Interceptor®
Biological Safety Cabinet
Class II B2
120 VAC

User & Operation Manual
INT-1400B & INT-1400B-1
INT-2000B & INT-2000B-1

KEWAUNEE®
...encouraging new discovery

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NOTICE:

The Interceptor® Biological Safety Cabinet offers many features to enhance performance, safety, and operator comfort.

Due to the nature of work performed in a Biological Safety Cabinet, it is very important to read the User and Operation Manual and Maintenance and Technical Manual and follow standard operating procedures to avoid infection and other potential injuries.

If this equipment is used in a manner not specified by the manufacturer in this manual, the protection provided by the equipment may be impaired.

Maintenance or service to an Interceptor® product must be done according to the instructions contained herein. Maintenance of this product must be carried out by technicians trained in the mechanical details of this unit.

⚠ WARNING
Class II B2 Biological Safety cabinets must be certified before initial use, after being moved, and after any service, including required annual recertification. Service must be performed by an NSF accredited certifier using NSF/ ANSI 49 criteria and should include, at minimum, the following test:
- **Downflow Velocity Profile Test**
- **Inflow Velocity Test**
- **Airflow Smoke Pattern Test**
- **HEPA Filter Leak Test**

CHAPTER 1

Product Description

Interceptor® Class II, B2, 120 VAC Biological Safety Cabinet manufactured by Kewaunee Scientific Corporation

Part Numbers:
- INT-1400B   INT-B1400 Biological Safety Cabinet
  - with   050200-1400 Manually Adjustable Stand

- INT-1400B-1   INT-B1400 Biological Safety Cabinet
  - with   050200-1400-E Electrically Adjustable Stand

- INT-2000B   INT-B2000 Biological Safety Cabinet
  - with   050200-2000 Manually Adjustable Stand

- INT-2000B-1   INT-B2000 Biological Safety Cabinet
  - with   050200-2000-E Electrically Adjustable Stand

Product comes standard with:
- Supply and exhaust HEPA filters
- Two (2) electrical ground fault protected duplex receptacles
- Base Stand (choice of electrically or manually adjustable height)
- Armrest

Optional Features:
- Base stands are available in both electrically and manually adjustable height versions. Interceptor® Biological Safety Cabinets are shipped with one or the other but both stands are available individually.
- Casters
- Footrest
- Additional Service Connections (up to four total)
- UV Light
- IV Pole

Technical Specifications for Interceptor®

Product Number	Width of Superstructure	Height of Superstructure	Depth of Superstructure	Fan Max HP	Fan and Light Amps / Power	Outlet Rating Amps / HZ	Exhaust CFM
INT -1400B 120 VAC	1400 mm 55.1"	1610 mm 63.4"	813 mm 32"	0.5	5.4 Amps 650 VA	20 Amps 60hz	755
INT- 2000B 120 VAC	2000 mm 78.7"	1610 mm 63.4"	813 mm 32"	0.0	10.9 Amps 1320 VA	20 Amps 60hz	1120

Table 1.1: Product Descriptions

NOTES:

The powered base stand, if ordered, will take an additional 8.6 amps at 120 VAC; 60 Hz.

The electrical outlets inside the Interceptor® are grounded. This is particularly important since all internal surfaces are stainless steel and conduct electricity. Under NO CIRCUMSTANCES use ungrounded plugs in these outlets. It is not recommended to use in excess of 1500 watts of power. Exterior power plugs must not be removed until unit fan and lights are turned off. The unit is to be disconnected from the main voltage by unplugging both plugs to remove power. For electrically-powered base stands, power for disconnect is also accomplished by plug removal from a waste-high or lower plug outlet.

The Interceptor® has one power cord. If power base is employed, a total of two power cords are used. When positioning the BSC, always connect BSC and stand power plugs in waste-high or floor-positioned outlets to facilitate disconnection in an emergency. Never block these outlets.

If UV option is on your BSC, be sure safety overrides are never immobilized! UV lamp should NEVER be on while sash is open. Blower must be disabled before UV is activated.

Based on the following UL definitions, the Interceptor® may be used in a room with pollution degree 1 or pollution degree 2 conditions:

Pollution Degree 1   No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.

Pollution Degree 2   Normally only non-conductive pollution occurs. Occasionally, a temporary conductivity caused by condensation must be expected.

Pollution Degree 3   Conductive pollution occurs, or dry, non-conductive pollution occurs which becomes conductive, which is expected.

Be aware that the dimensions of a Biological Safety Cabinet may exceed doorway limitations.

ⓘ **Attention**

Because of the weight and size of the Biological Safety Cabinet and the stand, it is recommended that they be moved and lifted only with help of a furniture dolly and/or floor jack. Cabinet and stand weights are listed in the table below:

Interceptor® Biological Safety Cabinet Weights

Part Number	Cabinet Stand		BioSafety Cabinet	
	Shipping Weight	Installed Weight	Shipping Weight	Installed Weight
INT-1400B	207 lbs	147 lbs	765 lbs	704 lbs
INT-2000B	255 lbs	168 lbs	1050 lbs	987 lbs

Table 1.2

ⓘ **Attention**

Do not lay the Biological Safety Cabinet on its side!

CHAPTER 2

Safety, Ergonomic, and Reliability Features

Kewaunee's Biological Safety Cabinet product line is engineered to provide the utmost in reliability; a product that is carefully designed with many enhancements to ensure the operator's safety.

- 10° Angled Sash for ease of viewing and superior ergonomic working conditions.

- Easy to read factory calibrated Control Monitor indicating average inflow velocity and filter loading.

- Touch Pad Control Panel on right facia of cabinet ergonomically designed for ease of access; ADA compliant.

- Audible and visual alarms alerting user of unsafe sash height. Sash should only be operated at 8" opening.

- Dual HEPA filters with minimum 99.99% efficiency at 0.3 microns.

- Angular front intake grill design for improved down flow capture and containment. Ergonomically designed for operator comfort.

- Classic double wall construction fully surrounds containment area with negative pressure.

- Forward positioning of service fittings for improved ergonomics.

- Reinforced nylon sash belt and sprocket system. Sash anti-racking design will eliminate binding or slipping.

- Optional bases with electrically or manually controled height adjustment. Range of adjustment for better ergonomics; ADA compliant.

- UV timer allows user to preset UV illumination cycle, effectively extending lamp life.

- NSF, UL, CUL Certified.

- Factory Inspected to exceed NSF requirements.

- T5 fluorescent light. Energy efficient with brighter illumination than T8 bulb.

- Right and left sidewall position of electrical outlets. Facilitates convenience of electric connection.

- Armrest. Promotes good working posture and reduces stress points.

- Reduced noise and vibration. Interceptor® design exceeds NSF standards for acceptable noise and vibration levels. Allows operator to work longer and more comfortably.

Tips

The following are recommended for control of ergonomic-related issues associated with the use of Biological Safety Cabinets:

- Use an ergonomically designed chair that provides adequate back support, adjustable seat angle, and height adjustability between 18 inches to 28 inches.

- Place anti-fatigue matting in areas for users who must stand for extended periods of time.

- Place working materials in recommended order to create 'flow' "clean to dirty".

- Take frequent mini-breaks to perform stretching.

- Proper posture should always be practiced. Use of footrest when working seated is recommended.

- Upper shoulders and upper arms should be relaxed; ensure chair seat height is aligned properly to provide no stress to upper shoulders or upper arms when forearms are resting on tabletop (wrist should always align with forearm – think straight, horizontal line).

Room Location

It is imperative that the Biological Safety Cabinet be placed in the correct location within the room. Ideally the location of the cabinet will be away from any type of room air turbulence and out of high traffic areas within the laboratory. Air turbulence can be created by a number of things including; but not limited to, air ducts, doorways, windows and foot traffic. Placing the cabinet in direct path of unstable air flows can cause contamination of the cabinet workspace and/or allow contaminates to escape from the cabinet into the room.

It is also important to keep the proper distance away from the ceiling when exhausting back into the room. The minimal acceptable height is 3 inches (8cm) from the ceiling. Less than 3 inches (8cm) clearance constricts the intake and alters the flow into the cabinet.

First and foremost always refer to your facilites Standard Operating Procedures (SOP). Always use best housekeeping practices. Never store items on top of the cabinet. Never remove the exhaust filter cover unless cabinet is being certified by a technician. If you have questions about cabinet location, please contact Kewaunee Scientific Corporation at www.kscmarketing@kewaunee.com or 704-873-7202.

Placement Requirements
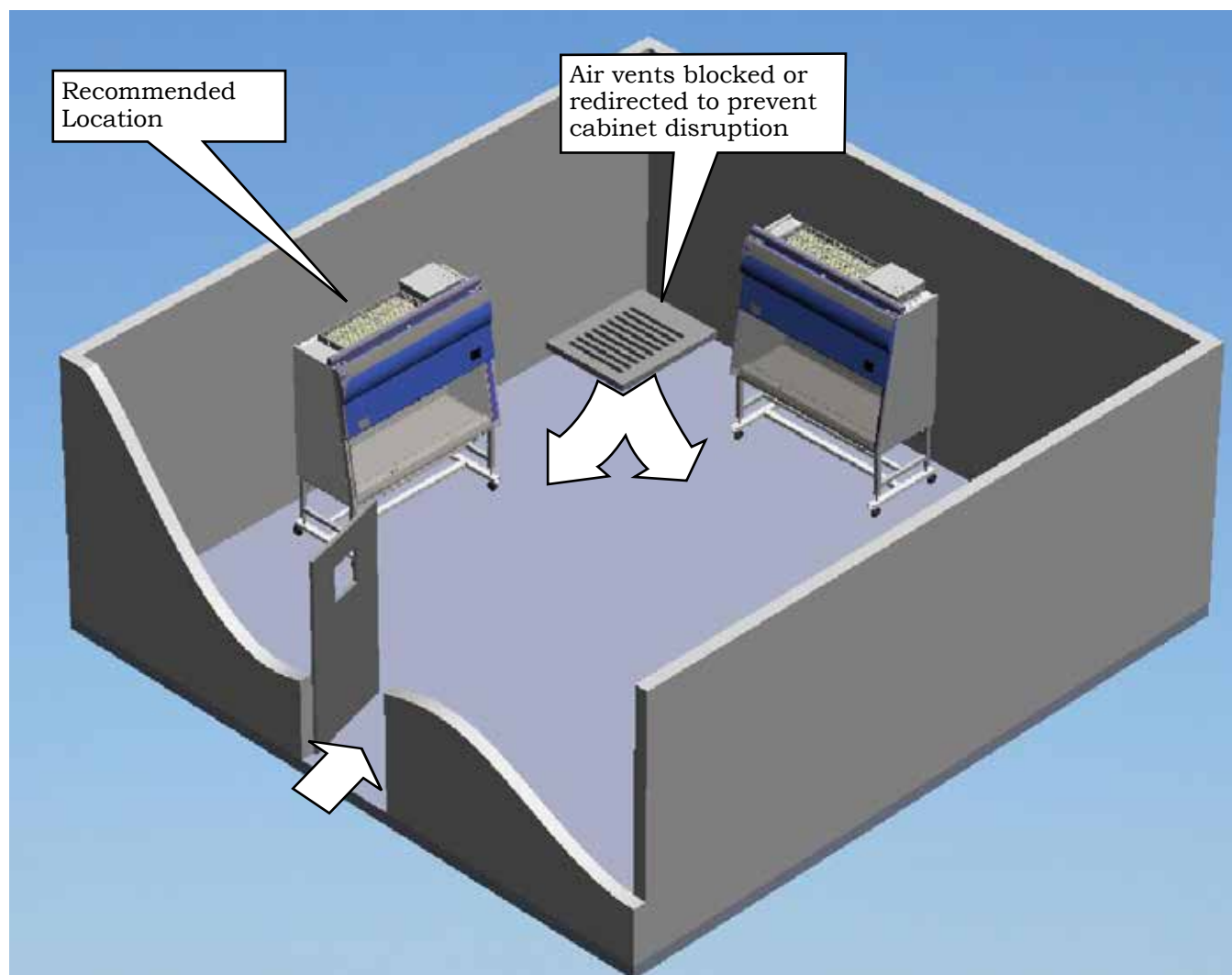
Figure 2.1: BSC Placement Example

Refer to NIH recommendations shown on the following pages from *Biological Safety Cabinet (BSC) Placement Requirements for New Buildings and Renovations*, National Institute of Health, Division of Technical Resources, Office of Research Facilities.

Recommended BSC Placement

Workplace Specification

DO Maintain an undisturbed space of **40"** around BSC
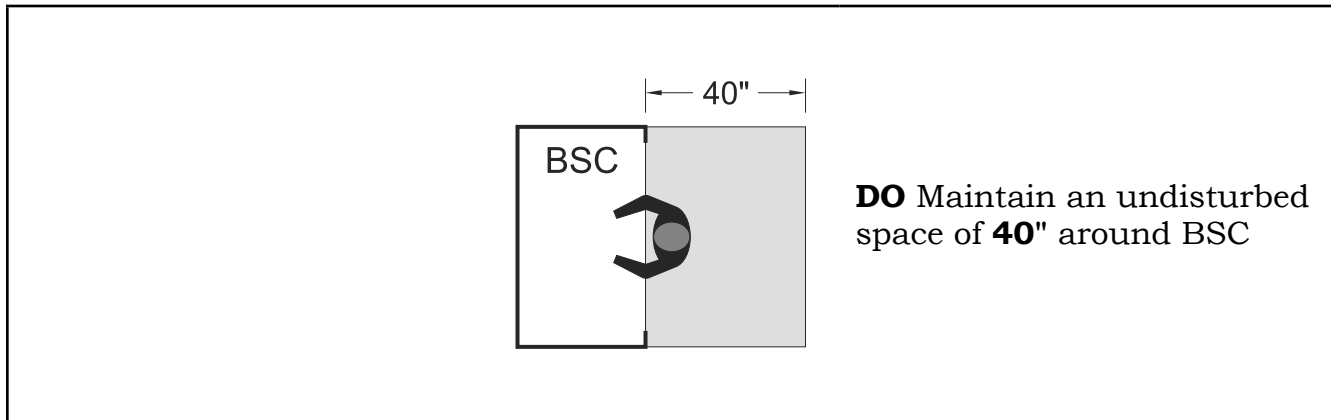
Figure 2.2

