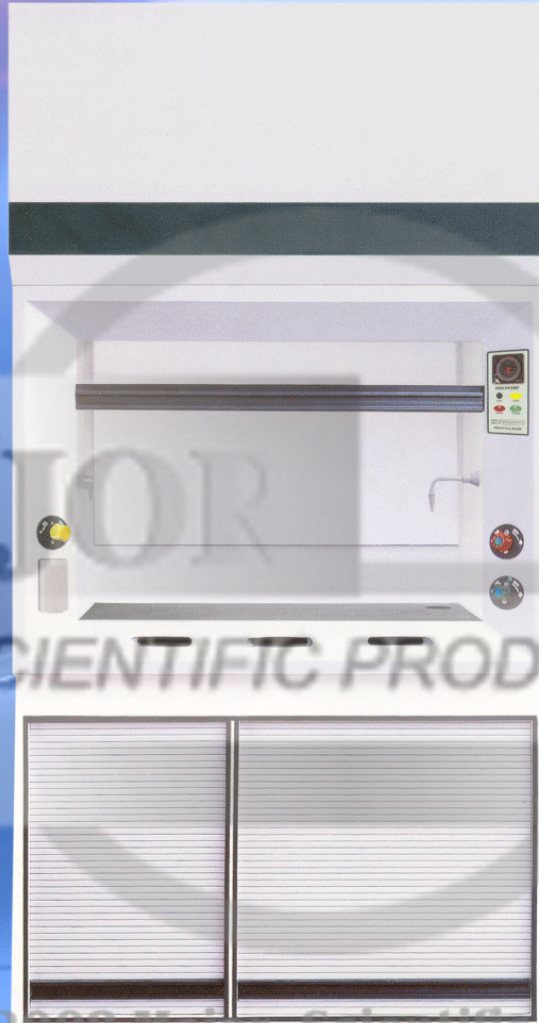


Major[®]



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Fume Cupboard



www.major-lab.com (e-mail: major@major-lab.com)

DISCOVERY Fume Cupboard

100 - 120 - 150 - 180 - 200

2

New Aerodynamic Design

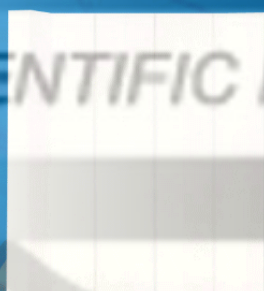
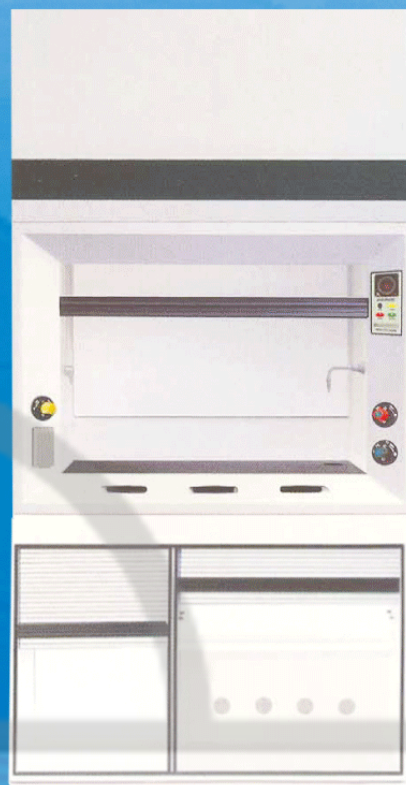
Normally case of fume cupboard designer, designed the air movement pass on the working area top, this important reason, the operator made wrong decision on experiment, We can not control the temperature of heater for boiling the sample or the glassware have fallen from windy. The new design make the air movement pass under the working area top under working area pass system through to the back of baffle and adjust the flow rate by itself.

Fume Cupboard Structure

The fume cupboard are manufactured from fiberglass reinforced unsaturated polyester resin (F.R.P.), fire retardant, corrosion resistant, with no metal contain in the structure. The frontage of fume cupboard is aerodynamically shaped to ensure an even flow of air in the chamber. It has large radius corners.

Fume Cupboard Chamber

The one piece moulded chamber has excellent aerodynamically shaped roof which is contoured towards a rectangular extraction outlet. The interior is fitted with especially designed removable back baffle for cleaning purpose. The floor has two levels, top for working area, easily to changing or cleaning. The lower one for drainage purpose.



