

L130 Series A2

Class II, Type A2 Biological Safety Cabinet
Operating Manual Rev. 00

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Dear User,
 Congratulations on your purchase of a Kavoshteb L130 Series Class II, Type A2 biological safety cabinet! Your L130 Series A2 biological safety cabinet has been tested and certified in accordance to NSF/ANSI 49, and is designed to protect the user, the environment, and your research from harmful substances and cross-contamination. This user’s manual provides instructions on how to use the L130 Series A2 most effectively and safely. A printed copy of this user’s manual is available from Technical Services, if required

Containment * Comfort * Convenience™

The L130 Series A2/B2 offers a unique range of product features that will enhance your safety and improve overall operating efficiency. Should you have any questions on using this product or need further explanation of any of its features, please contact Technical Services (Page iv), or your local distributor L130 Series A2/B2 most effectively and safely. A printed copy of this user’s manual is available from Technical Services, if required.

This manual covers the models shown below:

Biological Safety Cabinet		ClassII A2	ClassII B2	Coated Exterior &Stainless Steel Interior	Stainless Steel Exterior&Interior
BSC-L100	5 Inch Opening sash	√	√	√	√
BSC-L130					
BSC-L160					
BSC-L100 AT					
BSC-L130 AT					
BSC-L160 AT					

* Includes cabinet, adjustable height stand, UV light and armrest.

NOTE: Model AT see more catalogues, whose configuration of Automatic Control System as shown in the following Table.

Biological Safety Cabinet		Class II A2	Class II B2	Automatic Control System	4.3" Touch Display	Inverter	DP. Sensor	Air Velocity Sensor
BSC-L100 AT	5 Inch Opening sash	√	√	√	√	√	√	√
BSC-L130 AT								
BSC-L160 AT								



Important Read this instruction manual. Failure to read, understand and follow the instructions in this manual may result in damage to the unit, injury to operating personnel, and poor equipment performance.

Caution All internal adjustments and maintenance must be performed by qualified service personnel.

Material in this manual is for information purposes only. The contents and the product it describes are subject to change without notice. Kavoshteb makes no representations or warranties with respect to this manual. In no event shall Kavoshteb be held liable for any damages, direct or incidental, arising out of or related to the use of this manual.

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Important operating and/or maintenance instructions. Read the accompanying text carefully.



Potential electrical hazards. Only qualified persons should perform procedures associated with this symbol.



Equipment being maintained or serviced must be turned off and locked off to prevent possible injury.



Hot surface(s) present which may cause burns to unprotected skin, or to materials which may be damaged by elevated temperatures.



ISO45001 Compliance: For recycling/disposal our product please send an email to Info@KavoshTEB.com.



- ☛ Always use the proper protective equipment (clothing, gloves, goggles, etc.)
- ☛ Always dissipate extreme cold or heat and wear protective clothing.
- ☛ Always follow good hygiene practices.
- ☛ Each individual is responsible for his or her own safety



Management System Certification Body

CERTIFICATE

No. 23-B-1590 Rev. 0

Kavosh Teb Ayandeh Negar

No.4, East Second Alley, North Motahari Blvd., Safadasht, Tehran, IRAN

Company Reg. No.: 7028

has documented and implemented system in compliance with the requirements of

ISO 13485:2016

Medical Devices Quality Management System
for

**Manufacture, Sales and After Sale Service of Laboratory Equipment
such as Laminar Air Flow Cabinets (Biological Safety Cabinets),
Incubator and Shaker**

Technical Area:

- B: Active Medical Devices (Non-Implantable) – Others
- F: Parts or services
 - Distribution services
 - Maintenance services

The certificate is issued on the basis of the results mentioned in the pertinent audit report. Validity of the certificate is conditionally limited by positive results of surveillance audits, which the certified company is committed to undergo.

This certificate can be invalid if the certificate holder does not fulfill the conditions set out in the certification agreement.

IGC is accredited by IAS for the scope and sub scopes described in this certificate

Initial issue date: Apr. 18. 2023
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Section 1 Description

Laminar flow hood **Class II - Type A2** Direct drive intelligent 2speeds motor

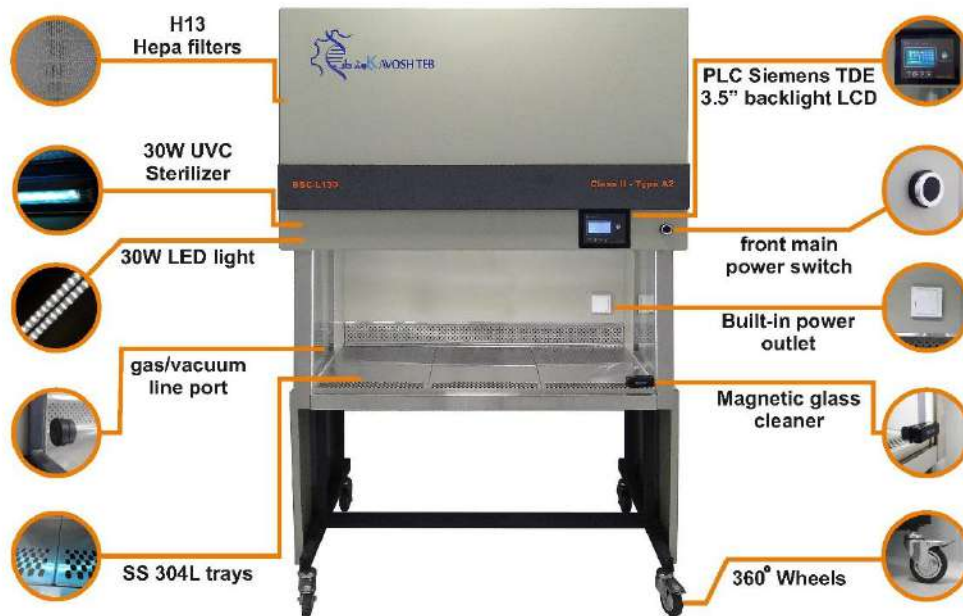


Figure 1-1. Unit Components

The **Kavoshteb** L130 Series A2 offers innovative Smart Fan technology; an automatic airflow compensation system that adjusts motor speed as filters load, without the use of a manual damper. The Smart Fan system ensures safe working conditions, even between annual certifications.

The plenum assembly consists of a plenum for the down flow blower and a plenum for the exhaust air blower. Each blower includes a filter. The exhaust air is discharged through an opening in the top of the cabinet.

Chamber lighting includes one LED bulb for L130 models and two for L160 models.

The factory-installed UV light is installed in the ceiling at the front of the sample chamber.

(Optional) Two service valve access ports are located on each side panel. When installing service valves, remove the center of the port plugs at the perforations.

A fixed 29" working height with attached casters. A stainless steel one-piece work surface is standard. For minimize blockage of airflow at the front grille there is a step grille shape. Internal outlets, provided

as the power source for accessories, are provided standard in the following configuration: L100, L130, L-160: one single right and left side

Test Ports (aerosol challenge ports) are located Back side of the device. The supply plenum is located on the Back and the exhaust hose plenum on the top.

Safety Systems

Negative pressure air system

A negative pressure air system combines with HEPA filters in the supply and exhaust airflow for personnel and product protection.

