

INSTRUCTION MANUAL FOR BIO SAFETY CABINET Class II Type B2
MBMSJ-1018BNMD

This operation manual introduces the instruments component, key features & using notes. Be sure to read these instructions before using the instrument.

Foreword:

Your MBMSJ-1018BNMD Bio-safety cabinet has been designed with function, reliability, and safety in mind.

It can meet the different requirement in the field of biology, virology, medicine & industry.

It is necessary to read this technical manual to ensure that the instrument is snuff, long haul & safely used.

It is the user's responsibility to install it in conformance with the operation manual. For safe operation, please pay attention to the each and every word of the manual.

Because of the nature of this product, considerably more care is required in operating and servicing this product as compared to other laboratory products.

SAFETY NOTES:

➤ Overview:

The instruction manual contains important safety instructions & information. The operation manual is an important part of the instrument which the operator must read carefully prior to start up & use in order to run the product safely.

It is a critical moment to ensure personal safety & avoid instrument damage.

Please keep the manual near the instrument so as to enable easy readability.

➤ Safety Warning:

The following safety notes relating to transport, installation, calibration, operation, maintenance, cleaning and all aspects of the instrument. Every principal person must be read carefully and carryout this mentioned strictly.

• Warnings- Transport & Installation:

-  The instrument may only be transported or moved in an upright position always; the tilt angle should not exceed 45Degrees.
-  The input voltage has been preset in the factory (220V 50Hz); please check this setting complies with your local power requirement before connecting the instrument to the mains power.
-  Please use the power cord provided. If changing the power cord, must ensure the power cord with earth wire.
-  Don't operate in rooms with explosion hazard.
-  The protection devices on both instrument & accessories must neither be removed nor modified, in order to avoid injury to instrument or person body.

- **Warnings- Operation:**

- ✚ Take care when handling front sash. The glass door if not handled properly may cause injury.
- ✚ Always remove the inner partitions of stainless steel at the time of cleaning.
- ✚ Ensure that liquids don't enter the interior of the instrument during working.

- **Warnings- Maintenance & Cleaning:**

- ✚ Only authorized person may do the service & repair.
- ✚ Before cleaning, always switch off the instrument, disconnect the power plug.
- ✚ Don't use any solvents containing acetone or xylene for cleaning.
- ✚ Ensure that no liquids enter the interior of the instrument when cleaning.
- ✚ Don't turn on the instrument before it is completely dry.

Installation Site Requirement:

- Put the instrument on a steady base floor to ensure the instrument base is in horizon when the instrument is running.
- Ensure that no other goods are there around the instrument to avoid the shelter affecting the operator to operate the instrument.
- Ensure that there is enough space for movement of the counter weight.
- Do not operate in rooms having explosion hazard.

Bio-safety cabinet consist of

A class 100 air flow in the work area for operations where a product is of utmost importance. The unrestricted open front work area allows the use of equipment under sterile conditions. The Biosafety Cabinet is designed to provide a high degree of protection for products in laboratories and production facilities. Class II Type B2 cabinet provides 0% recirculation of air & 100% exhaust.

All the positive pressure contaminated plenums within the cabinet are surrounded by a negative air pressure plenum thus ensuring that any leakage from a contaminated plenum will be drawn in to the cabinet & not released to the environment & the plenum is under negative pressure to the room.

Features:-

1. High Visibility due to Front Glass Sash.
2. UV Lamp.
3. Fluorescent Lamp with light intensity of 1000Lux.
4. Panel mounted microprocessor touch screen control
5. 230V AC Supply.
6. Low Noise Blower.
7. Utility holes for Air/Gas & Vacuum
8. Least power consumption of 140Watts

Biosafety Cabinet

Unidirectional airflow moving along parallel flow lines at a constant velocity minimizes air turbulence within the work area.