Discovery Specification

MODEL	TOP WxDxH (cm)	STORAGE WxDxH (cm)	WORKING AREA WxD (cm)	MOVABLE TOP WxD (cm)	OUTLET PIPE Ø (Inch)
Discovery 100	100 x 90 x 150	100 x 80 x 85	75 x 70	73 x 66	8.5
Discovery 120	120 x 90 x 150	120 x 80 x 85	95 x 70	93 x 66	8.5
Discovery 150	150 x 90 x 150	150 x 80 x 85	125 x 70	123 x 66	10.5
Discovery 180	180 x 90 x 150	180 x 80 x 85	155 x 70	153 x 66	10.5
Discovery 200	200 x 90 x 150	200 x 80 x 85	175 x 70	173 x 66	10.5/12
Electricity	Main switch breaker 30 AMP.				
	Blower switch (visual light) with magnetic and overload for motor damage protection				
	Fluorescent switch (visual light) with 2 sets of 18 watts fluorescent lamp covered with safety glass.				
	Electrical service (Double receptacle plugs type) with 2 or 3 legs plug. 10 AMP. with cover				

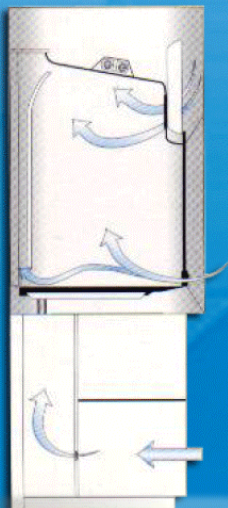


DISCOVERY Fume Cupboard

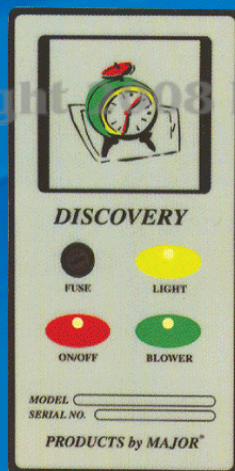
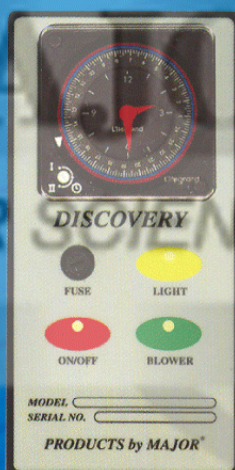
3

100 - 120 - 150 - 180 - 200

Air Flow Diagram



Sash lowered. Velocity was controlled through under working area pass for adjust the flow rate by itself.



Safety Sash

The counter-balanced sash is vertically sliding sash type supported on chemical resistant cable and running bearing pulleys which are bullet embedded in rigid nylon. Sash is 6 mm. thickness safety glass fixed in F.R.P. frame with PVC. handle.

Storage Cabinet

The storage unit is manufactured from F.R.P. completed with polypropylene roller shutter, has two separate parts, one for LPG tank and the other designed for chemical storage. The back of storage part can be removed for access to any service.

Pipe Line

The pipe are manufactured from F.R.P. with filament winding process, smooth interior, low resistance air flow. The end of pipe has 135° elbow for bird and rain protection.

Acid Trapping System

The acid trapping system is designed principle to handle acid fume in pipe line. The interior of system has transfer 2 holes for air turbulent protection. The air movement control is reverse air transparent type.

Microprocessor Control

Blower switch and lighting switch completed with visual light in only one piece microprocessor control panel, soft touch type, 24 hours timer switch also be equipped depending on request.

Checking

Air velocity is checked with ANEMOMETER at 100 FPM. while the door opening at 30 cm. height from workbed.

Warranty

12 months, Life time service.