Distance to Adjacent Wall

DO Maintain a distance of **12"** to adjacent walls
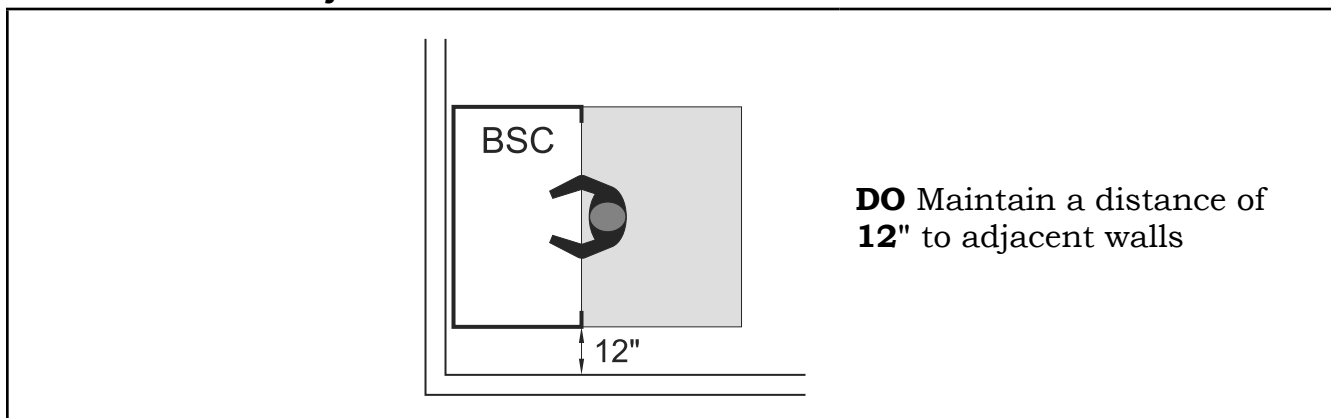
Figure 2.3

Distance to Opposing Wall

Do Place BSC at least **80"** from opposing wall
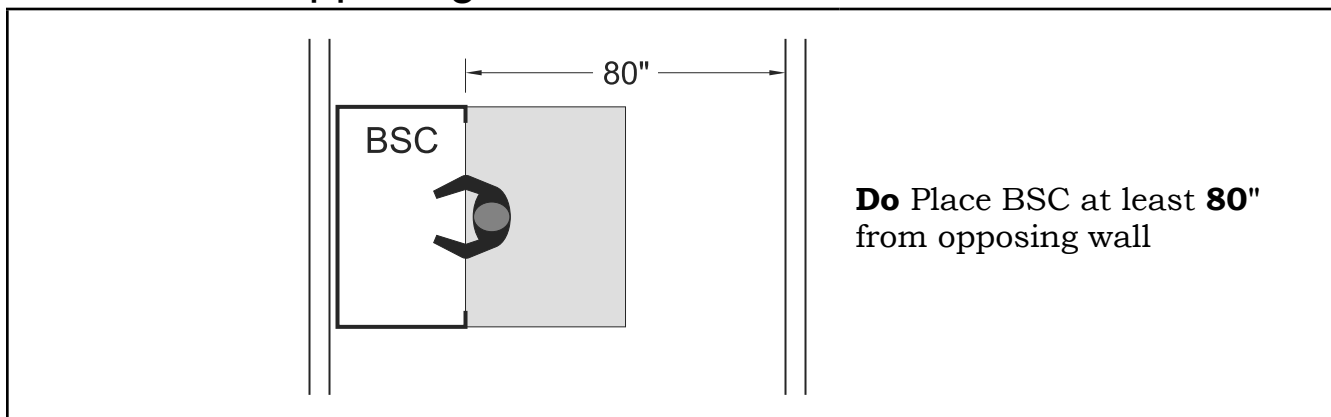
Figure 2.4

Recommended BSC Placement

Distance to Opposing Bench Top

DO Place BSC at least **60"** to opposing bench top or area with occasional traffic
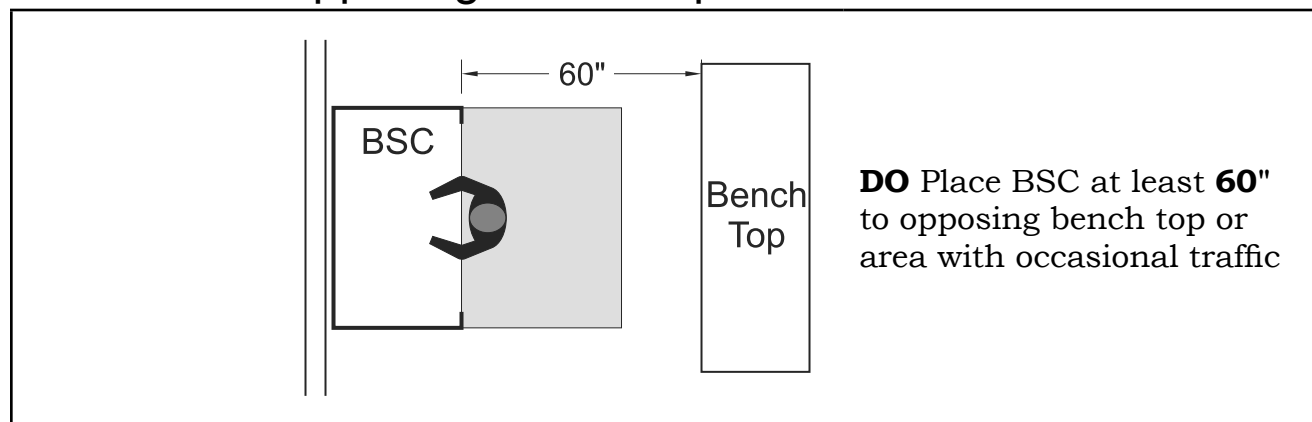
Figure 2.5

Distance to Adjacent Bench Top

DO Maintain a distance of **40"** to adjacent bench top
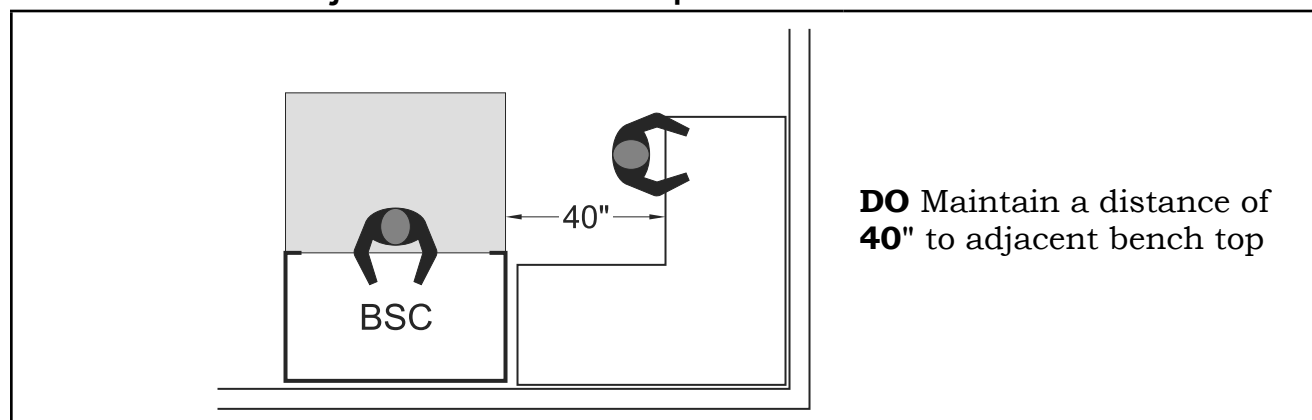
Figure 2.6

Distance to Columns

Do Maintain a distance of **12"** to columns to avoid disturbance of BSC airflow
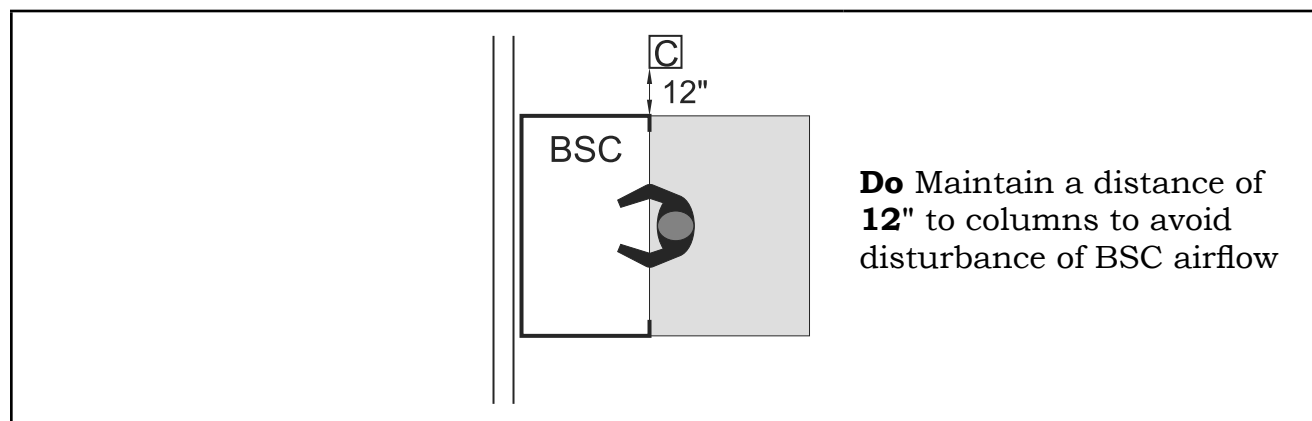
Figure 2.7

Recommended BSC Placement

Distance to Columns

> Traffic Route
>
> C
>
> 40"   12"
>
> BSC

NOTE: Columns can aid in defining traffic routes
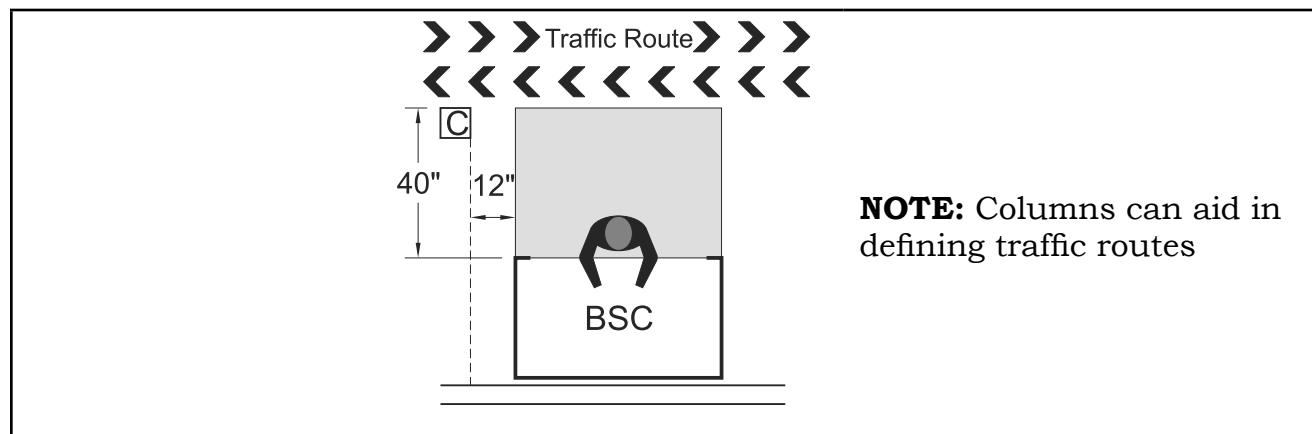
Figure 2.8

BSC Placement Along Opposing Walls

> 120"
>
> BSC   BSC

DO Maintain a distance of **120"** between opposing BSCs
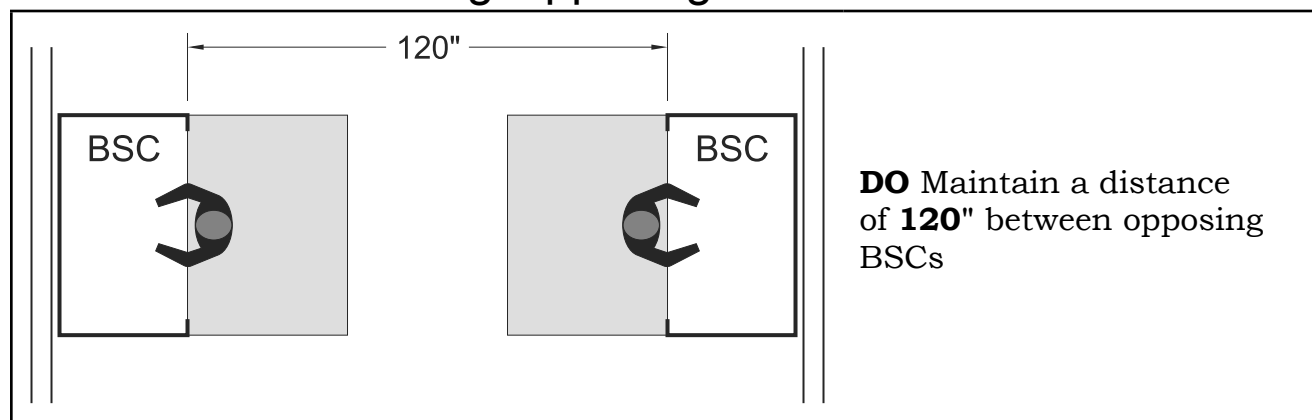
Figure 2.9

BSC Placement Along Same Wall

> BSC   40"   BSC

Do Maintain a distance of **40"** between BSCs along the same wall
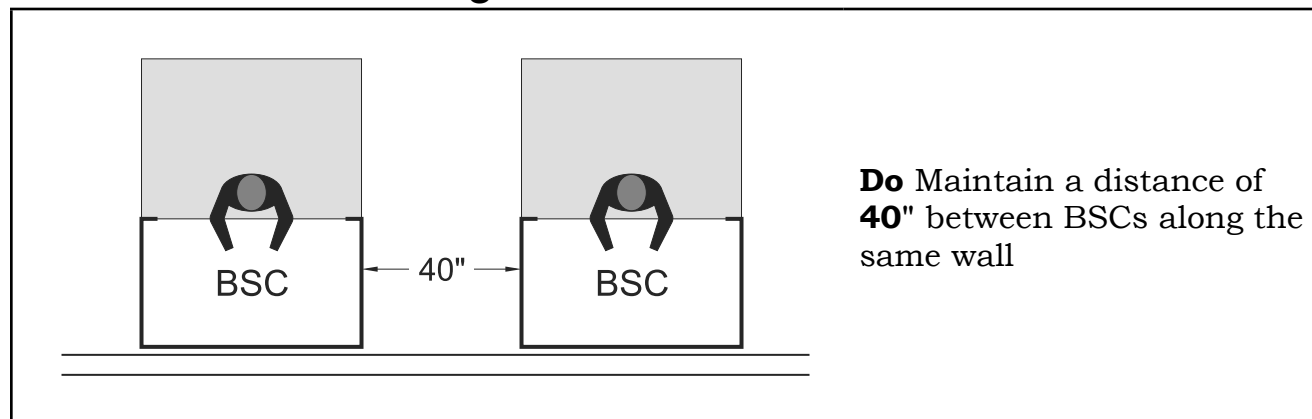
Figure 2.10