HEPA Zero Leak Air Flow System:

This unique air flow system eliminates the possibility of structural or gasket leaks. H14 HEPA EN1822, 99.995% MPPS

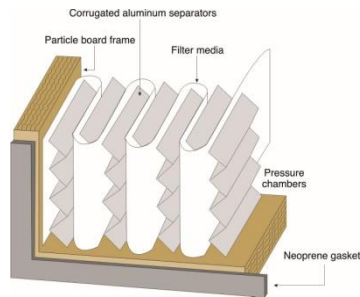
Optimum Volume of Air creates a Safe Environment:

Selection of specific motor/blower, HEPA filter(s), materials, electronics, workspace and plenum sizes – creates a crucial combination of elements providing an optimum air volume for personnel, product and environment protection.

The cabinet is designed to automatically handle more 150% or even more increase in pressure drop across the filter without reduction in total air delivery greater than 10%.

Large Long Lasting HEPA Filters:

We select & test each HEPA filter to ensure the integrity of the system. Our HEPA filters are typically larger & therefore last longer than those in most competitive products.



Dual DC Motor/Blower System extends HEPA filter life:

As the HEPA filter loads the motor/blower system automatically compensates to assure optimum performance & extended filter life. The high efficiency centrifugal motor blower assembly provides an inflow air flow volume of 300-350m³/Hr & exhaust air flow volume of 290-350m³/Hr. The motor blower automatically adjusts the air flow speed (balancing inflow & down flow) without use of damper to ensure continuous safe working conditions.

Experience Ergonomics:

Ergo: "Work" **Nomos:** "The Study or Laws of...." Combines to mean: "The Laws of Work"

MBMSJ-1018BNMD designs equipment that accommodates advancement for: Improved Safety Conditions; Improved Productivity; Improved Quality and Reliability; and Reduction of Arm, Shoulder, and Neck Strain contributing to common work place injuries.



Ergonomic designed equipment improves productivity, quality, and reliability. Expanded vision zone, large work area, proper lighting for reduced glare, forearm support for comfort and safety, and maximum knee/thigh clearance are just a few of the many ergonomic features designed into each MBMSJ-1018BNMD product.

Applications:

Life Science Research

The clean work area provides an excellent work space for small laboratory appliances, microscopes, pipetting, or similar applications.

