a floor, make sure it is mounted on support rails with a minimum of 8" from the bottom of unit to the floor. Verify with your plumber that this is sufficient clearance for the drains. Secure the unit through the unit support frame to the rail with at least eight (8) #14 sheet metal screws, anchor bolts or AHJ approved fasteners. Secure support rails to the floor in accordance with federal, state and local codes. Make sure the unit has proper clearance for the service access doors (see page 4). Make sure the bottom of the unit (not including support frame) has at least 18" clearance from combustibles as per NFPA 96 and federal, state and local codes.



INSTALLATION (Cont'd.)

INDOOR/CEILING MOUNTED INSTALLATIONS

When hanging the KAP from the ceiling/roof structure above, make sure it is mounted with structural steel or uni-strut supports from underneath the unit. Verify the size and number of supports required as well as ceiling integrity with your building's structural engineer. Make sure that the supports do not interfere with the service access doors or with filter removal by providing proper clearance (see page 4). Make sure the unit has 18" clearance from combustibles as per NFPA 96 and federal, state and local codes.



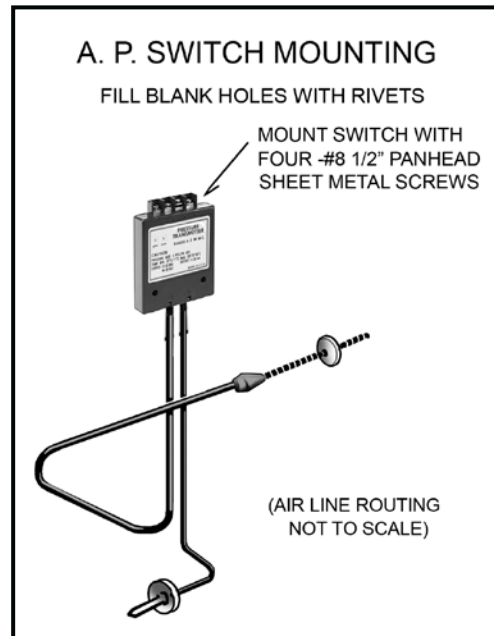
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AIR PRESSURE SWITCH

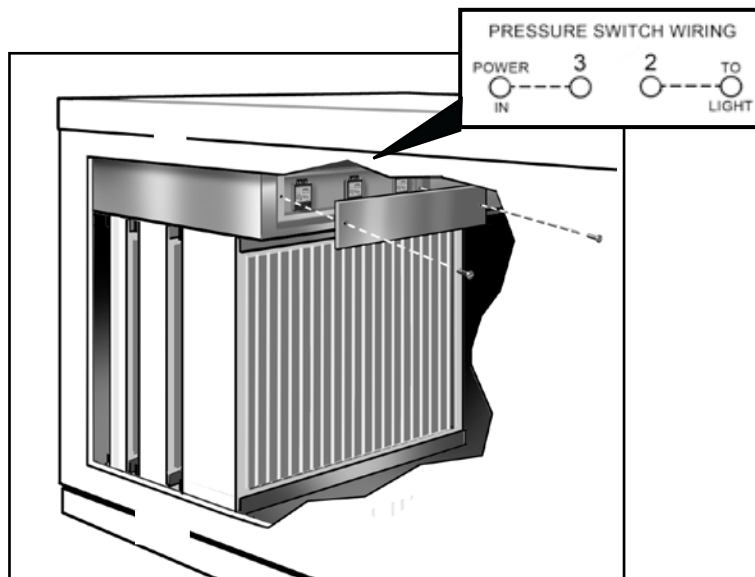
Air pressure switch is factory preset to .15" w.c. above the internal static pressure of the unit (with clean filters). The pressure switch is located in downstream filter module. Route wiring from hood control panel to the unit using 1/2" conduit through quick-seal (lower right of filter module). Use existing conduit in the module to route wires from module exterior to pressure switch (see wiring label above switch). Tighten all conduit fittings. When filters become clogged, the switch will close kitchen illumination lighting to signal the cleaning or replacement of filters.



Air Pressure Switch
(Within downstream air flow)



Air Line Routing



Air Pressure Switch Location

(INSTALLATION Cont'd.)

FIRE SYSTEM

Air Purification Units require a fire suppression system to be installed with the unit. The HD KAP Series unit can be factory fitted with Kidde, Ansul or Buckeye fire equipment products. The system uses fusible links to activate the fire system. The KAP fire system must be interlocked with a hood fire suppression system so that it may be activated by the hood system even in the absence of fire in the KAP and is activated by the KAP even in the absence of fire in the hood.