Recommended BSC Placement

BSC Placement Along Perpendicular Walls

DO Maintain a distance of **48"** between BSCs
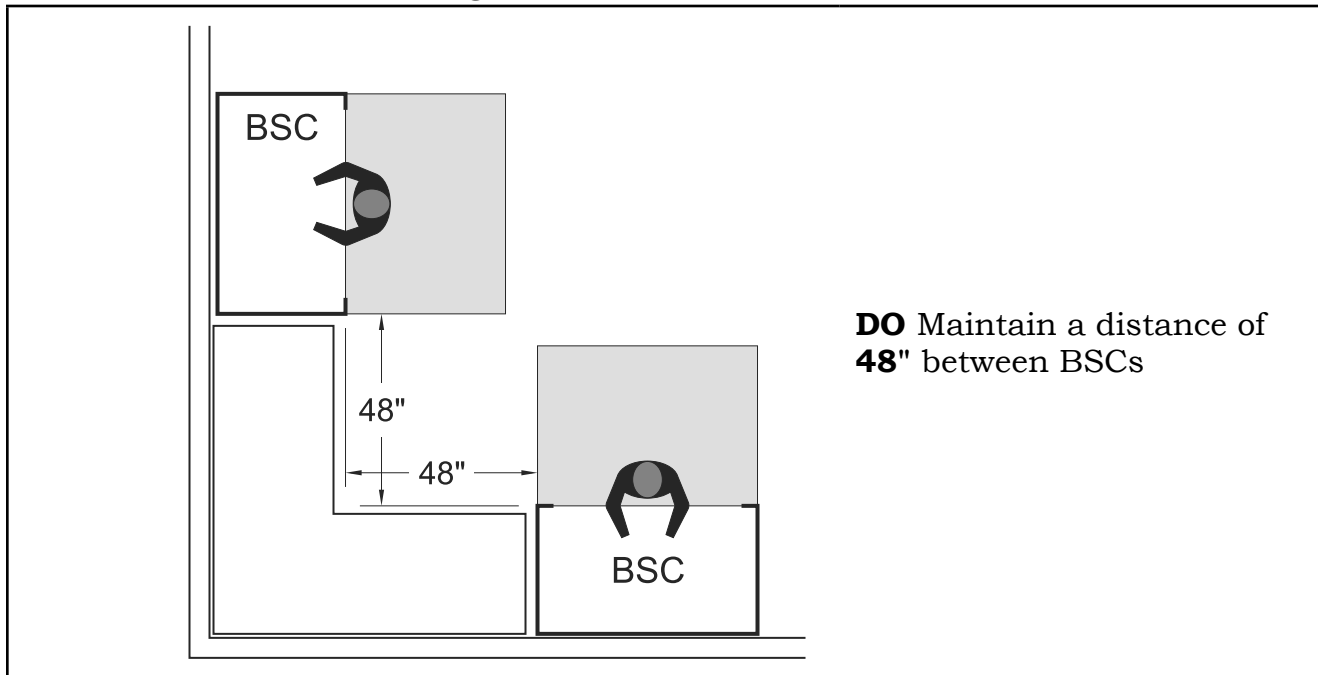
Figure 2.11

CHAPTER 3

Unpack and Inspection

When unpacking your new Interceptor® Biological Safety Cabinet, it is imperative that a thorough inspection be performed to ensure that there is no freight damage. If any damage is found at time of delivery, it should be noted with the carrier on paperwork. If damage is concealed owner must contact the freight carrier within 15 days of delivery per the United States Interstate Commerce Commission rules and regulations. Kewaunee Scientific Corporation and its dealers are not responsible for damages occurring during shipment.

Assembly and Setup

The Biological Safety Cabinet should be maneuvered, as close as possible, to its final location with the assistance of either a furniture dolly or floor jack. Attempts to move the unit by tilting it onto a hand truck greatly increases the risk or injury to the handler and damage to the Biological Safety Cabinet.

(i) Attention

A Class II, B2 Biological Safety Cabinet requires that it be connected to an external exhaust connection. Make sure that an exhaust system with enough capacity is available before beginning installation. Ductwork must be available for connection.

Miscellanious Parts Packed in Box Inside Cabinet

Qt	Part Number	Description	Qt	Part Number	Description
1	BSCUOB2-120	User & Operation Manual	3	050195-0A	Arm Rest Bracket
1	BSCMTB2-120	Maintenance & Technical Manual	2	F-7279-00	Arm Rest End Caps
1	050110-00	Drain Plate with 3/8" Female Fitting	10	F-3808-00	1/4"-20 Hex Nuts
1	F-7211-00	Type 316 SS Pipe Fitting	4	F-5294-00	5/16" Machine Bolt
1	F-7210-00	Type 316 SS Ball Valve	10	970406	5/16" Flat Washers
3	970442	#8x1/2" Self-drilling Screws			

Table 3.1

Parts Packed Loose Inside Cabinet

Qt	Part Number	Description
1	F-7280-(Length)	Aluminum Armrest Tube

Table 3.2

Step 1   Remove End Panel

Remove the five (5) Screws from each End Panel and remove the panels from the cabinet. Cut the straps that secure Biological Safety Cabinet to the pallet.

Strapping

End Panel
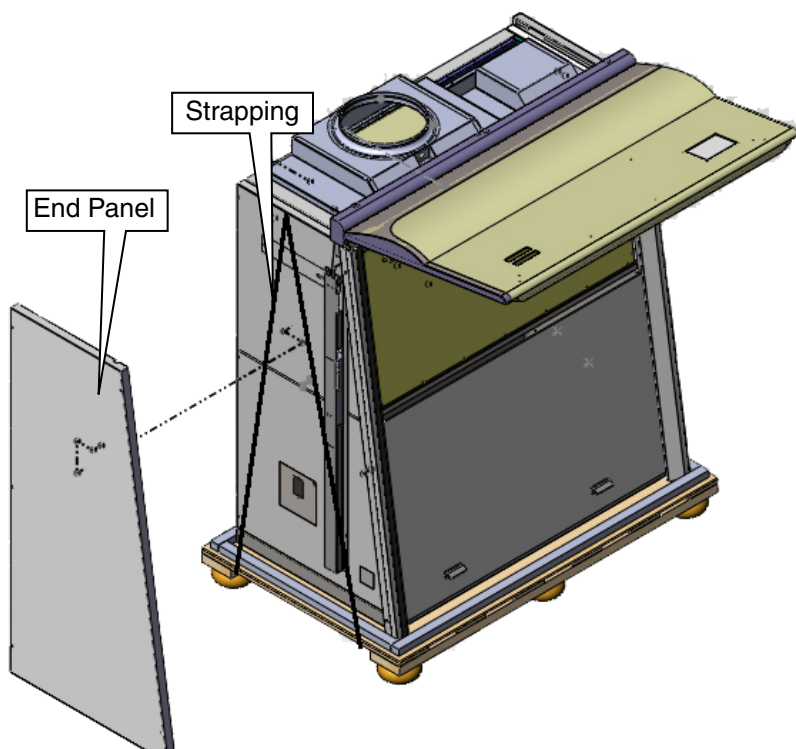
Figure 3.1 Biological Safety Cabinet on pallet

Step 2   Unsecure Weight

Remove the (2) Pan Head Screws and Nuts to remove the Angle that secures the Sash Weight on the left end of the BSC.

Nut

Pan Head Screws

Angle
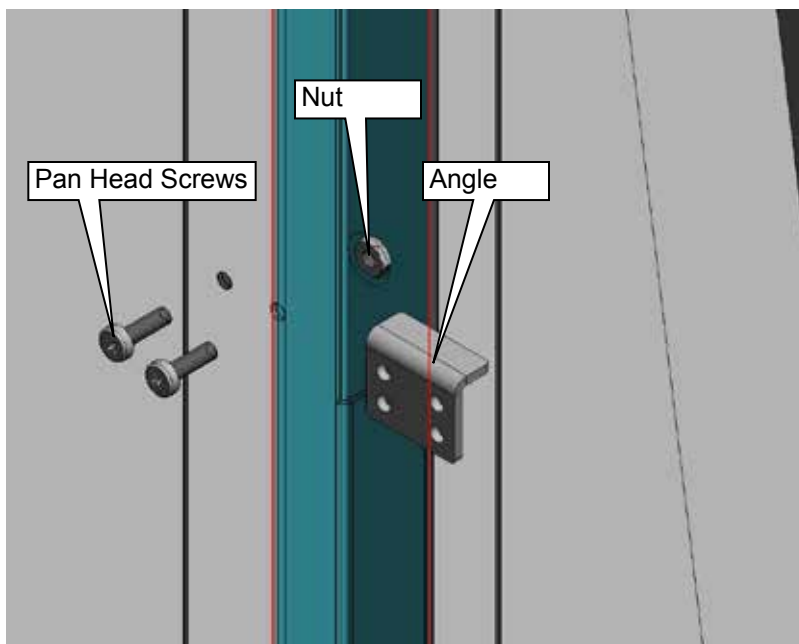
Figure 3.2 Sash Weight Lock-down

Step 3   Level Sash
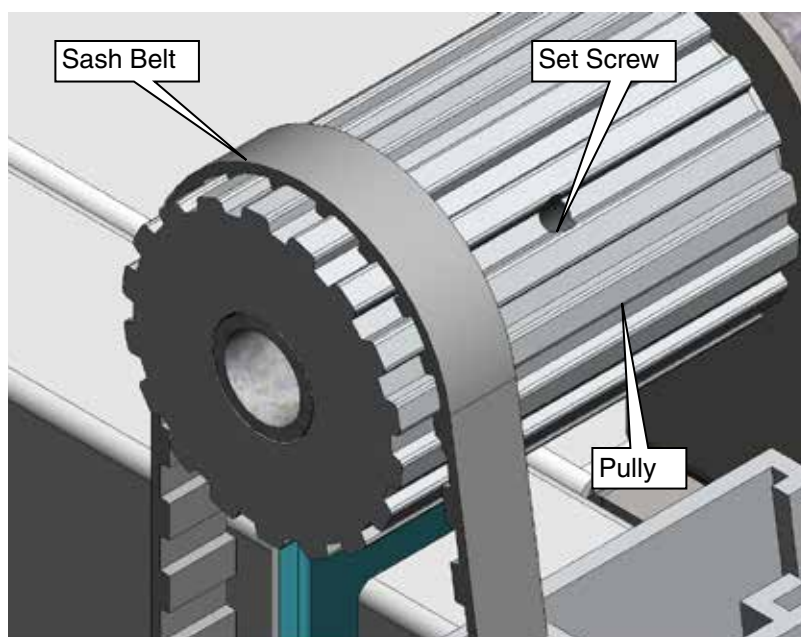
Ensure that the Sash Belt is engaged with the Pulley on both ends, ensuring sash looks level horizontally. If sash is not level, loosen Set Screw on one pulley, leaving the other pulley fixed, and slowly move the sash up and down until level.

Figure 3.3 Sash Belt Pully

Step 4   Set Cabinet

Setting the Kewaunee Biological Safety Cabinet will require a floor jack and multiple personnel. Lift the BSC with the floor jack and slide onto the stand, aligning the holes on the stand with the threaded connectors on the bottom frame of the cabinet. Insert (4) 5/16" Bolts with Washers thru Frame into the Cabinet and tighten securely.
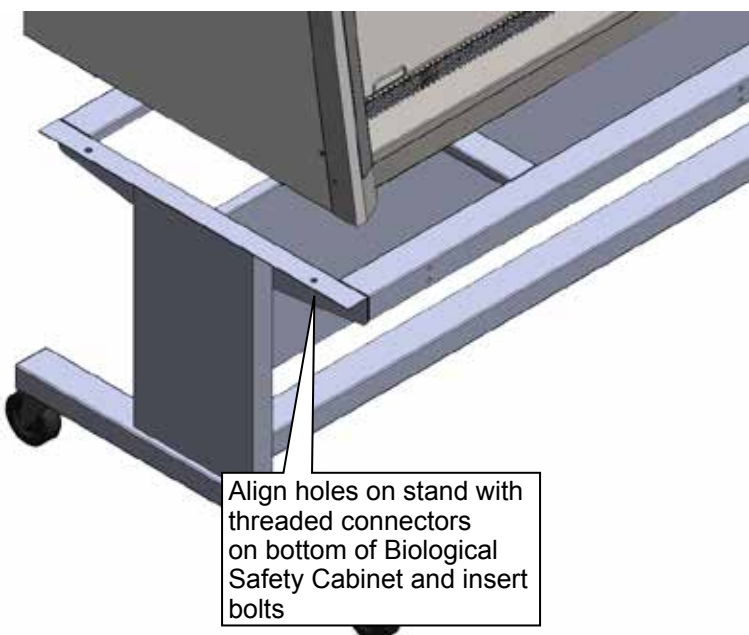
Figure 3.4 Attachment of Cabinet to Stand

Step 5   Attach Drain Valve
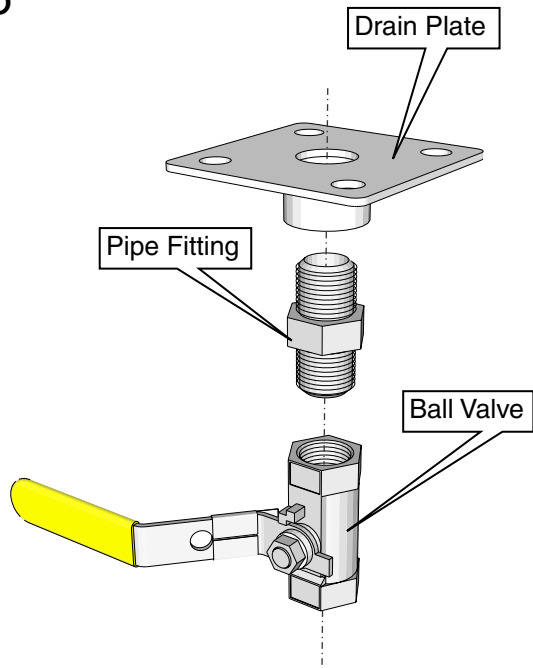
Figure 3.5 Drain Valve Parts
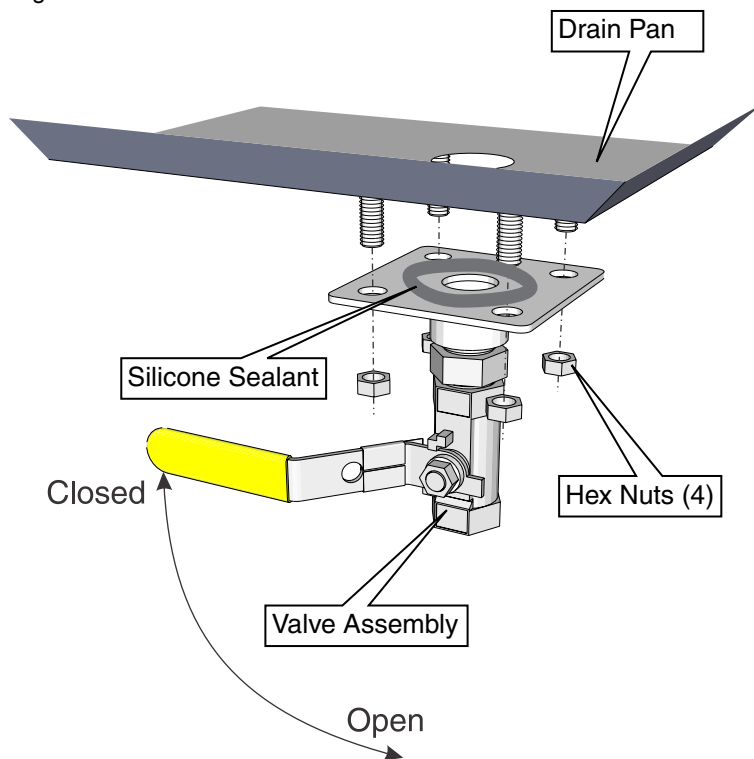
Figure 3.6 Drain Valve Assembly Installation

1. Remove the cabinet Worksurface by lifting the two Handles at the front of the Worksurface.

2. Remove and discard the Plug Button that seals the drain mounting hole (front right of pan) and clean the surface of any remaining sealant. (putty knife works well)

3. Assemble Drain Valve Assembly as shown in Figure 3.5 using plumbers tape.

4. Apply a light bead of silicone sealant to the mounting surface of the Drain Assembly and attach the assembly to the bottom of the cabinet using four (4) 1/4"-20 Hex Nuts as shown in Figure 3.6

5. Tighten nuts evenly until assembly is fully seated and sealant begins to seep from around all edges of the mounting plate.