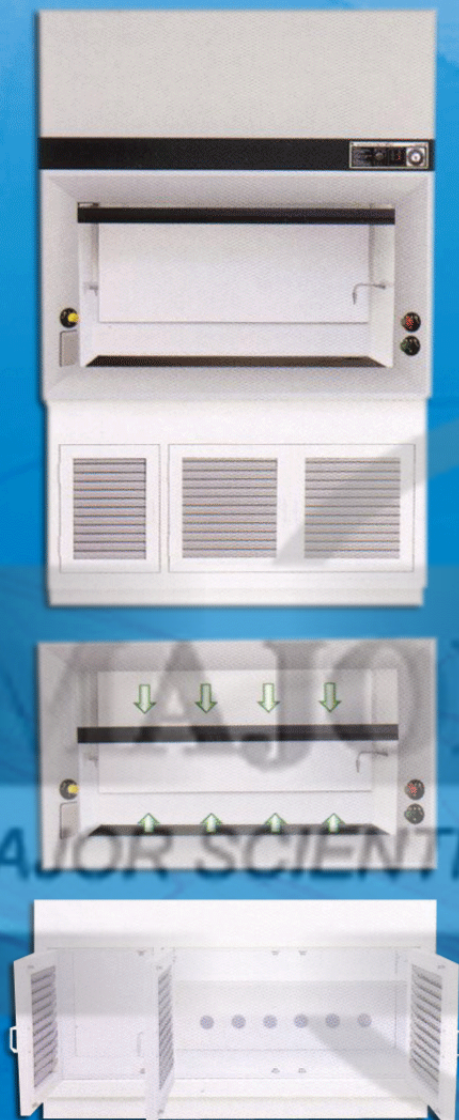


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SUPER FLOW Fume Cupboard

4

100 - 120 - 150 - 180 - 200



Structure

The fume cupboards are manufactured from fiberglass reinforced unsaturated polyester resin (F.R.P.) fire retardant, corrosion resistant, without metal contains in the structure. The frontage of fume cupboard is aerodynamically shaped to ensure an even flow of air in the chamber. It has large radius corners. The extraction rate from fume cupboard is depending on the position of sash. The storage part is designed to support the fume cupboard more than 200 kg. The storage unit is manufactured from F.R.P. completed with slated door, PVC baffle (for fix point automatic by pass 1:10 approximate) and two separate parts. The first part is designed for storage LPG tank and the other designed to be the adjustable shelf for chemical storage. The back of storage part can be removed for access to any service. The fume cupboard also available with Epoxy coated steel exterior upon request.

Chamber

The one piece moulded chamber has excellent aerodynamically shaped roof which is contoured towards a rectangular extraction outlet. The interior of chamber is fitted with a specially designed back baffle. The baffle is made from one piece in molding of F.R.P., it can be removed for cleaning purpose.

Floor

Two levels, The top one for working area, and the Lower one for drainage purpose.

Workbed

The specially designed removable workbed is very useful. It gives a maximum available working surface and easily to clean-up or even changing in the future. The work-top can be removed to reveal bowl flow fitted with wasted outlet.

Sash

The counter-balanced sash window is vertically sliding sash type supported on chemical resistant cable and running bearing pulleys which are bullet embedded in rigid nylon. Sash window is 6 mm. thickness safety glass fixed in F.R.P. frame with PVC handle.

Air Flow Diagram



Fiberglass Type



Metal Type



Sash Fully raised. All extraction through sash opening. By-Pass closed.

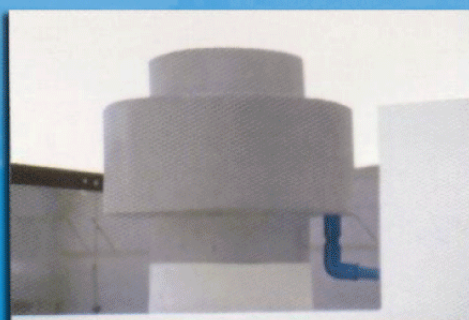


Sash lowered. Velocity was controlled through sash opening, and By-Pass By-pass open.

SUPER FLOW Fume Cupboard

5

100 - 120 - 150 - 180 - 200



Acid trapping system (MJ-CAT)

The acid trapping system is designed principle to handle acid fume in pipe line. The interior of system has transfer 2 holes for air turbulent protection. The air movement control is reverse air transparent type. The MJ-CAT is provided in \varnothing 14 or 16 diameter inches depending on mode of fume cupboard.



Pipe line system

The pipe line are manufactured from F.R.P. by filament winding method. Fire retardant, 3 mm. thickness for safety to installation. The pipe lines are connected by fiberglass resin for protection from the distribution of fume. Pipe line have 135° elbow at the end of pipe line for bird and rain protection.



Timer

24 Hours timer with selectable switch, 10-15 minute minimum increment can be set to start/stop blower. The timer also show the present time.