Personnel protection

Inflow air along the entire working opening at a constant high velocity prevents leakage from the work opening of the chamber.

Exterior air pressure being higher than the internal air pressure creates negative pressure, ensuring containment in case of cabinet leakage.

Product protection

Steady airflow within the air system ensures constant down flow, allowing the HEPA filters to remove contaminants so that the samples are always surrounded by ultra-pure air. Harmful particles are not carried over the sample chamber (protection from cross-contamination).

HEPA filters

The down flow air within the chamber and the exhaust air are cleaned by HEPA filters.

Safety Systems(continued)

Safety lockout

To protect from UV radiation, the optional UV light will not turn on if the front window is open. While the UV light is on, the front window should remain closed. The closed window blocks out the UV rays. Opening the window will cause the UV light to turn off.

Digital Airflow Verification (DAVe)

Monitoring of down flow air velocities guarantees that product and personnel protection remain uncompromised. As soon as airflow velocities rise above or fall below a specified safety value, an audible and a visual alarm is activated.

Window position monitoring

The position Limit switch detect the size of the front window opening and indicate whether the window is open to the specified work position, closed (energy saving) or in an unsafe intermediate position.

HEPA Filters

The filter system consists of two HEPA filters for downflow (supply) and exhaust air. Room air is drawn into the sample chamber through the work position window opening. The room air is drawn into the negative pressure drain pan air duct, then pulled into the air plenum in the top portion of the cabinet. The room air is mixed with recirculating HEPA filtered air from the chamber, and filtered proportionally by the downflow and exhaust filters. The filtered air is then supplied as ultra-pure air into the sample chamber of the unit, and exhausted as ultra-pure air into the room environment, or into an external exhaust system via an exhaust transition.

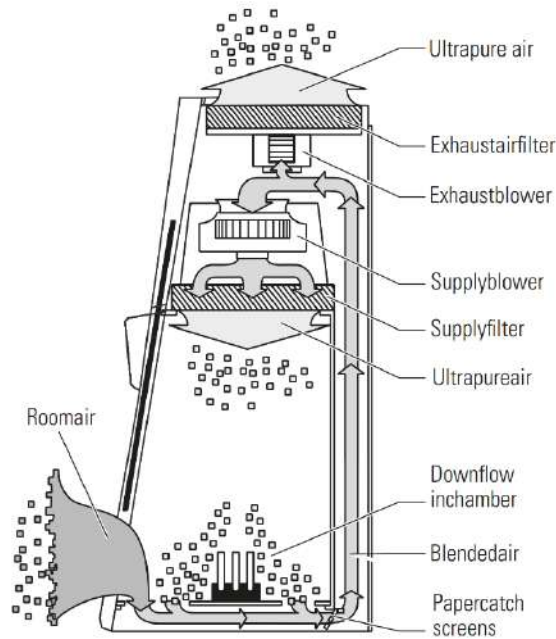


Figure 1-2. Airflow Filtering System

catch grids

Catch grids are installed beneath the work tray in the air duct between the inner and outer back wall of the unit. These grids prevent large items such as paper towels and tissues from entering the plenum where they may impair the function of the blowers or the filters. The grids can be easily removed for cleaning.

Use of the Window

The sample chamber is accessible through various positions of the front window. The working position of the window is a 5 inch opening, +0.25", -0.75" (depending on model - check data label and first page of this manual). For loading the chamber, the window opens fully. For decontamination and energy saving, enter into Night-Set-Back mode by closing the window. When the window is closed, the blower speed is reduced, minimizing energy consumption and noise emittance without compromising particulate containment inside the work chamber. Note The working and loading window positions are indicated on the user interface, as controlled by micro switches.

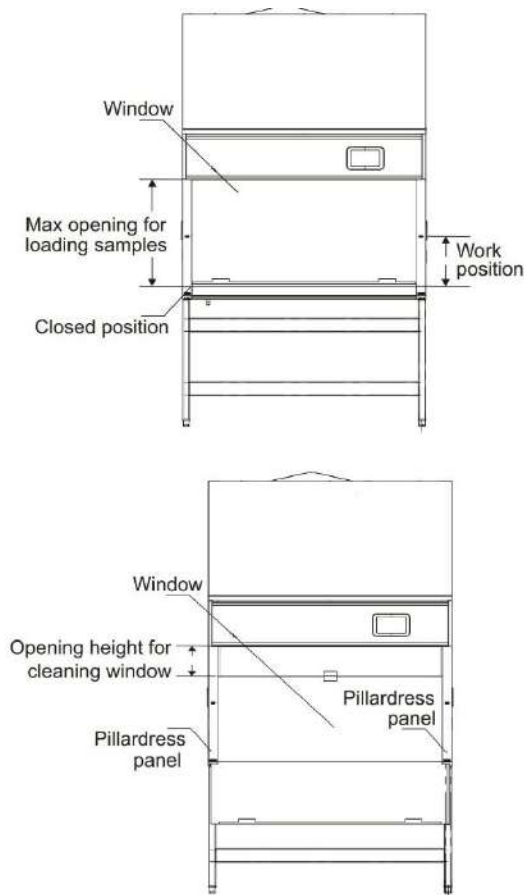


Figure 1-3. Window Openings

Unit Interface

The standard unit includes accessory outlets, service valve access ports (Just Ports), The power cord to be connected to the power source is located on behind, near the back of the cabinet. The accessory outlets (max 5A) are located on the interior chamber back wall. On top of the cabinet are the one fuse holders for the 5A accessory outlet fuse. Service valve access ports are located on each side of the cabinet. To use these ports, remove the center perforation. Service valves are available as optional accessories. The internal alarm accessory can be used for notification of window movement or access.

Warning If a gas burner is to be operated in the sample chamber, an appropriate shut-off valve for the gas supply must be installed. Use only laboratory safe burners in the sample chamber.

Unit Interface (continued)

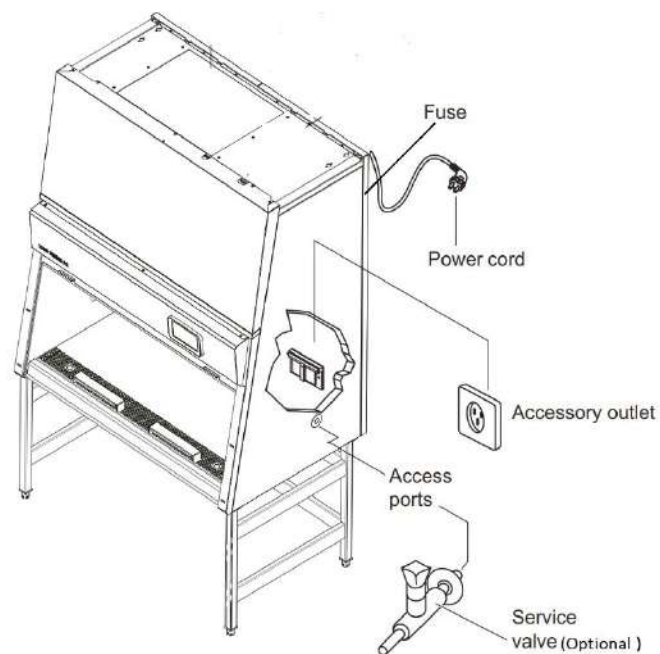


Figure 1-4. Interfaces (access ports are shown)

Chamber Lighting

The Kavoshteb L130 Series A2 offers a bright workspace for a more comfortable working environment. Models with coated rear and side walls resist glare and make it easier for the user to work safely. Lighting for the sample chamber includes one LED bulb for L130 units, and two bulbs for L160 units. The bulb(s) is installed behind the light canopy.

