



# Fine Airsys

## Clean Air Techniques



**A Perfect Solution For  
Clean Air**

## INTRODUCTION

Fine Airsys is a leader in the filtration Industry for last 15 years has a State of Art manufacturing facility located at Vasai.

Fine as the name suggests has ordinary air normally considered to be reasonably clean and pure will in general obtain a great deal of combinations Ordinary air normally considered to be reasonably clean and pure will in general obtain a great deal of contaminations and particulars. i.e. dust, ash, pollen and bacteria. Fine Airsys was created by a team of dedicated and pro-active individuals with intense experience in the field of clean air techniques experience in the field of clean air techniques.

Fine Airsys is manufacturing entire range of Clean Air Filters, Hepa Filters in EU Grades & Synthetic Media Filters to render world class clean room services to the pharma, health care, microelectronics, space research industries and food industry. We also provide services for HEPA Integrity Test {DOP}. Air Velocity Measurements {hot wire type} and Particle Count monitoring as and when required by client at factory or



## OUR MANUFACTURING PROGRAM

1. Clean Room Air Filters (EN Series / Merv Ratings).
2. Laminar Air flows in Vertical, Horizontal Sampling and Dispensing booths
3. Operation Theatre modules
4. Bio-Safety Cabinets
5. Inter-locking pass boxes Dynamic and Static with all accessories.
6. Turnkey System for Dust Collection with Exhaust Hood
7. G.I. Housing boxes for HEPA filters / Risers / Perforated Sheets (Aluminium / S.S.304)
8. Airflow Measuring Station (AMS)
9. Mini pleat Hepa Filters
10. Knife Edge Aluminum Housing Box For Gel Seal Filters.
11. Scrubber / Dust Collection Sysytem.
12. Bag in Bag Out Assembly
13. Filter Testing As Per **EN779 & EN1822**.
14. Manual Filter Cleaning Booth For Scrubber / Dust Collection System.

## KNIFE EDGE HOUSING BOX FOR GEL SEAL MINIPLEAT HEPA FILTERS

The knife edge housing box are specially manufactured by 16g aluminium extruded sections. The knife specially designed for fixing Gel Seal Minipleat Hepa Filters. Diffuser plates are given at bottom of damper for even distributions.

### Advantages

Gel Seal fixing has a clear advantages against gasket type as there is zero leakage in this design.

### Salient features

1. Filters are easy to install with pressure plates given below.
2. Accessories like Aerosol Port, Differential Pressure Port, and Upstream Port.
3. Aluminum extruded dampers with minimum leakage.
4. Gasket are provided above flange for selling of walkable panels on top.
5. Cleat arrangement for hanging of box.

### Applications

1. Semi-Conductor industry
2. Clean room industry
3. Hospital Sector
4. Pharmaceutical sector



### CAPACITY (CFM) FOR DIFFERENT SIZES

| Aluminum boxes suitable for below size of Gel Seal minipleat Hepa Filters |                    |           |      |
|---------------------------------------------------------------------------|--------------------|-----------|------|
| Initial Pressure 25 mm WC<br>Final pressure 60 mm WC                      |                    |           |      |
| Sr. No.                                                                   | SIZE               | PACK DEPT | CFM  |
| 1                                                                         | 610 X 610 X 105 mm | 72mm      | 1000 |
| 2                                                                         | 610 X 610 X 105 mm | 48mm      | 500  |
| 3                                                                         | 450 X 450 X 105 mm | 72mm      | 550  |
| 4                                                                         | 450 X 450 X 105 mm | 48mm      | 275  |
| 5                                                                         | 305 X 305 X 105 mm | 72mm      | 250  |
| 6                                                                         | 305 X 305 X 105 mm | 48mm      | 125  |
| 7                                                                         | 610 X 610 X 120 mm | 92mm      | 1500 |
| 8                                                                         | 450 X 450 X 120 mm | 92mm      | 785  |
| 9                                                                         | 305 X 305 X 120 mm | 92mm      | 375  |

**Note:** Fine Airsys also can convert your conventional Hepa designed boxes to Gel Seal Hepa on site maintaining same CFM with better efficiency & power savings after filter replacements.

## FILTERS- SYNTEHTIC MEDIA PRE FILTER (G4 / F7)

### Construction:

Fine Airsys Pre filters are built into either 18 Gauge Aluminum / SS304 material. The filter can be easily washed or soaked in addition with detergent and then gently given an air pressure to dry it in the atmosphere.

### Application:

The Pre filters / Fine Filters are generally used for comfort and non critical Industrial applications, (acts as a fresh air filter in Air Handling Units) prior to fine filters, and can be easily mounted in the handling units or banks, generally used in commercial buildings.

### Testing:

The Pre filters / Fine Filter are randomly tested as per EN-779 Synthetic Dust Load and Dust spot procedures Efficiency test with Air Velocities and Static Pressure drops are measured at our premises on the TESTING RIG.



### GSM Size Varies As Per Changes In EN Series

Following are our EU 3 and EU 4 Standard Pre filters Sizes and Capacities with Initial Pressures as below:

Flange Type or Box Type

| EN Series<br>Filter Class | Size            |           | Capacity |      | Initial Pressure<br>Drop<br>Inches (MM wg) | Efficiency<br>In%<br>Arrestence |
|---------------------------|-----------------|-----------|----------|------|--------------------------------------------|---------------------------------|
|                           | Inches          | mm        | CFM      | CMH  |                                            |                                 |
| G4                        | 24" X 24" X 2"  | 610 X 610 | 2000     | 3400 | (4mm)<br>40 pascals                        | >90%<br>10 Microns              |
|                           | 20" X 20" X 2"  | 508 X 508 | 1400     | 2380 |                                            |                                 |
| F7                        | 24" X 24" X 12" | 610 X 610 | 2000     | 3400 | (8mm)<br>80 pascals                        | >98%<br>3 Micron                |
|                           | 24" X 24" X 6"  | 610 X 610 | 1000     | 1700 |                                            |                                 |
|                           | 18" X 18" X 12" | 450 X 450 | 1100     | 1870 |                                            |                                 |
|                           | 18" X 18" X 6"  | 450 X 450 | 550      | 940  |                                            |                                 |