6. Wipe away excess sealant from the area and verify that the drain hole is unobstructed and clean.

7. Verify that the drain valve is in the closed position.

8. Reinstall the Worksurface and allow the silicone sealant to cure for at least eight hours before exposing the Drain Pan to liquids.

ⓘ Attention
Drain Valve is not installed at factory to facilitate shipping. It is packed in the Loose Parts box inside the cabinet and must be properly installed before cabinet is placed into operation.

Step 6   Attach Armrest

End Cap

Armrest Tube

BSC Stand Top Rail

Armrest Bracket

Self-drilling Screw
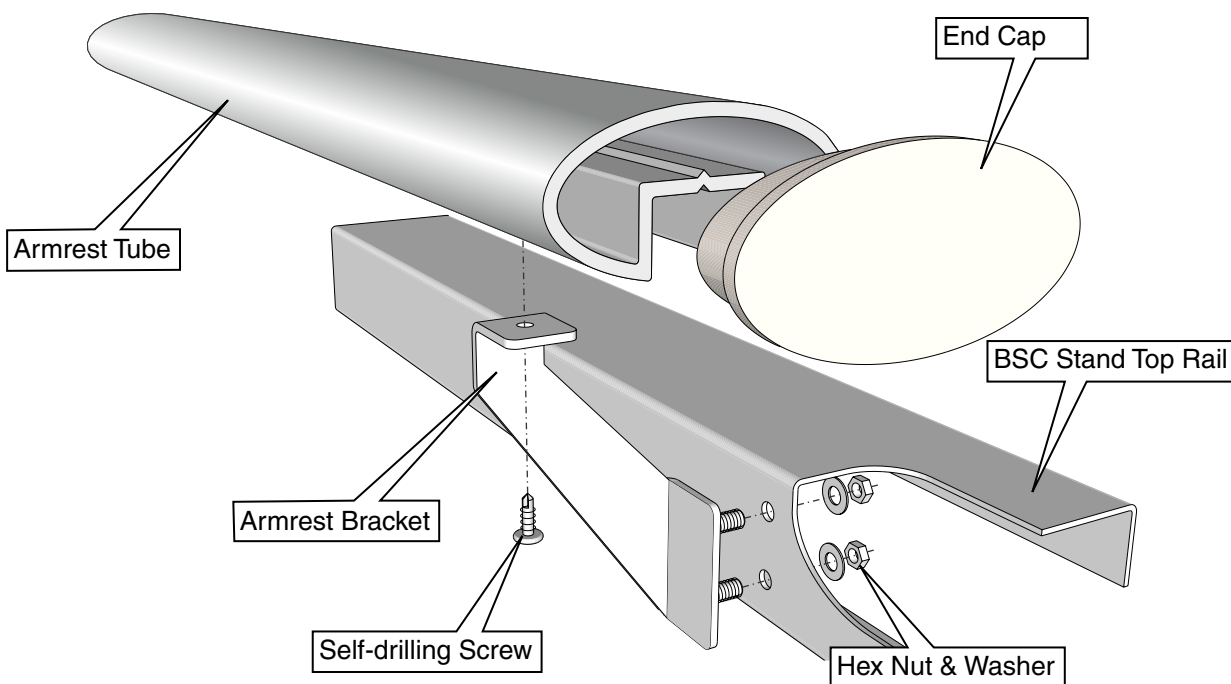
Hex Nut & Washer

Figure 3.7 Armrest Assembly

1. Attach the three (3) Armrest Bracket to the BSC Stand using the supplied $1/4$"-20 Hex Nuts and Washers.

2. Insert the armrest End Caps into each end of the Armrest Tube.

3. Place the Armrest Tube on the Armrest Brackets and center horizontally.

4. Attach the tube to the brackets using the supplied #8x $1/2$" Self-drilling Screws

Position Biological Safety Cabinet:

Position the Biological Safety Cabinet in an accessible location free of turbulence as described in Chapter 2. Be sure hood is not located under a make-up air diffuser of any kind. Also, avoid placing the unit next to any frequently used door or high traffic areas. Be sure a properly sized exhaust duct is located above the cabinet.

Service Feed Requirements

Mechanical connections, when required, should be made after the cabinet is in position. The fitting stub-outs are located on the lower front of the cabinet's right and left side panels. See Figure 3.8 and Figure 3.9 below.

1. The use of flammable gas services is not recommended.

2. Any service used should be at a line pressure of 75 psi or less.

3. Active high velocity gas jets inside the Biological Safety Cabinet should be avoided due to the turbulence they create.

4. Service lines should be connected by a licensed professional
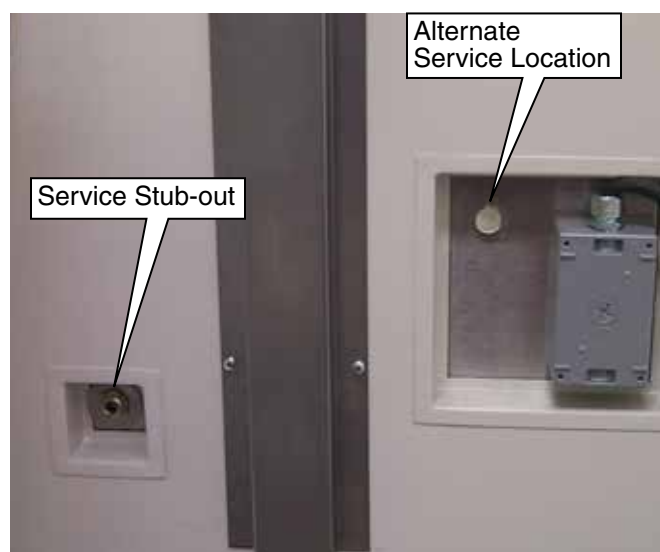
Figure 3.8 Fixture stub-outs behind removed end panel
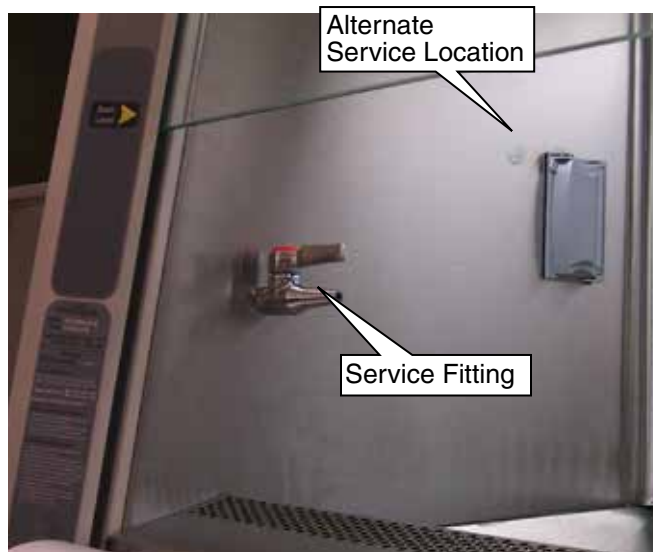
Figure 3.9 Mechanical Fixtures inside cabinet

Electrical Power Connection

The Interceptor® has one power cord which is hardwired to the cabinet. The cord should be plugged into a 120 VAC, 20 amp, grounded, electric outlet. Always use waste-high or floor-positioned outlets to facilitate disconnection in an emergency. The powered stand, if ordered, takes an additional 8.6 amps at 120 VAC off its own power cord and should also be plugged into a waste-high or floor-positioned outlet.

⚠ **WARNING**

The electrical outlets inside the Interceptor® are grounded. This is particularly important since all internal surfaces are stainless steel and conduct electricity. Under NO CIRCUMSTANCES use ungrounded plugs in these outlets.

As soon as the cabinet power cord is connected, you are ready to follow the "Startup" procedure on page 4.2. The electrical cord must not be unpluged until cabinet fan and lights are turned off. The cabinet should be disconnected from the main voltage by unplugging the cord to remove power. For electrically-powered lift stands, disconnection is also accomplished by unplugging the power cord.

Exhaust Connection

The Class II B2 Interceptor has a hard duct connection. The photo below shows how this connection is made to the building exhaust fan. The fan inside a B2 unit only provides internal downflow air. Exhaust is entirely accomplished with a building exhaust fan.

Figure 3.9 Class II B2 Interceptor Duct Connection

Exhaust requirements

The building ventilation system must be verified that it can handle the required exhaust volumes of the cabinet before connection.

Size of Biological Safety Cabinet	Biological Safety Cabinet Exhaust CFM
1400mm	755
2000mm	1120

Table 3.3

⚠ WARNING

A B2 Biological Safety Cabinet may become dysfunctional if the ventilation system fails. Check building ventilation system before using cabinet!

CHAPTER 4

Cabinet Operation

Theory of Operation

The Interceptor® is a Class II, B2 Biological Safety Cabinet. Its function is to isolate bacterial samples from cross-contamination and protect the user and the environment around the cabinet from being contaminated by biological or particulate material inside the cabinet.

It accomplishes this objective by bathing biological samples in HEPA filtered clean air while keeping contaminants contained by having a continuous substantial inflow of air through the 8" cabinet sash opening.

The BSC will safely operate at a temperature range of 55°F to 85°F (13°C - 29°C) and a relative humidity of 10% to 70%.

Class II, B2 Biological Safety Cabinets are made to safely contain bacterial samples that fall into the Biological Safety levels 1, 2, 3, and 4 if accompanied by level appropriate protection garments (see Protective Clothing on page 6.1). The following is a description of each level as published in the *CDC BMBL 5th edition:*

> "Biological Safety level 1 (BSL-1) is the basic level of protection and is appropriate for agents that are not known to cause disease in normal, healthy humans. Biological Safety level 2 (BSL-2) is appropriate for handling moderate-risk agents that cause human disease of varying severity by ingestion or through percutaneous or mucous membrane exposure. Biological Safety level 3 (BSL-3) is appropriate for agents with a known potential for aerosol transmission, for agents that may cause serious and potentially lethal infections and that are indigenous or exotic in origin. Exotic agents that pose a high individual risk of life-threatening disease by infectious aerosols and for which no treatment is available are restricted to high containment laboratories that meet biosaftey level 4 (BSL-4) standards."

Startup Procedure

Raise the vertical sash to the 8" operating line. Push the **Menu/OK** button on Control Panel Touch Pad (Figure 4.1) while at Startup/Home Screen (Figure 4.2), then press the **Fan** button once and the fan motor will start. The Interceptor® is now intercepting all dust, bacteria, and viral matter and delivering HEPA filtered, clean air to the Biological Safety Cabinet work zone. The air flow pattern is shown in Figure 4.3 on following page.

Figure 4.2 Monitor Startup/Home Screen

Figure 4.1 Control Panel Touch Pad

⚠ WARNING

Class II B2 Biological Safety cabinets must be certified before initial use, after being moved, and after any service, including required annual recertification. Service must be performed by an NSF accredited certifier using NSF/ ANSI 49 criteria and should include, at minimum, the following test:
- **Downflow Velocity Profile Test**
- **Inflow Velocity Test**
- **Airflow Smoke Pattern Test**
- **HEPA Filter Leak Test**

Interceptor Class II, B2 Air Flow Patterns

It is recommended that the cabinet fan be turned on and allowed to operate for several minutes removing any suspended particulates. Cabinet interior should then be wiped down with 70% ethanol (EtOH), or other approved disinfectant.
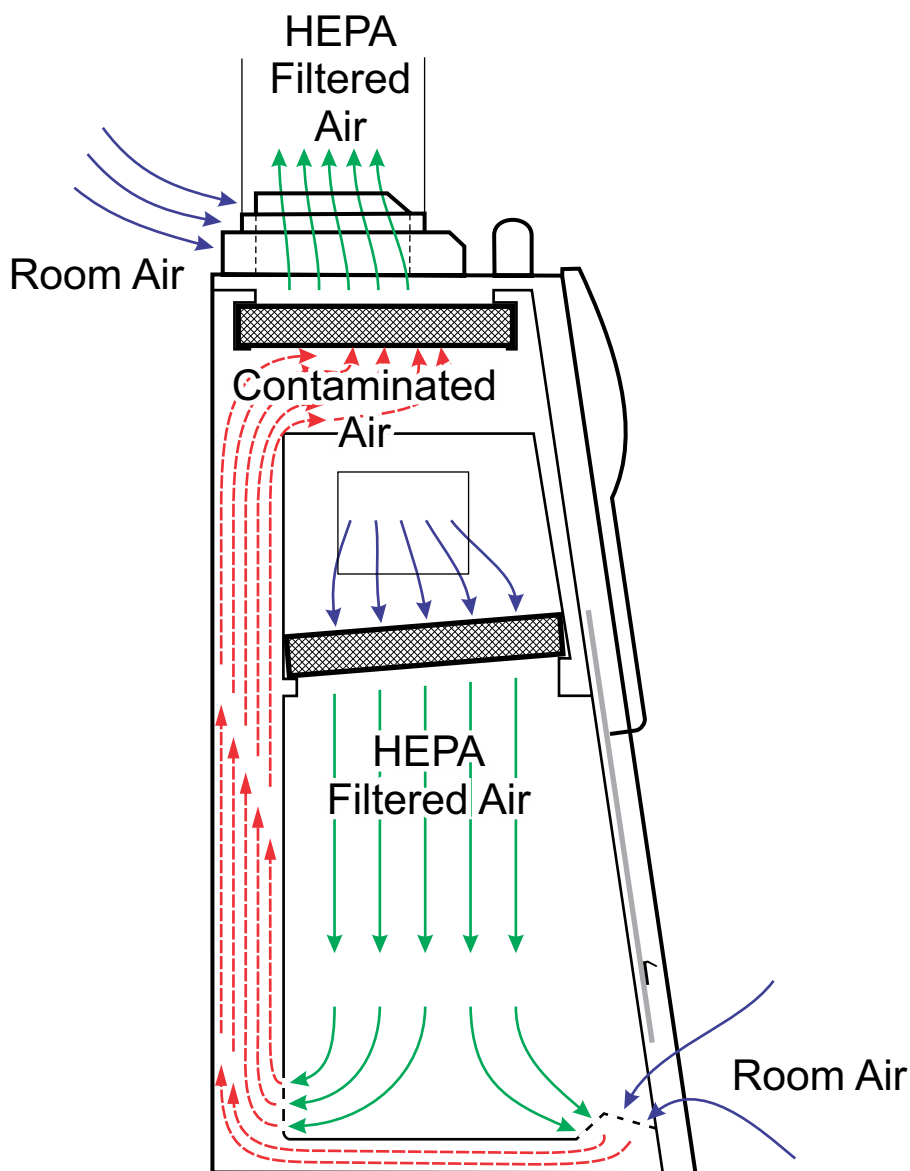
Figure 4.3 B2 Interceptor Biological Safety Cabinet Air Flow Patterns

Operating the Interceptor® BSC

When the Interceptor® cabinet is plugged in, the Control Monitor displays the Startup/Home Screen, Figure 4.4. Press the **Menu/OK** button on the Control Panel (Figure 4.5) to take you to the **Run Screen**. Pressing ▲ (up arrow button) displays the **Configuration Menu**; pressing ▼ (down arrow button) selects **Help**, which displays an instructional slide show.