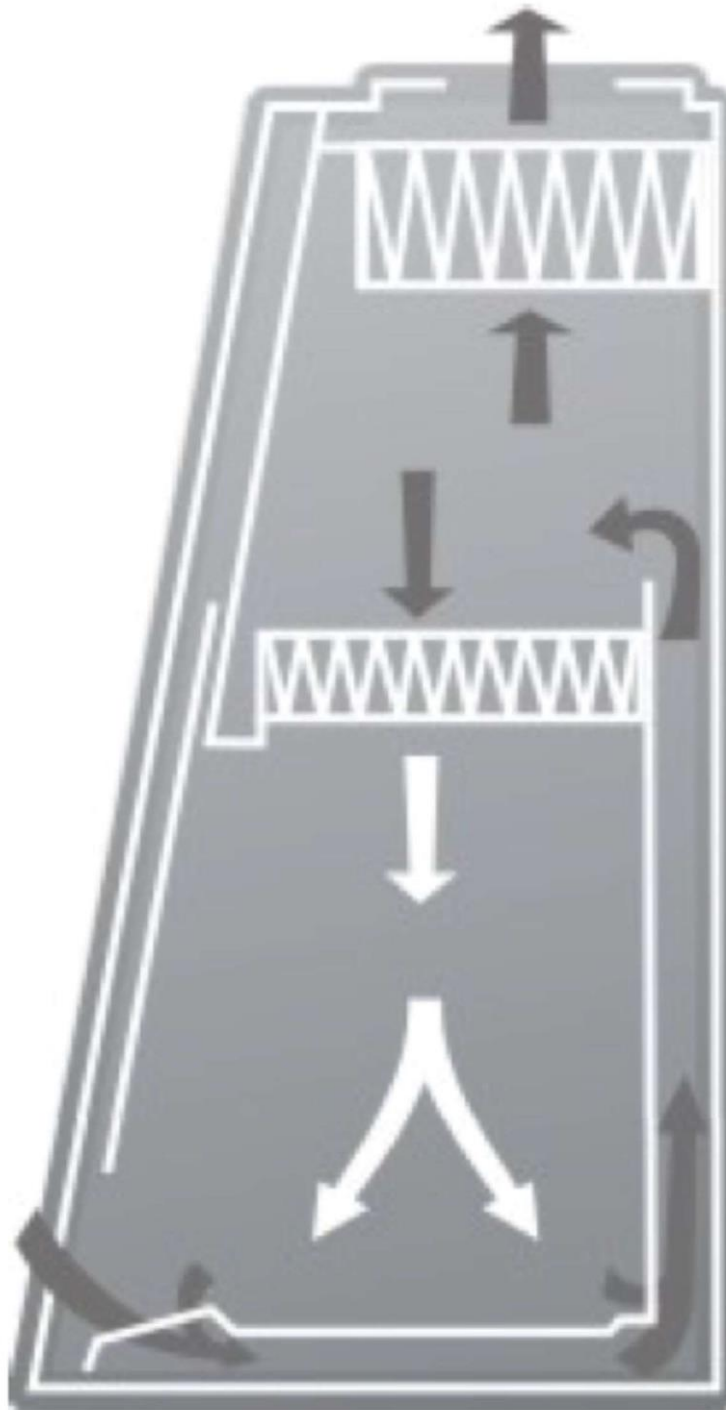
Pharmacy

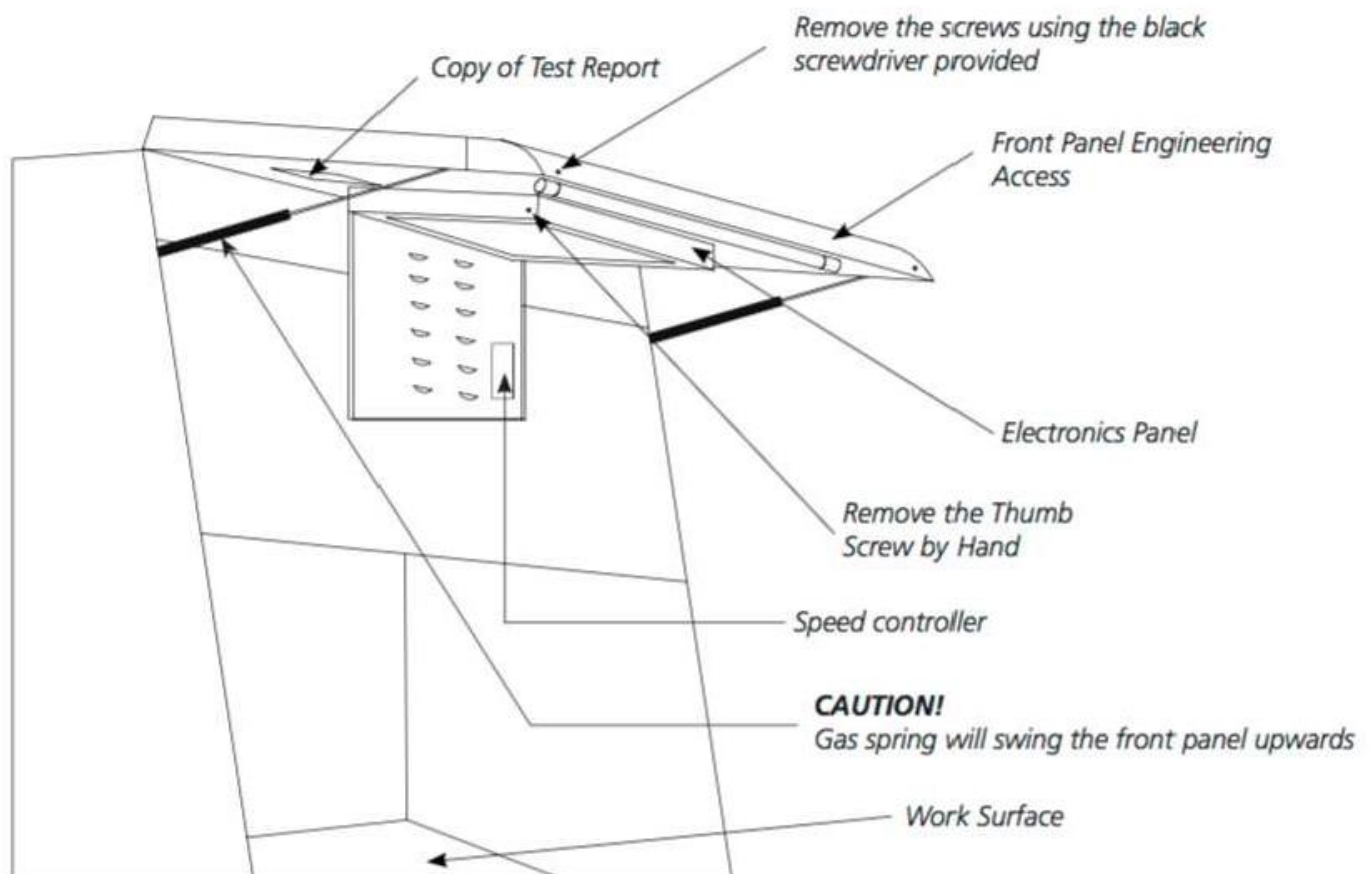
For use in compounding sterile drug preparations or IV admixture preparation.