❖ Refer Classification Particle & Efficiency Chart On Next Page

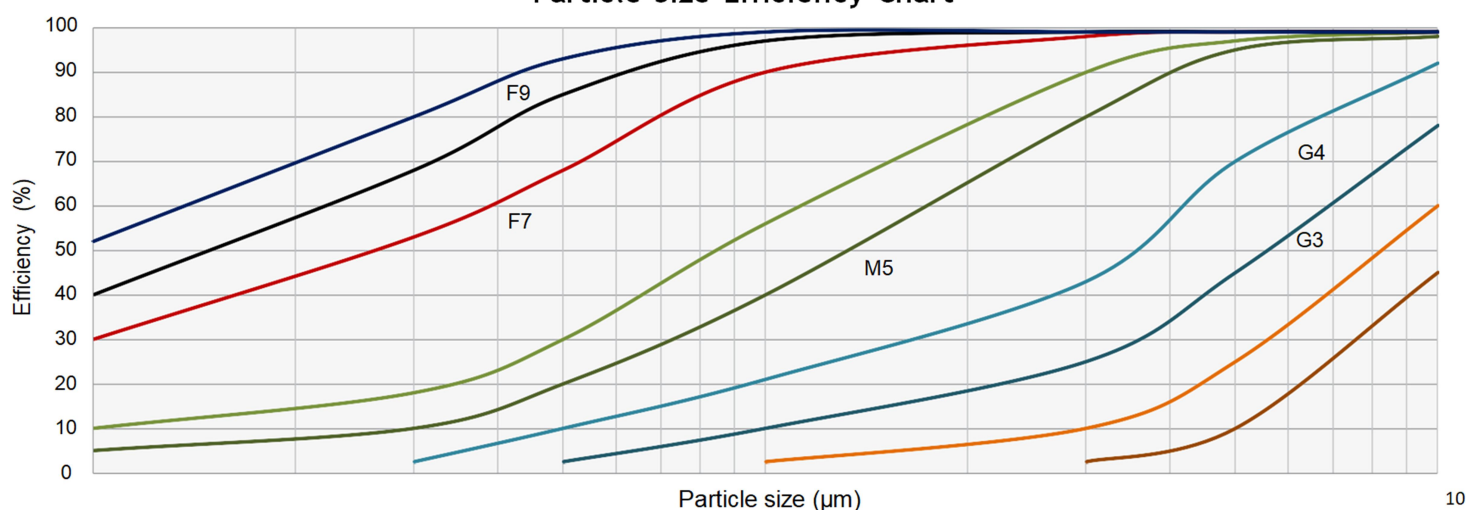
Note: High temp filter upto 500° also available\*

## FILTER CLASSIFICATION AND PARTICLAE SIZE EFFICIENCY CHART

| F27042014                                  | Coarse filters |            |        |                    | Medium filters |            | Fine filters |         |            |
|--------------------------------------------|----------------|------------|--------|--------------------|----------------|------------|--------------|---------|------------|
| Filter classification according EN779:2012 | G1             | G2         | G3     | G4                 | M5             | M6         | F7           | F8      | F9         |
| Average Arrestance (%) gravimetric         | 50<65          | 65<80      | 80<90  | 90< A <sub>m</sub> |                |            |              |         |            |
| Average Efficiency @ 0,4                   |                |            |        |                    |                |            |              |         |            |
| Minimum Efficiency @ 0,4 µm DEHS           |                |            |        |                    |                |            | > 35         | >55     | >70        |
| Eurovent 4/5 Classification                | EU1            | EU2        | EU3    | EU4                | EU5            | EU6        | EU7          | EU8     | EU9        |
| ASHRAE 52.2-2012                           | MERV 1         | MERV 2/3/4 | MERV 5 | MERV 6/7/8         | MERV 9/10      | MERV 11/12 | MERV 13      | MERV 14 | MERV 15/16 |

| Initial efficiency versus particle size |       |       |       |       |       |       |       |       |       |
|-----------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0,1 µm                                  | -     | -     | -     | -     | 0-10  | 5-15  | 25-35 | 35-45 | 45-60 |
| 0,3 µm                                  | -     | -     | -     | 0-5   | 5-15  | 10-25 | 45-60 | 65-75 | 75-85 |
| 0,5 µm                                  | -     | -     | 0-5   | 5-15  | 15-30 | 20-40 | 60-75 | 80-90 | 90-95 |
| 1 µm                                    | -     | 0-5   | 5-15  | 15-35 | 30-50 | 50-65 | 85-95 | 95-98 | >98   |
| 3 µm                                    | 0-5   | 5-15  | 15-35 | 30-55 | 70-90 | 85-95 | >98   | >99   | >99   |
| 5 µm                                    | 5-15  | 15-35 | 35-70 | 60-90 | 90-99 | 95-99 | >99   | >99   | >99   |
| 10µm                                    | 40-50 | 50-70 | 70-85 | 85-98 | >98   | >99   | >99   | >99   | >99   |

Particle Size Efficiency Chart



## HEPA FILTER > DEEP PLEATED HEPA FILTER

### HEPA FILTERS (Absolute Filters) (H 11 & H 12 & H 13)

High Efficiency Particulate Air Filters are the most efficient air filters commercially available.

Fine Airsys Hepa Filters are built into 18 guage Aluminium / SS construction also known as absolute filters with exceptionally high efficiency 99.97% or 99.997% down to 0.3 Microns. Hepa Filters are generally tested by PAO Test (Poly Alpha Olefin) as per **EN1822**. Glass fiber paper media separated by piece of corrugated material generally used Aluminium to keep resistance & media velocity. The filters pack & separators are sealed with fire retardant Polyurethane Sealants. When dry hardened providing positive seal for leakage. Also provided with suitable gaskets tightened. Super Hepa 99.997% down to 0.3 filters are same built as conventional filters, but having doubled the capacity with same initial pressure drop.