Testing

Air velocity is checked by ANEMOMETER at 100 FPM, while the door opening at 30 cm. height from the workbed.

Warranty

12 months, Lifetime service.



Super flow Specification

MODEL	TOP WxDxH (cm)	STORAGE WxDxH (cm)	WORKING AREA WxD (cm)	MOVABLE TOP WxD (cm)	OUTLET PIPE \varnothing (Inch)
Super Flow 100	100 x 90 x 150	100 x 80 x 85	75 x 70	73 x 66	8.5
Super Flow 120	120 x 90 x 150	120 x 80 x 85	95 x 70	93 x 66	8.5
Super Flow 150	150 x 90 x 150	150 x 80 x 85	125 x 70	123 x 66	10.5
Super Flow 180	180 x 90 x 150	180 x 80 x 85	155 x 70	153 x 66	10.5
Super Flow 200	200 x 90 x 150	200 x 80 x 85	175 x 70	173 x 66	10.5/12
Electricity	Main switch breaker 30 AMP.				
	Blower switch (visual light) with magnetic and overload for motor damage protection				
	Lighting switch (visual light) with 2 sets of 18 watts fluorescent lamp covered with safety glass.				
	Electrical service (Double receptacle plugs type) with 2 or 3 legs plug. 10 AMP. with covered				

NEW ECON Fume Cupboard

6

100 - 120 - 150

New Reasonable Design

The one piece molded chamber has excellent aerodynamically shaped roof which is contoured towards a rectangular extraction outlet are manufactured from fiberglass reinforced unsaturated polyester resin (F.R.P), fire retardant corrosion resistant. The interior of chamber is fitted with especially designed back baffle. The counter-balanced sash are of the vertically sliding and the safety glass are fitted in fiberglass frame.

Pipe line

The pipe are manufactured from fiberglass with filament winding process, smooth interior, low resistance air flow.

Stand

The stand is made of fiberglass reinforced unsaturated polyester resin, two or three PVC doors can use for gas tank chamber and others heavy duty.



Micro Processor Control

Main power, blower switch, lighting switch and control fuse are completed with visual light in only one piece microprocessor control panel, soft touch type. The control is provide alarm system, main alarm for shot circuit or electrical problem and sash alarm for operator safety.

NEW ECON FUME CUPBOARD MODEL								
Model	Dimension (cm)			Working area (cm)			Outlet pipe (Inch)	Blower (Inch)
	W	D	H	W	D	H	Ø	Ø / model
ECON 100	100	75	140	94	63	90	8.5	12" / CB12
ECON 120	120	75	140	112	63	90	8.5	12" / CB12
ECON 150	150	75	140	140	63	90	10.5	14" / CB14

STAND FOR NEW ECON FUME CUPBOARD MODEL					
Model	Dimension (cm)			Doors	For Fume Cupboard Model
	W	D	H		
Stand 100	100	66	85	2	NEW ECON 100
Stand 120	120	66	85	2	NEW ECON 120
Stand 150	150	66	85	3	NEW ECON 150



Fume Cupboard Fan

Axial Flow Type

7

The fume cupboard fan have high resistance to corrosive gases and very good durability. The casings are rigid PVC, the impellers moulded in phenolic resin, and the motor protected by a sealing coat of polyurethane compound. In addition, there is the inherent advantage of axial-flow design, permitting the simple layout of exhaust systems. The fume cupboard fan operates ideally in the fume cupboard application in schools, colleges and education centers. Its non-overloading characteristic makes it easy to select and operate in this hostile environment.



Fume Cupboard Fan Specification					
MODEL	Blade Ø (inch)	Pipe Ø (inch)	Motor 220 V. 50 - 60 Hz.	Sound Level (dB)	Used in Superflow Model
AX 7.5	7.5	8.5	90 Watts 2500 R.P.M	50	120
AX 9.5	9.5	10.5	93 Watts 2800 R.P.M	63	150

Impellers

Made from noryl (phenolic resin) with stainless steel fixing.

Motors

Totally enclosed air stream rated to class F. All motors are totally sealed and designed to run 10,000 hours over a 5 years period without attention.

