

# KITCHEN VENTILATION REPORT

## Cartridge Grease Extractors

There are two types of cartridge/extractor ventilators:

- One type uses a large open plenum area with horizontal baffles that may or may not be removable as a cartridge. See figure 24a.
- The other type is compact removable stainless steel (s/s) cartridges that use internal baffles and high velocity intake slots that use internal baffles and high velocity intake slots. See figure 24b.

The principle of operation for both types is the same. However the older system as shown in figure 24a removes very little grease with particle sizes smaller than 10 microns.

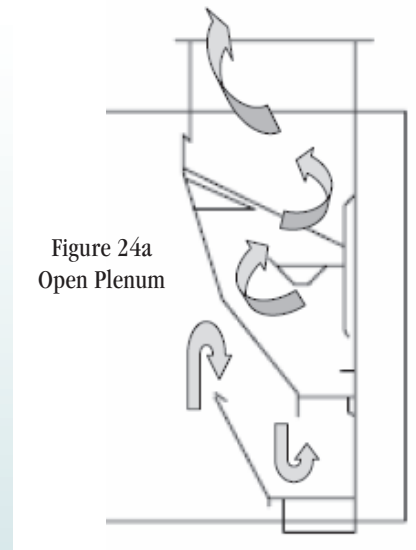
In figure 24b the cartridge units operate on the principle of high capture velocities and low exhaust volumes. These two features combine to provide economical grease extraction. Intake slots cause air entering the cartridge from the cooking surface to move along the cartridge chambers in a cyclonic motion before leaving in another direction, out the top, bottom or back areas.

This centrifugal action of the air causes particles even under 10 microns in size to collect on the baffle surfaces and drain into the bottom surface of the hood grease trough.

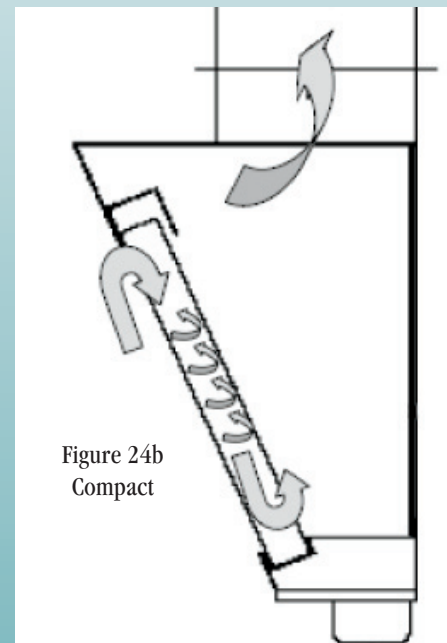
Four factors affect the grease removal efficiency in exhaust hoods:

- Air velocity
- Change of direction and spinning the air
- Lower exhaust air temperatures.
- Special secondary media

An efficient design uses a combination of one or more of these factors throughout the path of travel of the exhaust air in the hood chamber. A good design in an extraction chamber provides a lower static pressure to operate efficiently; i.e., low internal chamber resistance allows for lower horsepower and energy consumption to achieve maximum grease removal efficiency.



Manufacturers used this system until recently. Most systems were redesigned after 2002 when new ASHRAE studies showed that grease removal needed to be improved for particle sizes below 10 microns. This older system was only tested for particle sizing over 20 microns and new tests showed that there was little to no grease removal efficiency for the smaller sizes.



New systems incorporate compact chambers forcing the exhaust to spin through in a cyclonic motion. This removes smaller grease particles in an extremely efficient manner.