

User Manual



Please read operating manual before installation and operation.

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FUME HOOD

USER MANUAL



1. Brief introduction

Fume hood is integrated with water, electricity, gas and ventilation. It is equipped with multifunctional socket inside. The window is designed into automatic balance type and is equipped with proper poise for taking its place easily. The bottom is equipped with stainless steel water tank with which liquid antiseptic, experiment leftover can be discharged from this tank through bathing so as to keep experiment environment safe and reliable. Thus, it is a kind of common lab equipment for discharging bad gas, cleaning and discharging in the course of experiment.

Properties

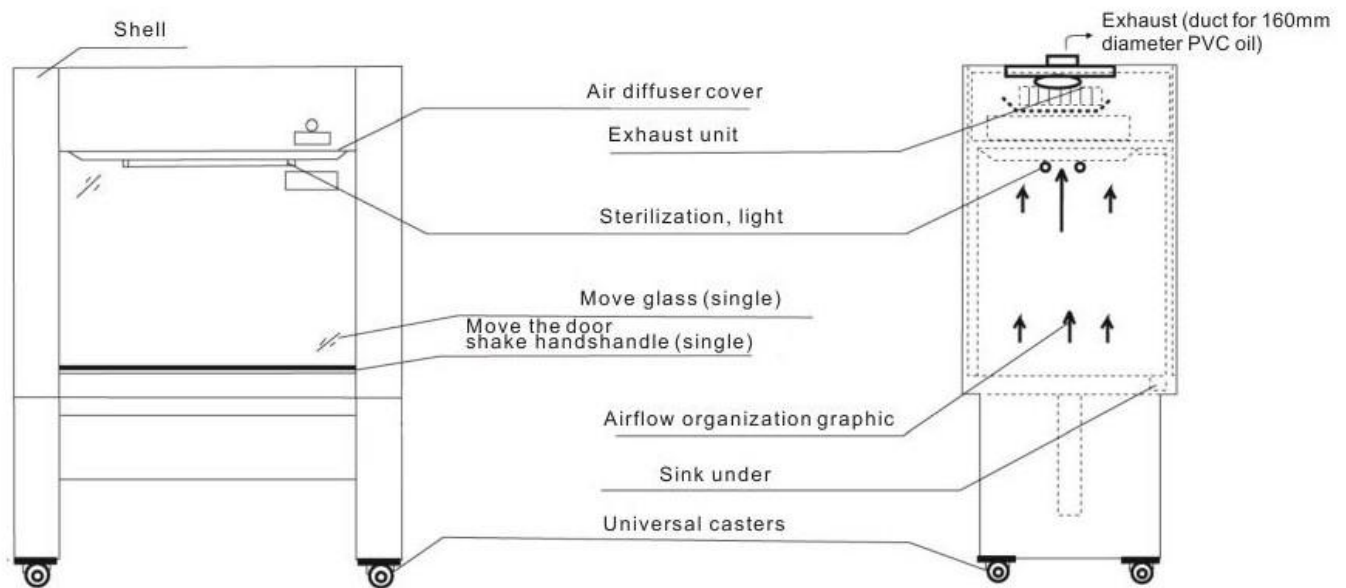
The flow plate makes bad gases in different height discharged from different parts. The ventilation cabinet discharges internal air out at the speed of 0.5m/s to guarantee there is not any residual air inside, so the ventilation efficiency is high and ventilation capacity is 450-1600m³/h. The glass window may be dragged up and down. It can be stayed on any position to provide safer, more comfort test space for experimenter

Product	Fume Hood
Model	SW-TFG-15
Discharging speed	within 0.3m-0.6m/s adjustable
Inlet pressur	>0.5Pax
Power	400W
Power supply	AC,220 V/60Hz
Specifications of LED light	20W×②
Working area size W*D*H	1300*695*580mm
Overall dimension W*D*H	1455*760*1950mm

2. Structural Characteristics

Fume hood: by several major components of the cabinet, fan and operating switches, etc. Box cold plate production, surface spray treatment, work tops, stainless steel. Purification unit uses a variable air volume fan system, by adjusting the fan working status, can the average wind speed to maintain a clean work area within the rated range.