Temperature Range

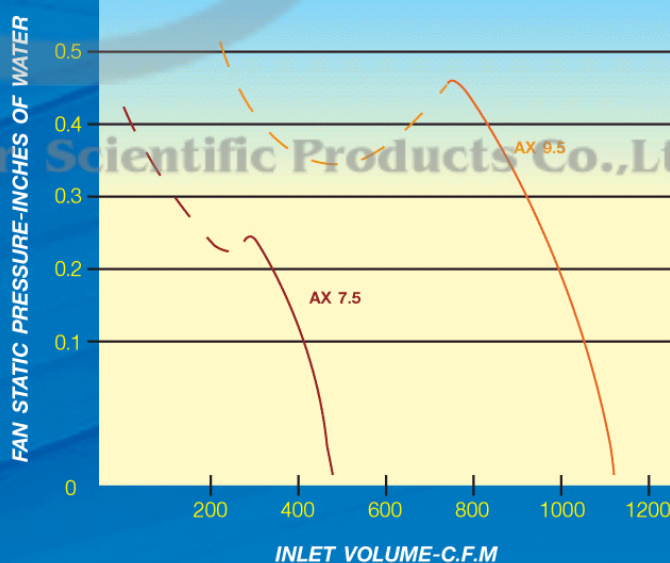
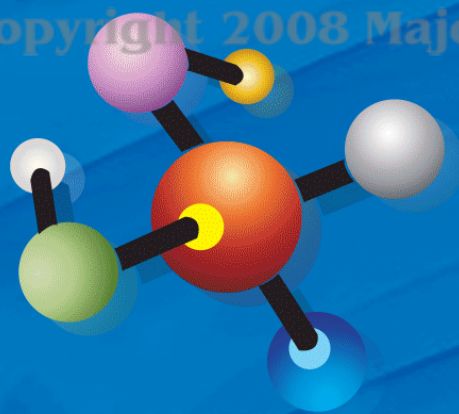
0°C to 40°C

Casing

The casing is made from rigid PVC. with a duct terminal box complete with a breather pipe. It can only be connected by using Woods supplied cupboard and duct connectors.

Resistance to corrosive reagents

Acetic acid	Hydrogen peroxide
Aluminium chloride	Lctic acid
Ammonium chloride	Lead acetate
Ammonium sulphate	Magnesium sulphate
Benzoic acid	Oxalic acid
Cadmium cyanide	Potassium ferricyanide
Calcium chloride	Potassium hydroxide
Citric acid	Sodium chloride
Copper sulphate	Sodium hydroxide
Cromic acid	Sodium thiosulphate
Diesel oil	Stannic chloride
Ethylene glycol	Sulphur dioxide
Ferric chloride	Sulphuric acid
Formic acid	Zinc sulphate
Hydrochloric acid	



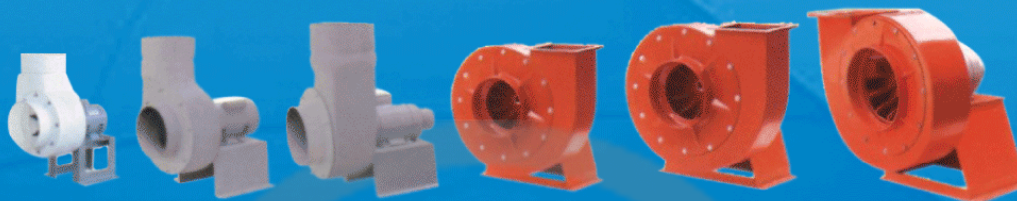
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HIGH PRESSURE BLOWER

Centrifugal Type

8

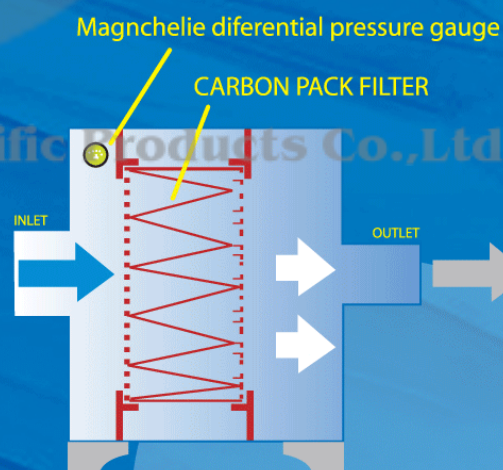
The centrifugal blowers are made from fiberglass reinforced unsaturated polyester resin (F.R.P.) in one piece molding which expressed for the purpose of corrosive fume extraction. The blower is aerodynamic shape without any adaptor to joined pipe line. Housing and blade are made of fiberglass reinforced unsaturated polyester resin (F.R.P.) and corrosion resistant from concentrated acid, base and solvent. The backward curve blade is dynamically balanced, direct coupling to induction motor without the belt and 1400 RPM. The blower stand is made of epoxy coated steel.