If the fire suppression system is accidentally activated, the disposable filters and pre-filter must be replaced. Immediately discard all filters and wash (with soap and water) any part of the unit that was in contact with the fire suppressant.

If a fire occurs in the ductwork leading to the APU, the following maintenance must be done:

1. The unit must be cleaned of all suppression agent and grease.
2. All filters must be replaced including the pre-filter.
3. Replace any damaged gasketing.
4. Fire-damaged components of the KAP, if any, must be replaced by factory service personnel.

Installation, repair or refitting of the fire system must be done ONLY by a licensed fire system installer according to exact manufacturer guidelines.

FIRE SYSTEM UTILITY CABINET

A utility cabinet is recommended for indoor or outdoor installations to house the fire system. An optional heated temperature controller is available upon request.





Air Purification Unit with fire system utility cabinet installed

OPERATION

Before starting up the KAP, check all fasteners for tightness and be sure to check the module connection seal and door seals. With power to the fan shut off, check the airflow direction of the filters to match the label on the filters.

START-UP TOOLS REQUIRED:

1. Standard Hand Tools
2. Static Pressure Meter

START-UP PROCEDURE:

1. Check duct connections to inlet and outlet of unit for proper welds.
2. Check that entire duct system is intact and that all clean-out doors are properly installed.
3. Install all filters in correct direction
4. Start fan and check for rotation, voltage and proper operation.
5. Inspect entering & exiting ductwork connections and grease duct for leaks or pinholes (grease rated duct must be continuously welded to the transition, if factory provided).
6. Inspect all fire suppression piping and components.

TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	REMEDY
Not enough airflow	Fan rotating in wrong direction Restricted outlet condition Static pressure in duct too high Blower speed too low Dirty filters Belt slipping	Correct according to rotation label Provide straight clear duct at outlet Repair or reconfigure ductwork to reduce losses Increase fan RPM (do not overload) Clean / replace Adjust belt tension
Excessive airflow	Missing filters Fan speed too high Motor incorrectly wired Overload in starter set too low Duct static pressure too low	Install all filters & doors Reduce fan RPM Conform to motor wiring diagram on fan motor Set overload to FLA. value Reduce fan RPM
Excess vibration / noise	Damaged / unbalanced wheel Misaligned pulleys Fan operating outside of stable fan curve Bearing lubrication needed Fan speed too high Worn or greased belts	Replace wheel Align pulleys Adjust to performance curve Lubricate or replace bearings Reduce fan speed RPM Inspect and replace as needed
"Check KAP" filter light on (if installed with this option)	Dirty / clogged filters Incorrect switch setting Internal static pressure higher than estimated	Clean / replace filters Set to .15" w.c. above internal pressure Increase switch setting by .1" w.c.
"Check KAP" light will not turn on (if installed with this option)	Light is burned out Switch is set incorrectly Internal static pressure is lower than estimated	Check light and related wiring with jumper wire / circuit tester; repair as needed Set switch to .15" w.c. above internal pressure (with clean unit) Decrease switch setting by .1" w.c.
Smoke or odor from KAP	Exhaust fan installed at wrong end of KAP unit	Relocate fan to the discharge end of KAP unit

(OPERATION Continued)

ABOUT MAINTENANCE

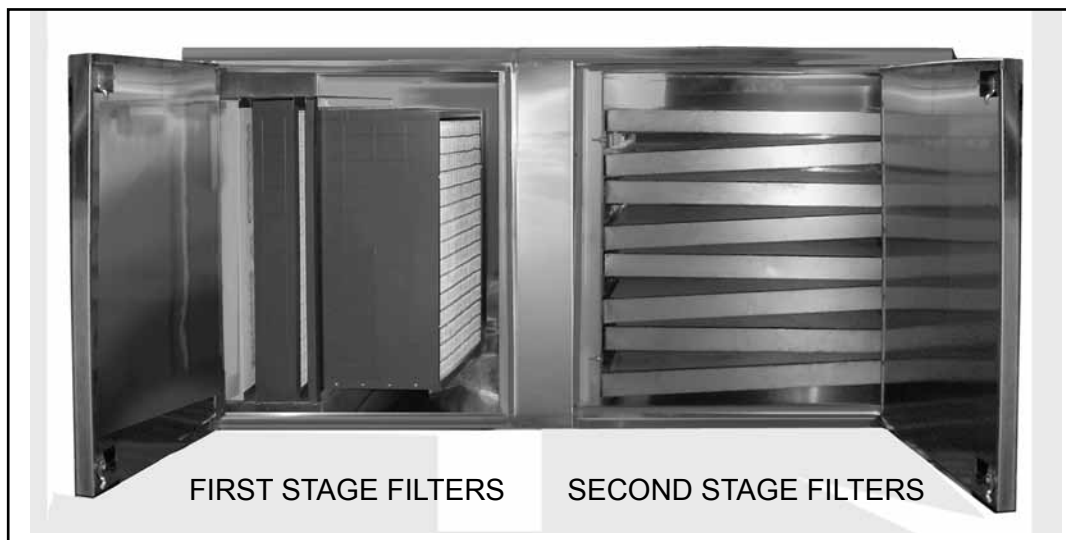
Poor maintenance (failure to clean or replace filters) accounts for most KAP problems. To assure proper operation of the KAP, keep the system clean and follow the manufacturer guidelines below. Be sure to record any service on the unit in the documentation section of this manual.

