

Orientation to Proper Use of Your
Kewaunee Dynamic Barrier
Low-Flow Fume Hood

Innovative Laboratories
U of MN – DEHS

Not-Your-Ordinary Fume Hood

- Combination (vertical- AND horizontal-sliding) sashes
- Lower capture velocities and overall exhaust (for energy savings)
- Insulated (for sound attenuation) vacuum pump cabinets (NOT for chemical storage)

HOOD 212

CAUTION

DYNAMIC BARRIER SUPREME AIR FUME HOOD
BEFORE USING THIS HOOD, READ KEWAUNEE'S
"RECOMMENDED WORK PRACTICES FOR LABORATORY FUME HOODS."

Failure to follow these procedures may result in overexposure to contaminants or other injury.

1. Do not use Perchloric Acid in this hood. Perchloric Acid may create an explosion hazard.
2. Prior to using hood, verify that the exhaust fan is operating and sufficient air is being exhausted from the hood.
3. Never put head into hood while contaminants are being generated.
4. Set up all apparatus and sources of contaminants at least 6" back from sash opening and in recessed portion of work surface.
5. Do not place electrical replacements or other sources of ignition in hood when flammables are present.
6. Use a safety shield if there is a possibility of a small explosion or runaway reaction. This hood is not designed for explosion protection.
7. Do not obstruct slots in rear baffle.
8. Do not remove bottom deflector vane. Use pass-throughs for all tubes and cords.
9. Place equipment with large flat surfaces parallel to hood face on legs 2" to 3" high.
10. While working at hood, keep sash lowered to the minimum opening required for access to the working area. During other times, keep sash closed.
11. Wear gloves and other protective clothing if skin contact with airborne contaminants is a hazard.

Other Important Operating Data:

- A. Remove all materials from hood which are not needed for the immediate work.
- B. Do not store chemicals in hood.
- C. Avoid making rapid movements while working at hood.
- D. Minimize personnel traffic past hood.
- E. Avoid creating air currents in the laboratory which affect the air flow patterns in the hood.
- F. Use good housekeeping in hood at all times. Clean up spills immediately.
- G. Test the performance of hood at least once every six months.
- H. In models with removable sashes, always replace sash before using hood.



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LABORATORY
FUME HOOD
64AF

Model: H50

Recommended Work Practices

1. Do not use Perchloric Acid in a hood not specifically designed for use with Perchloric Acid.
2. Prior to using hood, verify that the exhaust fan is operating and sufficient air is being exhausted from hood.
3. Never put head into hood while contaminants are being generated.
4. Set up all apparatus and sources of contaminants at least 6" back from sash opening and in recessed portion of worksurface.
5. Do not place electrical receptacles or other sources of ignition in hood when flammables are present.
6. Use a safety shield if there is a possibility of a small explosion or runaway reaction. This hood is not designed for explosion protection.
7. Do not obstruct slots in rear baffle.
8. Do not remove bottom deflector vane nor block off opening between the underside of the deflector vane and the work top.
9. Place equipment with large flat surfaces parallel to hood face on legs 2" to 3" high.
10. While working at hood, keep sash lowered to the minimum opening required for access to working area. During other times, keep sash closed.
11. Wear gloves and other protective clothing if skin contact with airborne contaminants is a hazard.

Additional Recommended Work Practices

- A. Remove all materials from hood which are not needed for the immediate work.
- B. Do not store chemicals in hood.
- C. Avoid making rapid movements while working at hood.
- D. Minimize personnel traffic past hood.
- E. Avoid creating air currents in the laboratory which affect the air flow patterns into hood.
- F. Use good housekeeping in hood at all times. Clean up spills immediately.
- G. Test the performance of hood at least once every six months.
- H. In models with removable sash, always replace sash before operating.