UV Light

factory installed UV light is installed at the Back of the front section of the sample chamber. The operating time of the UV light is preset for 30Minute. The UV disinfection procedure can be started by pressing the “UV” key on the control panel with the window in the closed position. If the window is opened, the procedure is immediately cancelled.

Note to protect from UV radiation, the UV light can only be turned on when the window is completely closed.

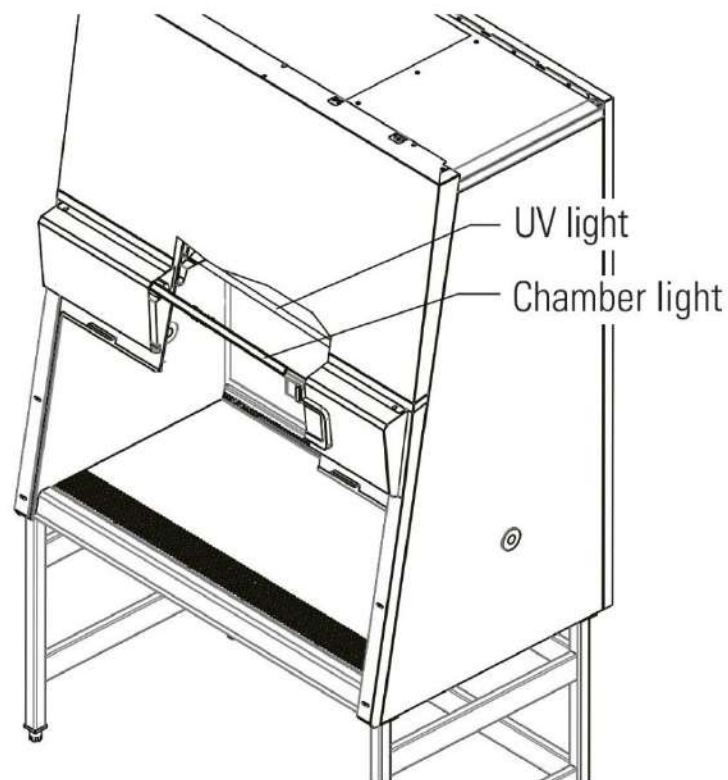


Figure 1-7. Lights

Work Area

The third piece work tray is provided with the cabinet. These placed onto the frame above the sample chamber drain pan. It can be removed by lifting up, by using pence onto the holes in the work tray. The working area for optimal product protection extends over the entire width and depth of the work tray.

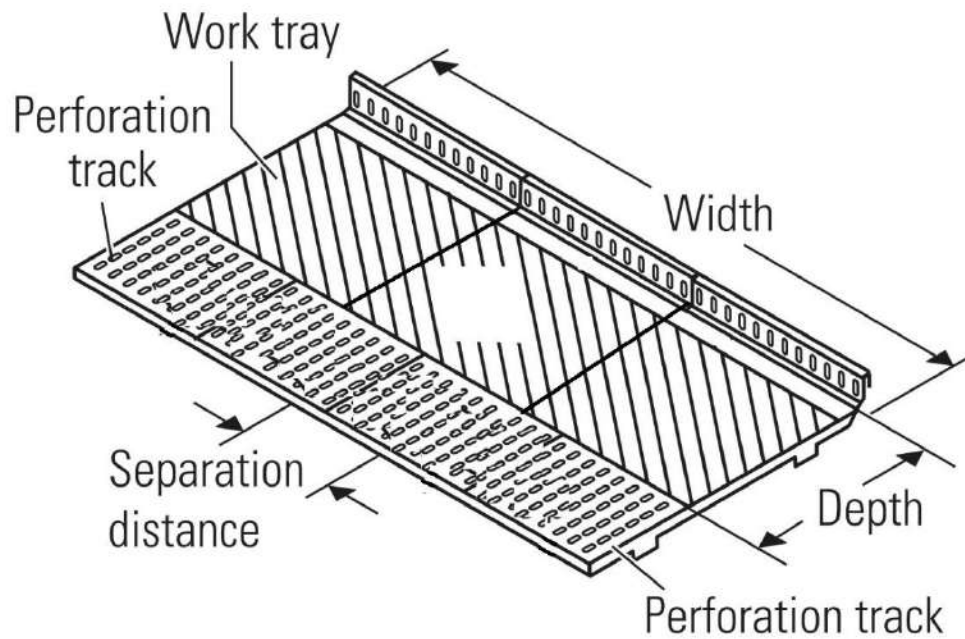


Figure 1-8. Work tray

Section 2 Installation

The operational safety and proper function of the unit depend on the location where it is to be operated. The cabinet should be operated only in the ambient conditions listed below.

- Up to 6562 ft. (2000 m) above sea level.
- Power outlet accessible to authorized personnel only. Ideally, the outlet should be installed above the biological safety cabinet. The power cord is the mains disconnect.
- Location capable of supporting the weight of the device and non-flammable.
- If the factory-approved stand is not purchased, the holding device must be rated for twice the cabinet weight.
- Adequate room height. For devices that are not connected to an exhaust system, the distance between the exhaust air opening at the device and the room ceiling must be at least 8 inches (200 mm).
- Equipped with an appropriate ventilation system.
- Room temperature between 10°C and 40°C (50°F and 104°F).
- Relative humidity must not exceed 80%, up to 31°C and decreasing linearly to 50% at 40°C.
- For indoor use only.

Room ventilation should preferably be a ventilation system that complies with the national requirements for the application. The inlet air and exhaust air openings of the room ventilation must be located so that drafts do not impair the function of the biological safety cabinet air system. When positioning the cabinet, make sure the counterweight on the back of the unit can move freely. The minimal distance to the wall or adjacent objects should be 3 inches (7.6 cm), unless upper wall brackets are used.

Exhaust System Accessories

The exhaust system components (Recommended for B2 Type) are installed to the exhaust opening on top of the cabinet. The threaded inserts for the retaining screws are pre-installed in the unit. Installation on 4 model:

1. Turn the unit off and disconnect it from the power source.
2. Thoroughly clean the surfaces around the exhaust opening and of the accessory to be installed, to ensure that they are free of debris.
3. Secure the accessory by tightening the supplied retaining screws (M5) wrench-tight.
4. Using the adjustment nuts on the sliding panel, set the gap height to an opening of 2 inches.