High Pressure Blower Centrifugal Type Specification						
MODEL	Blade Ø (inch)	Blade Thickness (inch)	Inlet Ø (inch)	Motor 220 V. 50 - 60 Hz.	Motor 380 V. 50 - 60 Hz.	Static Pressure mm. H ₂ O
CB 8	8	3	6	$\frac{1}{4}$ HP	$\frac{1}{2}$ HP	12
CB 12A	12	4	6	1 Hp	1 HP	20
CB 12	12	4	8.5	1 HP	1 HP	20
CB 14	14	5	10.5	1.5 HP	2 HP	28
CB 16	16	6	10.5	2 HP	2 HP	38
CB 18	18	8	12.5	2 HP	3 HP	40
CB 20	20	8	14.5	3 HP	5 HP	60
CB 24	24	10	16.5	5 HP	7 HP	100

CARBON FILTER

The exterior and interior structure are manufactured from 5 mm. thicknes fiberglass reinforced unsaturated polyester resin (F.R.P.), corrosion resistant, UV resistant and water resistant characteristic. The activated carbon filter packs are fixed like pleat inside the unit for high efficiency absorption purpose. Each carbon filter pack can be easily replaced. Differetail manometer or magnehelic gauge is completely equiped to detect saturation of the filters.

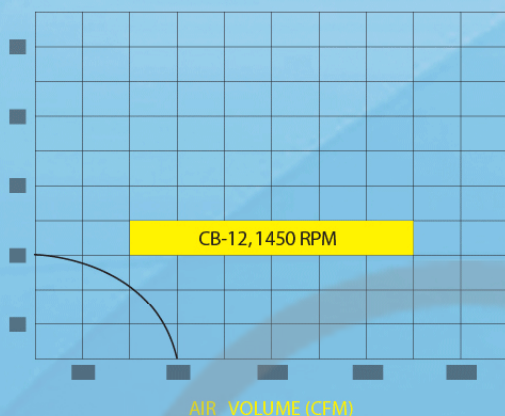


Flow Schematic Figure of Carbon filter

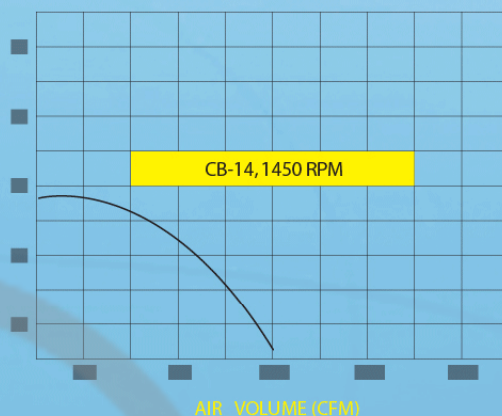
PERFORMANCE CURVE of Centrifugal Blowers

9

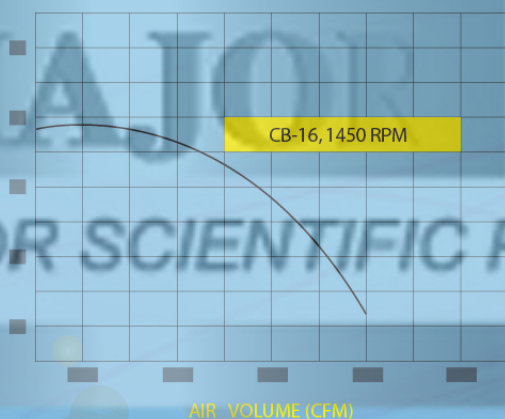
▲ Static Pressure (mm. H₂O)



▲ Static Pressure (mm. H₂O)



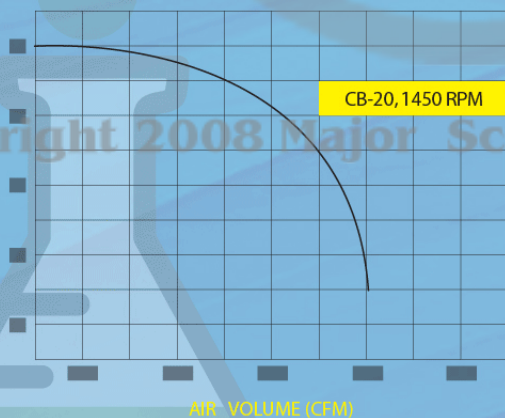
▲ Static Pressure (mm. H₂O)