**We also manufacture F8 & F9 filters i.e. minimum efficiency @0.4 mic. 75% to 85% respectively.**

#### Application:

A must use in pharmaceutical, biotech industries, semi conductors manufactures, hospitals and laboratories. The filter can also be used in Laminar flow applications.

## HIGH TEMPERATURE HEPA FILTER

**HIGH TEMP HEPA FILTERS** range from 100° to 500° C. Filters has a range of super hepa filters also. Our unique constructional design ensures leak-free performance during heating cycles.

**NOTE: NON-STANDARD SIZES also can be manufactured as per requirements in different sizes.**

| SR. NO | EN SERIES | HEPA EFFECIENCY | INTIAL / FINAL PRESSURE DROP |
|--------|-----------|-----------------|------------------------------|
| 1      | E-11      | 99.97%          | 25 MM<br>TO<br>50 MM         |
| 2      | E-12      | 99.99%          |                              |
| 3      | H-13      | 99.997%         |                              |
| 4      | H-14      | 99.999%         |                              |

## FILTERS – MINIPLEAT HEPA & GEL SEAL MINI PLEAT HEPA FILTERS

Mini Pleat hepa are designed to meet the needs of critical application where Hepa filtration is required. They are Rated as H13/ H14 Grade. The pressure drop is much lower as compared to conventional filters hence leading to power consumption savings.

### ® Filter media and construction:

#### Media type:

Fire Retardant, Microfine glass fibre media **Frame:**

- Material of construction: Aluminium/ SS 304
- For Gel Seal filters a special Silicon Gel is poured to ensure leak proof performance when rested on Knife Edge.

#### Salient Features:

- Can be used up to 70° Ambient temp
- Filter media is separated by hot melt thread
- All filters are 100% leak tested
- Filter Media is fully bonded with frame
- Low Pressure rating

#### Main Advantages:

- Robust Construction to withstand harsh environmental conditions
- Environment friendly construction
- Enough filter media provided to ensure very low initial pressure drop
- 100% leak proof construction

### ® Filters - FA MINI PLEAT CFM CHART & STANDARD SIZES

Typical filter data for standard filter size



| TYPE                        | Dimensions (mm)  | Gel seal filter depth | Air flow (cfm) | Initial pressure drop (Pa) - H13 | Initial pressure drop (Pa)- H14 | Efficiency in % |
|-----------------------------|------------------|-----------------------|----------------|----------------------------------|---------------------------------|-----------------|
| FA 70<br>50mm<br>Pack Size  | 610 X 610 X 71   | 81                    | 500            | 140                              | 160                             | H-13<br>99.997% |
|                             | 610 X 915 X 71   |                       | 750            | 140                              | 160                             |                 |
|                             | 610 X 1220 X 71  |                       | 1000           | 140                              | 160                             |                 |
| FA 90<br>62mm<br>Pack Size  | 610 X 610 X 90   | 105                   | 760            | 150                              | 170                             | H-14<br>99.999% |
|                             | 610 X 915 X 90   |                       | 1140           | 150                              | 170                             |                 |
|                             | 610 X 1220 X 90  |                       | 1520           | 150                              | 170                             |                 |
| FA 105<br>92mm<br>Pack Size | 610 X 610 X 104  | 119                   | 1000           | 160                              | 170                             |                 |
|                             | 610 X 915 X 104  |                       | 1500           | 160                              | 170                             |                 |
|                             | 610 X 1220 X 104 |                       | 2000           | 160                              | 170                             |                 |

## FILTERS – FA COMBI FILTER

Fine Airsys Combi Filter is a combination of pre and fine filter. The fabrication of filter frame is a dual one, which houses both pre filter and fine filter.

### ® Filter media and construction:

Media type: Synthetic Media for both filters sandwiched between two layers of HOPE media.

Frame: Aluminium / S.S / G.I.

Media edge sealing: Ultrasonically welded either press type or stitch type and regular stitching.

Construction: Box type/ flange type - Leak proof.

### Salient Features:

- The filter can be constructed in such a way that pre filter of G3 - G4 and supported by a fine filter of F7 / F8 / F9.
- Very good temperature withstanding capability up to 100°C and relative humidity of close to 100°.

### Main Advantages:

- Filters can be used for various applications, where pre and fine filters are separately used.
- Environment friendly construction.
- 



## OPERATION THEATRE MODULE (LAMINAR FLOW)

Reducing airborne bacteria in the operating theatre is a vital key to a successful surgery.

Now you can cut dramatically the incidence of deep sepsis in orthopaedic surgery, with similar benefits in such fields as neurosurgery and ophthalmology.

Operation Theatre Modules provides obvious health and financial benefits to your patient and the hospital. The Module is easily retrofitted to the ceiling or within the ceiling void of existing operating theatres.

A controlled column of ultra clean air is delivered down over the operating table, your surgical team and their equipment. It then moves radically outwards and up to the return air intakes.

Clean Air is delivered through HEPA filters fixed in the plenum. 55 304 perforated sheet is provided under the HEPA Filters.



## IMPROVING INDOOR AIR QUALITY & PREVENTING ODOR

### Plated Panel Activated Carbon Filter

#### Description

The carbon plated filters are designed to control and absorb variety of odors & gases. Its a combination of Non-Woven (MERV 8) & Activated Carbon Media, which is plated with Aluminium frame. The advanced media has improved capability to absorb foul odors & trap particulates in atmosphere.

#### Benefits

In some light duty applications, the effectiveness of carbon plated filters can equal many long-term solutions used for controlling odor problems. The Fine Airsys make panel filters can be used as a low cost method to verify the potential effectiveness of carbon for controlling an odor problem.