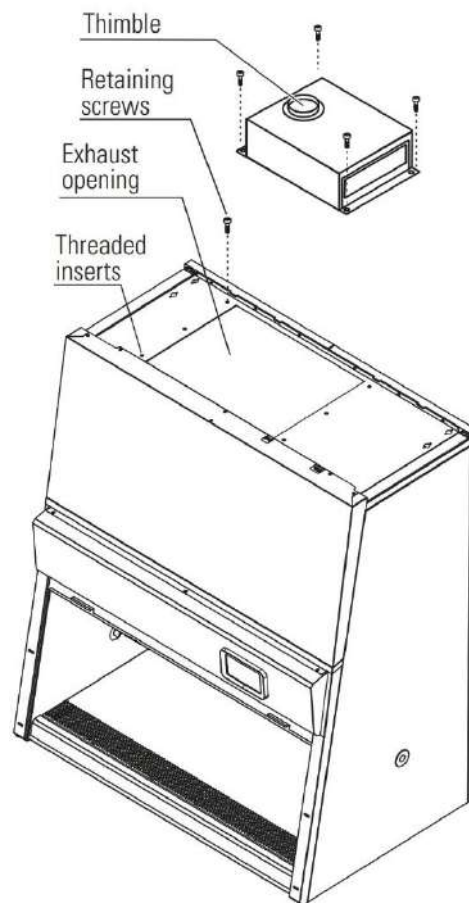


Figure 2-1. 4 ft Thimble

Exhaust System Accessories (continued)

The exhaust thimble connection is installed to the top of the cabinet using an additional adapter. The threaded inserts for the retaining screws of the adapter are pre-installed to the top of the cabinet. Installation on a L130 B2 model:

1. Turn the unit off and disconnect it from the power source.
2. Clean the contact surfaces around the exhaust opening, and the upper and lower contact surfaces of the adapter thoroughly to ensure that all grease and dust residue are removed.
3. Secure the adapter to the pre-installed threaded inserts on top of the cabinet using the supplied four retaining screws. Tighten the screws hand-tight.
4. Secure the accessory by tightening the supplied retaining screws.
5. Using the adjustment nuts on the sliding panel, set the gap height to an opening of 2 inches

Connecting Sleeve

1. Place the connecting sleeve onto the connecting opening of the accessory and secure it with the screws.
2. Fit the connecting pipe (200 mm [8 in]) of the on-site exhaust air system to the connecting sleeve.
3. Seal the unused connecting opening with the cover. Place the cover onto the connecting opening at the housing and secure it with the screws.

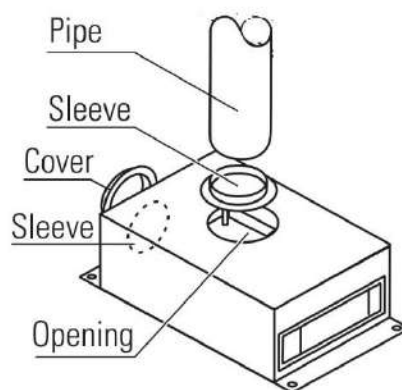


Figure 2-2. 6 ft Thimble and Sleeve

Moving the Unit

To prevent tilting, always transport the cabinet separate from the stand, using equipment capable of supporting the weight, even for a move within a building.

Caution When moving the unit, lift only at the lift points shown in Figure 2-3.

Caution Do not allow the weight of the cabinet to rest on the drain pan!

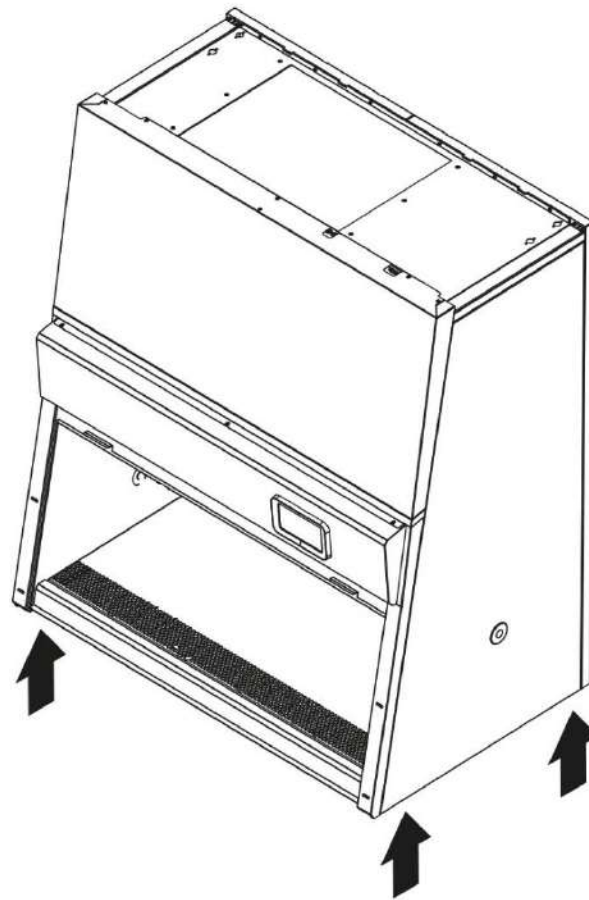


Figure 2-3. Lift points

Service Valve Connections

Install the service valve(s) by removing the centers of the plug (brass) or piercing it at the pre-determined location (plastic).

Note The plugs must only be used for the installation of service valves in accordance with the applicable national regulations. At each side panel, service valves can be installed through the one service valve port plugs.

1. Move the front window to the fully open position.
2. Turn the unit off and disconnect it from the power source.
3. Score the plug circularly at the pre-determined point (inside and outside). Remove the centers.
4. Referring to Figure 2-4 on the following page, slide the bezel onto the threaded pipe of the service valve. Apply a thin bead of silicon to the inner flange of the service valve.
5. From inside the sample chamber, slide the service valve through the desired plug.
6. From the outside, slide the washer onto the service valve threaded pipe and apply a thin bead of silicon to the outer flange of the service valve.
7. Secure the service valve to the side panel using the nut.
8. Establish the connection to the supply line using a union nut.

Note If a service valve is removed, the service valve port plug should be re-installed.

Valve Connections (continued)

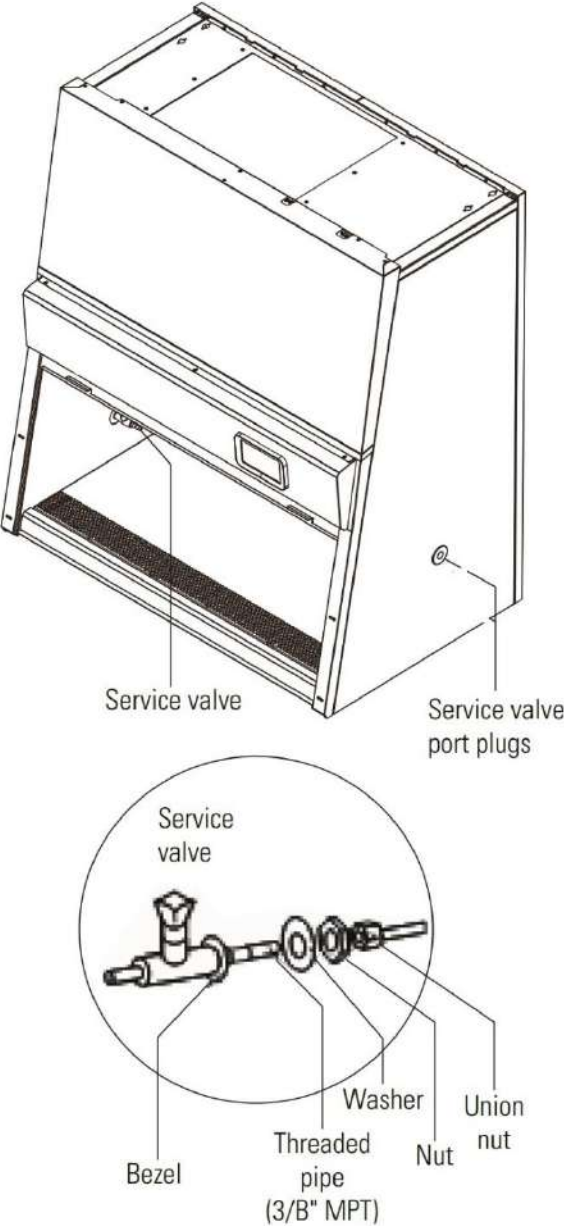


Figure 2-4. Valve Assembly and Installation

Drain Cap

after the unit has been installed, either on a stand or a workstation, the drain cap should be installed. The drain cap itself is shipped in the manual bag taped to the inside of the unit.

