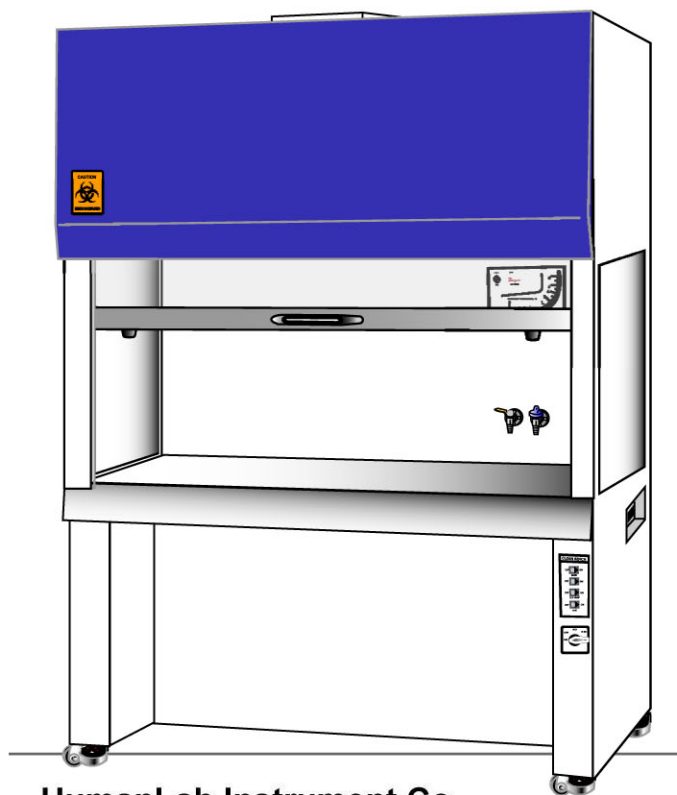


Model : CB-BV-900  
CB-BV-1300  
CB-BV-1600  
Edition : March 2006

# Bio Hazard Clean Bench



Before operating this unit,  
please read and understand  
this manual completely and  
keep it for future reference.



**HumanLab Instrument Co.**

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1	Features of the product
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• Safety warnings

Safety



Caution

Before operating, read and understand safety warnings thoroughly and use this equipment properly.  
Keep these warnings in mind for your safety.

Safety Warnings: Danger!, Warning!, Caution!



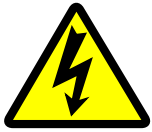







**Danger** : Failure to observe this instruction can result in a personal injury or death.



**Warning** : Failure to observe this instruction may cause a fatal injury



**Caution** : Violation of this instruction and improper use may cause a serious injury and property damage.

 Electric shock	<p> <b>Caution</b></p> <ul style="list-style-type: none"> <li>A risk of electric shock exists. Make sure to install a ground wire. Electric shock may occur without a ground wire installation.</li> </ul>
 Do not contact	<p> <b>Caution</b></p> <ul style="list-style-type: none"> <li>Eye injury and Fire may occur. Do not work close to the U.V. lamp.</li> </ul>
 Do not modify	<p> <b>Caution</b></p> <ul style="list-style-type: none"> <li>If you are not authorized personnel, do not try to open, repair, or modify the unit. It can cause a fire or malfunction inflicting an injury upon people.</li> </ul>
 Explosion!	<p> <b>Danger</b></p> <ul style="list-style-type: none"> <li>Explosion or fire may occur due to improper handling. Do not put flammable, explosive materials in the unit.</li> </ul>

## 1

### Features of the product

This clean bench is ideally suited to germ free clean environment.

This unit is very useful device for various applications including medical, pharmaceutical, food, agriculture, advanced materials, and electronics industry, etc.

This product has following features for user's safety and convenience.

- 1) Efficient up to 99.97% at  $0.3\mu\text{m}$  with HEPA filters.
- 2) The grounded circuit prevents a short circuit and over current of electricity.
- 3) Comfortable armrest and height adjustable glass window.
- 4) Compact switch type control panel
- 5) Clear glass window for easy view into the work zone.
- 6) Safe workbench with vertical laminar airflow.