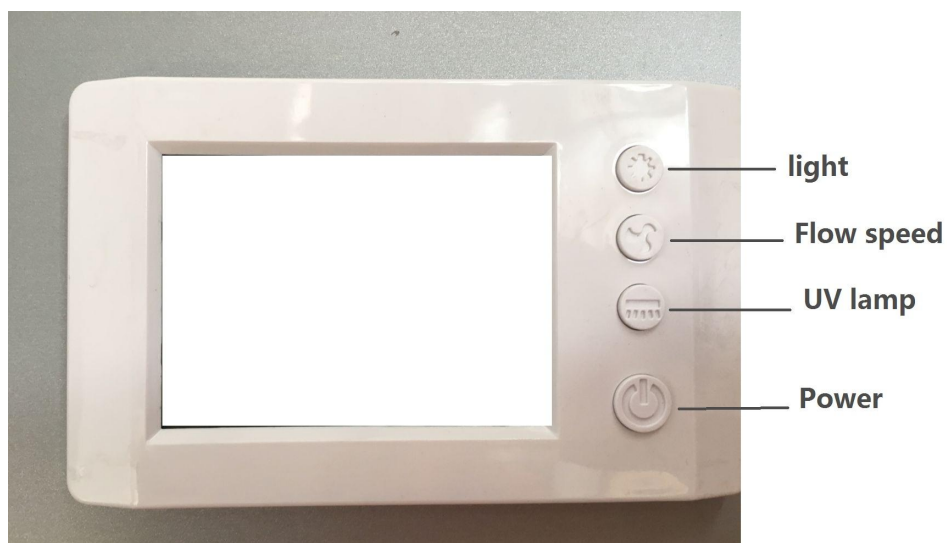
Structure schematic diagram



3. Working Principle

The centrifuge in the fume hood pulls out the air from the working area from the top and discharges dirty air . Clean air enters the working area from the front of it . Keep the air in the working area clean .

4. Schematic Diagram for Controller



Note: UV lamp is for Opinion

5. Operation

Fume hood placed in a clean room, plug in the power, turn on the power switch, turn on the light switch, according to your needs, change the wind speed.

5.1 pre-operation inspection

After the operator starts the fan system, he can start to use the fume hood. Before using the fume hood, please check:

5.1.1 Check whether the power switch is in the open position;

5.1.2 power control panel is lit;

5.1.3 fluorescent switch is turned on;

5.1.4 Fume hood is in a state of exhausting;

Operate the fume hood when all the test results are OK.

5.2 Fume hood the correct mode of operation

5.2.1 Glass window The fully open state is allowed only when assembling and debugging internal equipment or cleaning the space in the cabinet. This is the "adjustment state".

5.2.2 Adjusting the window of the glass to the user's elbows (half-open) allows the operator to reach into the cabinet to operate the experiment while the chest is protected by the safety glass of the glass window, which is "normal operation" ;

5.2.3 adjust the door open to the minimum opening, the operator leaves, so that the experimental procedures inside the cabinet to react or suspend the experiment, this is "standby mode";

5.2.4 The experimenter should avoid putting the head into the regulating door to avoid the danger while the fume hood experiment is in progress.

5.2.5 fume hood should avoid placing too many non-essential items, equipment, so as not to interfere with the normal air flow, causing disturbance (turbulent) flow;