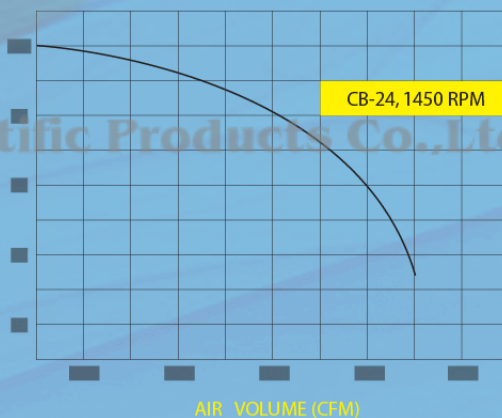
▲ Static Pressure (mm. H₂O)



▲ Static Pressure (mm. H₂O)



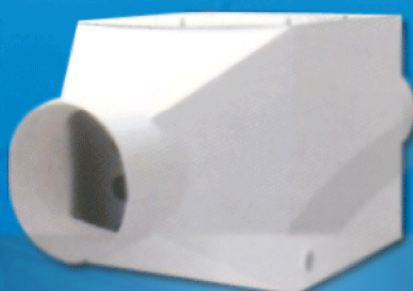
▲ Static Pressure (mm. H₂O)



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CANOPY

Major® Canopy is aerodynamic and well designed using in double wall type. Canopy has qualify to eliminated the fume which is more condense than air, such as acide-base fume. The canopy was produced from fiberglass reinforced resin which is chemical resistance. Canopy have many sizes depend on the working area from 0.50 m., 0.75 m., 1.0 m.,....., 3.0., as request.



TRAPPING TANK

The experiment which used a large amount of acid-base for warming or boiling needs equipment to eliminated acid-base fume before sending into the air. Especially, the system which has no the elimination of acid-base at the end of pipe is very hazardous. Short pipe or static air condition can cause less distribution of acid-base fumes. Trapping tank can solve this problem by accelerate the acid-base fume condensation.

TRAPPING TANK SPECIFICATION

Tank Structure	Fiberglass
Tank Size	50 x 50 x 50 cm ³
Condensing Process	Wind circular attack with 4 multiple half curve
Filter	Polypropylene Ø 2"
Inlet / Outlet	Ø 8.5" or 10.5"selectable

The elimination of acid-base fume by water is the easiest way to make the environment better. The fumes in the laboratory must be eliminated before emission through the air. In case of using large amount of acid-base for example, digestion; acid-base fumes have to be treated before emitted through the environment. Treating process is passing these fumes into the pack-media tank in order to increasing the contact time between the fumes and water spray. Next, passing its through 5 micron filter to separate water spray from treated fume (cleaned-air). Finally, the remain cleaned-air is emitted through the environment.

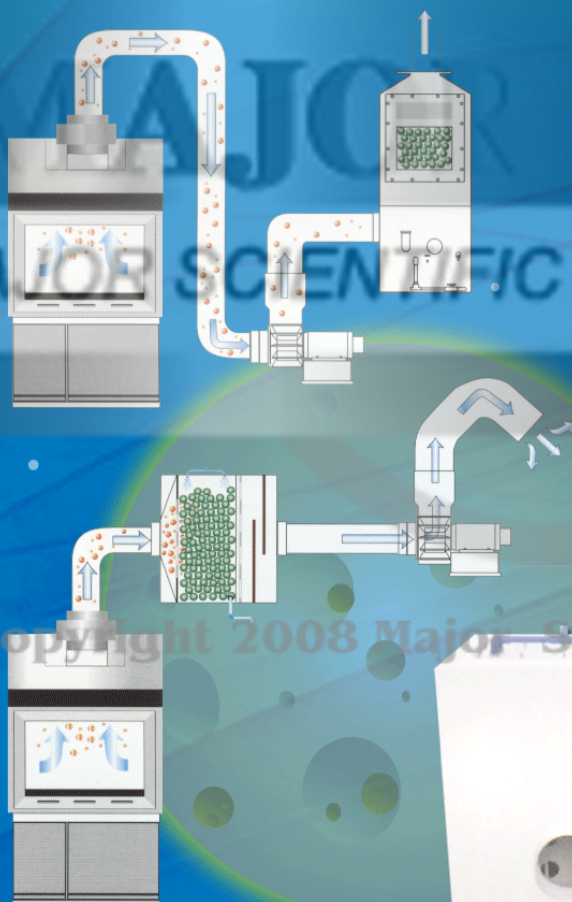
FUME SCRUBBER SPECIFICATION : HORIZONTAL TYPE