## 2

### Setup Locations

setup



#### Caution!

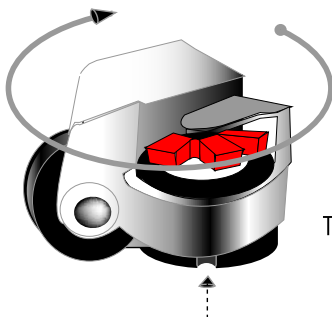
Improper set up can cause a malfunction or an accident.

Do not damage the power cord and do not put any object on it.

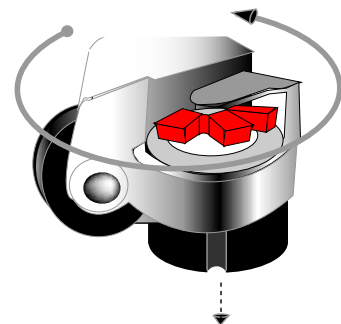
It can cause a fire, or electric shock.

- 1) Install the equipment on a firm area avoiding heat, humidity, dust, and vibration.
- 2) Place it in a well-ventilated area with enough space.
- 3) Install it horizontally on a firm and stable surface.

Turn the parking screw counterclockwise to fix the unit.



Turn the parking screw clockwise to unfix the unit.



# 3

## Cations



### **Danger!**

Do not work in or near the clean bench when the U.V. lamp (germicidal ultraviolet lamp) is on. Exposure to UV light can burn the skin and cause severe eye damage.



### **Warning!**

Do not place flammable materials near the equipment. Fire may occur.  
Do not touch the power cord with wet hands. Electric shock may occur.  
Do not plug too many equipment into the same electric outlet.  
Overload may cause a fire.  
Make sure to connect a ground wire. Electric shock may occur without a ground.