Animal or Plant

For procedures requiring work-in-progress protection from outside potentially harmful contaminants.

AIR FLOW DESIGN OF SMI BIO SAFETY CABINET:





The bio-safety cabinet is accessible from the front. The service engineer can easily replace the HEPA filter, Blowers, electrical components just by opening up the front panel access effortlessly.

USE BY THE OPERATOR:

The operator is the critical factor in the successful performance of any Bio Safety Cabinet. When properly maintained and operated, the MBMSJ-1018BNMD Bio-safety Cabinets will do an excellent job of controlling

airborne contamination.

Prior to beginning work inside the hood, the operator should wash their hands and arms with germicidal soap.

It is recommended that technicians working in the hood wear long sleeved gowns with knit cuffs and rubber gloves. This will minimize the shedding of skin flora into the work area.

Conventional laboratory coats with open cuffs allow the entrapment of contaminated air between the technician's wrist and forearms and the inside sleeves. This contaminated air can thus be introduced into the work area.

Abrupt movements of forearms and hands should be avoided. Excessive activity in the room also creates disruptive air currents. Therefore, such activity should be held to a minimum or eliminated when work is being performed.

MOTOR & BLOWER ASSEMBLY:

The motors blowers were selected because they have the following characteristics: low noise level, low vibration level, and most importantly, the efficiency in delivering air through clean HEPA filters as well as those loaded with a moderate amount of particulate matter. The 3-pronged grounded power cord can be plugged into a standard grounded receptacle.

The motor is located in the center of the blowers. It should rarely be necessary to work on the motor blower assembly.

For access to the motor blowers, open the top of the unit.

Before servicing the motors, the power cord must be disconnected or, if this is difficult to reach, the fuses should be removed.

HEPA FILTER:

The average life of a HEPA filter is 5 to 7 years or longer, depending on the cleanliness of the ambient air. A loaded HEPA filter cannot be cleaned or recycled. New filters are available from the factory and we recommend that they be changed by qualified personnel. The filters are accessed from the backside of the unit.

GLASS DOOR & SIDES:

The transparent glass sides of the work area are designed to provide optimal light in the work area.

UV LAMP:

UV lamps are active microbically for a relatively short part of their working life, which is a fraction of their total lifetime as a source of visible (blue) light.

FLUORESCENT LAMP:

The fluorescent light component is located in the overhead control panel/light housing. Fluorescent Lamp reduces heat-build up near the operator. User friendly light intensity and provision of replacement of the lamp.

OPERATION OF THE MICROPROCESSOR CONTROLLER:

The microprocessor is simple to operate with a 7" bright color touch screen.

When you switch on the machine, the Main screen will open & display as under:



In the left block column, the UP & DOWN keys are meant for the sash movement. You can use them to put the sash in SAFE, FULL OPEN & FULL CLOSED position.

The settings button assists the operator to move to the next settings screen for monitoring/altering the parameters.