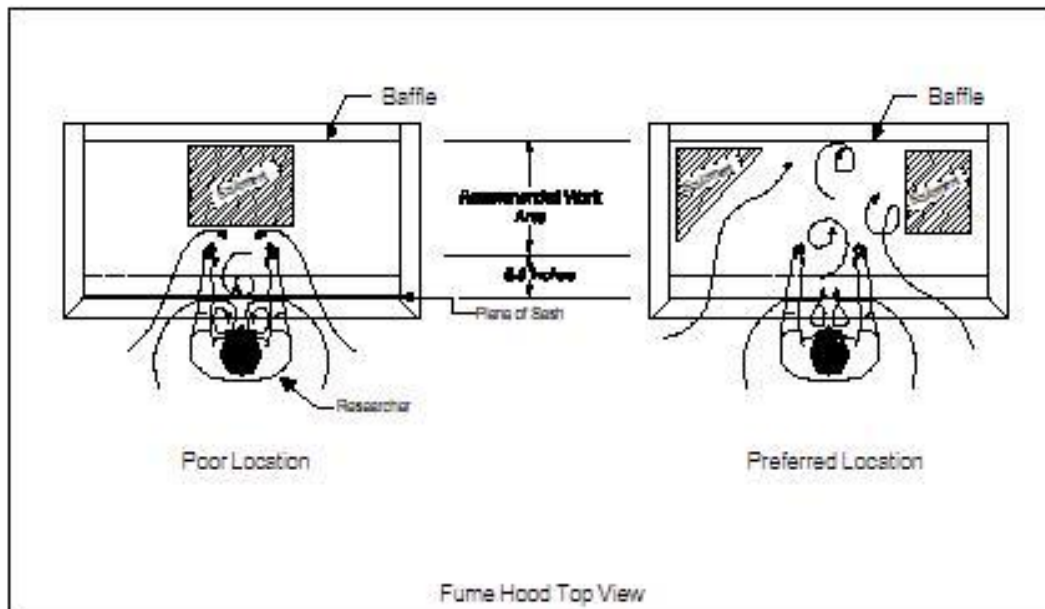
5.2.6 laboratory items, equipment placed in the fume hood, the glass door should be within 150mm distance adjustment to ensure smooth exhaust;

5.2.7 When the operator finishes his work and leaves the fume hood, the equipment in the fume hood should be powered off, and all water, electricity and gas switches should be turned off and the control door should be lowered to the lowest position before leaving;

5.2.8 although the work area of the fume hood are phenolic resin corrosion-resistant materials, but for the fume hood as new, to extend the service life, proper cleaning and maintenance is necessary, if the usual use of reagents, splashes should be immediate Wipe, clear, clean the interior with clean water before leaving work every day, and remove the baffle for cleaning at least once every three months.

5.3 The correct placement of equipment and materials

When the equipment or instruments are placed in the cabinet, their placement will affect the airflow pattern in the fume hood. When the operator stands in front of the fume hood, a vortex will be generated, and if the operator places the items in front of him incorrectly, it will lead to such countercurrent and spoiler situation aggravating. (As the following picture)



Fume hood placed equipment, materials and the corresponding location of the airflow effect.

Provide several suggestions for reference:

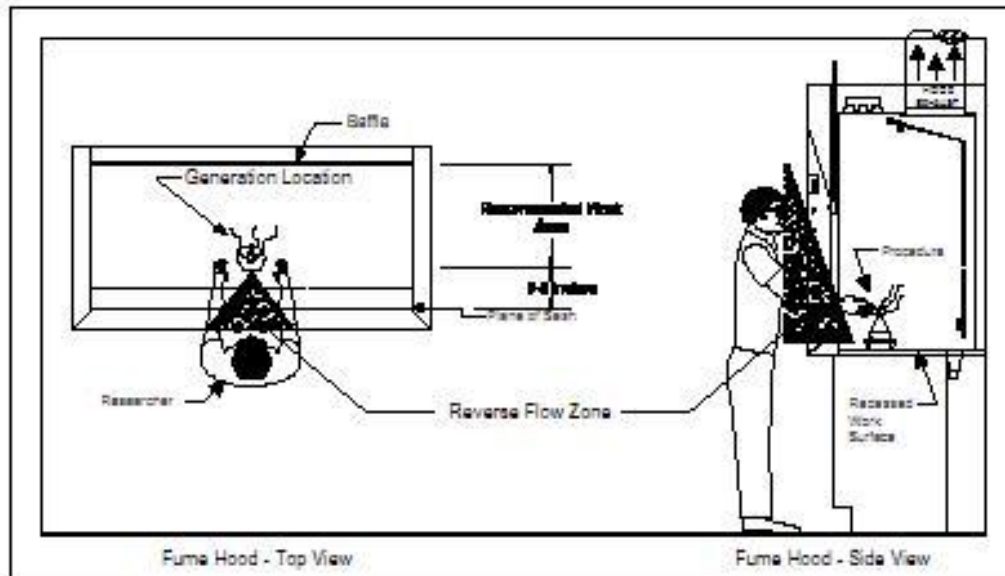
5.3.1 Equipment should be placed deep inside the fume hood as far as possible, and should be at least 6 to 8cm away from the glass door.