Figure 4.4 Control Monitor — Startup/Home Screen

When at the Run Screen, Press the **Fan** button on the Control Panel (Figure 4.5) to begin the warm-up cycle. After 5 minutes, the Control Monitor should look like Figure 4.6. The fluorescent light is controled by the **Light** button and may be pressed anytime after the fan is started.

Figure 4.5 BSC Control Panel
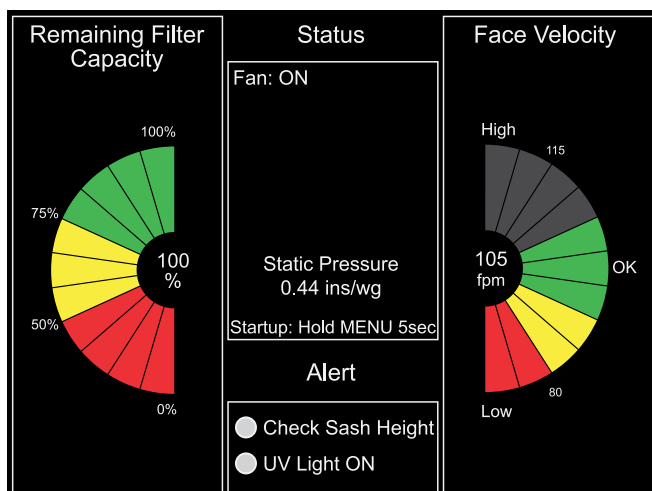
Figure 4.6 Control Monitor — Run Screen after warm-up

A brand new BSC is set for 100% filter capacity and 105 FPM. When face velocity drops below 100 FPM, trained personnel should make adjustments to the system.

Suggested or Recommended Workflow

Once skilled in your lab's Standard Operating Procedure (SOP), don appropriate protective garments and gear suitable to the level of safety required. Place items for use in the procedure in the left section of the work area. Place equipment in the center of the work area. Designate the right section of the BSC for waste to be disposed of at the procedure's end.

As you perform the procedure, waste materials will accumulate on the right side of the cabinet.

After the procedure is finished, remove waste materials, disinfect as is customary at your facility, and place materials away. Each time the unit is used, it should be left clean. Follow your SOP for shut down or night setback procedures.

Control Monitor

The Control Monitor Run Screen can alert you to several possible problems as you proceed:

1) Low inflow velocity (Face Velocity).

2) Filter system full (Remaining Filter Capacity)

3) Check Sash Height. Always set the sash at the 8" line when conducting experiments. This is the setting that has received NSF certification.

4) UV Light On
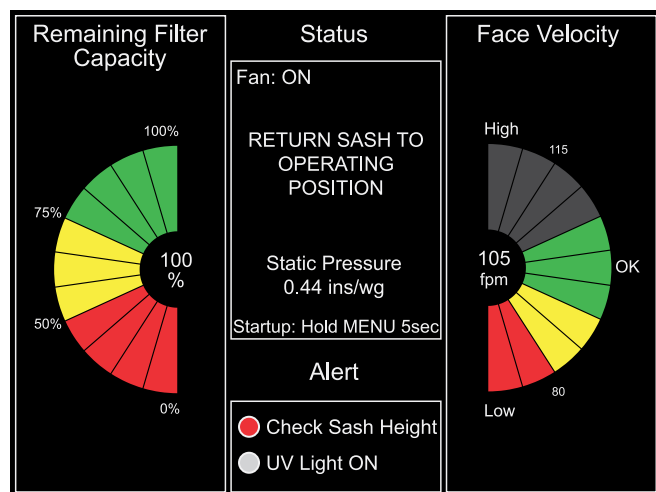
Figure 4.8 Control Monitor Run Screen — Warning – Sash not at 8"

UV Light

The UV germicidal disinfecting light may be used if one has been installed; simply turn off the fan, fully close the sash, and turn on the light using the **UV Light** button. Because UV rays are dangerous, the light will not operate unless the sash is fully closed. Glass stops UV radiation. If the UV light is not turned off before the sash is raised, the safety interlock will disable the UV light, but the fan will not operate until the UV light is turned off at the Control Panel.

⚠ WARNING

If the UV option is on your BSC, be sure safety overrides are never immobilized! UV light should NEVER be on while sash is open.

Control Monitor Messages and Meanings

Variable	Measurement Method	Importantance	Recommended Action
Airflow (optimal value is 105 FPM)	Since the inflow at any point of the 8" sash opening can vary widely, it is the average inflow (CFM/sq ft) that is actually measured. Since the "air in" through the 8" sash opening and blower intake exactly equals "air out", the exhaust port, the Interceptor® converts the FPM exhaust port velocity into FPM inflow velocity at the sash opening.	Proper inflow at 8" assures containment of contaminants within the cabinet. NSF 49 requires a minimum inflow velocity of 100 FPM.	The Run Screen shows airflow on the right pie graph. Any velocity between 100 FPM and 110 FPM is acceptable. If face velocity falls below 100 FPM, discontinue work and contact your Accredited Technician for remediation.
Filter	The static pressure differential between the negative and positive pressure is proportional to filter loading. It is measured by the Pressure Sensor and converted by the Contol Module to a filter loading percentage.	The Interceptor® exceeds NSF requirements for maximum static load.	An Accredited Technician may need to adjust fan speed to maintain face velocity or change filter.
Sash ≠ 8"	A micro switch interaction with the counterweight activates this warning.	The cabinet is designed to be used at a 8" sash opening. Any other opening is inappropriate. If the fan is on at any height other than 8", the **Check Sash Height** red warning light displays.	Return the sash to 8" or turn the unit off and close the sash.
UV Light (when installed)	When the sash is closed and the fan is off, the disinfecting UV Light may be activated using the UV Light button on the Control Panel Touch Pad.	Be sure UV Light Safety Overrides are never immobilized! UV light should NEVER be on while sash is open.	Close sash and turn fan off to reactivate UV.
UV Hours Remaining	Internal countdown timer. Setting of 2000 hours can be reset to manufacturers recommendations.	When the hood UV light is on, it is important to know how much life is remaining in the UV lamp before its UV output diminishes. The "hours remaining" notation will show in the middle column while this information screen is showing.	Replace UV lamp, even if it still glows, when '0' hours remaining is indicated.

Table 4.1

Touch Pad Control Functions

	Function Button	Operations
	Menu/OK (Select)	1. Access Menu 2. Enter Data 3. End routine
	▲	1. Increase programmed value 2. Access menu 3. Increment up on menu
	▼	1. Decrease programmed value 2. Access Instructional Video 3. Increment down on menu
	UV Light Button	Activates UV light ONLY when sash is closed and fan is off
	Alarm Mute	Mutes audible alarm
	Fan	Turns BSC air fan on and off
	Light	Turns work light on and off when the sash is open

Table 4.2

Monitor Run Screen

Pie Chart	Display Explanation
Remaining Filter Capacity	Shows remaining filter capacity
Face Velocity	Shows face velocity at 8" opening (100 FPM to 110 FPM is optimal)

Table 4.3
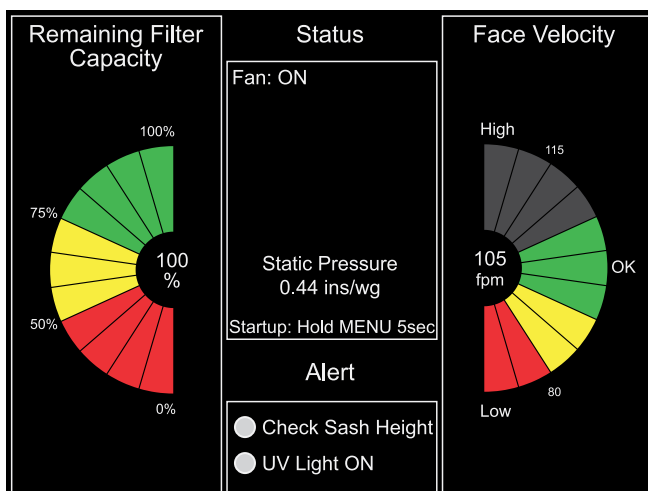
Figure 4.9 BSC Control Screen

Monitor Screen Displays

The Kewaunee Interceptor® Biological Safety Cabinet employs a sophisticated control system using a built in color VGA screen to display menus and options. The following pages illustrate the different states of the monitor with illustrations of the various screens and schematics of each of the menus. The schematic charts show all options for each menu item as well as the factory setting. Please note that it is recommened that menu items highlighted with an asterisk and shaded in grey be changed only by a factory authorized technician.

The menus and options are controlled by the BSC Touch Pad Control located at the bottom of the right facia post and shown on page 4.4, Figure 4.5.

Startup/Home Screen

displays when cabinet is plugged in

Press OK to Run
Press Up Arrow for Configuration
Press Down Arrow for Help

Figure 4.10

Monitor Screen Displays
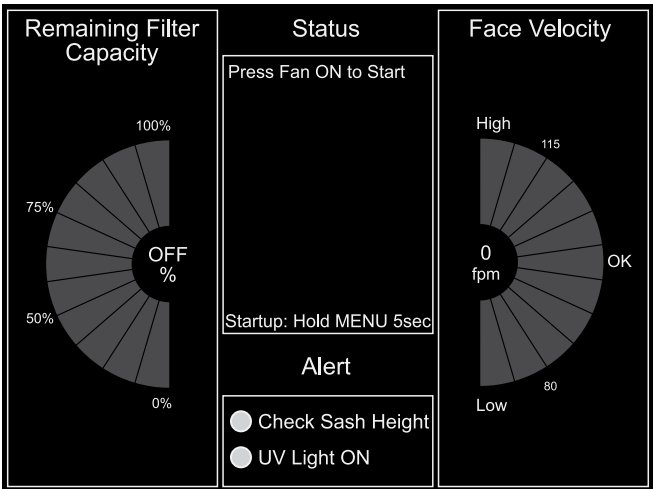
Figure 4.11

Run Screen
Fan OFF

displays when Fan is Off

Press Fan Switch to Start

Press Menu/OK for 5 seconds
to return to Startup Screen
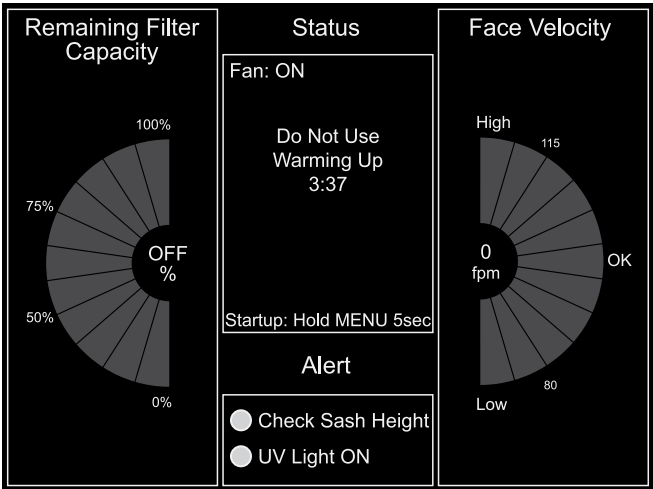
Figure 4.12

Run Screen
Fan Warmup

*displays when Fan is On
during warmup period*

Press Menu/OK for 5 seconds
to return to Startup Screen
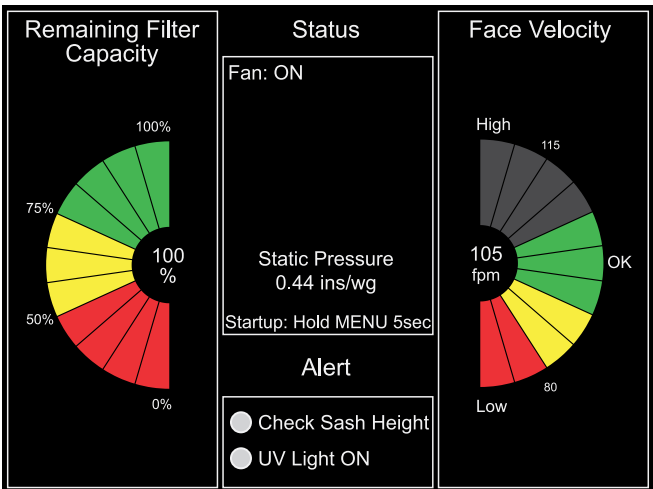
Figure 4.13

Run Screen
Fan On

*displays when Fan is On
after warm up period*

Press Menu/OK for 5 seconds
to return to Startup Screen

Monitor Screen Displays

Setup Menu:
> Configure
Calibration
Password
Exit
Use Up/Down to select option & Press OK
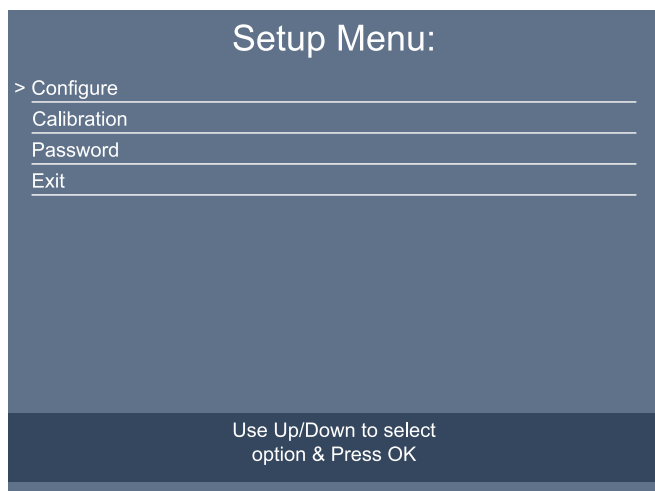
Figure 4.14

