



Filter Systems

# FACTS

Fume extraction

*For better workbench environment*

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## Fume extraction, the correct way

Basic issue for using a solder fume extraction/filter system is: *'remove the fumes at the spot where they occur !'* The method of extraction is predicted by the job the operator has to fulfill.

The systems which are used with solder fume extraction consist of a number of recognisable parts:

- The extraction point, which can have the shape of a small tube at the tip of a soldering iron or a hood or a tube over or behind the working spot.
- A vacuum pump, which provides an airflow (vacuum) of the dangerous fumes. The type of motor depends on the systems you choose.
- A filtering concept, which removes the dangerous fumes from the airflow.

When you are doing hand soldering the most effective method will be the tip extraction system. The dangerous fumes are removed straight at the tip of the soldering iron. The tube can be integrated in the soldering iron or as a clip-on kit mounted to the iron.

## Filter Concept

For removing fumes in electronics repair or from solder pots, glueing and with other solvents an arm extraction system is more handsome. A free moveable arm with an end piece, a suction tube or a special hood to it will be placed as close as possible to the working spot.

The FT Filter Concept is build up on several stages,

- a dust filter which removes larger particles,
- a micro filter which removes all smaller particles and increases the lifetime of the gas filter. The separation degree of this filter is 99,97 % DOP.
- a gas filter where the airflow is cleaned. The gas filter is made of activated carbon with a chemisorbent.

The chemisorbent increases the lifetime of the filter and gives the benefit of filtering a wider spectrum of gases. The volume of the filter is dimensioned for optimal contact time between gas filter media and the gases in the airflow.

Most of our filter systems can be upgraded with a HEPA micro filter as the last stage for clean room applications. This guarantees that there are no particles left in the air after filtration.

The lifetime of the filter varies from 3 to 12 months depending on working hours, quantity of particles and type of pollution. Most of our filter systems are equipped with a filter guard indicating when the filter should be replaced.

A filter guard indicating the lifetime of a filter will give you a more exact indication based upon vacuum pressure sensing and running hours.

## Vacuum Pump

To each principle of fume extraction we have different kind of vacuum pumps. For tip extraction a pump with a high vacuum is required. This pump provide high speed of the airflow which enables to remove gases through small tubes. For arm extraction a pump with low vacuum and high volumes is preferred.



Depending on your choice of extraction principle Filtronic can provide you with the correct system, advise you on the correct accessories and support you with knowledge about filtering of the dangerous gases.

### **FT product range**

Filtronic AB is specialised in equipment for fume extraction and filtering of fumes and gases. We supply you with the correct equipment for removing all dangerous fumes at your working place.

#### **FT/FE-series**

A small high vacuum system for tip extraction. The units, driven by compressed air, have a high separation degree, high suction capacity, are ESD-safe and have a small consumption of compressed air. For one to two soldering irons with integrated extraction tube or clip-on kit. Also an electrically driven unit, FE3000, is available for two soldering places.

#### **MG-series**

These units are suitable for connection to extraction arms or cabinets. The MG75, MG95 and MG100S are mobile systems for one respectively two arms or a cabinet for use in typical areas such as: soldering, glueing, laboratories. The MG350S can serve maximum 6 extraction arms. The units are ESD-safe.

#### **Extraction arms**

Filtronic AB has a wide assortment of extraction arms. In combination with the MG-series this will give you flexibility and a guaranteed function.

### **Solder fumes are dangerous**

While heating solder wire with flux cores fumes and particles do occur. These fumes (mostly aldehydes and alcohols) can lead to occupational asthma and other allergic reactions when inhaled.

Intense testing by health institutes have proven that specialised equipment for extracting and filtering of dangerous fumes in electronics should be used to prevent the fumes getting into the operators breathing zone.

Solder fumes consist of 99.5% of particles and for 0.5% of gases. Particles in solder fume that are a threat to the human health are lead particles (in dust and smoke) larger than 0.1 micron and fumes of aliphatic aldehydes and isocyanates.

The most important health symptoms are breath-lessness, cough, wheezing and tightness of the chest in combination with irritation of the eyes, headaches, dizziness and dry cracked skin.

We do not have to calculate what loss due to illness of employees will cost you and loss in productivity will effect your results. An investment in a good working environment will be more profitable. So use a fume extraction system before your employee gets ill.

Filtronic AB is the leading Scandinavian manufacturer of solder fume extraction systems with the best filter concept. Known electronics manufacturers throughout the world have invested in Filtronic equipment and with that in a safe healthy working environment for their employees.