5.3.2 When the height of the equipment is more than 100 mm, airflow path is required under the equipment, stainless steel bracket can be used to raise the equipment, and the hollow type or hole-shaped bracket can reduce the interference to the airflow pattern.

5.3.3 Avoid putting too much equipment and instruments in the fume hood.

5.3.4 In the cabinet, there is equipment with high heat load. The heat source of the cabinet will cause the change of air flow in the cabinet, which will affect the surface wind speed under the opening of the glass window of the fume hood. Hot air flow will increase the surface wind velocity below the opening of the glass window and reduce the wind speed on the upper half of the opening.

5.3.5 Since there is both countercurrent and eddy current above the fume hood and behind the regulating door, a large amount of air flow disturbance should be avoided in these two places. (As the following picture)



Equipment that produces dangerous substances in a ventilator and the correct placement of the equipment

5.4 operator's position and action

5.4.1 Fume hoods The operator should always be aware of the relative position of herself to the fume hood as the fume hoods collect contaminants, so operators must not extend their heads into the fume hood at any time while the fume hood is in progress This will cause contaminated air to flow through the operator's breathing zone;

5.4.2 When pollutants begin to form in the fume hood, the operator must slowly approach or leave the fume hood, as rapid movement will cause turbulence in the airflow near the front opening of the fume hood and contaminate the inside of the cabinet substance;

5.4.3 In front of the fume hood, the operator should also avoid rapid swings of arm and position.

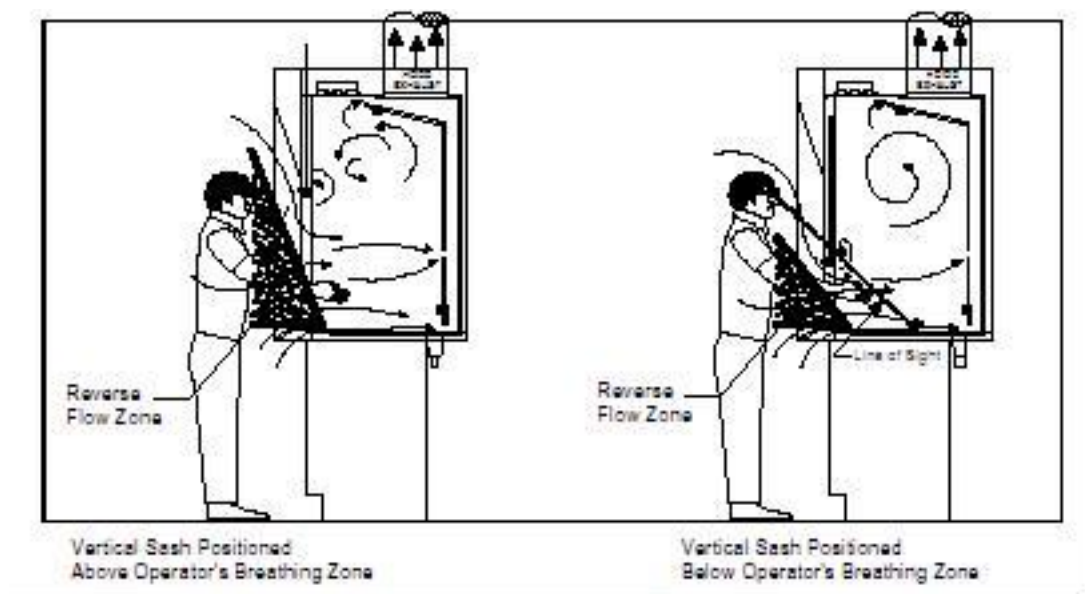
5.5 vertical sliding door the correct location