Locate the drain piping underneath the unit on the center.

Apply thread sealant sparingly to the threads.

Installation of the drain cap is done by manufacturer.

Be aware of the cap when moving the unit from the stand or workstation.

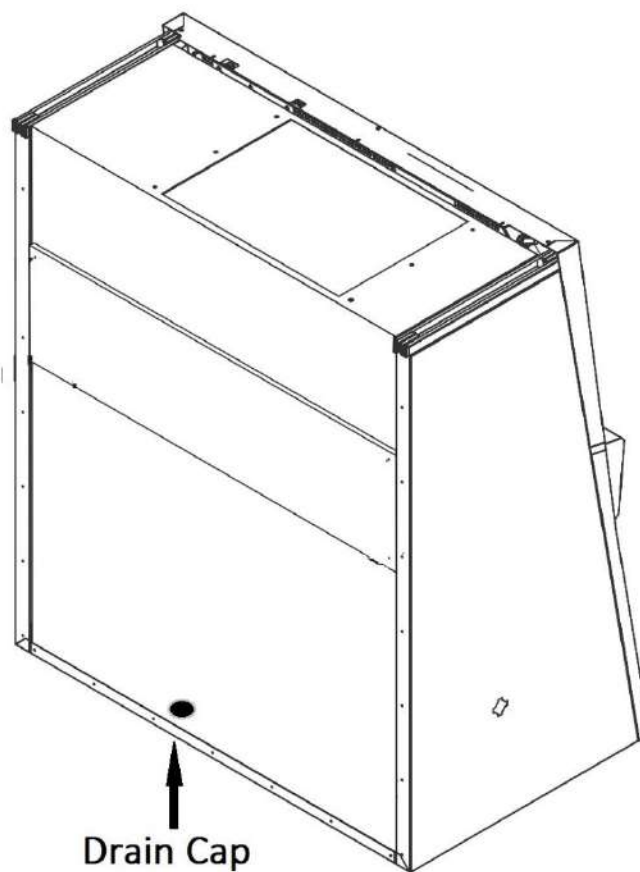


Figure 2-5. Drain Cap

Section 3 Start-Up

Caution Correct assembly and installation is essential for proper start-up and operation.

Assemble the Stand

For a unit without a stand, place the cabinet onto a stable structure capable of supporting two times the unit weight. Make sure the weight is not resting on the drain valve or nipple.

For a unit with a stand, first assemble the stand per the instructions included with the stand. Then fit the cabinet onto the stand. See steps below. **Caution** Make sure each leveler is turned all the way in, to avoid bending an edge during installation.

1. Install the cabinet frame to the stand, (if not already installed). **NOTE:** Make sure the cabinet is placed on the legs. by using 4 screws, tighten the cabinet to the stand.

2. Install the leg frames to the stand, (if not already installed). by using 4 screws, tighten the leg frames to the stand.

Power Connection

warning Contact with electrical components can cause a lethal shock.

Warning Before connecting the unit to a power source, check plug and power cord for possible damage. Do not use damaged components to connect the unit to the power source!

1. Before connecting the unit to the power source, verify that the voltage of the outlet matches the specifications on the cabinet nameplate. If the ratings given for voltage (V) and maximum current (A) do not match, do not connect the unit to the power source.

2. Connect the power cord to a properly grounded and fused outlet. The outlet must be fused separately, using a fusible link T15A or using a circuit breaker B15. If the configuration of the receptacle does not match the power plug, consult a qualified electrician to replace or install the correct receptacle.

3. Make sure that the power cord is routed away from the counterweight and cable guide. The left side of the cabinet has additional fastening points that can be used for routing the power cord.

4. Make sure that the power cord is not stretched or pinched. To protect from accidental disconnection, the power source outlets should be located out of casual reach and be accessible only to authorized persons. Ideally, the outlet should be located above the cabinet to avoid accidental shut-off. The power supply cord is the mains disconnect. Maintain access at all times. If the unit includes service valves (gas, water), the valves must be installed properly to ground, to the unit's main ground.

Installation Tests

Warning Do not operate the unit before initial operation, installation and certification tests have been performed.

The installation test must be performed in accordance with the specifications of NSF/ANSI 49. The cabinet may be operated as a Class II biological safety cabinet, in accordance with NSF/ANSI 49, if the unit functions listed below were verified and if the test results are within the safety value tolerances as specified in NSF/ANSI 49, Annex F.

- Inflow velocity profile test
- Downflow velocity profile test
- HEPA filter leakage test
- Airflow smoke pattern test
- Site installation assessment tests
- A repeat test must also be performed annually, after repairs to the unit or after location changes.
- The operator should request a written test report from the authorized service technician.

Warning The operational safety of the unit, particularly the personnel and product protection, are guaranteed only if all safety functions of the unit have been tested and approved.

Caution Kavoshteb will not warrant operational safety if the unit is operated without the required installation and certification test, or if these tests and repeat test are not performed by adequately trained and authorized personnel.

Caution The initial operation with subsequent installation test does not include any decontamination measures. The sample chamber and any accessories required must be disinfected and

cleaned in accordance with the hygiene guidelines set forth for the desired application.

Caution Alarms on this unit are not factory-set. Set the alarms to avoid product loss and ensure personnel safety. Refer to Certification section.

Locating a Certifier

Caution Service and certification must be performed by qualified personnel.

Biological safety cabinet certification consists of a series of tests designed to verify that the cabinet is performing within operating parameters established by the manufacturer. To assure that a biological safety cabinet is operating as intended, each cabinet should be field-tested at the time of installation and at least annually thereafter. Cabinets should be re-certified whenever HEPA filters are changed, internal maintenance is performed, or the unit is relocated.

Section 4 Operation

Initial Setup

This section explains how to set up the device.