Configuration Setup Menu

Main Menu

Press Up or Down Arrow to select option, then Press OK

See Page 4.13

Configuration Menu:	
> Cal Config	Sensor Err Options
Input 1	Filter Options
Input 3	UV Lights Option
Relay Output 1	Exit
Relay Output 2	
Relay Output 3	
Pushbutton 1	
Pushbutton 2	
Pushbutton 3	
Sash High	
Modbus Settings	
Use Up/Down to select option & Press OK	
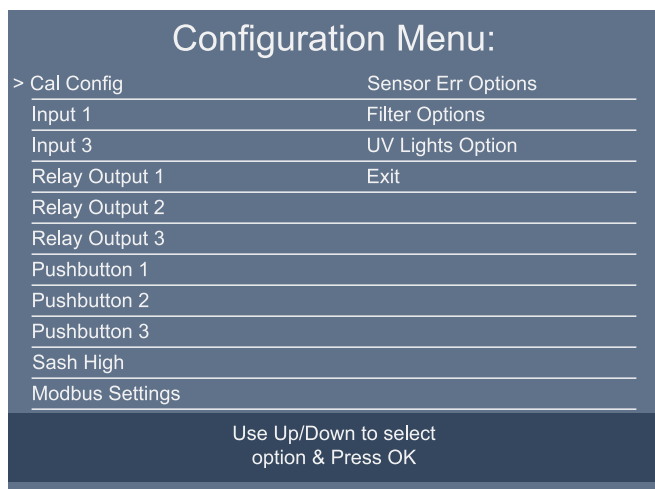
Figure 4.15

Configuration Menu

Use to set Calibration, Filter, and UV Light Options

Press Up or Down Arrow to select option, then Press OK

See Page 4.14

Calib Config Menu:	
> Pressure Calib Delay	Show Time Line
Low Air Alarm	Audible Alarm
Low Air Cutoff	Sensor Difference
Warning Air Alarm	Sensitivity
High Air Alarm	Fan Run Up Timer
Low Air Fluc	Exit
High Air Fluc	
Low High Diff	
Warning-Alarm Time	
Alarm-Warning Time	
Show Air Flow	
Use Up/Down to select option & Press OK	
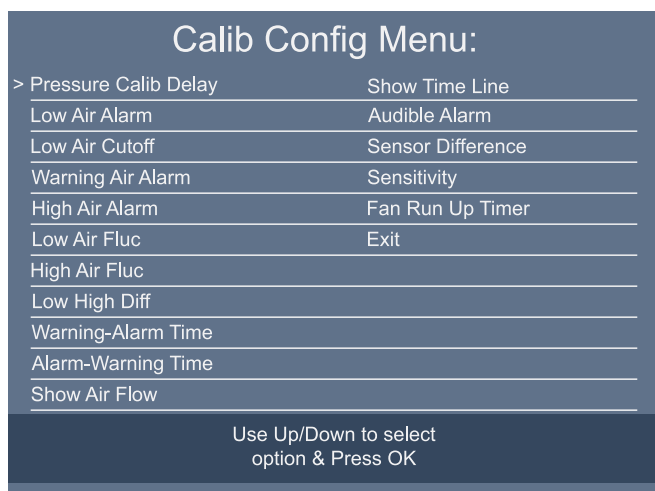
Figure 4.16

Calibration Configuration Menu

Use to set Calibration Options

Press Up or Down Arrow to select option, then Press OK

See Page 4.15

Monitor Screen Displays

Calibration

Enter calibration password	0000
Airflow sensor test	
Switch fan on	
Set fan voltage to 70% of run value	
Set sash to operating height and enter face velocity	
Low airflow calibration	
Set fan voltage to run value and enter face velocity	
High airflow calibration	
Turn fan off	
Pressure calibration	
Calibration completed	

Use Up/Down to select
option & Press OK
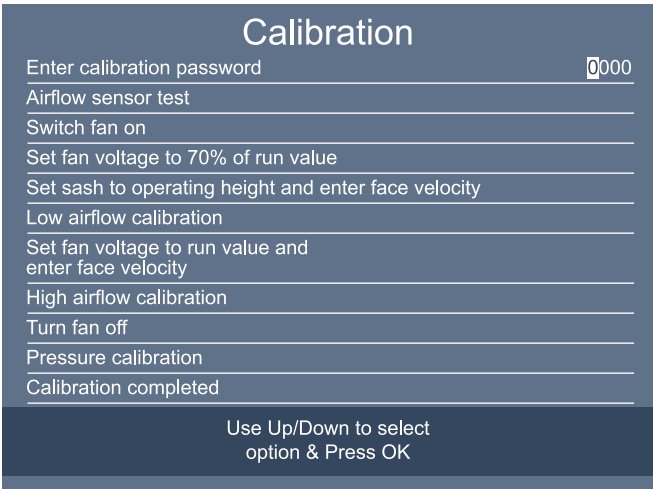
Figure 4.14

Calibration Screen

Use to Calibrate Cabinet at time of installation and after filter changes

Enter Password, then follow screen prompts

Note: To Be Performed by Certified Technician Only

see Page 4.20

Password Menu:

> Admin
Calibration
Configuration
Exit

Use Up/Down to select
option & Press OK
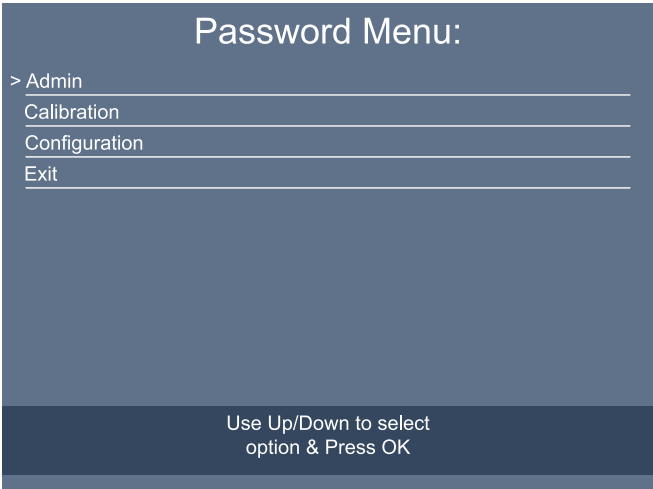
Figure 4.15

Password Menu

Use to change Passwords

Press Up or Down Arrow to select option, then Press OK

see Page 4.13

Enter Password:

0000

Use Up/Down to select
option & Press OK
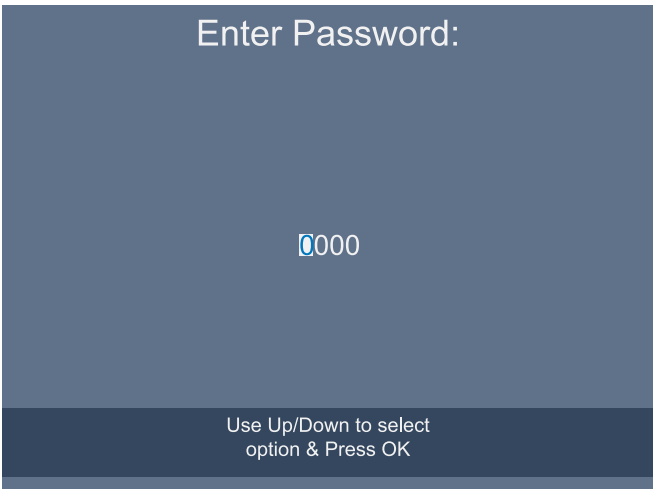
Figure 4.16

Password Screen

Used to enter Configure and Password Menus and change Passwords

Press Up or Down Arrow to select digit
Press OK to advance to next digit
Press OK with complete

Monitor Menus

Setup Menu Schematic

Menu Item

Configure	to Configuration Menu →	*See Page 4.14*
Calibration	to Calibration Steps →	*See Page 4.20*
Password	to Password Menu →	*See Page 4.13 below*
Exit	return to Startup Screen	

Table 4.4

Password Menu Schematic

	Input Screen Title	**Input Option**	*Factory Setting*
Password	Enter Password:	XXXX	*contact Kewaunee*

Menu Item	**Input Screen Title**	**Input Option**	*Factory Setting*
Admin	Enter Password:	XXXX	*contact Kewaunee*
	New Password:	XXXX	
	Confirm New Password:	XXXX	
Configure	New Password:	XXXX	*9999*
	Confirm New Password:	XXXX	
Calibration	New Password:	XXXX	*9999*
	Confirm New Password:	XXXX	
Exit	return to Setup Menu		

Table 4.5

Configuration Menu Schematic

	Input Screen Title	Input Option	Factory Setting
Password	Enter Password:	XXXX	9999

Menu Item	Input Screen Title	Input Option	Factory Setting	
Cal config menu	to Calibration Configuration Menu			see page 4.15
Input 1 *	Input 1 Activation:	open contact close contact	close contact	
Input 3 *	Input 3 Activation:	open contact close contact	close contact	
Relay Output 1 *	Relay 1 Activation:	open contact close contact	close contact	
Relay Output 2 *	Relay 2 Activation:	open contact close contact	close contact	
Relay Output 3 *	Relay 3 Activation:	open contact close contact	close contact	
Pushbutton 1 *	PB 1 Activation:	Not Enabled Enabled	Enabled	see page 4.16
Pushbutton 2 *	PB 2 Activation:	Not Enabled Enabled	Enabled	see page 4.17
Pushbutton 3 *	PB 3 Activation:	Not Enabled Enabled	Enabled	see page 4.17
Sash = 10 inches *	Sash High Alarm:	Repeat Timer Off Repeat Timer On	Repeat Timer On	
	if On → Sash High Timer:	Xmin	5min	
Modbus Settings *	to Modbus Settings			see page 4.18
Sensor Err Options *	to Sensor Err Options			see page 4.18
Filter Options	to Filter Menu			see page 4.19
UV Light Options	to UV Light Menu			see page 4.19
Exit	return to Setup Menu			

Table 4.6

* Should only be changed by Factory Authorized Technician

Configuration Menu > Calibration Configuration Menu Schematic

Menu Item	Input Screen Title	Input Option	Factory Setting
Pressure Calib Delay	Pressure Calibration Delay:	Xsec	5sec
Low Air Alarm	Low Air Alarm:	XXfpm	89fpm
Low Air Cutoff	Low Air Cutoff:	OFF ON	OFF
if ON	Low Air Cutoff:	XXfpm	
Warning Air Alarm	Warning Air Alarm:	XXfpm	99fpm
	Warning Air Reset:	Xfpm	4fpm
High Air Alarm	High Air Alarm:	OFF ON	OFF
if ON	High Air Alarm:	XXXfpm	150fpm
Low Air Fluc *	Low Air Fluc:	XX%	5%
High Air Fluc *	High Air Fluc:	XX%	10%
Low High Diff	Low High Air Diff:	XXfpm	30fpm
Warning-Alarm Time	Warning-Alarm Time:	Xsec	5sec
Alarm-Warning Time	Alarm-Warning Time:	Xsec	1sec
Show Air Flow	Show Airflow:	OFF ON	Inactive For future use
Show Time Line	Show Time Line:	OFF ON	Inactive For future use
Audible Alarm	Audible Alarm:	Not Enabled Enabled	Enabled
Sensor Difference	Sensor Difference:	XX%	10%
Sensitivity	Sensitivity:	XX%	100%
Fan Run Up Timer	Fan Run Up Timer Duration:	Xmin	5min
Exit	*return to Configuration Menu*		

Table 4.7

Configuration Menu > Pushbutton 1 Options Schematic

Menu Item		Input Screen Title	Input Option	*Factory Setting*
Select O/P Relay *		PB 1 Relay:	None Output 1 Output 2 Output 3	*Output 1*
Interlock *		PB 1 Interlock:	Not Active Off enable Pb 2 On enable Pb 2 On RU enable Pb2	*Not Active*
Run Up Timer *		PB 1 Run Up Timer:	Not Enabled Enabled	*Not Enabled*
	if Enabled	PB 1 Run Up Timer Relay:	None Output 1 Output 2 Output 3	
		PB 1 Run Up Time:	XXsec	
Run Down Timer *		PB 1 Run Down Timer:	Not Enabled Enabled	*Not Enabled*
	if Enabled	PB 1 Run Down Time:	XXsec	
Icon display *		PB 1 Icon:	Fan On/Off Set Back OR Not Enabled	*Fan On/Off*
Sticky Button *		PB 1 Sticky:	Not Enabled Enabled	*Not Enabled*
Exit		*return to Configuration Menu*		

Table 4.8

* Should only be changed by Factory Authorized Technician

Configuration Menu > Pushbutton 2 Options Schematic

Menu Item	Input Screen Title	Input Option	Factory Setting
Select O/P Relay *	PB 2 Relay:	None Output 1 Output 2 Output 3	Output 2
Icon display *	PB 2 Icon:	Not enabled Pump Lights Services UV Lights	UV Lights
Sticky Button *	PB 2 Sticky:	Not Enabled Enabled	Not Enabled
Exit	return to Configuration Menu		

Table 4.9

* Should only be changed by Factory Authorized Technician

Configuration Menu > Pushbutton 3 Options Schematic

Menu Item	Input Screen Title	Input Option	Factory Setting
Select O/P Relay *	PB 3 Relay:	None Output 1 Output 2 Output 3	Output 3
Icon display *	PB 3 Icon:	Not enabled Scrubber On/Off Purge On/Off VAV Min/Norm/Max VAV Min/Norm	Scrubber On/Off
Sticky Button *	PB 3 Sticky:	Not Enabled Enabled	Not Enabled
Exit	return to Configuration Menu		

Table 4.10

* Should only be changed by Factory Authorized Technician

Configuration Menu > Modbus Setting Schematic

Menu Item	Input Screen Title	Input Option	Factory Setting
Slave ID *	Slave ID:	X	1
Baud Rate *	Baud Rate:	1200 2400 4800 9600 14400 19200	9600
Parity Type *	Parity Type:	None Odd Even	None
Exit	return to Configuration Menu		

Table 4.11

* Should only be changed by Factory Authorized Technician

Configuration Menu > Sensor Err Options Schematic

Menu Item	Input Screen Title	Input Option	Factory Setting
Buzzer On/Off *	Sensor Error Buzzer:	Off On	On
Exit	return to Configuration Menu		

Table 4.12

* Should only be changed by Factory Authorized Technician

Configuration Menu > Filter Menu Schematic

Menu Item	Input Screen Title	Input Option	*Factory Setting*
Clean Pressure	Clean Pressure:	X.XX ins wg	*0.62 ins wg*
Dirty Pressure	Dirty Pressure:	X.XX ins wg	*1.86 ins wg*
Warning %	Filter Warning:	XX%	*49%*
Alarm %	Filter Alarm:	XX%	*30%*
Pressure Fluc	Pressure Fluc:	XX%	*25%*
Pressure Filter	Pressure Averaging Period:	Xsec	*1sec*
Low Pressure Alarm	Low Pressure Alarm:	Not Enabled Enabled	*Not Enabled*
Low Pressure Alarm Setpoint	Low Pressure Alarm Setpoint:	XX%	*30%*
Exit	*return to Configuration Menu*		

Table 4.13

Configuration Menu > UV Lights Menu Schematic

Menu Item	Input Screen Title	Input Option	*Factory Setting*
UV Lifetime	UV Lifetime:	XXXXhrs	*2000hrs*
Reset UV Hours	Confirm Reset	This cannot be undone!	
UV Time Duration	UV Timer Duration:	XXmin	*33min*
Exit	*return to Configuration Menu*		

Table 4.14

Calibration — *Should only be performed by Certified Technician*

Calibration step	possible error message	input screen/progress	status
Enter Password			XXXX
		Use arrow keys to set Press OK to go to next digit	
Airflow sensor test		checking	OK
	Sensor error	Press OK to repeat Up Arrow to Quit	
Switch Fan On		Press Fan Button	OK
		Press Fan Button	
Set fan voltage to 70% of run value			OK
		Adjust fan voltage Press OK to Continue	
Set sash to 10" and enter measured face velocity		XXfpm	OK
		Use arrow keys to set measured value Press OK to Continue	
Low airflow calibration		Calibrating, please wait	OK
	Deviation too high	Press OK to repeat Up Arrow to Quite	
Set fan voltage to run value and enter measured velocity		XXfpm	OK
	Increase face velocity	Use arrow keys to set desired value Press OK to Continue	
High airlow calibration		Calibrating please wait	OK
	High and Low samples too close Deviation too high	Press OK to repeat Up Arrow to Quit	
Turn Fan Off		Press Fan Button	OK
		Press Fan Button	
Pressure Calibration		Sampling pressure XX%...	OK
Calibration complete			OK

Table 4.15

CHAPTER 5

Care and Maintenance

This chapter details maintenance that can be undertaken by laboratory personnel, supervisors; and/or Accredited Technicians.