5.5.1 Place the vertical sliding door at the lowest position whenever necessary, except where necessary, to protect the operator and to reduce the need for adjusting the door handle to obstruct the operator's view. Ventilation control cabinet door only in the "state of adjustment" can be placed in the fully open position;

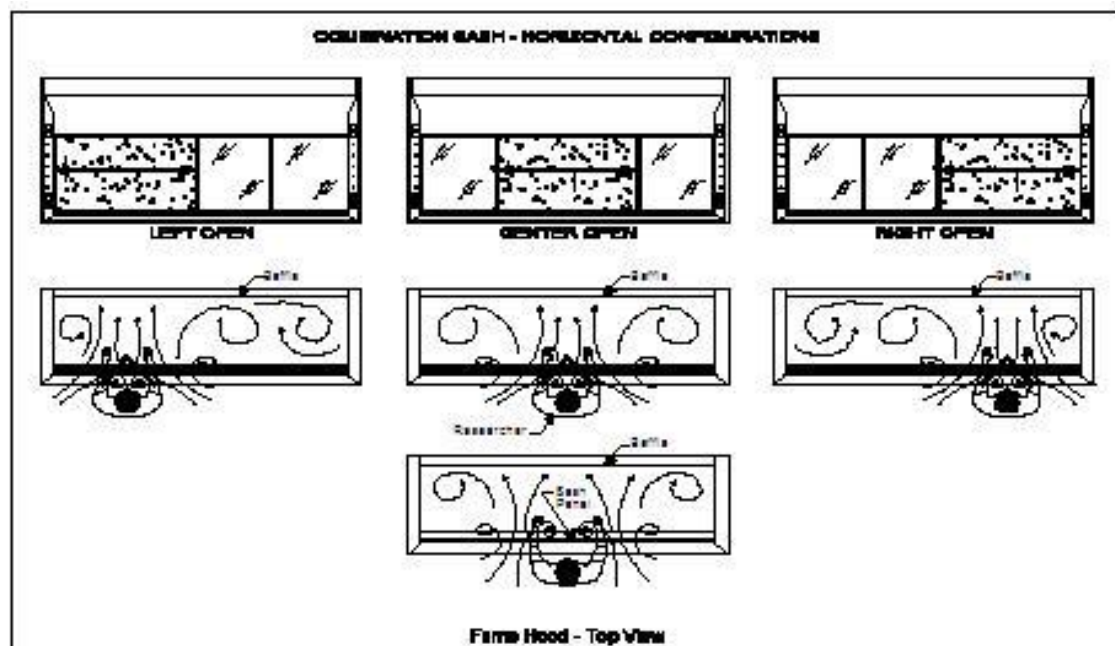
5.5.2 will adjust the door down to the operator breathing zone below its role in the establishment of a staff and the cabinet of the isolation barrier between the contaminants in order to protect the operator;

5.5.3 As air enters the leveling door opening, vortices are created along the vertical edges of the door, as can be seen with the smoke generator, which will extend rearwardly of the cabinet and will bring contaminants back to the

conditioning door. So no matter where the pollution generated in the cabinet, will accumulate in the regulation of the door;



Shows the airflow effect of placing the regulator door below the operator's breathing area



Air flow pattern of different level regulating gate structure

5.5.4 Although the control door may provide a protective barrier to the operator in case of accidents such as splashing or explosion in the cabinet, it must be kept in mind that the highest concentration of pollutants inside the control door. In general, you must avoid moving quickly in front of the door;

5.5.5 Avoid quickly removing items or equipment from the cabinet;

5.5.6 Do not use the fume hood should always keep the control door in the closed position.

5.6.1 Reduce personnel flow in the area near the fume hood

When someone walks in front of a fume hood, there is a large amount of cross-flow, so when a hazardous substance is creating in the enclosure, notify other lab personnel and limit the passage of people through the fume hood or diversion.

5.6.2 Make sure the fume hood is clean

After the fume hood has been treated with highly toxic, highly residual or radioactive material, the interior of the fume hood should be cleaned and decontaminated immediately.