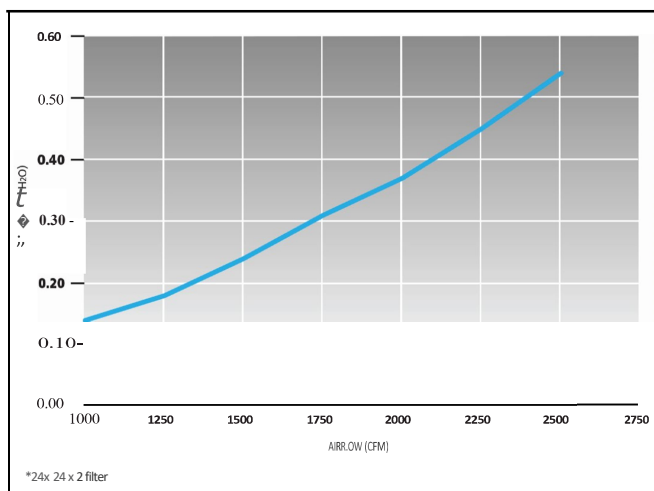


### Application & Material

#### Activated Carbon Filter & Link - MERV 8

Heavy duty industrial & commercial activated carbon filter with an internal wire grid for support. A porous tackfield, white synthetic media upstream for depth loading of airborne particles and highly adsorptive carbon laden polyester layer on the downstream side to remove nuisance odors and VOCs/gases from the airstream. Increases comfort in the workplace, where nuisance odor/gas contamination is a problem.

### Air Flow Vs. Resistance



### Dimensions & Performance Data

| Sr. No. | Nominal Size<br>HxWxD | Initial Actual Size<br>HxWxD | Initial Resistance<br>@ 250 fpm ("w.g.) | Resistance |
|---------|-----------------------|------------------------------|-----------------------------------------|------------|
| 1.      | 24 X 24 X 1           | 23 3/8 X 23 3/8 X 3/4        | 0.23                                    | N/A        |
| 2.      | 20 X 24 X 1           | 19 3/8 X 23 3/8 X 3/4        | 0.23                                    | N/A        |
| 3.      | 12 X 24 X 1           | 11 3/8 X 23 3/8 X 3/4        | 0.23                                    | N/A        |
| 4.      | 24 X 24 X 2           | 23 3/8 x 23 3/8 x 1 3/4      | 0.13                                    | 0.34       |
| 5.      | 20 X 24 X 2           | 19 3/8X23 3/8X1 3/4          | 0.13                                    | 0.34       |
| 6.      | 12 X 24 X 2           | 11 3/8X23 3/8X1 3/4          | 0.13                                    | 0.34       |
| 7.      | 24 X 24 X 4           | 23 3/8X23 3/8X3 5/8          | 0.07                                    | 0.23       |
| 8.      | 20 X 24 X 4           | 19 3/8X 23 3/8X 3 5/8        | 0.07                                    | 0.23       |
| 9.      | 12 X 24 X 4           | 11 3/8X23 3/8X 3 5/8         | 0.07                                    | 0.23       |

## BIOSAFETY CABINET

Class 2 Biosafety Cabinets are designed to provide protection to operator, environment and materials inside the workspace. These Class II 85Cs are utilized for containing low-to-moderate risk biohazardous materials. These cabinets have downward airflow and HEPA filters that re-circulate air providing required level of protection from microorganisms and aerosols. As these cabinets are extensively used in drug preparation, chemotherapy preparation, clinical research, medical and pharmaceutical sectors, life science and industrial laboratories etc. it must follow relevant application specific standards.



### Types of Class 2 Biosafety Cabinet

In order to meet varying research and clinical needs, Class II Biosafety Cabinets are designed mostly in 3 types i.e. Type A2, Type B1, and Type B2. Regardless of type, each cabinet provides the same level of protection. According to international sanitation standards, there are exactly same pass and fail criteria for all of them.

#### Biosafety Cabinet Class 2 Type A2:

In this type of Class II 8SC, approximately 70% of the HEPA filtered air is circulated through the cabinet, while 30% passes through an exhaust HEPA filter and is discharged.

#### Biosafety Cabinet Class 2 Type B1:

This Class II 8SC, exhausts 60% - 70% of the HEPA filtered air, while 30% - 40% air is re-circulated inside workspace through HEPA filter.

#### Biosafety Cabinet Class 2 Type B2:

It is total exhaust type 8SC, no re-circulation inside workspace; blower exhausts 100% of the filtered air.

#### Features:

|                                                    |                                               |
|----------------------------------------------------|-----------------------------------------------|
| Class 5 conditions (class 100) per ISO 14644-1 & 2 |                                               |
| Produces less heat and energy efficient            | Highly efficient airflow management system    |
| Lightening through fluorescent lamp                | Feather Touch switches for operations         |
| Durable construction for long service life         | Durable wall plenum design                    |
| Easy to clean and maintain                         | 55304 Construction                            |
| Low noise operation                                | Minihelic Gauges and UV light with Hour Metre |

#### Standard Sizes (Dimensions):

| Nominal Size       | 2 ft. | 3 ft. | 4 ft. | 5 ft. | 6 ft. |
|--------------------|-------|-------|-------|-------|-------|
| Working area (ft.) | 2x2x2 | 3x2x2 | 4x2x2 | 5x2x2 | 6x2x2 |

## LAMINAR AIR FLOW

Many microbiological and cell culture laboratories require highly sterile working environment for performing research activities and laminar air flow cabinets are the best solution for them. Often called laminar air flow chambers or laminar air flow workstations, these cabinets are designed to keep contents of the work zone safe from particulates that are sensitive to such contamination.

A laminar air flow cabinet maintains a unidirectional flow of HEPA-filtered air over the work area and protects the working environment from dust and other air-born particulates. The flow can be horizontal (parallel to the work surface) or vertical (from top to the work surface). Both the air flow types have their own significance in research.