Combination Sashes

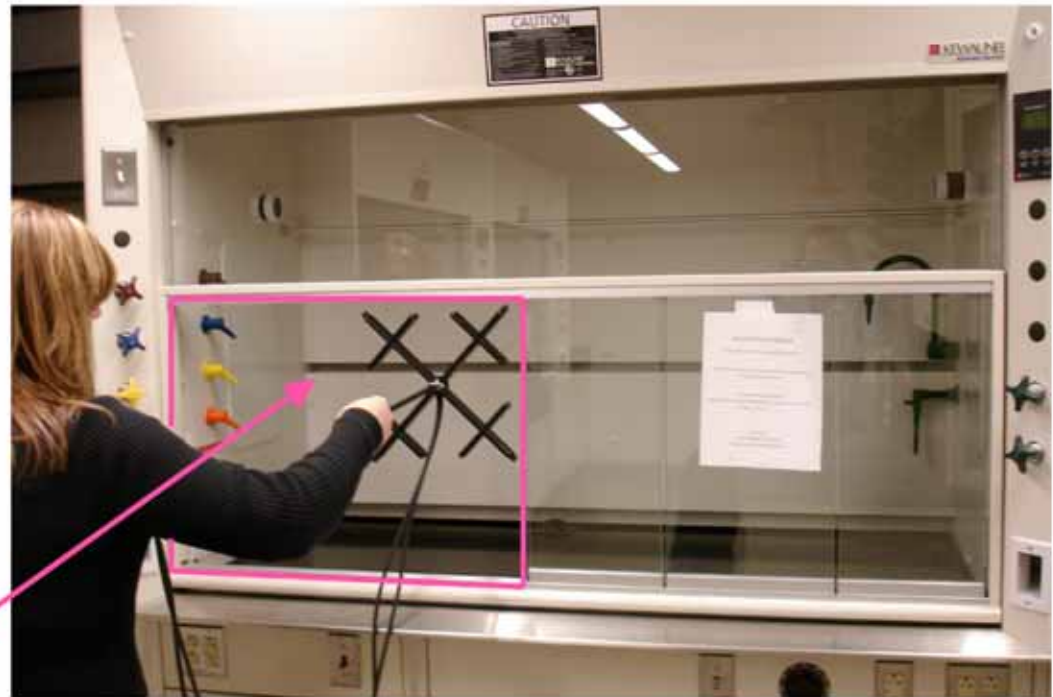
- Panels move horizontally as well as vertically
- Low flow alarm will activate if horizontal panels are removed, OR....
- if vertical sash is raised above the 10 inch sash locks, OR



- if the vertical sash is raised with horizontal panels also opened

Low Flow to Save Energy

- Lower capture velocity (80 fpm vs. 100 fpm on a standard hood)
- Smaller designated work opening
- 21" x 29" horizontal opening OR....



- 10" x 62" vertical opening

Sash Locks Horizontal

- Horizontal sash-lock orientation prevents vertical movement of sash
- Use lowest setting when working through horizontal opening



- Use 10" setting when horizontal panels are CLOSED and vertical sash is raised to 10"

Sash Locks Vertical

- Turn sash locks vertically to raise sash for equipment set-up



- Hood will go into low-flow alarm with sash in this configuration

Airflow Monitor



- Green indicates 'SAFE' airflow; Amber light indicates warning; Red indicates a face velocity failure and 'ALARM' will activate
- Press 'ENTER' to mute the alarm while you set up equipment in the hood (horn with slash icon appears)

Proper Working Sash Position

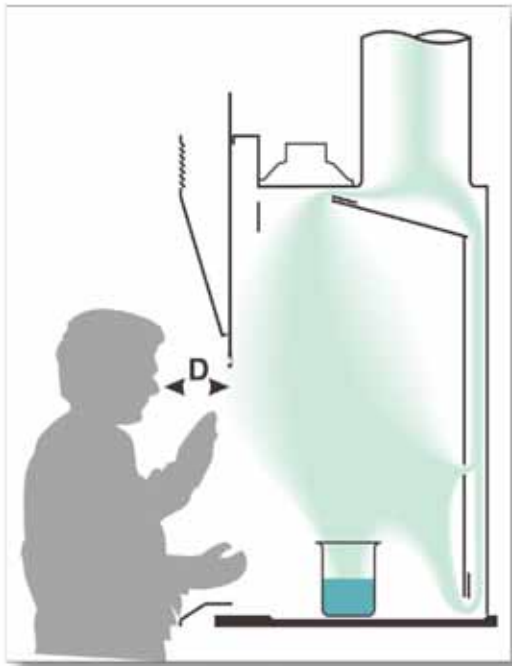
- Keep vertical sash at 10" or below while working
- Ensure horizontal panels are CLOSED when vertical sash is raised