WARNING: Do not attempt service or maintenance on the KAP unless the electrical supply has been completely disconnected from the fan

GENERAL MAINTENANCE

1. KAP doors and approaches to unit should be kept clean and obstruction free.
2. Filters must be installed according to airflow direction indicated by arrow labels. Pre-filters must be installed so that drains are at the bottom edge of filter.
3. All fasteners must be checked for tightness each time maintenance is performed.
4. Ductwork and KAP should be cleaned according to local code requirements.
5. Make sure KAP drains are clear and that they drain properly.

PROPER FILTER POSITIONS



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GASKETS

One type of gaskets is used on the KAP Series Air Purification Unit: Orange gasket is used for exterior weather-proofing (rated at 450° F with PSA Backing) of the doors and any access panels.

Gasket	Application	Size	Temp. Rating	Part Number
Orange High Temp. Closed Cell	On door seal	3/16"x1"	450°F	#SNS-ROLL



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MAINTENANCE INTERVALS

Two weeks after start-up:

1. Inspect unit for grease or air leaks and repair if needed.
2. Check fasteners and hardware for tightness.
3. Monitor filter loading to determine replacement frequency.
4. Clean pre-filters and check remaining filters.
5. Adjust air pressure switch to assure proper of indicator light.

Every Month:

1. Inspect unit for grease or air leaks and repair if needed.
2. Clean 1st stage steel pre-filters.
3. Clean or replace 2nd stage filters as necessary.
4. Monitor filter loading to determine replacement frequency.
5. Clean pre-filters and check remaining filters.
6. Adjust air pressure switch to assure proper of indicator light.

Yearly:

1. Inspect all seals for wear and replace if needed.
2. Clean 1st stage steel pre-filters and replace if necessary
3. Replace all 2nd stage filters.
4. Inspect ductwork junction with unit and repair if necessary.

NOTE on Duct Cleaning:

1. Place tarp / dropcloth under unit for over-spray during cleaning.
2. Place tarp over blower insulation and motor to prevent damage during cleanup.
3. Remove tarps from unit after cleaning.



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DOCUMENTATION

START-UP & MAINTENANCE DOCUMENTATION

The following documentation is necessary to maintain warranty and inform service personnel for any future service call.

Note: Start-up Measurements and documentation should be recorded only after system has been tested and air-balanced by factory rep

Job & Site Information	
Job Name	
Purchase Date	
Address	
City	
State	
Zip	
Phone Number	
Fax Number	
Contact	
Purchase Date	
Service Company	
Address	
City	
State	
Zip	
Phone Number	
Contact	
Start-Up Date	

Air Purification Unit Information*	
Name Plate & Unit Information	
Model Number	
Serial Number	
Pressure Switch Set Point	
Estimated Unit Weight	

*Refer to start-up procedure in this manual to complete this section

(DOCUMENTATION Continued)

MAINTENANCE RECORD

The following documentation is necessary to maintain warranty and inform service personnel for any future service call.

Note: *Service by unauthorized personnel may void warranty*

Date	Service Description	Initials

(DOCUMENTATION Continued)

LISTINGS

The HD KAP Series Air Purifier Unit is certified by the following listing authorities:



WARRANTY

One Year Limited Warranty

Hood Depot™ warrants this Kitchen Air Purifier against defects of material and workmanship for a period of one year from date of installation contingent upon proper maintenance as described in the KAP Series Air Purification Unit “Installation, Operation and Maintenance Manual”. Hood Depot will not be held responsible for [More copy to come as per existing (?) warranty etc. More copy to come as per existing (?) warranty More copy to come as per existing (?) warranty]

Issue Date: _____ Expires: _____ Authorized by: _____

FACTORY SERVICE

Hood Depot’s highly qualified service department personnel are ready to answer any question and quickly resolve any problem with your KAP unit. Call 24/7 at:

1-800 322-8730

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