

Advanced filtration systems -- portable and installed

Last Updated: Tuesday, September 5th, 2023, Created: Wednesday, January 21st, 2004

Many people would like to filter the air in their houses in an effort to improve indoor air quality. The most efficient of the furnace filter systems, when it is kept clean, is the electronic air cleaner. As you can see in the first photo, it is a large unit that is installed directly in the furnace ducting just before the furnace. A small pre-filter catches the big stuff and then the dust that passes through is electronically charged by some small wires and then attracted to collector plates as it moves on through the filter. You do have to clean the plates regularly for it to do its job. However the reality of any furnace filter is that it only catches a certain portion of the household air.

Many people would like to provide additional specific room filtration, or they don't have a forced air system. They turn to portable room filters. The photo shows one of the best of the table top models, which can also be hung on a wall. It has a standard pre-filter, then a small electronic air filter cell, followed by a carbon filter. The pre-filter catches any large dust particles or hairs, the electronic cell traps over 99% of the particles left in the air while the carbon after filter will trap odours. This type of filter is great for dealing with cigarette smoke but must be cleaned frequently. In addition it can pump negative-ions into the discharge air, revitalizing the air after the filtration process. Click here for information on Negative Ions. Negative Ions are good, ozone is bad. Hydroxyl is the most useful as it breaks VOCs down into CO₂ and H₂O and kills mould and other irritants throughout the room without collecting them on a dirty filter.

This third photo shows a floor model that can handle a larger room. When choosing a model, check the dimensions of the room before going to the store.

The last photo shows a new device which is actually intended as a furnace by-pass filter, meaning that it takes about 10% of the air going through the furnace and really cleans it, slowly having an effect on the entire house. What is special about this unit is that it has two carbon filters and a large HEPA filter, the type used in hospital surgical wards. It traps everything including germs. What especially interests me about this unit is not its use with a furnace, where the by-pass concept can be debated, but the fact that it has a self contained fan motor. This means that it could be used for the bed room or office of someone who is either sick or sensitive. It could be installed in a closet and all the air going into this room could be run through this filter and pushed back out the doorway to the house. This would truly create a 'clean room' within an ordinary house. Draw back? Filters need to be changed regularly as they become pollutant sources themselves, and HEPA filters can get expensive. A special note. Electronic air filters must be cleaned thoroughly and regularly. For details follow this link to [Cleaning Electronic Air Filters](#). All of the advanced filters I showed here came from a company called Five Seasons in Toronto.

Keywords:

Filters, Wire, Air Quality, Ozone, Dust, Negative Ions, Cleaning, Ions, Smoke, Furnace, Health, Odours, Air Filters