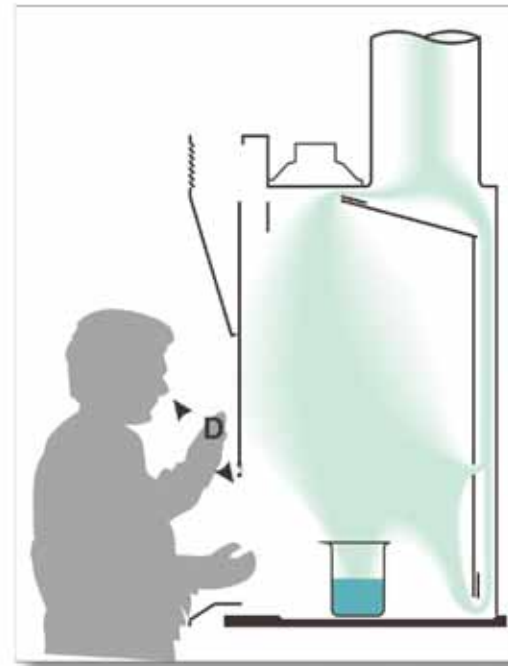
- Raising the vertical sash AND opening horizontal panels will cause low-flow alarm

Effect of lowering the sash

Effect of lowering the sash



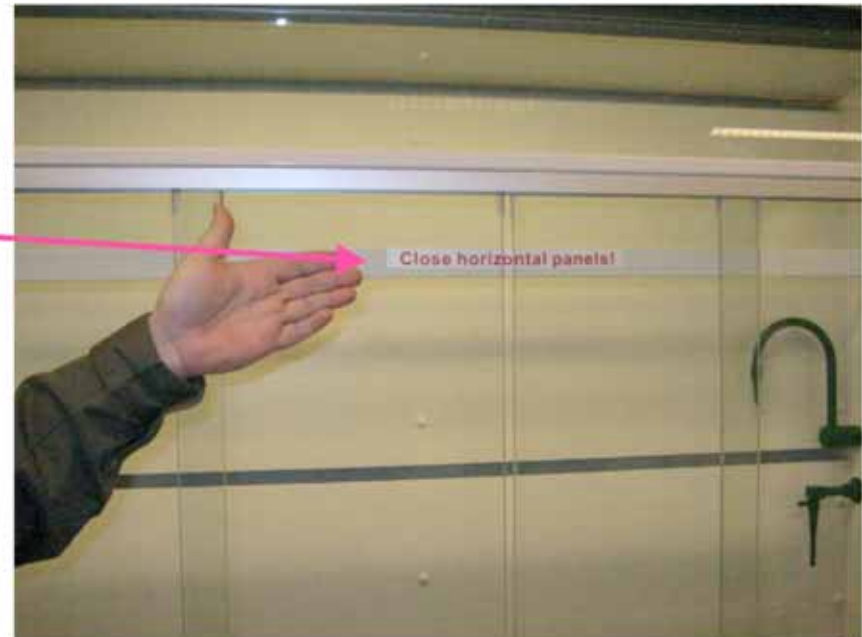
Not Recommended



Recommended

Using the Vertical-sliding Sash

- If you choose to work with the vertical sash raised, labels remind you to close the horizontal panels to ensure adequate capture velocity at the face opening.



Using Horizontal-sliding Sashes

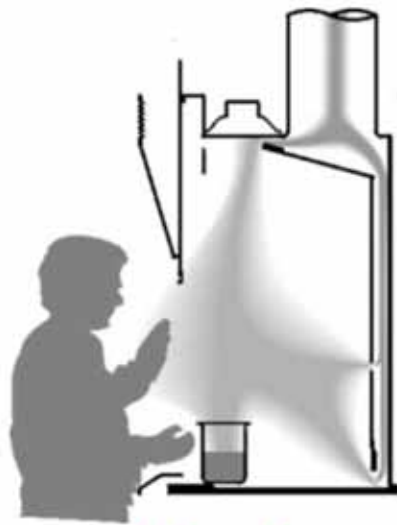
- Keep all panels in the tracks (don't remove!!)
- Ensure vertical sash is fully lowered
- Place one panel in front of your body as a safety shield



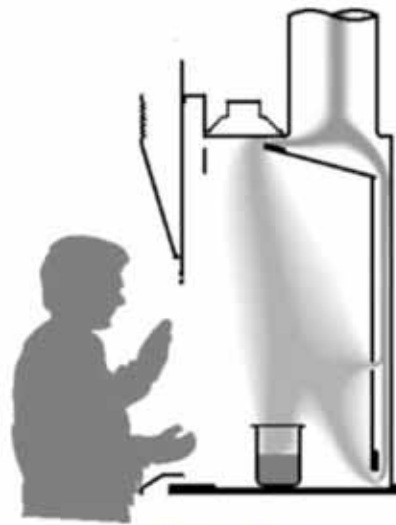
- Work at least 6" back from the face of the hood (inside dished spill-containment)