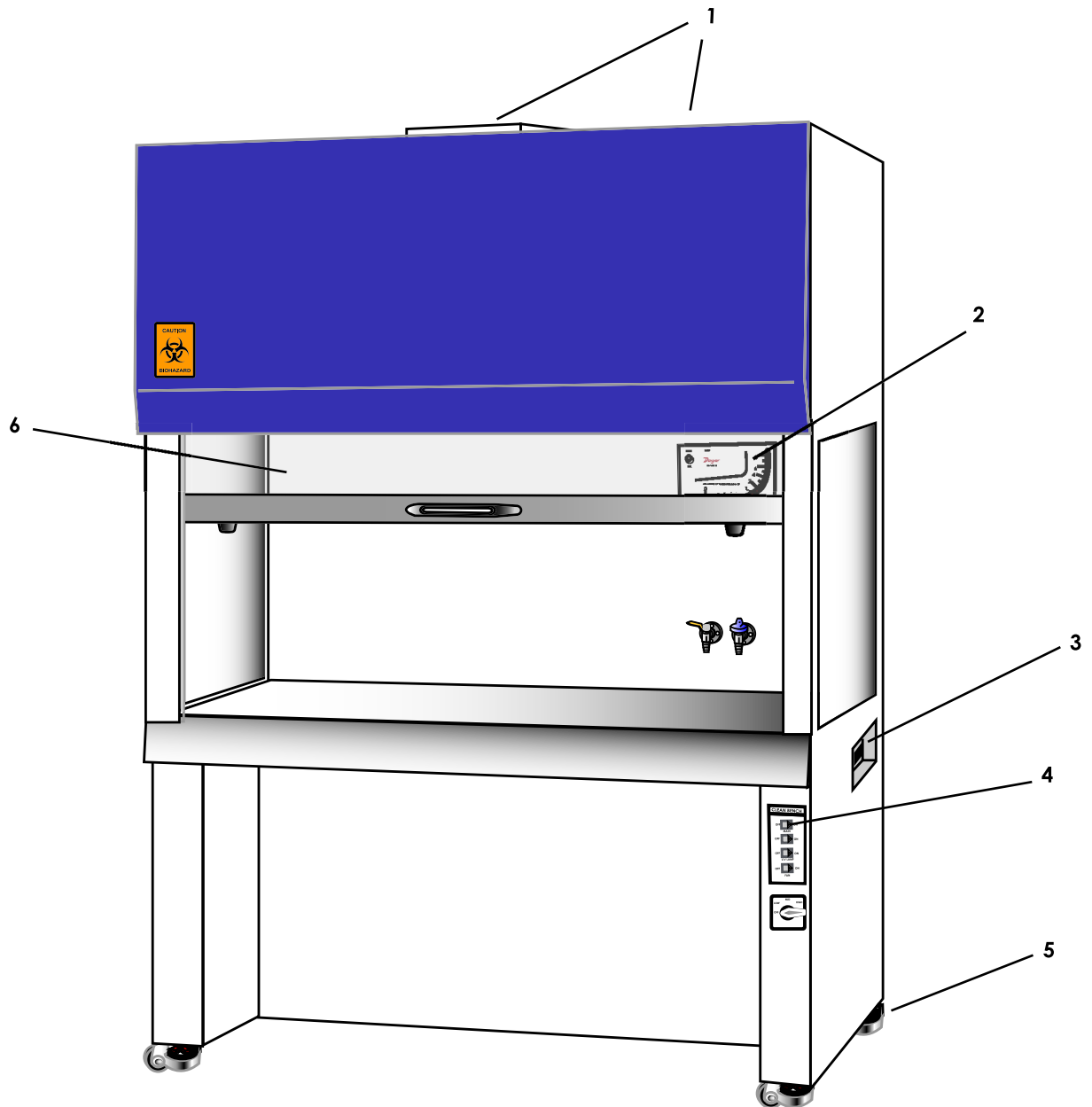


### **Caution!**

- Before plugging into the electric outlet, make sure that the power voltage is 220VAC, 50/60Hz.
- Avoid using other electric equipment with high voltage current near this equipment.
- Do not pour water on this equipment directly.  
A short circuit may occur.  
Do not use acid solution, benzene, and sharp objects, to clean the equipment.  
It may cause changes of color or damage. Rubber and plastic parts are likely to change easily. Do not use any volatile material.