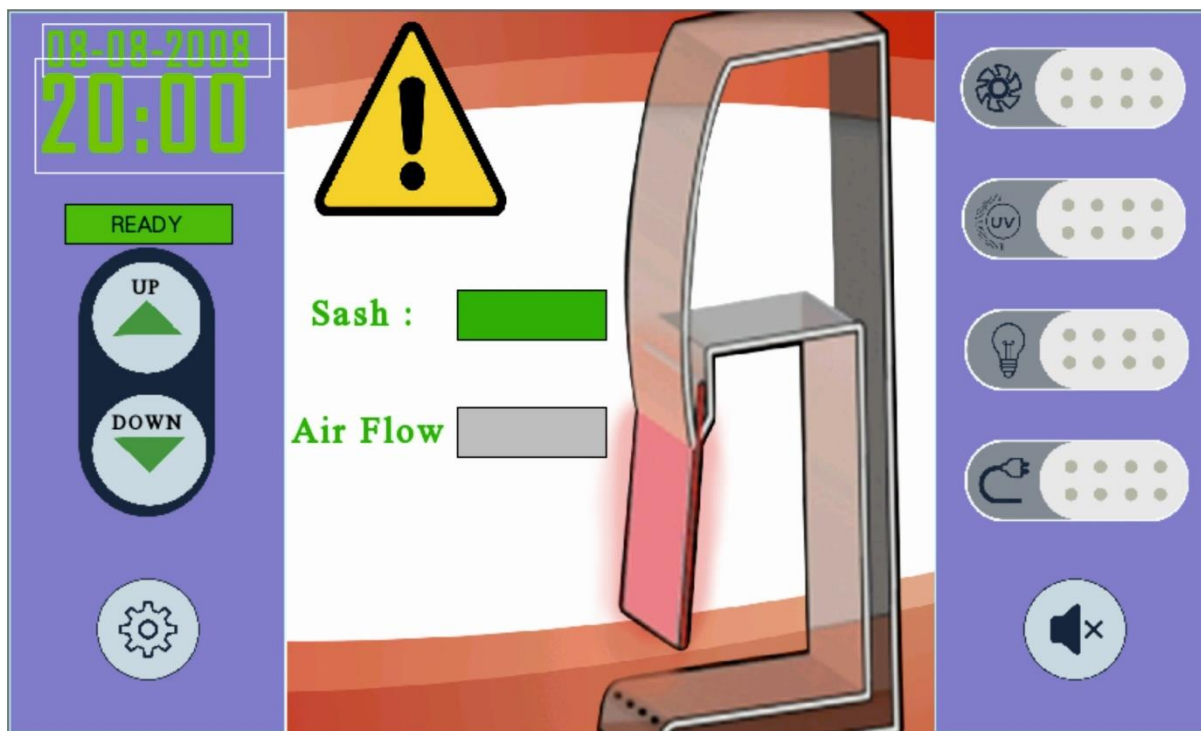
In the right block column, the first key from the top is for the blower operation. Make sure you switch on the blower once the sash is in SAFE position.

The second key is for UV Tube which can be switched on for a particular time for decontamination. Make sure the SASH is in fully closed position before switching on the UV Lamp.