MODEL	DIMENSION (WxDxH)	FUME HOOD SIZE	P.P.M* (pcs.)
SCB 120X	120 X 75 X 120 CM.	120	1,000
SCB 150X	150 X 75 X 120 CM.	150	1,200
SCB 180X	180 X 75 X 120 CM.	180/200	1,500

FUME SCRUBBER SPECIFICATION : VERTICAL TYPE

MODEL	DIMENSION (WxDxH)	FUME HOOD SIZE	P.P.M* (pcs.)
SCB 60Y	60 X 60 X 175 CM.	120	1,000
SCB 70Y	70 X 70 X 175 CM.	150	1,200
SCB 80Y	80 X 80 X 175 CM.	180/200	1,500

P.P.M* = Polypropylene Pack Media



Vertical Type



Horizontal Type

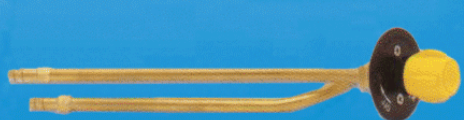


ACCESSORIES

Remote control valve

Material : High grade brass with epoxy power coating surface at high temperature 300°C (Electroplating) and polypropylene handle.

Visual Color : According to DIN 12920 standard



Remote control valve for Low pressure gas supply



Remote control valve for water supply



Remote control valve for Automatic cleaning system



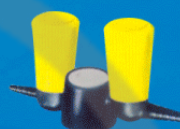
Remote control valve for High pressure gas supply

L

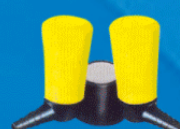
Low / High Pressure gas valve for bench or wall



LP/HP-10A (LPG)



LP/HP-20A (LPG)



LP/HP-20B (LPG)

W

Water valve for bench or wall



M-10A



M-20A



M-30A



M-10B



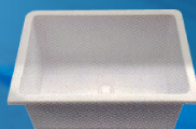
M-20B



M-30B

Drainage system

Polypropylene waste, size 1 1/2 Inch, complete with polypropylene bottle trap cup size 1500 ml, corrosion and removable jointed to drainage line with P.V.C pipe.



Fiberglass Sink



S-07



S-09(1500)



S-09(250)

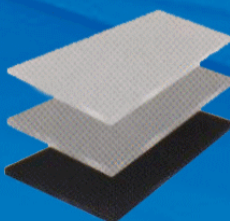


S-08

Epoxy

High grade chemical resistance

23 mm. Thickness of epoxy resin, more than 1.90 density value, in darkgray and saphire color can be replaced as the work top for special experimentation. For example, experiment with high temperature more than 1 hour with concentrate acid etc.



Chemical resistance SIRENA PLATE workbed

bulk molding compound (BMC) technique

Molded from special lab grade polyester resins. Its molecular structure is highly resistant to reaction with acids and other laboratory chemical. SIRENA surface are also highly heat resistant, preventing cracking and blistering.

Specific gravity : 1.88

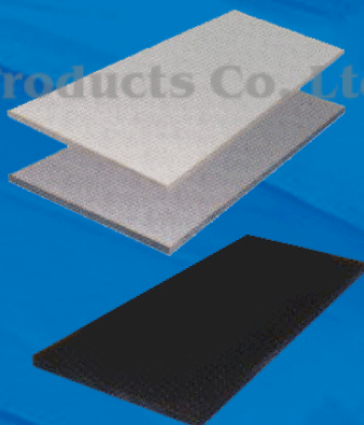
Tensile strength : 240 kgf/cm²

Compressive strength : 1070 kgf/cm²

Bending Strength : 432 kgf/cm²

Fiberglass

Its made of fiberglass reinforced unsaturated polyester resin (F.R.P.) fire retardant, corrosion resistant.



MAJOR

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