Proceed as follows to start up the unit:

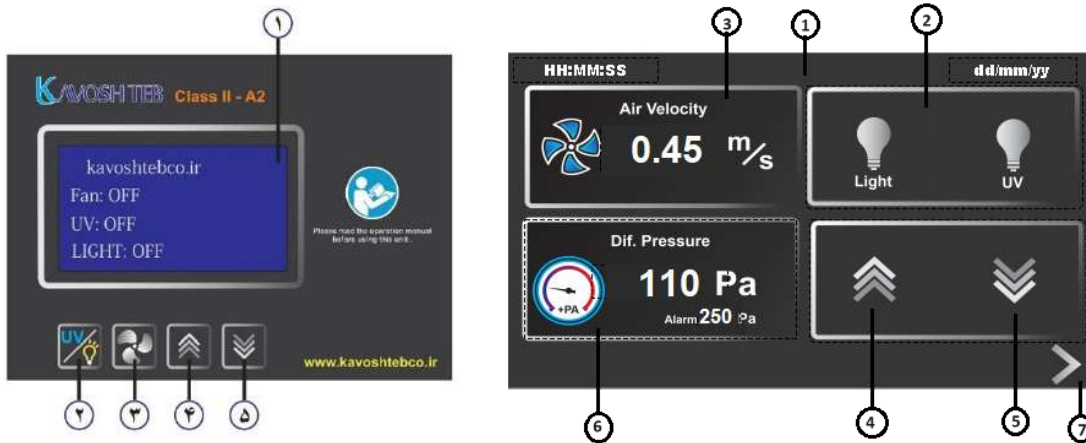


Figure 4-1. Interface

- 1)Characteristic/touch Screen
- 2)UV/Light Bottom On/Off
- 3) Fan Bottom On/Off
- 4)Directional(Up) Bottom
- 5) Directional (Down) Bottom
- 6) Differential Pressure Monitoring (at AT Series)
- 7) Next Menu

1. Power up the device by connecting the external power source. A startup screen with a “Loading” appears, prompting you to run the setup, as shown below:



Figure 4-2. Initial Startup: Startup Screen

2. The UV and filter life time counter appears (at AT Series, after calibration Air Velocity and Diff. Pressure values can get offset value) as shown below:

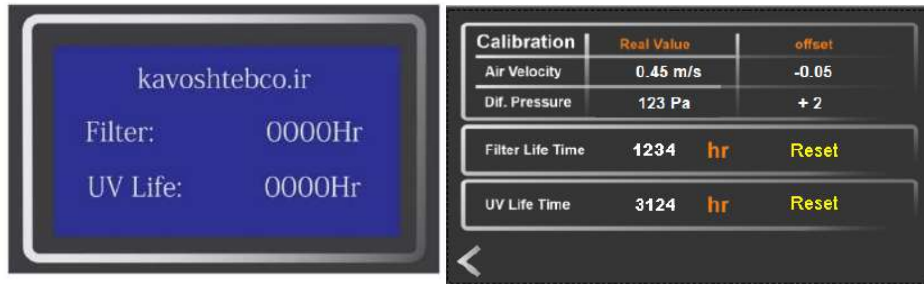


Figure 4-3. UV and HEPA Filter life time

3. (Tap any button at characteristics Series).The initial Setup is complete now.

You can now begin using the unit

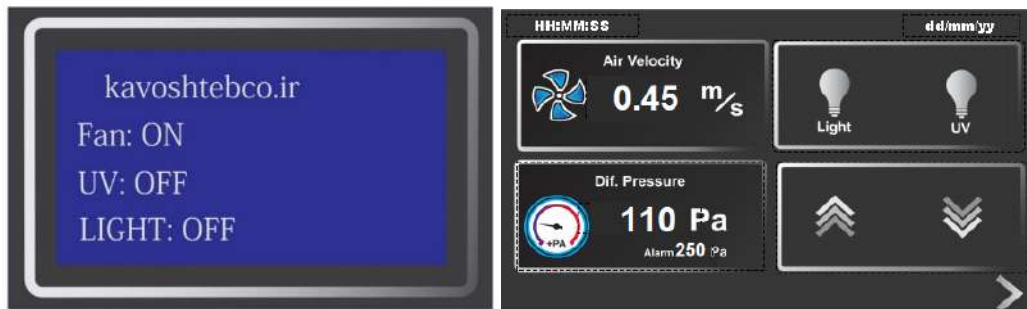









Figure 4-4. Main Menu Screen

4. The Main Screen (Figure 4-1) displays the main operating parameters and including window status.

5. For Start/Stop the circulating Fan, Push  / . (At AT Series after a while air velocity automatically set and 0.45m/s monitored on the screen)

6. For On/Off the Light, Push  /   / 


7. For Up/Down front Window (Sash) Push  / 


Note: for start operation push “up” bottom just once then sash will be open automatically 12cm. for opening more than 12cm during cleaning and disinfection Push “up” bottom and hold to reach the maximum limit.

Not: opening more than operation limit, audible alarm start and message comes as shown below:



Figure 4-5. Sash opening more than limit

8. For Start/Stop the UV disinfection cycle, Push and hold  for 3 sec.

At At Series touch  on the screen then touch yes in dialogue box as below:



Note: The biological safety cabinet has a built-in UV disinfection routine that affords an intensifying additional disinfection after a standard wipe/spray disinfection. UV disinfection can be started by pressing the “UV” button as described above (8).



Warning if the UV-auto-start function is enabled, audible alarm and message start as below figure 4-6 and after 20second sash will close automatically and disinfection started for the specified time (30min.). For running the UV disinfection routine, the sash must be completely closed to protect against UV radiation. A safety interlock ensures that the routine cannot be run until the sash is in the closed position.



Figure 4-6. sash closing after 20 sec.



Figure 4-7. UV disinfection cycle

Note: During the Disinfection cycle, when the “” button is tapped, Biological Safety Cabinets will interrupt this operation and UV turned off and audible alarm comes. After closing the window, disinfection cycle will be start again. If tapping and holding 3 second the “” bottom, the disinfection cycle will be stop.

Replacing UV Bulb


After 3000 hours UV life time get expiration and it must be replacing, and a pop-up screen shown in Figure 4-8



Figure 4-8 UV Lamp Timer is Expired

If you replace a new UV bulb, please follow below process to update the UV status

Warning: As filter replacement is an interference with the safety system of the unit, filters must only be replaced by adequately trained and authorized service personnel.

- Tap and hold for 20 second the “ Reset” button to update the installed date, and the UV work hours will be fall to zero. When you tap the “Reset button”, a pop-up screen shown in Figure 4-9

At At series press **Reset**, the UV Life Time counter gets **0**.

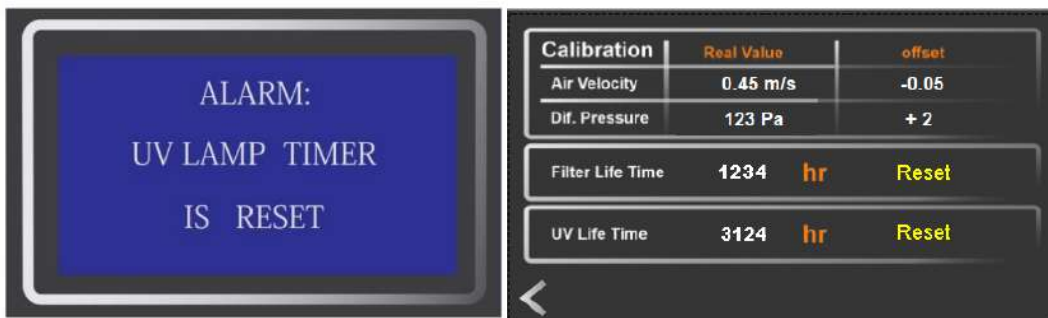


Figure 4-9 UV Lamp Timer is Reset

Replacing HEPA Filter


After 3000 hours' filter life time get expiration and it must be replacing, and a pop-up screen shown in Figure 4-10



Figure 4-10 Filter is Expired

If you replace a new HEPA Filter, please follow below process to update the Filter status

Warning: As filter replacement is an interference with the safety system of the unit, filters must only be replaced by adequately trained and authorized service personnel.