- Use mild detergent only and wash it with water thoroughly.  
Unplug from an outlet by holding the plug.
- Do not unplug it by pulling on the power cord.  
If this unit is not going to be used for a long period of time, remove the plug from an outlet.
- Damaged power cord can cause a short circuit or a fire.
- Replace the filters regularly to keep the unit in maximum condition.

# 4

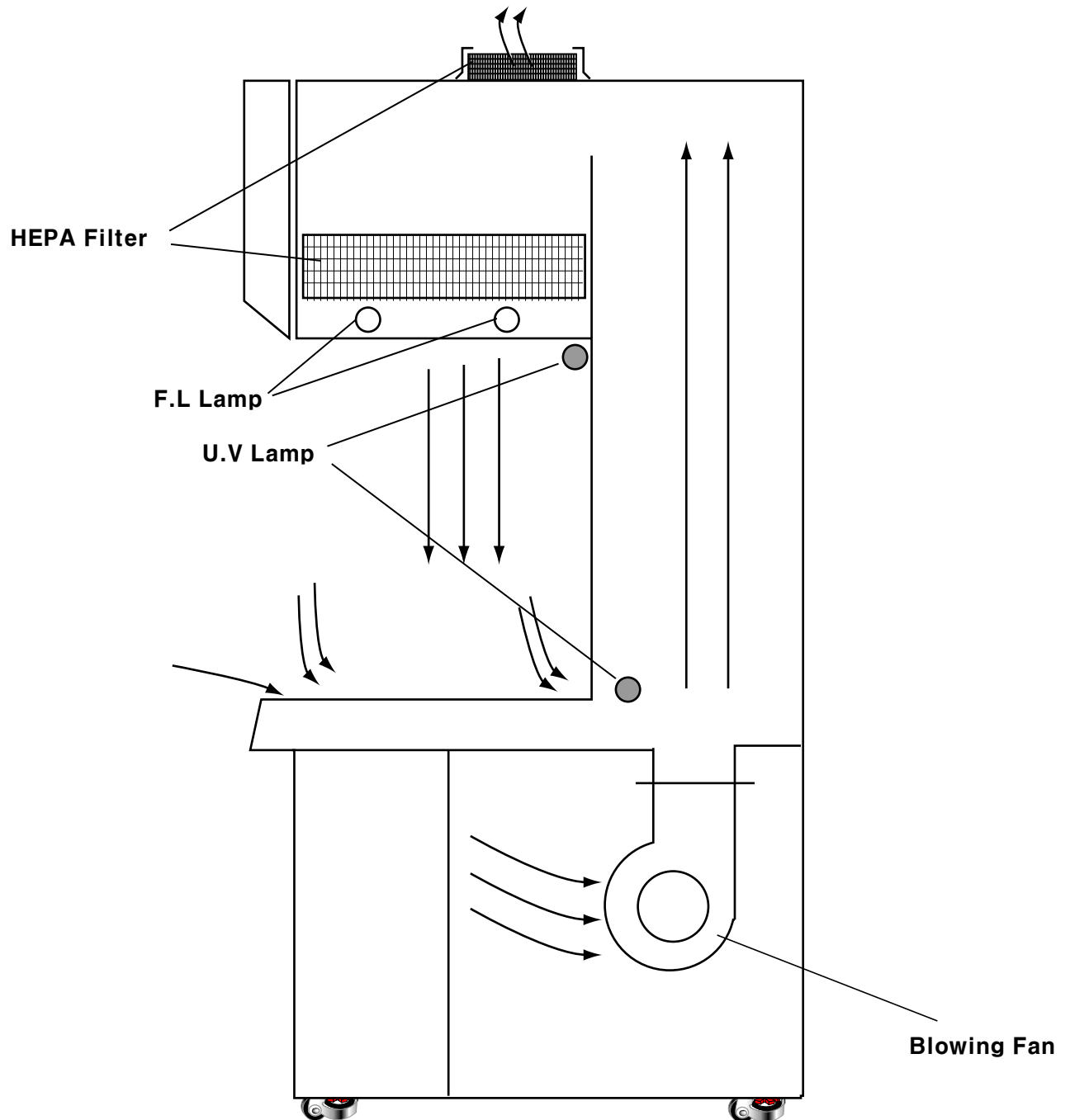
## Description of Parts and Functions- Clean bench