**WE ALSO MANUFACTURE SAMPLINGS & DISPENSING BOOTHES.**



## Specifications:

|                      |                                                             |
|----------------------|-------------------------------------------------------------|
| Cleanliness          | Class 100                                                   |
| Velocity             | 90 FPM±20%                                                  |
| Hepa Filter          | 99.999 % efficiency for particles > 0.3 µm                  |
| Pre-Filter           | 95% efficiency for particles > 5 microns (Washable)         |
| Cabinet              | Stainless Steel SS 304 (optional 316 grade)                 |
| Light                | High intensity, low wattage >800 lux                        |
| Noise Level          | < 55 dBA                                                    |
| Optional Accessories | UV light, Gauges, Microprocessor LCD Controller, Hour Meter |

## DYNAMIC PASS BOX

Dynamic Pass Box equipment are made of G.I powder coated or high grades stainless steel (304 / 316 / 316 L) with international quality standard components including mechanically or dynamic pass box equipment are equipped with suction filter made of stainless steel with 95% down to 5 $\mu$  efficiency (EU-5 rating) and supply filter made of aluminum with 99.997% down to 0.3 $\mu$  (EU-14 Rating.) An interlock guard system controls the inlet and the outlet of PASS BOX not be opened at the same time, in order to prevent the cross contamination.



### Specifications:

| Product        | Pass Boxes                                                                                               |
|----------------|----------------------------------------------------------------------------------------------------------|
| Construction   | <b>Stainless Steel 304 / 316 / 316L</b>                                                                  |
| Door           | <b>Solid door w/ mechanical or electrical interlocked</b>                                                |
| Window         | <b>Tempered Glass / Polycarbonate Sheets</b>                                                             |
| UV Lamp        | Optional                                                                                                 |
| HEPA Filter    | Optional                                                                                                 |
| Suction Filter | Stainless Steel w/ 95% down to 5 $\mu$ Efficiency (EU-4 Rating.)                                         |
| Supply Filter  | Aluminum w/ 99.997% down to 0.3 $\mu$ (EU-14 Rating.)                                                    |
| Blower         | Branded Heavy duty %                                                                                     |
| Noise          | < 68 DB                                                                                                  |
| Power Supply   | 220 I 230 Volts                                                                                          |
| Accessories    | Hour meter, Magnehelic / Minihelic Pressure Gauge                                                        |
| Electricals    | Hour Meter, Fluorescent light, UV light, Electromagnet for door interlocking, Buzzer and Indicator lamps |

## STATIC PASS BOX

Fine Airsys presents its static pass box equipment, fabricated with G.I powder coated or 304 / 316 grades stainless steel and high quality components and are capable of eradicating pollutants completely from the air. These static pass boxes are installed in manufacturing areas and filter the incoming air in order to keep the air free from dust and other contaminants. With UV light along with hour meter, Fluorescent light, buzzer indicator to know the material is kept inside and indicating lamp, these static pass boxes provide excellent working performance in the clean room unit.



## HEPA SEAL BAG IN BAG OUT (BIBO)

Fine Airsys make **BIBO** housing for gasket seal Hepa filters are side loading filter housing which have been designed to meet due air filtration needs of industries and research facilities which handles dangerous, toxic, biological or carcinogenic material to minimize exposure to this harmful own termination while replacing and handling dirty filters Special Enclosure housing is built by Fine Airsys for above purpose. STD 5.3 ES of BIBO are available as per cfm require.

The casing Material can be either M.S Powder coated or SS 304 as required.

The **BIBO** system consists of a sealed bag-in/bag-out filter housing. When it's time to replace a contaminated filter, the process begins with an operator attaching an empty replacement bag to the filter housing. The contaminated filter is then safely removed and sealed within the first bag, without any risk of releasing contaminants into the cleanroom.

The operator then attaches a new, clean filter to the housing, which is sealed within the second bag. This bag-within-a-bag design ensures that the filter replacement process is entirely contained, preventing any contamination from escaping into the environment.



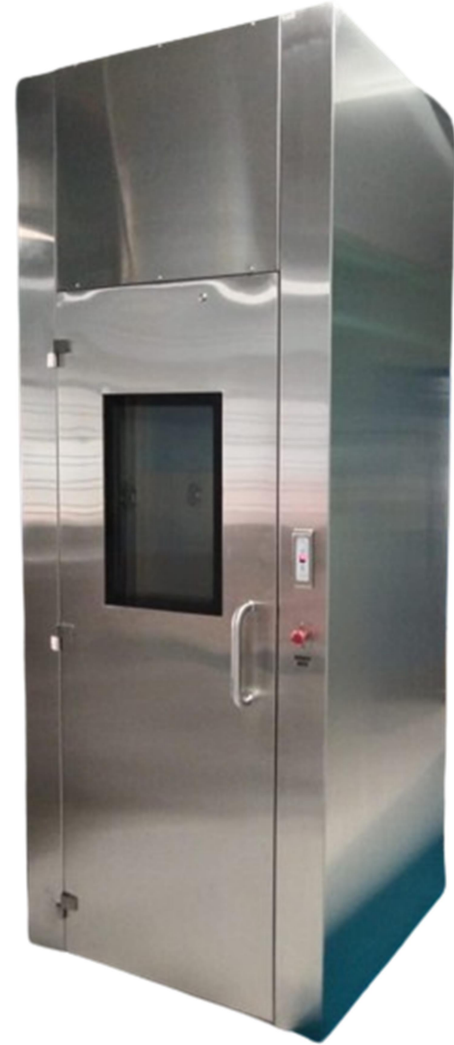
### Characteristics and Features:

- Manufactured from powder-coated cold-rolled sheet or 304 stainless steel and 316 stainless steel for option.
- Housing accommodates standard gel seal HEPA filters or any other EU filters.
- All pressure boundaries are fully welded.
- Multi-wide housings are equipped with a filter removal rod to draw the filters to the change out position.
- One PVC change out bag is furnished for each filter access port.
- Upstream Filter Seal: Each HEPA filter seals against the air entering face of the frame to prevent interior contaminant build-up.

## CLEAN ROOM AIR SHOWER

Fine Airsys make Air showers are specialized enclosed antechambers which are incorporated as entryways of cleanrooms and other controlled environments to reduce particle contamination. Air showers utilize high-pressure, HEPA filtered air to remove dust, fibrous lint and other contaminants from personnel or object surfaces. The forceful "cleansing" of surfaces before entering clean environments reduces the number of airborne particulates introduced.