Access to Maintenance Areas

Do not remove the Air Chamber Access Panel or Blower Access Panel shown in Figure 5.1. The area behind these panels is contaminated. Contact your Accredited Technician for maintenance of these areas.
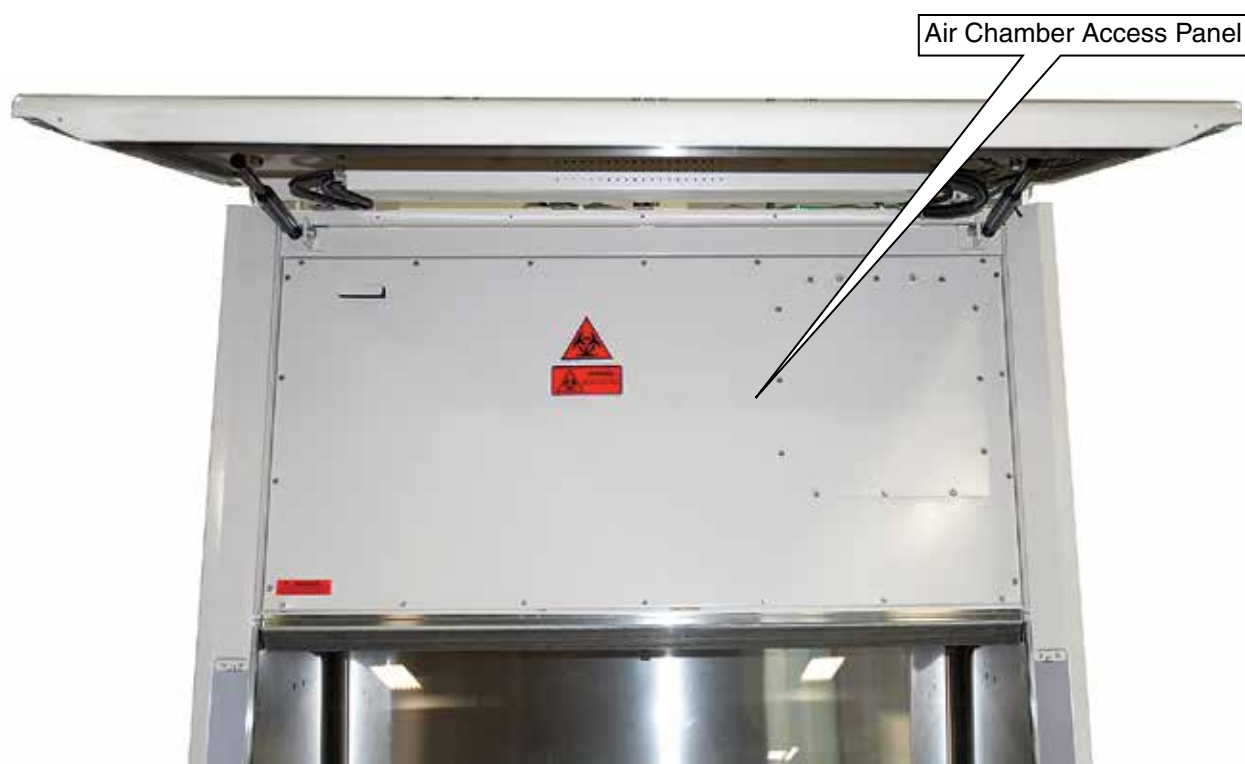

Air Chamber Access Panel

Figure 5.1

Frequently Required Maintenance Procedures

Before following any of these procedures, be sure all in-house safety precautions are followed regarding personal contamination. Face masks and wearing two pair of gloves are recommended in all cases.

Item	Procedure
Filter replacement	Refer to Maintenance & Technical Manual
Cabinet interior cleaning NOTE: DO NOT USE CHLORINE BLEACH	a) Use UV disinfecting light for at least 30 minutes or time recommended by your Standard Operating Procedure (SOP) if UV light is installed. b) Open sash and using disinfectant approved for use in your procedures, carefully clean worktop, top and bottom. Lift top and disinfect drain pan.
Clean cabinet exterior	Use mild soap and approved disinfectant
Check service fittings	Visual test with soap solution, inspecting for bubbles indicating leaks.
Check remaining life of UV Lamp	View lamp life on Control Monitor
Recertify cabinet	Use NSF 49 Accredited Technician
Cleaning Towel Catch (only perform this if face velocity drops or towels are known to have been drawn into the back baffle)	With worktop lifted, reach below rear baffle slot and remove debris from the towel catch grille behind the rear baffle. NOTE: this procedure becomes easier if worktop can be removed entirely from the cabinet. Since the top may be partially contaminated be sure removal and temporary storage of the top is undertaken using procedures approved by your facility's Health and Safety Department.
Removal and cleaning of stainless steel front grille	Remove fasteners from the grille, then lift and remove. Clean grille with approved disinfectant and replace.
Removal of worktop	Usually considered part of interior disinfection procedure; be sure underside of top is disinfected before removing from the unit. Clean drain tray thoroughly using approved disinfectant before returning the worktop to operating position.

Table 5.1

Infrequently Required Maintenance Procedures

Item	When Required	Procedure
Hinged top front panel operation	Needed only for fluorescent light replacement. All other areas behind panel should be accessed only by Accredited Technician.	Remove the small screws at each end of the bottom edge of the panel. Panel will lift assisted by two gas struts.
Changing lamps	Fluorescent lights may be operated until they burn out. UV lights should be replaced when their useful life is exceeded.	Disconnect the power cords. Remove pinned UV or fluorescent lamp by turning lamp 90° and pulling forward. New lamps are installed by reversing this procedure.
Resetting circuit breakers	When: a) outlets are not working b) fan and control unit will not power up	Resetting these requires disconnecting power and removing the cover on the electrical junction box under the front panel of the BSC. Reset the two breakers inside the box, then plug the unit back in. If breakers trip, call an **Accredited Technician or trained personnel**. If breakers do not trip, remove wall plug reattach lid, and reconnect power.

Table 5.2

Maintenance Log

We recommend the formation of a logbook to record recommended maintenance activities as the example shown below:

Month	Clean Exterior	Check all Service Fittings
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
Daily Basis: Disinfect surface work areas, before and after each use		
Weekly Basis: Surface disinfrect drain pan		

Quarterly Basis:
    Check lights for proper function
    Check for malfunctions
    Spot clean stainless steel surfaces		

Annual Basis: Inspect and Recertification by an Accredited Technician		

Table 5.3

Disinfection

It is recommended that your Biological Safety Cabinet be thoroughly disinfected before and after each use. This procedure is to destroy any contaminates that may remain within the cabinet and may compromise your work. This should be at least part of your Standard Operating Procedure (SOP) but not a substitution for it. The entire inside of the cabinet should be wiped down during the disinfection. This includes the side and rear walls, the removable worksurface, both top and underside (as needed) and the drain pan.

It is recommended that the cabinet fan be turned on before disinfection procedure and allowed to operate for several minutes to remove any suspended particulates. Cabinet interior should then be wiped down with 70% alcohol, or other approved disinfectant. After cabinet has been thoroughly disinfected, then it is very important to rinse the surfaces with sterile water to remove any residue.

Storage

If the Interceptor® is to be decommissioned or stored for protracted periods, consult with your health and safety personnel for appropriate procedure.

If the filters were not full the last time the cabinet was used, all contamination will be sealed inside the fan compartment and positive plenum, and therefore isolated.

The storage mode for the unit will be influenced by at least the following issues:

1. Virulence or toxicity of materials used in the cabinet

2. Resistance of materials to UV light or other disinfection procedures used on the cabinet interior

3. Length of time item is to be stored before reuse

Filters

Filter replacement must be completed by an NSF Accredited Technician. See Maintenance and Technical Manual.

Lamps

See Table 5.2 for information on replacement of fluorescent and/or UV lamps. See Table 7.2 for replacement lamp part numbers.

Decontamination

Decontamination must be undertaken by an **NSF Accredited Technician**. Details on decontamination and filter change-out procedure can be found in the *Interceptor®* *Maintenance and Technical Manual.*

⚠️ **WARNING**
   Decontamination may only be performed by an NSF Accredited Technician.

CHAPTER 6

Operator and Product Protection

Safe Operation Guide

The Biological Safety Cabinet may only be used in the 8" sash open position due to calibrated air flows. An opening other than 8" during a procedure will not protect the operator from materials inside the hood.

Protective Clothing

The following are general guidelines only and should not replace any of your laboratory's Standard Operating Procedures (SOP).

Before beginning any work, the user should first thoroughly wash their hands with a germicidal soap.

Don appropriate personal protective equipment for the bio safety level and work being performed. Operations being performed in BSL level 1 suggest wearing protective laboratory coats, gowns or uniforms to prevent contamination of personal clothing. Protective eyewear is also suggested.

BSL level 2 and 3 suggests wearing gloves, protective laboratory coats, gowns, smocks or uniforms (possibly tie back, wrap around gowns or scrub suits). Eye and face protection include goggles, mask, face shield or other splatter guard are also suggested. Eye, face and Respiratory protection must be worn in rooms containing infected animals.

All procedures being performed in a BSL Level 4 and using a class II BSC require the user to wear a one piece air supplied positive protection suit.

UV Lamp

The Control Monitor Run Screen will alert the operator when the UV lamp should be replaced. The lamp may still illuminate at this point; however, UV output will be greatly diminished.

HEPA Filters

HEPA filters are the most important safeguard of a Biological Safety Cabinet. The HEPA filter has a proven efficiency of 99.99% at 0.3 microns. The HEPA filter is made from a single sheet of borosilicate fibers that have been treated with a wet-strength water–repellant binder. The filter is pleated to increase overall surface inside the filter frame and is protected by corrugated aluminum separators. These separators protect the pleats from collapsing and provide a path for airflow. Although aluminum separators are most common, there are other materials that are acceptable. The filters are then glued to a wood, metal or plastic frame. The filters are very fragile and careless handling can easily compromise their integrity. It is important that the filters be leak tested when initially installed and whenever the cabinet is moved or relocated. Note that much of this information is credited to *CDC BMBL 5th Edition.*

HEPA filters are only efficient on particulates; they are not designed to filter gases. It is important to check the filters on a regular basis (at least annually during recertification). As the filters collect particulates, it will become increasingly harder to maintain the airflow balance within the cabinet. Filters should be changed at recommended intervals to ensure proper airflow is being maintained within the cabinets.

CHAPTER 7

Troubleshooting

Problem	Possible Cause	Recommended Fix
No lights or fan	a. Unit unplugged	Plug it in
	b. BSC breaker open	Reset breaker
	c. Building breaker open	Check outlet breaker
No fans	a. Sash is fully closed	Open sash to 8"
	b. Fan breaker/overload tripped	Overload will reset if unit disconnected. If condition persists, motor may need to be replaced. Contact Kewaunee Scientific Corporation for assistance.
	c. Sash-activated fan kill relay broken	Replace
Fluorescent light not working	a. Lamp burnt out (look for dark rings at opposite ends of glass fluorescent tube)	Replace lamps
	b. Lamp wiring defective	Inspect and repair
	c. Bad lamp ballast (symptom is intermittent light)	Replace ballast located inside rooftop circuit box
UV light does not illuminate	a. Sash must be closed for UV light to work (regular glass blocks UV rays)	Close sash
	b. Lamp burnt out	Replace lamp
	c. Lamp wiring/microswitch defective	Inspect and repair
	d. Bad lamp ballast (symptom is intermittent light)	Replace ballast located in electrical box
Reduced face velocity	a. HEPA filter loaded	Increase motor RPM or replace filter if 105 fpm face velicity is no longer achievable
	b. Towels have clogged towel screen or visible baffle louvers	Clean towel screen (see Chapter 5 User & Operation Manual)
	c. Exhaust outlet clogged with debris	Clear outlet
Contamination of work inside the cabinet	a. Loaded downflow filter	Replace filters
	b. Torn downflow filter	Replace filters
	c. Cabinet inflow not being captured by front grill	Remove grill, inspect, repair
	d. Room turbulence	Decrease turbulence or move cabinet
	e. Cabinet balance has been disrupted	Rebalance cabinet (by NSF Accredited Technician)

Technical Support

Table7.1

To validate your warranty, please take a moment to register your Biological Safety Cabinet. Registering your cabinet will allow us to provide you with maintenance information and product updates.

To register, fill out the registration form at the end of this section and mail or fax to the address listed at the bottom of the form. If assistance is necessary, please contact us at 704-873-7202.