- 1. HEPA FILTER (Internal,external)
- 2. MANOMETER
- 3. Outlets
- 4. CONTROL
- 5. CASTERS
- 6. FRONT WINDOWS

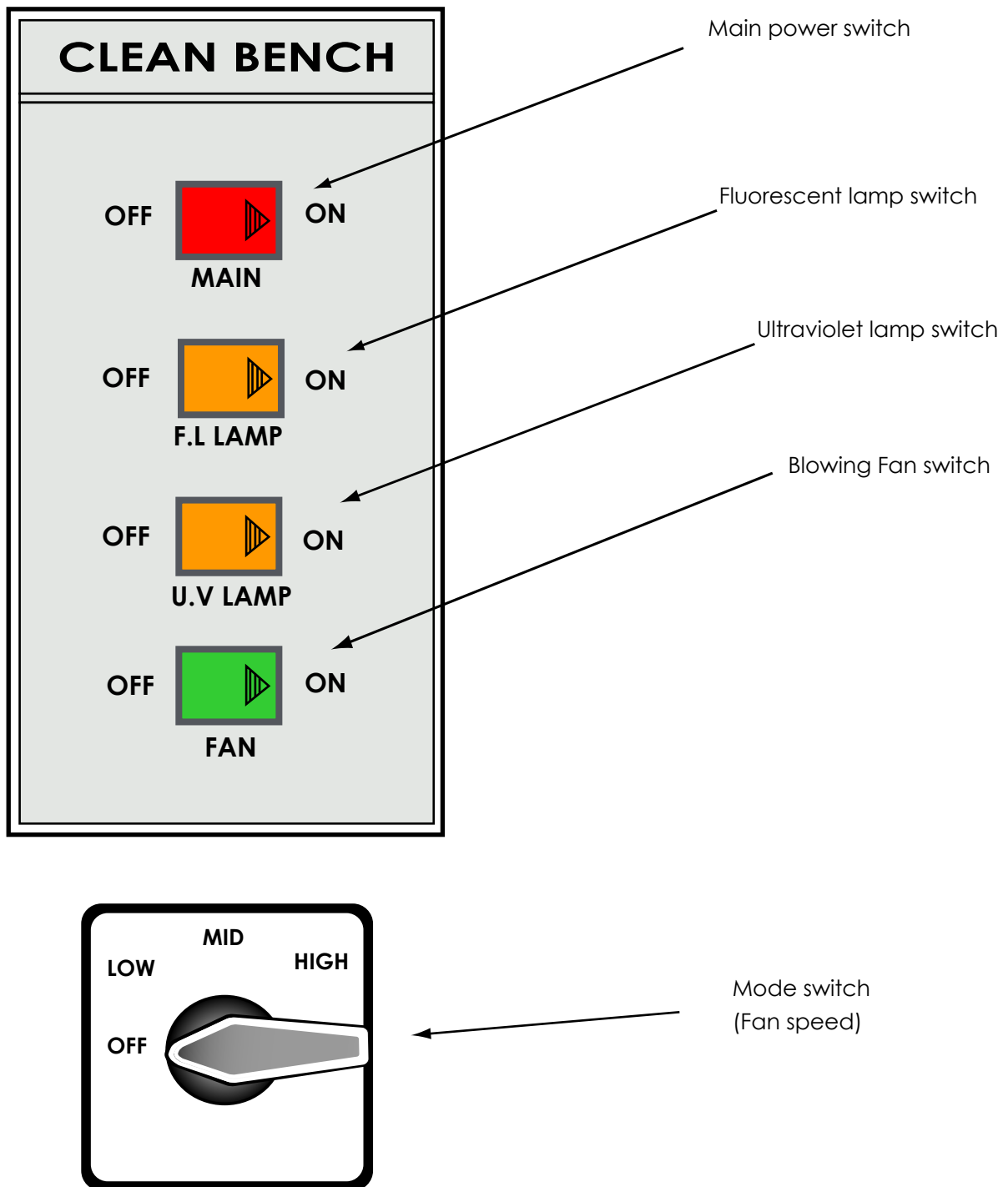
# 4

## Description of Parts and Functions - Internal structure



# 4

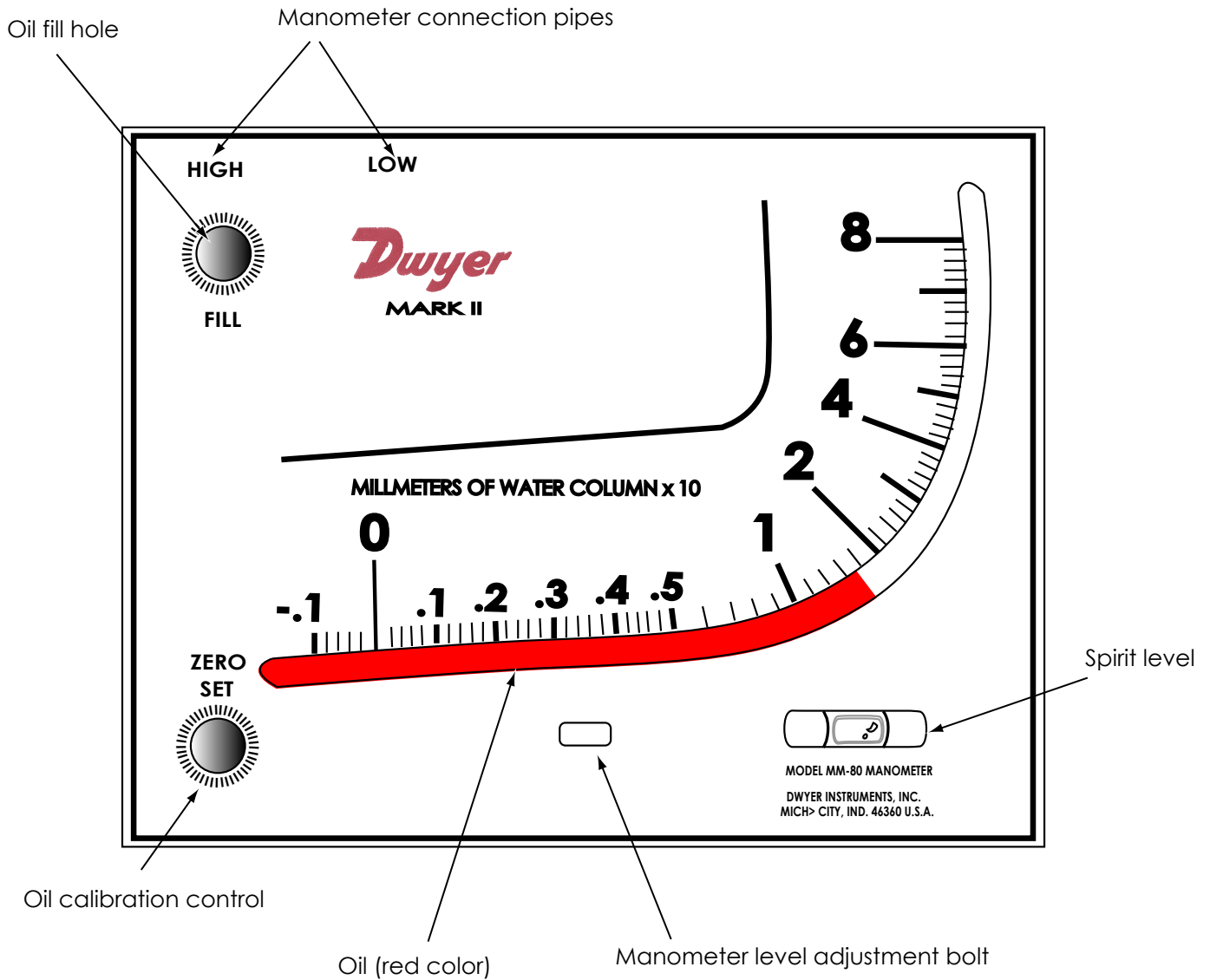
## Description of Parts and Functions - Control Panel