The contaminated fume hood should be hung with a clear warning sign informing the maintenance staff that the plumbing system may be contaminated. In some cases, the sodium hypochlorite in the fume hood system has been treated for lack of proper cleaning procedures. When, and maintenance staff.

5.7 No fumes can be stored in the fume hood

Laboratory fume hoods should not be used to store chemicals in cabinets as a replacement chemical storage cabinets. Hoods may experience performance degradation due to excessive storage of items in the cabinets and curtailment of effective work space.

5.8 General

The following are the proper use of fume hood points to summarize:

5.8.1 Operators at any time when working in front of the fume hood and adjust the door to maintain a distance of 150 mm or more;

5.8.2 When removing items from the cabinet should be small;

5.8.3 When not working, make sure the glass window is in the off state;

5.8.4 Adjusting the deflector needs to be carried out under the guidance of the manufacturer;

5.8.5 pad the contaminants and equipment such as padded, with the ventilation counter panel is empty, so that air can pass from below;

5.8.6 When storing necessary items or equipment in the fume hood, they should be placed on the left and right side as far as possible and away from the source of pollution. Do not store items or equipment that may protrude out of the cabinet or obstruct the opening or closing of the window or obstruct the opening under the deflector;

5.8.7 Minimize drastic movements in the fume hood and in front of the door;

5.8.8 When working in front of a fume hood, personnel in the laboratory should be minimized. If there is frequent movement of persons in front of the fume hood, a large amount of cross-flow will result;

5.8.9 At any time during the experiment of the fume hood, the head of the person and the upper body must never extend into the fume hood.

6. Hood maintenance manual

6.1 As most of the test substances are toxic, there are potential safety hazards in all parts of the fume hood and their associated ventilation lines. Therefore, it is necessary to confirm that there are no risk factors before conducting any inspection and maintenance. Any Workers engaged in maintenance checks must wear protective equipment (such as acid-base gloves, protective glasses, protective masks, masks, etc.). Any dangerous situation found during the process should be immediately ruled out to carry out maintenance work.

6.2 In order to maintain the safety of operators and prolong the life of the fume hood, the exhaust system should be kept in working order

6.3 The following recommendations every 3 months for maintenance:

6.3.1 Use a neutral detergent to clean the various parts of the brush cabinet, including the glass window, liner and deflector inside and outside;

6.3.2 Lubrication Adjusting the door slide, cable and balance pulley.

6.4 The following points are recommended to be maintained every 6 months:

6.4.1 Check if the mechanical device is corroded or damaged;

6.4.2 Check the fan, motor, shaft and bearing are operating normally;

6.4.3 test each remote control device (faucet, gas g) can be normal operation;

6.4.4 Examine the exhaust outlet piping, especially the exhaust hood and pipeline connection part for leakage;

6.4.5 Inspect the inside of the hood, especially the elbows, for impurities.

6.5 when the inspection is not normal, should immediately replace the damaged or bad parts according to specifications;

6.6 Whenever a chemical liquid is found to have been spilled at any time, it should be thoroughly cleaned with a neutral detergent immediately;

6.7 Ventilation counter panel maintenance:

6.7.1 Although the fume hood can withstand high temperature, but it is not recommended for a long time with open flame, high temperature direct contact. When using the electric furnace, need to add asbestos pad or triangular bracket insulation;

6.7.2 Though the fume hood has good corrosion resistance to various chemicals, it may cause some impact if it is exposed for a long time. Therefore, it is recommended that chemicals should be removed as soon as possible if they are dropped on the surface.

6.8 fume hood common troubleshooting

6.8.1 When the fume hood exhaust efficiency decreases, please check the following points:

- a. Check whether there is a breach of air leakage at each connection of the working pipe;
- b. Check whether the fan is affected by the phase modulation or phase loss of the total power supply;
- c. Is the motor running in the reverse direction?

7 When the fume hood matches the fan does not work, please check the following points:

- a. Check the total power supply with or without three-phase power output;
- b. Check the inverter work is normal (including the inverter's function settings);
- c. Check inverter output for three-phase power output;
- d. Check the wiring along the line for any damage;
- e. Check if the motor coil resistance matches the indicated power.

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