When properly incorporated into cleanroom design, air showers provide an ISO-classified transition vestibule to ensure the cleanliness of the classified cleanroom. Air showers are typically placed between a gowning area and cleanroom; after workers don appropriate garb and personal protective equipment, they enter the shower so that the pressurized air nozzles remove any residual particles from coveralls. Once the program cycle is complete, users exit through a second door into the cleanroom. Air showers (or air tunnels) may also be placed between cleanrooms of different ISO ratings.



### Design and functionality:

Air showers are generally constructed from cleanroom-compatible steel or plastic materials and feature electronically-powered blowers, filters and high-pressure jet nozzles, the latter being incorporated into the walls and ceiling of the chamber.[3] Air, at velocities of 3,000 ft/min (15 m/s) to 7,000 ft/min (36 m/s), continuously streams from the jet nozzles for 30–45 seconds, effectively removing loose particulate matter.[4] Personnel inside the enclosure will lift their arms and turn their bodies for uniform exposure to the air streams, a procedure usually specified in protocol. Air currents from the jets create shearing and flapping forces, which lift and remove contaminants from both flat surfaces and the creases of garments.[4] HEPA filtration within the air shower is capable of removing 99.97% of particles greater than 0.3  $\mu\text{m}$  diameter.

## AIR PURIFICATION MODULE

**FINE AIRSYS MAKE AIR Module** is designed to Purify the air in a small enclosure. These modules recirculates the air in the area through three stages of filterations. Its well designed to remove any type of impurities, bacteria and viruses to create a sterile environment.

### ® Technical Specifications:

- 99.97% efficient down to 0.3 microns HEPA
- Pre and Fine filters increase life of HEPA
- Feather touch switch with display
- HEPA validation at site
- HEPA life estimation by digital display gauge on the module
- Fan speed regulator to maintain air flow rate
- Robust MS Powder coated unit with trolley
- Double deflection adjustable air grill/ SS 304 perforated sheets.



### Dimension Table:

| Fine Airsys Model Number | FA25    | FA500   | FA 750  | FA 1000  |
|--------------------------|---------|---------|---------|----------|
| Capacity in CFM          | 250 CFM | 500 CFM | 750 CFM | 1000 CFM |

### Product Details:

|                    |                                                             |
|--------------------|-------------------------------------------------------------|
| Frequency          | 50 Hz                                                       |
| Velocity           | 90FPM +/-20                                                 |
| Noice Level        | 65 dB Max                                                   |
| Cleanliness        | Class 100 as per IS 14644                                   |
| Supply Filter      | GEL SEAL MINI PLEAT HEPA FILTERS H 14 COMBI FILTERS G4 + G7 |
| Available Capacity | 250 CFM, 500 CFM, 750 CFM and 1000 CFM                      |
| Particle Retention | 0.3 micron                                                  |
| Filter Efficiency  | 99.997%                                                     |
| Input Voltage      | 230V                                                        |
| Phase              | 1                                                           |

# NEGATIVE AIR MACHINE

## ® HEPA Negative Air Machine

The Fine Airsys make unit is a popular, compact sized negative air machine, with variable speed control which produces 300 to 500 CFM and weighs only 25 KG.

FINE AIRSYS HEPA Air Machines are used to clean the air as well as create positive or negative air pressure containment areas on job sites, in confined spaces, mold, asbestos and lead abatement or remediation, commercial or factory sites, medical facilities and many other places. With numerous optional filters, suitable for a large array of jobs from light construction, to tasks that require true 99.99% HEPA efficiency.

Our housings have a smooth, clean finish and individually SS 304/MS powder coated construction; with hospital grade non-marking PU casters Wheels allowing for easy portability. All critical seams are silicone sealed to assure that contaminated air will not bypass the HEPA filter. These machines have an easy to sanitize aluminum housing, designed to last job after job.

Fine Airsys machines offer an assortment of options for pre-filters, HEPA filters, and accessories. Our standard machine configers with primary/secondary filter and a 99.97% efficient HEPA filter.



## Applications:

- HEPA Filtration or Removal Of Air Through HEPA
- Renovation projects or light construction
- Create negative or positive pressure containment areas
- Removal or control of odors, VOCs or fumes.
- Medical facilities and labs

## DUST COLLECTOR WITH FILTER CLEANING BOOTH

An industrial dust collector is a type of air pollution control equipment used in factories, plants, warehouses and other industrial or commercial settings to meet environmental and workplace safety requirements. Effective dust collection systems control, reduce, And remove potentially spreaded particulate matter particles from a manufacturing process or the air and the surrounding environment during production and manufacturing.

The equipment is specifically designed to, purify and filter hazardous dust and fine particulate contaminant matter released into the work environment or atmosphere to maintain and improve air quality. Types of pollutants can differ by industry. Therefore, industrial dust collector designs are specific to the extraction method required for each industry. Dust collector systems work in general by drawing dust and particulates from the air through a filter that first captures and separates the matter and then discharges purified air back into the workplace or environment.



## FILTER CLEANING BOOTH

**THIS IS THE S.S CLEANING BOOTH ATTACHED ON DUST COLLECTOR SHOWN ABOVE**

The filter cleaning booth is Specially designed with suction hood connected to wet scrubber. The Fine& Pre filter can be placed on the gratings given on inner side. Water jet & Air jet nozzle are provided to clean the filters manually. The water then flow through the drain valve given in cleaning booth. The Air stream flow through the suction of Dust are get treated.

We are the well known designer, manufacturer & exporters of FILTER CLEANING BOOTH.

### PRODUCT SPECIFICATION .:

|                      |                                       |
|----------------------|---------------------------------------|
| MOC DUST COLLECTOR : | M.S WITH EPOXY PAINTED & FRP MATERIAL |
| MOC CLEANING BOOTH : | S.S-304/316.                          |
| CAPACITY :           | MAX UPTO 10 TO 12 FILTERS             |
| ACCESSORIES :        | AIR JET NOZZLE & WATER JET NOZZLE     |

### THE DUST COLLECTOR WITH FILTER CLEANING BOOTH Process Consist Of Two Section :

**CLEANING SECTION** :: Where The Filter Are Cleaned In The Wash Tank By Using Water In Scrubber By Using Air Pressure Nozzle.