# 4

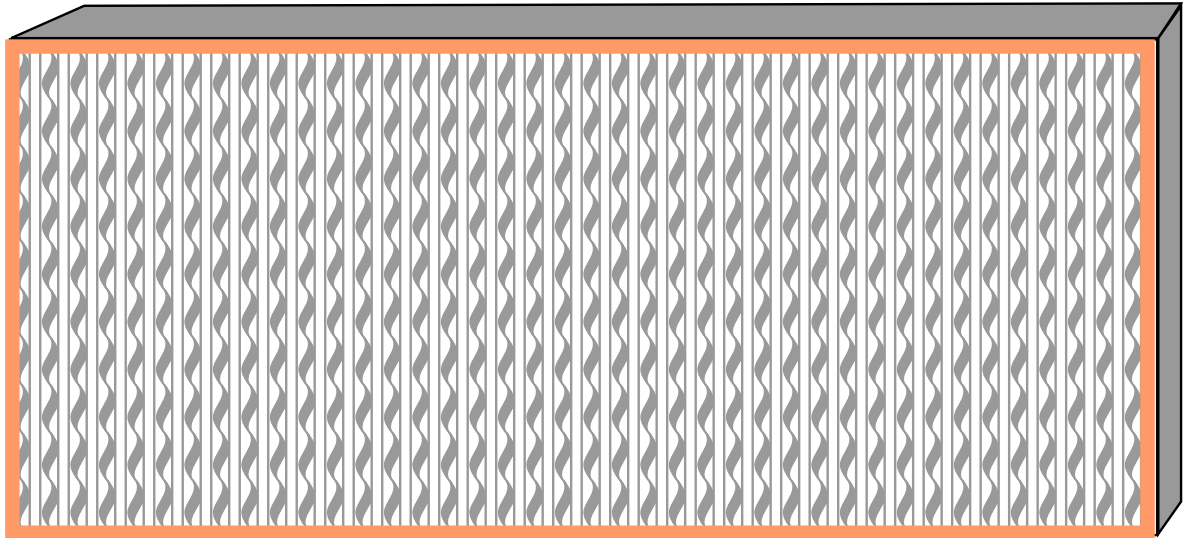
## Description of Parts and Functions - Manometer