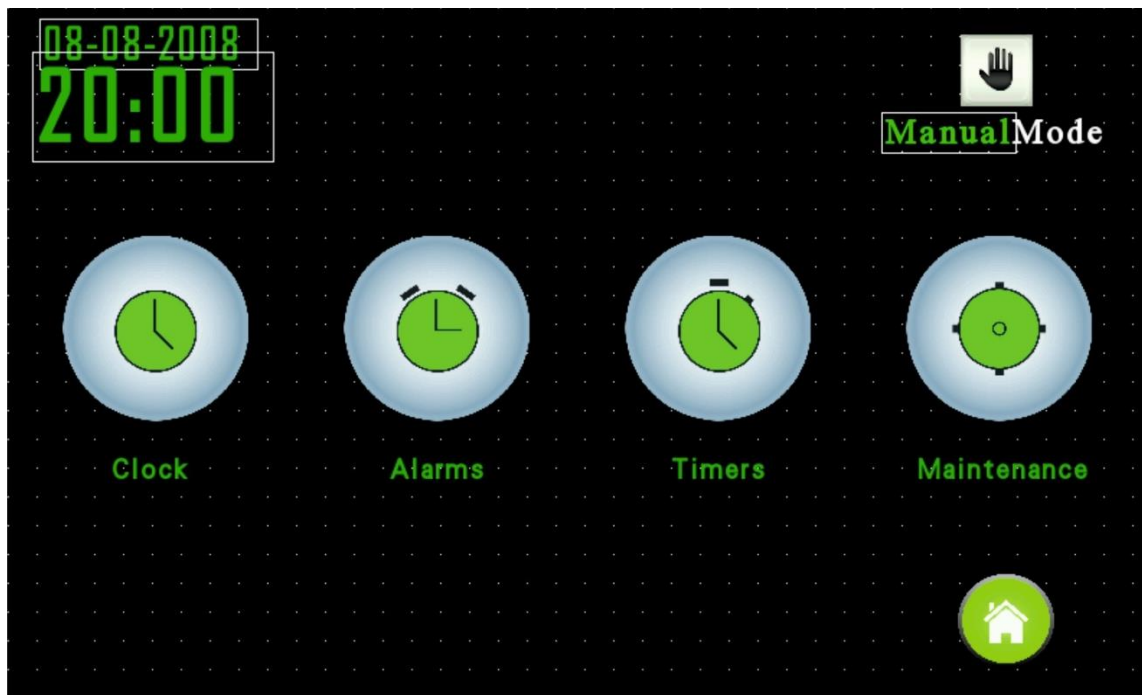
The third key is for the Fluorescent LED Lamps which can be activated by touch of a button.

The fourth key is for the internal sockets which can be switched on/off as per requirement.

In case the sash is opened more than the SAFE height, the screen shall show this alarm along with the buzzer.

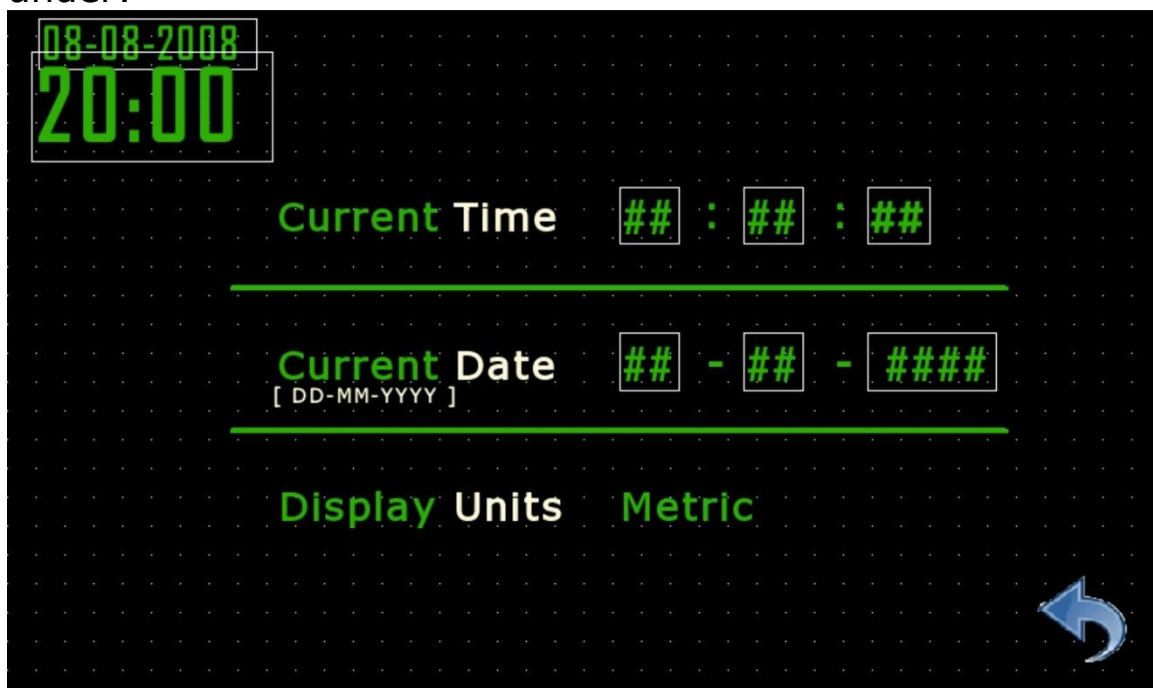


Now when you press the settings button the screen shall display as under:



