

SIMair's machines are designed specifically for use with aerosol adhesives, fixatives and lacquers (Gloo Booths, Airbrushes (Spray-Away) and the Uni-Booth for all the above, plus aerosol paints.

Essentially they are Side-draught booths, fitted with dry filters although the 'Gloo-Booth' may be described as Down-Draught/Side-Draught hybrid.

Intake Filter:

Filter systems fitted to the various machines are described in current product literature.

They have been tested and shown to be 98% efficient in the removal of BS2831 test dust No: 2 whose mass medium particle size is 5 microns. Emissions from Spray Guns, Airbrushes and Aerosols range from 5 to 20 microns from which we conclude that **SIMair** spraybooths are at least 98% effective in particulate removal. (Data supplied by manufactures of component parts).

Solvent Filtration:

During spraying of various aerosols without spraying it is possible to exceed the occupational exposure limits for solvent vapour. It is also feasible that other than the user may be exposed to undesirable solvent vapour levels. When **SIMair** spraybooths are used a combination of dilution, dispersion and adsorption contribute to reducing levels to below the occupational exposure limits. It is recommended that wherever possible a ducting kit is fitted.

SIMair charcoal filters contain a 12mm thickness of activated charcoal which actually scrubs contaminated air. Activated charcoal is a universal absorbent which means the charcoal has the ability to remove from air, almost all types of objectionable solvent vapours such as: Xylene, Methylene Chloride, Toluene, Methyl, Ethyl Ketone and retains them within its own microscopic porous structure.

The life of a filter depends on the rate at which it collects solvent vapours. A practical method for determining that a filter is saturated is the use of the human sense of smell. When the exhaust air has a detectable odour from a reasonable distance it is time to change the filter. Remember, very long bursts of a spray could cause a back spray situation which would contaminate surrounding surfaces, and cause them to retain the solvent odour.

Recognising the fact that people get 'desensitized' to smells, it is advisable to establish a fixed arbitrary date (say 2 months after date of installation of a new filter) when the filter should be tested to determine if it should be replaced. The time interval can be adjusted as your experience indicates in your application and rate of use, with your contaminant.

NOTE:- Some manufactures have changed the Petroleum distillates in the solvent which is less harmful. This places less emphasis on Charcoal Filtration.

It is an accepted fact that the exposure of operators to particulate and vapour components of aerosols and other airborne contaminants is a health hazard and as such falls under the Control of Substances Hazardous to Health (COSHH) 1988 regulations and also the associated occupational Exposure Limits published annually in HSE doc. EH40/90.

SIMair Graphic Equipment Limited produce a range of machines designed to reduce operator (and those within the vicinity of the contaminant source) exposure to a variety of airborne substances commonly found in the design environment. Consideration has been given to the following criteria:-

Size, Noise levels, Cost and Power, appropriate components have been selected.

The basic design for all machines is similar in that a suction fan draws air through a series of filters, creating a positive flow of air away from the operator, thus protecting the breathing zone. Filtered air is returned either directly into the local environment, or can be vented outside via a simple ducting kit. *

*Ducting kits are available for machine models FGBA1, FGBA2, FPA2, UB3020 and UB1510 only.

Performance:

The performance is proportional to the linear airflow provided by the fan, and has been based on the requirements laid down in 'Spraying and Design of Spray Booths' - Specialist Inspector report No 20 HSE Publication January 1990.

In the specialist report the assumed output of Compressed air spray guns is between 0.2 and 0.8L/min at approximately 60psi. Maximum output for aerosols sprayed into **SIMair** machines is 0.1L/min, and for airbrushes only 0.015L/min at approximately 30psi.

From this information we conclude that values for the Linear air flow/face velocities given in the specialist report are considerably higher than those required for **SIMair** Booths to be effective in their specific application. This conclusion has been backed up by physical testing of machines under normal use conditions since 1985.

MODEL No:	Booth Face Area M2	Average Fan Velocity Ft/Min	Average Booth Face Velocity Ft/Min
FPA4/FGBA4	0.08	850	75
FPA3/FGBA3	0.20	900	80
FPA2/FGBA2	0.29	1850	60
FGBA1	0.58	1850	60
SSA1001	0.18	925	55
SSA1002	0.25	925	55
UB1510	0.08	850	75
UB3020	0.26	2050	90

Ref: H1601904

SIMAIR CHARCOAL FILTER

SPECIFICATION

FILTER PRODCUTS

<u>GRADE</u>	<u>SPEC REF</u>	<u>ISSUE</u>	<u>FIRST ISSUED</u>
VFF FB 10.9	VFF: 450F	2	DECEMBER 1988

PROPERTY	REQUIREMENT	TEST METHOD
SUBSTRATE TYPE	POLYESTER FIBRE	
Substrate Density (Kg M-3)	21.8	BS4443 PT 1 Method 2
Substrate Pore Size (where applicable)		Visual
Surface Area of Charcoal on Product (M2 per gram)	900 minimum	BET N2 SURFACE ADSORPTION SUPPLIER SPECIFICATION
Amount of Activated Charcoal on Product (grams per M3)	31,00 minimum	THEIRETICAL
CTC (Q) (Kg M-3)	10.9 minimum	DYNAMIC SATURATED CTC ADSORPTION

Frequency of testing: Every Batch

Ref: VFF/450F