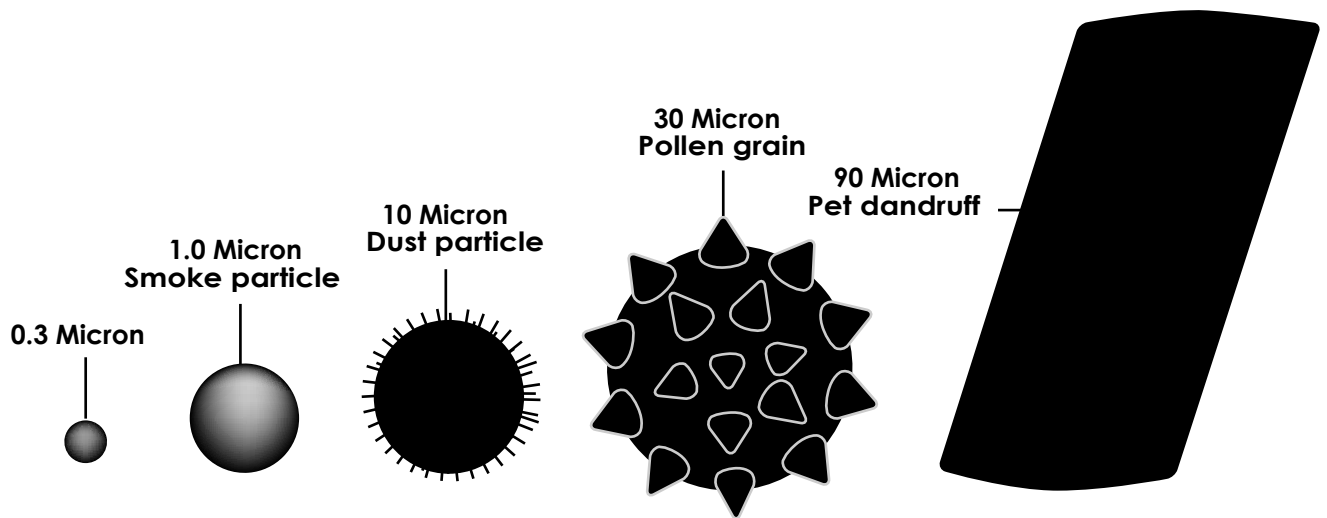
The manometer is used to check the contamination level of the filter by measuring the difference of internal and outside pressure for appropriate replacement of the filters.

# 4

## Description of Parts and Functions - HEPA Filter



## HEPA FILTER

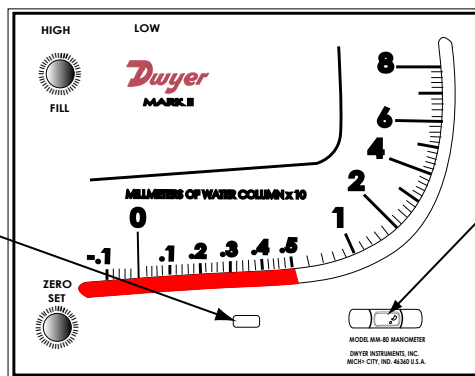


The top of the clean bench is equipped with the HEPA filter efficient up to 99.97% at  $0.3\mu\text{m}$

# 5

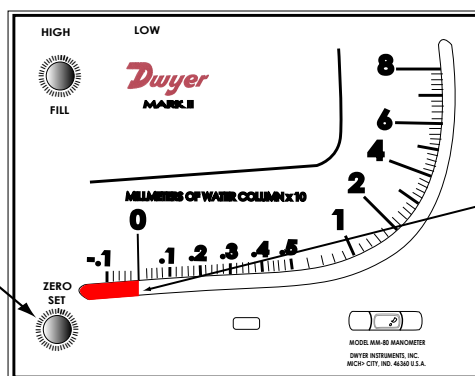
## Using the Manometer

Level adjustment bolt

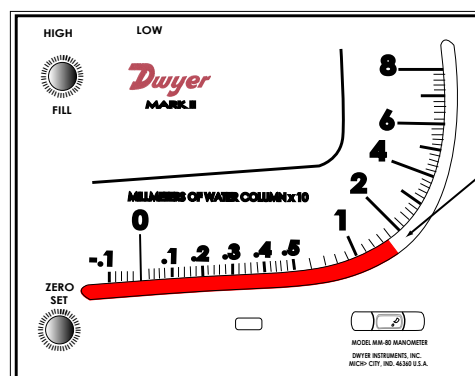


Manometer level adjustment  
Adjust the level adjustment bolt or clean bench itself to locate the bubble in the center of the spirit level

Oil calibration control



Set the oil level to '0' on the manometer by using of the oil calibration control.



When you turn on the fan switch, the oil level will be measured to '1~2'.  
(It may vary depending on the amount of the oil.)

Replace the HEPA filter when the oil level decreases to '.3~.4'.

# 6

## Maintenance and Storage



### Warning!

Make sure to unplug the unit from an outlet before cleaning the unit to avoid an electric shock.



### Caution!

Pull the plug when disconnecting from an outlet. Do not pull the power cord. Do not use acid solution, benzene, and sharp objects to clean the equipment. It may cause changes of color or damage of the equipment.