- Tap and hold for 20 second the “ Reset” button to update the installed date, and the Filter work hours will be fall to zero. When you tap the “Reset button”, a pop-up screen shown in Figure 4-11

At At series press **Reset**, the Filter Life Time counter gets **0**.

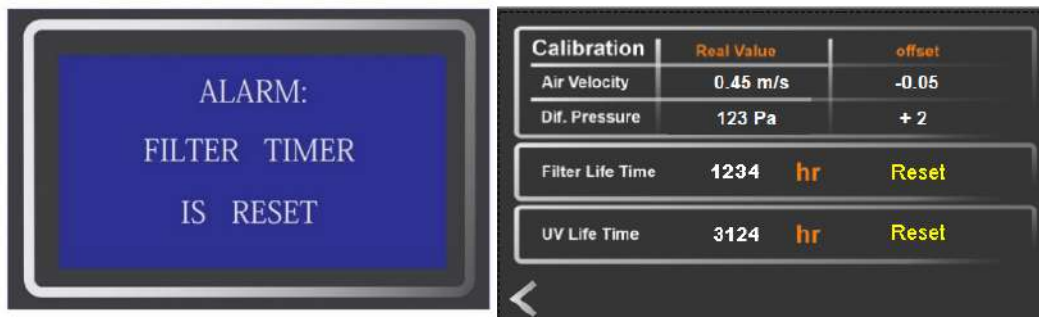


Figure 4-11 Filter Timer is Reset

Loading the Chamber

1. Move the front window to the maximum opening position. This automatically switches the blowers to full speed.
2. Install needed work materials within the sample chamber work area.

Avoid blocking the front air intake grille.

3. Move the front window to the work position and wait until the airflow has stabilized.

Warning Personal and product protection is ensured only if the airflow system of the device is working properly. If the alarm system issues a failure message for more than a few minutes while the front window is in

work position, stop all applications that may jeopardize worker safety.

4. Load the work tray with samples.

5. For work breaks or for extended experimental phases without manual intervention, switch the device to standby mode by closing the window.

Working Recommendations

The observance of work rules ensures a minimum of operational safety when handling the biological safety cabinet.

Before starting a procedure, take off all jewelry, put on required personal protective equipment (gloves, goggles, apron), and clean and disinfect the sample chamber surfaces at regular intervals.

During operation:

- Place samples only within the defined work area of the work tray.
- Do not place unnecessary items into the sample chamber.
- Use only disinfected and cleaned accessories for the work process.
- Do not cause air turbulence by quick hand, arm or body movements in the sample chamber or in front of the work opening.
- Do not place accessories into the sample chamber that cause air turbulence or emit excessive heat.
- Do not block air circulation at the ventilation slots of the work tray.
- A height-adjustable working chair with an adjustable seat back should be used during extended work periods at the cabinet.
- When the upper leg is in a horizontal position, the angle between

upper and lower leg should not exceed 90° .

- To compensate between the floor and sitting height, a footrest should be used. The minimal effective size of the footrest should be 18 x 14 in (45 x 35 cm). The slope should be adjustable to within a range from 5° to 15° . The adjustable height should extend to a minimum of 4 in (11 cm) above the floor.

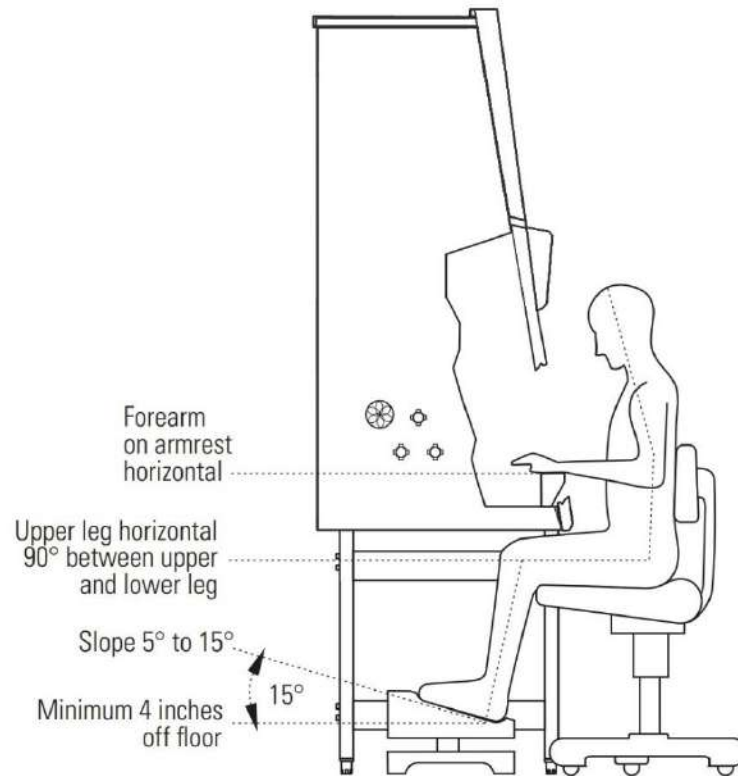


Figure 4-12 Sitting Posture

After completing a procedure,

1. Remove samples from the sample chamber and store them properly.
2. Clean and disinfect the sample chamber surfaces, including the work tray and the drain pan.

3. Clean and disinfect all accessories.

Unit Shut-down

To turn the unit off:

1. Remove all samples from the chamber and store them properly.
2. Remove any accessories from the chamber, and clean and disinfect them.
3. Clean and disinfect the chamber surfaces, work tray, and drain pan.
4. Press the “Fan” button to turn off the blowers.

Caution for safety reasons, the blowers can be switched off only when the front window is closed

Extended Period Shut-down

If the device is not to be used or is to be stored for an extended period of time, it must be completely decontaminated.

Warning To shut the device down, the sample chamber must be disinfected completely and the plenum, including the filters, must be decontaminated using the appropriate and authorized procedures.

1. After the device has been decontaminated, close the window completely.
2. Disconnect the unit from the power source. All components with the

Unit Disposal

exception of the HEPA filters can be discarded after having been thoroughly cleaned and decontaminated. The HEPA filters must be discarded in accordance with the applicable national, state and local regulations for special solid waste.

Warning As this unit can be used for processing and treating infectious substances, it must be decontaminated prior to disposal, in accordance with acceptable standards and procedure

Section 5 Cleaning / Decontamination

Several procedures can be used for decontaminating the biological safety cabinet. Which procedure is selected, depends on the potential

risk imminent in the agents used, and/or the degree of cleanliness required by an experiment or work process.

One possible decontamination procedure is to clean, rinse and dry with a disinfection liquid or spray, and sterile distilled water.

UV disinfection can also be used. It is particularly suited as a more intense disinfection after the above procedure.

Autoclaving (sterilization with steam) can be used for treating the removable stainless steel components. The work tray(s), armrests and paper catch grids are autoclavable components.

