

How do range hoods work

Kitchen ventilation systems are either overhead or downdraft. With a downdraft system the air is drawn down alongside or behind the hood top and expelled to the outside through a nearby wall or duct in the floor. Overhead systems use a hood above the range. Further there are two types of range hoods--vented and no vented--and both types use fans. Vented range hoods pull the contaminated air through a filter and then expel it outside by way of a duct in the roof or an exterior wall of your home. With no vented range hoods, air is drawn through a filter, and then recirculated back to the room. Since non vented range hoods remove only some of the contaminants and none of the humidity, they are used only when it's impossible to vent to the outside - this is particularly true if you're cooking surface generates in excess of 35k btu.

As we all know hot air rises – so it makes a whole lot more sense to capture the air above the cook top with an overhead unit and expel it outside than it does to try and make this hot rising air go down through a downdraft system. However sometimes there is no other option but a downdraft system – these days they have developed neat mechanical technology where the filtering system is gear driven and at the press of a button a suction device rises out of the countertop behind the cook top to about a height of 14” and the air is sucked in and out that way.

There are essentially four elements of a ventilation system. All of these elements must be efficient and work well together to have good ventilation:

- The canopy or hood and in some cases decorative chimney – the decorative body.
- The blower system – the mechanical fan system that moves the air.
- The ducting – the transport medium for moving the collected odors, gases, moisture and smoke outside
- The filters – there are essentially two types – mesh or baffle and they collect the grease drawn up by the blower system

The above elements must be appropriately sized and work in unison for the ventilation system to be effective.

How do filters work and what's the difference between mesh or baffle filters you may ask.

- Mesh filters have multiple layers of mesh that the air must pass through
 - the grease sticks to the mesh
- Baffle filters force the air to move through a couple of 180 degree turns and in so doing deposits the grease in the bends

Typically mesh filters are used in lower cfm environments because they do tend to restrict the airflow. Baffle filters allow more airflow but also have the great benefit of restricting the transfer of cook top fires.