Proper Setup

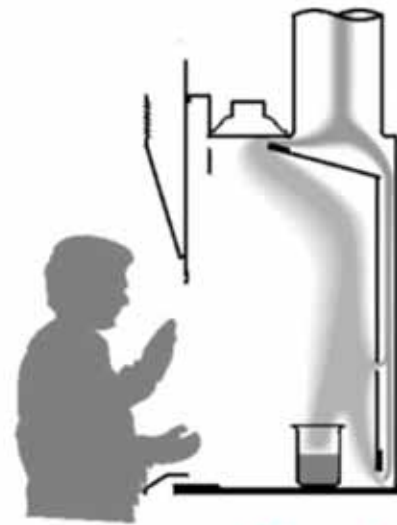
- Locate equipment as far to the rear as possible, without blocking the lower slot in the rear baffle.
- Never operate equipment closer than 6" behind the plane of the sash!



Bad



Better



Best

Chemical Storage Cabinets

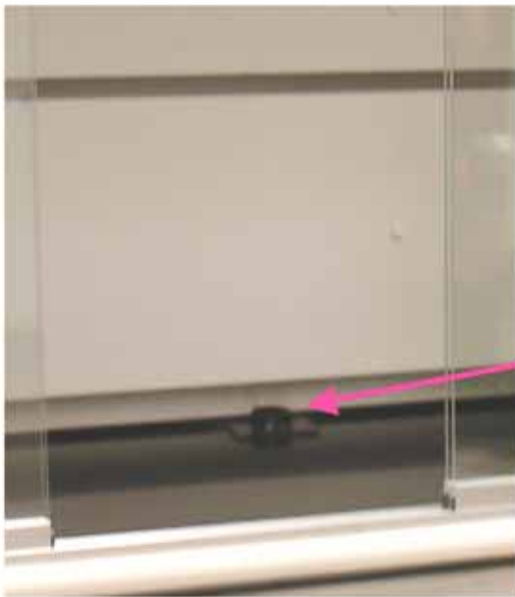
- Flammable cabinets have self-closing doors



- Ensure doors close completely to protect chemicals from fire

Chemical Storage Cabinets

- Flammable cabinets are vented to fume hood



- Do not block vent ports inside storage cabinet or fume hood

Vacuum Pump Cabinets

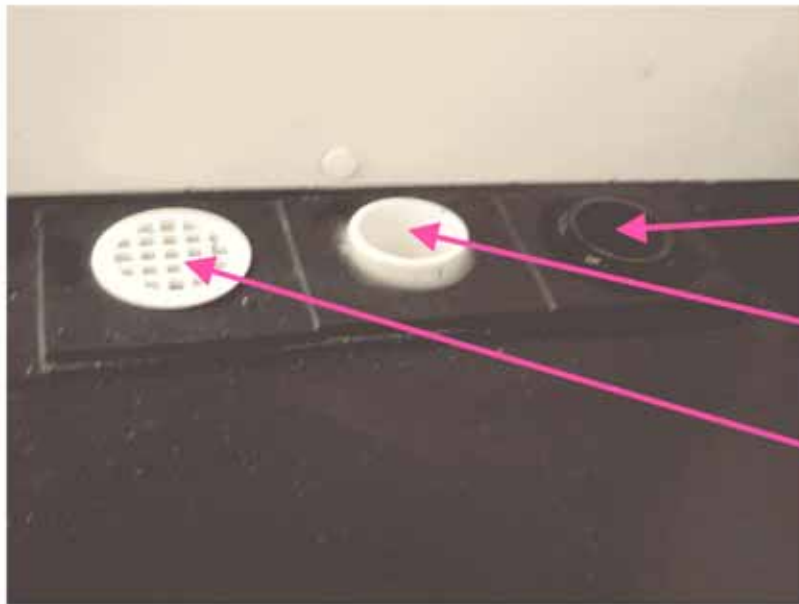
- Keep vacuum pumps in cabinets to reduce noise
- Use traps to prevent solvents from being drawn into pump.
- Exhaust pumps through tubing into fume hood in case traps fail.



Failure to follow these instructions may result in fume hood damage or destruction!!

Vacuum Pump Cabinets

- Like chemical cabinets, vacuum pump cabinets vent into the fume hood.



Ports for

- vacuum tubing,
- exhaust tubing; and
- Passive cabinet ventilation