Care and Cleaning of Stainless Steel

Disinfection with formaldehyde can be performed if a sterile sample chamber is required for the work procedure. This sterilization procedure is mandatory before filters are replaced, or before the unit is discarded. Stainless steel is a combination of many different metals including iron and chromium. Iron, the primary element in stainless steel, tends to corrode (rust) when in its natural state. The chromium content in stainless steel prevents corrosion.

Stainless steel is not corrosion or rust proof, just resistant to stains, or stains "less". The chromium, in the presence of oxygen, forms a tough, invisible, passive layer of chromium oxide film on the steel surface. If damaged mechanically or chemically, this film is self-healing as long as it has enough oxygen. The presence of any liquid or solid that remains in contact with the stainless steel for a prolonged time can prevent oxygen contact and promote corrosion, as can prolonged contact with cleaners or disinfectants containing chlorine, ammonia, iodine or other caustic agents.

Cleaning/Caring for Stainless Steel (cont.)

Cleaning and Caring for Coated Surfaces

1. To properly care for stainless steel, use cleaners and disinfectants free of caustic agents such as chlorine, iodine and ammonia.

2. Always follow the application of any cleaner or disinfectant with a minimum of two clean distilled water rinses, then a thorough drying with a clean soft cloth. By rinsing with distilled water and drying, any remaining residue is removed from contact with the stainless steel.

Caution Never use abrasive cleaners, scouring pads or steel wool when caring for stainless steel. If the stainless steel does become stained, corroded or rusted, the iron deposits left on the surface can be removed by neutralizing them with the passivation process. This process uses an acid to neutralize the “free iron” deposits left on the steel where there has been deprivation of oxygen. This stops the spread of the corrosion or rust. It will not return the stainless steel to its original finish.

Cleaning and Caring for Coated Surfaces

All the coated surfaces of this equipment are powder coated. Powder coating is a method of applying a dry powder to electro-statically charged metal, then baked in an oven where the dry powder molecules are melted and fused together. This is by far the most durable finish available today and, if cared for properly, will last for many years. The coated surfaces should be cleaned with a neutral detergent and rinsed twice with clean distilled water, then dried thoroughly with a clean soft cloth. Cleaning or disinfecting coated surfaces without rinsing with clean distilled water and drying thoroughly will result in smearing, streaking and dulling of the coated surfaces. Never use abrasive cleaners, scouring pads or steel wool. If the coated surfaces do become dull, streaked, smeared or marred in some other way, there is no known method to restore the finish.

Disinfection

1. Remove all samples from the chamber and store them properly.
2. Remove accessories from the cabinet and disinfect them using the disinfection procedure recommended by the manufacturer of the accessory.
3. The work tray(s) and stainless steel components can be removed from the chamber and disinfected separately.
4. Clean all chamber surfaces with disinfectant.
5. Do not remove the optional UV lights from the sockets. Clean thoroughly with a damp cloth. Do not saturate. Be sure to dry completely.

Rinsing

1. Rinse all surfaces twice with clean distilled water.

2. Discard any liquid from the drain pan. Rinse pan.
3. Dry all chamber surfaces completely. UV disinfection can be performed by using the optional factory installed UV light.

UV Disinfection After Cleaning

To start the UV disinfection procedure,

1. Close the front window, the air system operates in the reduced mode.
2. Press the UV key on the control panel.

To interrupt or cancel the UV disinfection procedure, just press the UV key (the display shows the operating hours) and slide the window up

Clean Exterior Surfaces

Clean the exterior surfaces of the cabinet using a solution of tepid water and commercially available mild dishwashing agent. Then, dry all surfaces well, using a soft, clean cloth.

Clean Window

For cleaning, the window closing position Creating a gap at the window's upper edge ensures that the upper portion of the window can be cleaned and/or disinfected. Use a commercially available window cleaner to clean the window.

Section 6 Maintenance

The annual certification consists of the following checks:

- Electrical safety in accordance with national regulations.
- Functional test of the device.
- Checking all components for possible damage.
- Checking the filter state.
- Verifying device air flows
- Checking the airflow conditions.
- Repeat test in accordance with NSF/ANSI 49. Recommended annual maintenance tasks
- Ensure the unit is within its certification window
- Clear debris from under the work tray and paper traps
- Confirm that both LED bulbs are working (Replace as necessary)
- Replace UV bulb if necessary (3000-hour life)
- Ensure the counterweight path is clear and unobstructed
- Ensure the sash is moving freely through its full range of travel
- Check sash cords and pulleys for wear and/or damage
- Inspect sash attachment points for cracks or damage
- Ensure all service valves are working properly

Contact our service department if help is needed on any of these maintenance steps.

Warning The diffuser plate on the chamber ceiling serves as protection for the downflow filter and prevents refluxing of downflow air. When scanning the filter surface for a leak test, the perforated plate must be removed.

Warning For any service work in a potentially contaminated section of the biological safety cabinet, the unit must first be decontaminated.

Section 7 Specifications

	Type	Model	External Dimension (cm) (L*D*h)	Working area Dimension(cm)	HEPA Filter(H14) Dimension (cm)	Body Material	Series	Control System	Display	Air Velocity Sensor	Differential Pressure Sensor	Automatic Disinfection Cycle	Control Access	Fan Speed Controller								
Biological Safety Cabinet	Class II A2	L100	103*88*210	93L*65D*62.5h	90X61X7	Coated Exterior & Stainless Steel Interior	ECO	PLC DGP LOGO TD+	LCD	☒	☒	☑	☒	Fan internal Controller								
		L130	130*88*212	123L*65D*62.5h	122X61X7																	
		L160	160*88*212	153L*65D*62.5h	153X61X7																	
	Class II B2	L100	103*88*211	93L*65D*62.5h	90X61X7																	
		L130	130*88*212	123L*65D*62.5h	122X61X7																	
	Class II A2	L100 SS	103*88*210	93L*65D*62.5h	90X61X7	Stainless Steel Exterior and Interior																
		L130 SS	130*88*212	123L*65D*62.5h	122X61X7																	
		L160 SS	160*88*212	153L*65D*62.5h	153X61X7																	
	Class II B2	L100 SS	103*88*210	93L*65D*62.5h	90X61X7																	
		L130 SS	130*88*212	123L*65D*62.5h	122X61X7																	
	Class II A2	L100 AT	103*88*210	93L*65D*62.5h	90X61X7	Coated Exterior & Stainless Steel Interior									Automatic	PLC Logo! Siemens	4.3" Touch Delta	☑	☑	☑	☑	Inverter System
		L130 AT	130*88*212	123L*65D*62.5h	122X61X7																	
		L160 AT	160*88*212	153L*65D*62.5h	153X61X7																	
	Class II B2	L100 AT	103*88*209	93L*65D*62.5h	90X61X7																	
		L130 AT	130*88*212	123L*65D*62.5h	122X61X7																	
Class II A2	L100 AT/SS	103*88*210	93L*65D*62.5h	90X61X7	Stainless Steel Exterior and Interior																	
	L130 AT/SS	130*88*212	123L*65D*62.5h	122X61X7																		
	L160 AT/SS	160*88*212	153L*65D*62.5h	153X61X7																		
Class II B2	L100 AT/SS	103*88*209	93L*65D*62.5h	90X61X7																		
	L130 AT/SS	130*88*212	123L*65D*62.5h	122X61X7																		