1) To clean the inside.

- Remove the plug from an outlet.
- Wipe the inside with a soft cloth using a neutral detergent.
- Clean the inside once more with a soft towel.

2) To clean the surface of the equipment.

- Use a sponge or a soft cloth with a neutral detergent
- Wipe the unit with a dry cloth.
- Do not use organic solvent.

3) To clean the electric parts.

- Always use a dry cloth.

4) If this system is not going to be used for a long period of time.

- Remove the plug from an outlet.
- Clean the unit with a soft towel.
- Wrap and store it.

# 7

## Troubleshooting



### Warning!

- Switch off the unit before any maintenance and make sure to disconnect the power.
- If you are not authorized personnel, do not try to open, repair, or modify the unit.
- It can cause a fire or malfunction inflicting an injury upon people.

Symptoms	Corrective Actions
The unit does not operate	<ul style="list-style-type: none"> <li>- . Make sure the power cord is plugged.</li> <li>- . Make sure the switch is on.</li> <li>- . Check a power outage.</li> </ul>
Decrease of clean air inflow	<ul style="list-style-type: none"> <li>- . Check the contamination of the filters by use of the manometer.</li> <li>Replace the filters when it requires.</li> </ul>
Failure of sterilizing	<ul style="list-style-type: none"> <li>- . Check the operation of the U.V. lamp.</li> </ul>
Malfunctions of the controller	<ul style="list-style-type: none"> <li>- . Check whether other high voltage electric equipment is working nearby.</li> </ul>

# 8

## Warranty

☐ **Product Name** : Bio hazard CLEAN BENCH

☐ **Model** :

☐ **Serial No.** :

☐ **Warranty period** : 1 year after purchase

☐ **The date of purchase** :

☐ **Purchased from** :

- This product is manufactured under strict quality control and has passed the quality test.
- This product will be warranted against defects accordingly to this warranty.
- Fill out all the items mentioned.
- Keep this warranty with care, it will not be reissued.

- 1) Contact your dealer for the services against defects in material or workmanship, when it is used under appropriate conditions.
- 2) In case of followings, the repair service will be charged.
  - . Damage due to improper operation, modification, or unauthorized attempt to repair
  - . Damage due to acts of God such as fire, flood, and improper voltage supply.
  - . Damage due to not following operating instructions.
- 3) This warranty does not cover consequential damages caused by the product .
- 4) Contact authorized service center or your dealer for additional information.



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# 9

## Specifications

Model		CB-(B,H,V)-90	CB-(B,H,V)- 120	CB-(B,H,V)- 150	CB-(B,H,V)- 180
Working Area (WxDxH)		900x630x630mm	1200x630x630mm	1500x630x630mm	1800x630x630mm
Working Condition		Temp. : Amb. +5℃ ~+40℃ / Humidity : >80%RH			
Clearliness Class		Class II B2 (Purity : Class 100 / Option : Class 10)			
Main Filter		HEPA 99.99% efficiency 0.3μm particle / Option ULPA 99.999%			
Air Flow of Exhaust		980 m3/hr	1350 m3/hr	1700 m3/hr	2030 m3/hr
Velocity of inside work		0.3 ~ 0.5 m/sec. adjustable			
inflow opening		0.6 ~ 0.7 m/sec			
Sterilizing (uW/cm3)		> 40 / 2 x UV 30W	2 x UV 40W	2 x UV 40W	2 x UV 40W
Illumination (Lux)		>1100 / 2 x FL 30W	2 x FL 40W	2 x FL 40W	2 x FL 40W
Blower		Centrifugal high efficiency blower with speed control			
Noise Level		< 55 dBA			
Control & display		Analog manometer & push button / Option : Microprocessor control & digital display			
Material	Case	Stainless steel interior & Steel plate with epoxy coated exterior			
	Door	Tempered safety glass			
	Work Table	Stainless steel			
Utility Device		Air, Gas, Water Cock, 2 x Electric receptacle			
Electric Power		220VAC,50/60Hz			
Overall (WxDxH)		1000x840x1850mm	1300x840x1850mm	1600x840x1850mm	1900x840x1850mm

### Options :

- 1) Main Filter efficiency 99.999% (ULPA)
- 2) Microprocessor control & digital display
- 3) Digital manometer

Specifications are subject to change without notice.



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