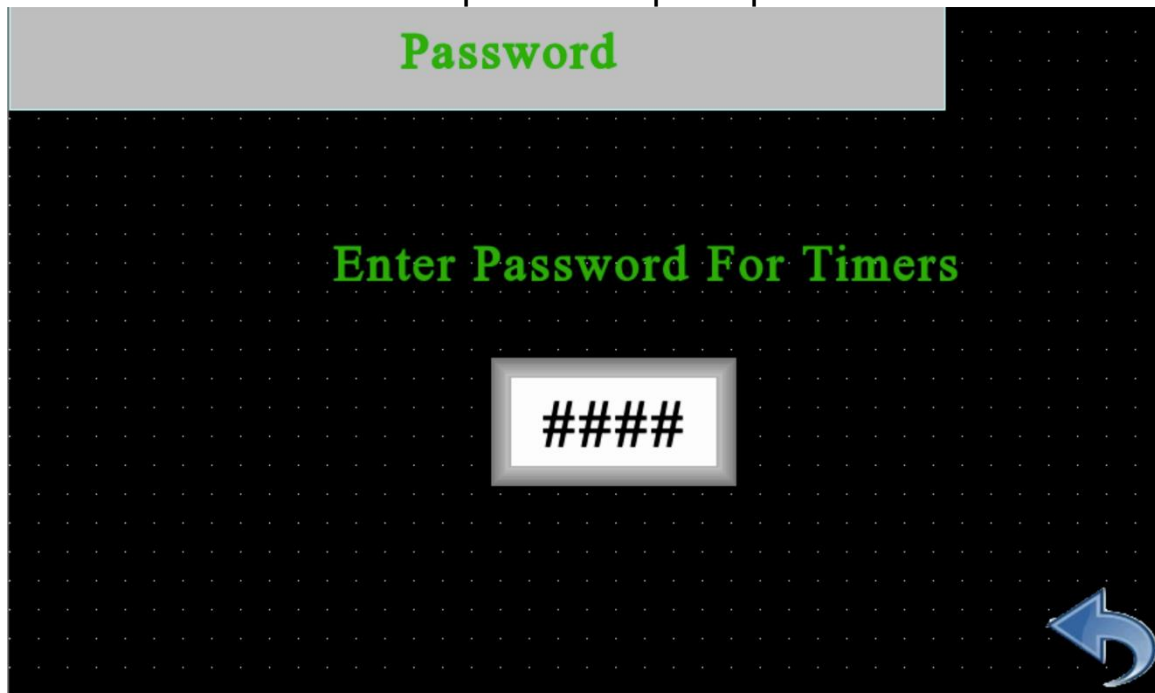
The top right key with a HAND shows the mode which can be Manual Mode to use the machine manually and Auto Mode to use the machine in auto operation mode. This can be toggled by touch of this hand button.

You can use the clock key to set/adjust the date and time. When you press the clock key the screen shall display as under:



For the active alarms or to view the Alarm log you can touch the Alarms key.

Now to adjust the timers, you can press the Timers key and the screen shall show a password prompt as under:



The password is 1234

When you enter the password, the below screen opens up:



You can set the timers and other parameters as per your requirements.

GENERAL CLEANING INSTRUCTIONS:

Wipe exterior surfaces with lightly dampened cloth containing mild soap solution.

A few simple procedures will help insure that your safety cabinet will give you long service.

Use the wet cloth to clean the areas always be touched when operate the instrument, for example the handle, front sash and the stainless steel table top.

Use the dry cloth to clean the other appearance.

To obtain a high quality output, it is important to keep cleaning the instrument. So the user must clean the Instrument periodically or regularly according to the total usage.