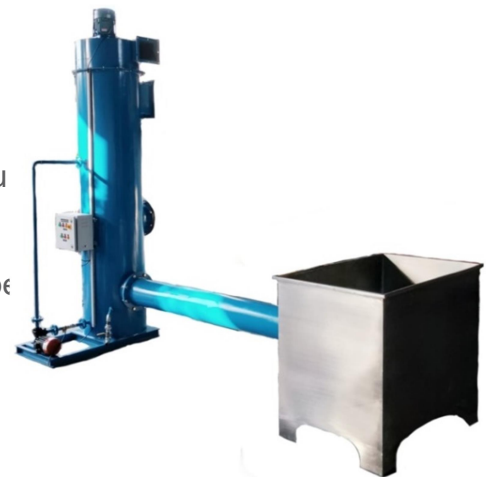
**SUCTION** :: Where The Dust In Form Of Gas Is Been Sucked By The Suction Effect Produced By High Pressure Blower Attached At The Top Of Dust Collector.

**DUST COLLECTOR** :: When DUST Particles Are Sucked And The Dust Been Socked By Filter Cartridge.

## WET SCRUBBER WITH FILTER CLEANING BOOTH

Wet scrubbers can remove particulate matter by capturing them in liquid droplets. The droplets are then collected, with the liquid dissolving or absorbing the pollutant gas / particles. Any droplets that are in the scrubber inlet gas must be separated from the outlet gas stream using a mist eliminator. Also, the resultant scrubbing liquid ultimate discharge or being reused in the plant.

A wet scrubber's ability to collect particulate matter is often directly proportional to the power input into the scrubber. Additionally, a proper mist eliminator is important to achieve high removal efficiencies. If the gas stream contains both particulate matter and gas / particles, wet scrubbers are generally the only single air pollution control device that can remove both pollutants.



## FILTER CLEANING BOOTH

The filter cleaning booth is Specially designed with suction hood connected to wet scrubber. The Fine& Pre filter can be placed on the gratings given on inner side. Water jet & Air jet nozzle are provided to clean the filters manually. The water then flow through the drain valve given in cleaning booth. The Air stream flow through the suction of wet scrubber & Dust are get treated.

We are the well known designer, manufacturer & exporters of FILTER CLEANING BOOTH.

### PRODUCT SPECIFICATION .:

|                      |                                       |
|----------------------|---------------------------------------|
| MOC SCRUBBER :       | M.S WITH EPOXY PAINTED & FRP MATERIAL |
| MOC CLEANING BOOTH : | S.S-304/316.                          |
| CAPACITY :           | MAX UPTO 10 TO 12 FILTERS             |
| ACCESSORIES :        | WASHING JET NOZZLE & AIR JET NOZZLE   |

### THE WET SCRUBBER WITH FILTER CLEANING BOOTH Process Consist Of Three Section :

- CLEANING SECTION** :: Where The Filter Are Cleaned In The Wash Tank By Using Water In Scrubber By Using Water Nozzle & Air Pressure Nozzle.
- SUCTION** :: Where The Dust In Form Of Liquid Is Been Sucked By The Suction Effect Produced By High Pressure Blower Attached Top Ventuari Scrubber. It Passes The Dust From Cleaning Booth To Scrubber From The Suction Pipe Attached In Between.
- SCRUBBER** :: In Scrubber, The Liquid Form Of The Dust Is Been Filterized And The Clean Water Is Been Supplied Back To Scrubber By Water Pump & The Water Is Used Again For Washing The Filter.

## CLEAN ROOM EQUIPMENTS ACCESSORIES

### Accessories for Clean Room



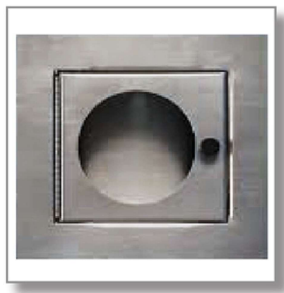
#### 1. Housing boxes for HEPA filters

- Material : G. I Powder coated/ SS 304
- Gauge: 16/ 18g



#### 2. Risers for Clean Room with Accessories

- Material: G. I Powder coated/ SS 304
- Gauge : 16g / 18g



#### 3. Magnehelic Gauge Boxes with Accessories Risers for Clean Room with Accessories

- Material : G. I Powder coated/ SS 304
- Gauge: 18g / 16g



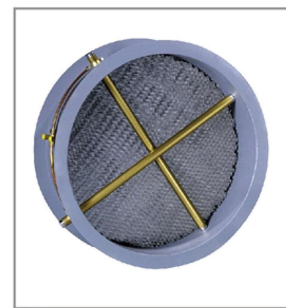
#### 4. Perforated Sheets

- Material : Aluminium Powder coated/ SS 304
- Gauge: 16 / 18g (Punching Capsule, Round)



#### 5. Aerofoil Dampers

- Material: Aluminium Anodized
- Gauge: 16g



#### 6. Air Flow Measuring Stations

- Material: G. I Powder coated/ SS 304
- Gauge : 18g /16g

## STANDARD CHARTS

| ASHRAE Standard 52.2-2012       |                                                                                  |                    |                    | EN           | EN779: 2012                                            |                                               |                                                 | EN1822: 2009                                                            | ISO16890: 2016                                                                                    |                     |                                      |                                       |          |
|---------------------------------|----------------------------------------------------------------------------------|--------------------|--------------------|--------------|--------------------------------------------------------|-----------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------|--------------------------------------|---------------------------------------|----------|
| Min. Efficiency Reporting Value | Composite Average Particle Size Efficiency (E <sub>m</sub> ) % in Size Range, μm |                    |                    | Filter Class | Average Arrestance (A <sub>m</sub> ) of Synthetic Dust | Average Efficiency (E <sub>m</sub> ) at 0.4μm | Minimum Efficiency (E <sub>min</sub> ) at 0.4μm | Initial Efficiency (E <sub>i</sub> ) at MPPS (typically 0.08 - 0.15 μm) | Average of initial and discharged efficiency E <sub>m</sub> = (E <sub>i</sub> +E <sub>d</sub> )/2 |                     | Initial efficiency (E <sub>i</sub> ) | Initial Arrestance (A <sub>m</sub> )  |          |
|                                 | Range 1                                                                          | Range 2            | Range 3            |              |                                                        |                                               |                                                 |                                                                         | Test Final dP 250Pa                                                                               | Test Final dP 450Pa |                                      |                                       | ePM1 (%) |
| (MERV)                          | 0.3-1.0                                                                          | 1.0-3.0            | 3.0-10.0           |              | %                                                      | %                                             | %                                               | %                                                                       | 0.3-1.0                                                                                           | 0.3-2.5             | 0.3-10                               | ISO Fine Dust                         |          |
| 1                               |                                                                                  |                    | E <sub>m</sub> <20 | G1           | 50≤A <sub>m</sub> ≤65                                  |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      | A <sub>m</sub> <50<br>Final dP 200 Pa |          |
| 2                               |                                                                                  |                    | E <sub>m</sub> <20 | G2           | 65≤A <sub>m</sub> ≤80                                  |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| 3                               |                                                                                  |                    | E <sub>m</sub> <20 |              |                                                        |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| 4                               |                                                                                  |                    | E <sub>m</sub> <20 |              |                                                        |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| 5                               |                                                                                  |                    | E <sub>m</sub> ≥20 | G3           | 80≤A <sub>m</sub> ≤90                                  |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      | A <sub>m</sub> ≥50 Final dP 300 Pa    |          |
| 6                               |                                                                                  |                    | E <sub>m</sub> ≥35 |              |                                                        |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| 7                               |                                                                                  |                    | E <sub>m</sub> ≥50 | G4           | A <sub>m</sub> ≤90                                     |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| 8                               |                                                                                  | E <sub>m</sub> ≥20 | E <sub>m</sub> ≥70 |              |                                                        |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| 9                               |                                                                                  | E <sub>m</sub> ≥35 | E <sub>m</sub> ≥75 | M5           |                                                        | 40≤E <sub>m</sub> ≤60                         |                                                 |                                                                         |                                                                                                   | E <sub>i</sub> >50  |                                      |                                       |          |
| 10                              |                                                                                  | E <sub>m</sub> ≥50 | E <sub>m</sub> ≥80 |              |                                                        |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| 11                              | E <sub>m</sub> ≥20                                                               | E <sub>m</sub> ≥65 | E <sub>m</sub> ≥85 | M6           |                                                        | 60≤E <sub>m</sub> ≤80                         |                                                 |                                                                         |                                                                                                   |                     | E <sub>m</sub> ≥50                   | E <sub>i</sub> >70                    |          |
| 12                              | E <sub>m</sub> ≥35                                                               | E <sub>m</sub> ≥80 | E <sub>m</sub> ≥90 |              |                                                        |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| 13                              | E <sub>m</sub> ≥50                                                               | E <sub>m</sub> ≥85 | E <sub>m</sub> ≥90 | F7           |                                                        | 80≤E <sub>m</sub> ≤90                         | E <sub>min</sub> ≥35                            |                                                                         |                                                                                                   | E <sub>m</sub> ≥50  | E <sub>m</sub> ≥65                   | E <sub>i</sub> >80                    |          |
| 14                              | E <sub>m</sub> ≥75                                                               | E <sub>m</sub> ≥90 | E <sub>m</sub> ≥95 | F8           |                                                        | 90≤E <sub>m</sub> ≤95                         | E <sub>min</sub> ≥55                            |                                                                         |                                                                                                   | E <sub>m</sub> ≥70  | E <sub>m</sub> >80                   | E <sub>i</sub> >90                    |          |
| 15                              | E <sub>m</sub> ≥85                                                               | E <sub>m</sub> ≥90 | E <sub>m</sub> ≥95 | F9           |                                                        | 95≤E <sub>m</sub>                             | E <sub>min</sub> ≥70                            |                                                                         |                                                                                                   | E <sub>m</sub> >80  |                                      |                                       |          |
| 16                              | E <sub>m</sub> ≥95                                                               | E <sub>m</sub> ≥95 | E <sub>m</sub> ≥95 |              |                                                        |                                               |                                                 |                                                                         |                                                                                                   |                     |                                      |                                       |          |
| N/A                             | N/A                                                                              | N/A                | N/A                | E10          |                                                        |                                               |                                                 | E <sub>i</sub> ≥85                                                      | N/A                                                                                               | N/A                 | N/A                                  | N/A                                   |          |
|                                 |                                                                                  |                    |                    | E11          |                                                        |                                               |                                                 | E <sub>i</sub> ≥95                                                      |                                                                                                   |                     |                                      |                                       |          |
|                                 |                                                                                  |                    |                    | E12          |                                                        |                                               |                                                 | E <sub>i</sub> ≥99.5                                                    |                                                                                                   |                     |                                      |                                       |          |
|                                 |                                                                                  |                    |                    | H13          |                                                        |                                               |                                                 | E <sub>i</sub> ≥99.95                                                   |                                                                                                   |                     |                                      |                                       |          |
|                                 |                                                                                  |                    |                    | H14          |                                                        |                                               |                                                 | E <sub>i</sub> ≥99.995                                                  |                                                                                                   |                     |                                      |                                       |          |
|                                 |                                                                                  |                    |                    | U15          |                                                        |                                               |                                                 | E <sub>i</sub> ≥99.9995                                                 |                                                                                                   |                     |                                      |                                       |          |
|                                 |                                                                                  |                    |                    | U16          |                                                        |                                               |                                                 | E <sub>i</sub> ≥99.99995                                                |                                                                                                   |                     |                                      |                                       |          |
|                                 |                                                                                  |                    |                    | U17          |                                                        |                                               |                                                 | E <sub>i</sub> ≥99.999995                                               |                                                                                                   |                     |                                      |                                       |          |



# Fine Airsys

## Clean Air Techniques



# Fine Airsys

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## A Perfect Solution For Clean Air