Detailed View of Cabinet Parts

Blower Intake Hood

Exhaust Thimble

Front Panel

Shaft Guard

LCD Control

Exhaust Filter

Lights/Bracket

Sash Weight

Sash

Channel for
Micro-switch

End Panel

Air Intake Grill

Worksurface

Sash Clip

Facia Back

Facia Front

Left Facia Decal

Facia Track
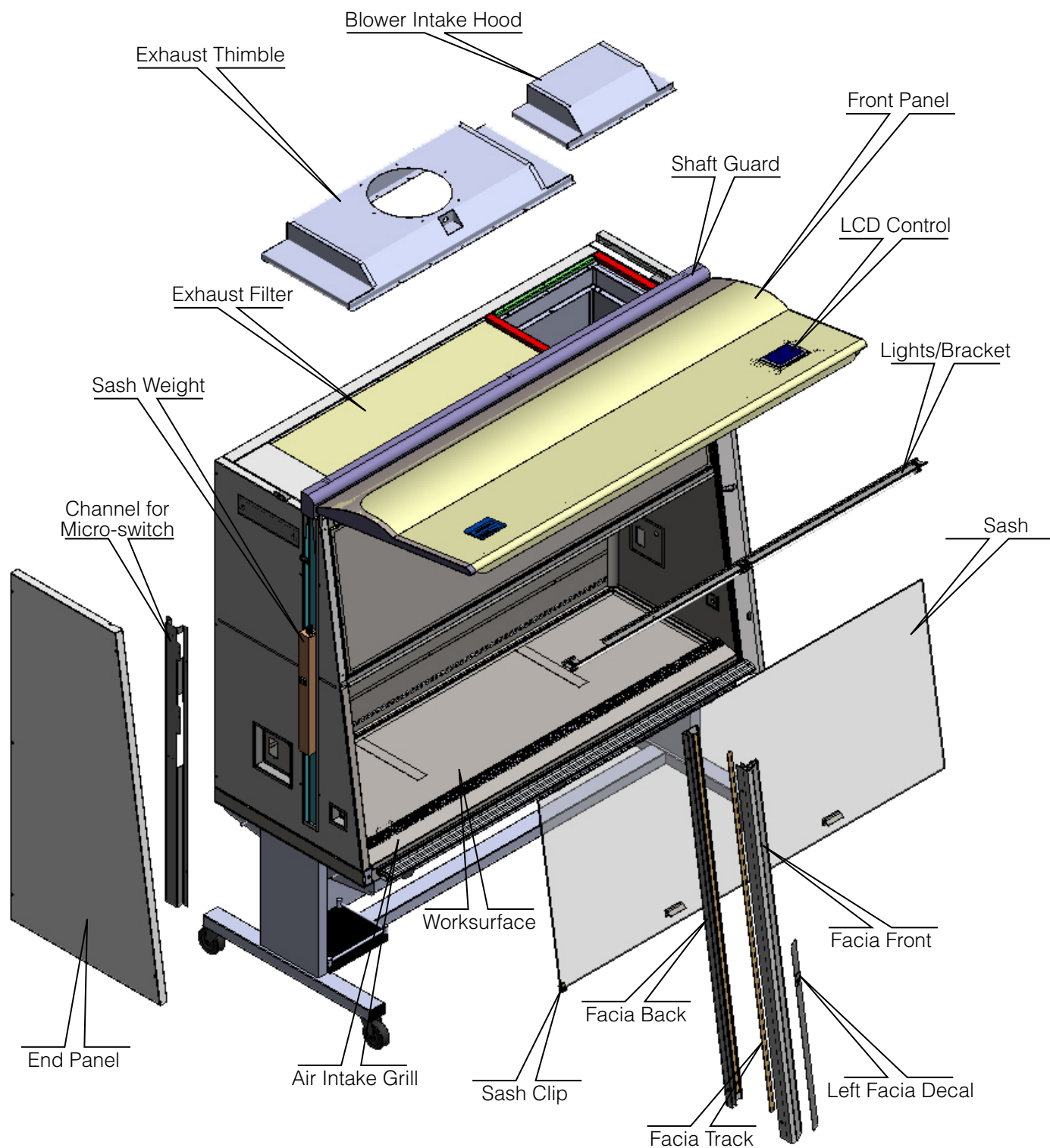
Figure 7.1
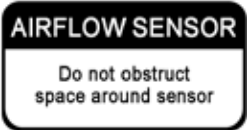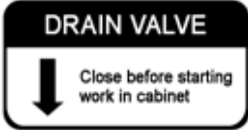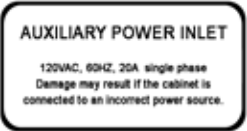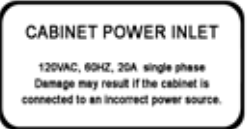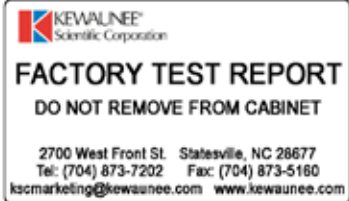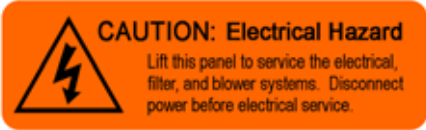
Replaceable Parts List

Parts	Part Numbers	
	INT-1400B	**INT-2000B**
30/40 µF Motor Capacitor	F-7262-05	F-7262-00
Micro Switch	F-7242-00	F-7242-00
Fluorescent / UV Relay	F-7232-00	F-7232-00
10 Amp Circuit Breaker	F-7240-04	F-7240-04
20 Amp Circuit Breaker	F-7240-00	F-7240-00
Motor Solid State Relay	F-7233-00	F-7233-00
Potentiometer	F-7239-00	F-7239-00
Variable AC Power Control	F-7238-00	F-7238-00
UV Lamp	F-7249-00	F-7249-00
T5 Lamp	F-6347-46	F-7248-00
Removable Work Tray	050007-48	050007-72
Tray Handle	F-7209-00	F-7209-00
Bottom Intake Grille	050008-48	050008-72
Sash Glass with Handles Ass'y	050009-48-FIN	050009-72-FIN
Electric Junction Box	050031-00	050031-00
Exhaust HEPA filter	F-7275-48-B	F-7275-72-B
Supply HEPA filter	F-7276-48	F-7276-72
Removable Work Tray Support	050063-00	050063-00
Sash Sweeper Plate	050076-48	050076-72
Top Exhaust Enclosure	050142-48W-B	050142-72W-B
12" Air Tight Damper	INT-DAMPER	INT-DAMPER
Downflow Perforated Grille	050079-48	050079-72
Arm Rest Bracket	050195-0A	050195-0A
Arm Rest Plastic End Cap	F-7279-00	F-7279-00
Aluminum Arm Rest	F-7280-48	F-7280-72
Drain Valve Plate	050110-00	050110-00
316 SS Pipe Fitting	F-7211-11	F-7211-11
316 SS Ball Valve	F-7211-00	F-7211-00
Safety Labels 120 VAC	F-8200-00	F-8200-00
Pressure Transducer	F-7225-06	F-7225-06
Velocity Sensor	F-7225-05	F-7225-05
Fan Assembly	F-7247-01-D	F-7247-00-D
Gas Spring Assembly	F-7224-00	F-7223-00
Belt Drive to Counterweight	F-6343-00	F-6343-00

Table 7.2

Labels

The following depictions are replicas of the exact labels used within/on the Biological Safety Cabinet and are generally self-explanatory.

Label Images	Description	Label Images	Description
AIRFLOW SENSOR Do not obstruct space around sensor	Airflow Sensor	**DRAIN VALVE** ↓ Close before starting work in cabinet	Drain Valve
AUXILIARY POWER INLET 120VAC, 60HZ, 20A single phase Damage may result if the cabinet is connected to an incorrect power source.	Auxiliary Power Inlets	**KEWAUNEE** Scientific Corporation **ELECTRICAL DIAGRAM** DO NOT REMOVE FROM CABINET 2700 West Front St. Statesville, NC 28677 Tel: (704) 873-7202 Fax: (704) 873-5160 kscmarketing@kewaunee.com www.kewaunee.com	Kewaunee Electrical Diagram
CABINET POWER INLET 120VAC, 60HZ, 20A single phase Damage may result if the cabinet is connected to an incorrect power source.	Cabinet Power Inlets	**KEWAUNEE** Scientific Corporation 2700 West Front St. Statesville, NC 28677 Tel: (704) 873-7202 Fax: (704) 873-5160 kscmarketing@kewaunee.com www.kewaunee.com Factory Certified and Tested Tested by: _____ Date Tested: _____ ina print	Factory Seal Label
⚠ (biohazard symbol)	Universal Biohazard Warning	**KEWAUNEE** Scientific Corporation **FACTORY TEST REPORT** DO NOT REMOVE FROM CABINET 2700 West Front St. Statesville, NC 28677 Tel: (704) 873-7202 Fax: (704) 873-5160 kscmarketing@kewaunee.com www.kewaunee.com	Factory Test Report
		Filter Scan Tested After Installation Compliance: EUROVENT 4/8, ISO/CD 14644-3 IEST-RP-CC034.1 and IEST-RP-CC006.2	Filter Scan
CAUTION: Electrical Hazard Lift this panel to service the electrical, filter, and blower systems. Disconnect power before electrical service.	Electrical Service Caution	(grounding symbol)	Electrical Grounding Label

Label Images	Description	Label Images	Description
KEWAUNEE Scientific Corporation — Made in USA — 2700 West Front St. Statesville, NC 28677 Tel: (704) 873-7202 Fax: (704) 873-5160 kscmarketing@kewaunee.com www.kewaunee.com	Made in America	- WARNING - Exhaust Damper Read and understand manual before adjusting	Exhaust Damper Warning
KEWAUNEE Scientific Corporation 2700 West Front St. Statesville, NC 28677 Tel: (704) 873-7202 Fax: (704) 873-5160 kscmarketing@kewaunee.com www.kewaunee.com — Quality control engineer seal of approval:	Quality Control	⚠ - WARNING - Warning: This cabinet must be certified to factory test standards before first use and at least yearly. Failure to do so may result in severe personal harm.	Cabinet Certification Wiring
(junction box ground symbol)	Junction Box Cover	KEWAUNEE Scientific Corporation 2700 West Front St. Statesville, NC 28677 Tel: (704) 873-7202 Fax: (704) 873-5160 kscmarketing@kewaunee.com www.kewaunee.com — Serial Number: _____ Model Number w/ Stand _____ Manufactured Date: _____	Serial Number and Manufacture Date
SAMPLING PORT Potentially contaminated area. Decontaminate before opening.	Sampling Port	WARNING! Ultraviolet Light This Biosafety Cabinet may have an Ultraviolet Disinfection System which only operates with the sash completely closed and the fan off. Because of the extreme danger of UV-C radiation, DO NOT attempt to disable the interlock system or run UV with the sash open! / Sash Position / Cabinet Airflow	
SPEED CONTROL Read and understand literature before adjusting	Speed Control		Ultraviolet Light Warning Label
- WARNING - Potentially contaminated area. Decontaminate before opening.	Biohazard Access Panel Warning	DO NOT REMOVE THIS LABEL Model: INT-1400B Type: CLASS II B2 Power: 440 VA 120VAC 60 HZ 1PH 2400 VA MAX Plug Load) ... NSF Label Here	Typical Product Label
⚠ Refer to manual before use	Electrical Warning		

Wiring Schematic

CLASS II B2 WIRING DIAGRAM - 1400B

R₅ = UV

R₄ = T5

R₃ = Ext. Fan Signal (optional)

R₂ = LO Alarm

R₁ = Int. Fan

Signal Out To Terminal Block

Signal In To Terminal Block

UV Ballast & Light

T5 Ballast & Light

GFI Receptacle Circuit (outlets)

Insert 120VAC wire in Heat Srink 6" Minimum from Relays

J.B. Ground Bar

Jumper to Enclosure Cover
Jumper to Sash Rod Bracket Ground Screw
Jumper to Front Panel Ground Screw

Primary Circuit

Cable   B=0   W=10   R=24

HI (To Plenum)   LO (Pos. Outside)   P Transducer

100K Ω   unused

MOTOR SPEED CONTROLLER

Vel. Probe

30 MF

Motor

USB

SD

0" Sash SW

8" Open Sash SW

DPT   0   10   24

VEL

0-10V   Relay

24 VDC

Power Sup   24v

To Primary 10 Amp

Keypad

Primus Cable UPT 4PR 23 AGW CAT6 600 MHZ CMR ETL

33 32 31 30 29 28

WIRE COLOR / DESCRIPTION

WIRE COLOR	DESCRIPTION
B	Black 12, 14, 16, or 18 AGW
W	White 12, 14, 16, or 18 AGW
G	Green 12, 14, 16, or 18 AGW
R	Red 12, 14, 16, or 18 AGW
G	Green 23 AGW Primus Cable CAT6
G/W	Green/White 23 AGW Primus Cable CAT6
Bl	Blue 23 AGW Primus Cable CAT6
Bl/W	Blue/White 23 AGW Primus Cable CAT6
Br	Brown 23 AGW Primus Cable CAT6
Br/W	Brown/White 23 AGW Primus Cable CAT6
O	Orange 23 AGW Primus Cable CAT6
O/W	Orange/White 23 AGW Primus Cable CAT6

Wiring Schematic

CLASS II B2 WIRING DIAGRAM - 2000B

WARRANTY

Biological Safety Cabinet Warranty

KEWAUNEE SCIENTIFIC CORPORATION warrants, for a period of three (3) years beginning at the date of delivery, that this Biological Safety Cabinet shall be free from defects in material and workmanship, excluding certain consumable items due to normal wear and tear, i.e.; filters, UV lamps, fluorescent lights, etc. KEWAUNEE MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WRITTEN OR ORAL, INCLUDING, BUT NOT LIMITED TO, THOSE OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. Purchaser shall notify Kewaunee immediately of any defective product. Kewaunee shall be given reasonable opportunity to inspect the product prior to its return. No product shall be returned to Kewaunee until receipt by purchaser of written shipping instructions from Kewaunee. PURCHASER'S EXCLUSIVE REMEDY, AND KEWAUNEE'S SOLE LIABILITY, SHALL BE, AT KEWAUNEE'S SOLE OPTION, REPAIR OR REPLACEMENT OF THE NON-CONFORMING PRODUCTS OR THEIR PARTS, OR REFUND OF THE PURCHASE PRICE. KEWAUNEE SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES OR EXPENSES WHETHER INCURRED IN CONNECTION WITH INJURY TO PERSONS OR PROPERTY.

Returned or Damaged Goods

Goods cannot be accepted without a Return Authorization ticket. Unauthorized returns will not be accepted. Claims for cabinet(s) damaged in transit must be filed with the freight carrier as Kewaunee Scientific Corporation and its dealers are not responsible for damages occurring during shipment.

Claims must be filed with the freight carrier with fifteen (15) days of delivery per the United States Interstate Commerce Commission rules and regulations.

Limitations of Liability

All users of this equipment are required to become familiar with any regulations that concern the disposal of waste materials in or surrounding water, land, or air, and to comply with such regulations. The disposal and/or emission of substances used in connection with this equipment may be governed by various federal, state, and/or local entities. Kewaunee Scientific Corporation shall be held harmless with regard to user's compliance to regulations and/or use.

Kewaunee *Interceptor*® Biological Safety Cabinet
Warranty Registration

PRODUCT DESCRIPTION

Model Number

I N T -

Serial Number

Date of Purchase (mm/dd/yyyy)

/ /

KEWAUNEE DEALER

Company Name

Contact Name

Phone Number   Extention

- -

CUSTOMER CONTACT INFORMATION

Company Name

Street Address

City   State   Zip Code

-

Contact Name

Phone   Facsimile

- -   - -

Email

OPTIONAL INFORMATION

How did you hear about us?

Do you currently own other Kewaunee Scientific Corporation products? | Yes | No |

Would you like to receive Kewaunee Scientific Corporation product information? | Yes | No |

Thank you for taking time to register your new product. Please contact Kewaunee Scientific Corporation at 704-873-7202 or visit our website @ www.kewaunee.com if you have any questions.

Please mail or fax completed form to: Kewaunee Scientific Corporation
2700 West Front Street
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Tele: 704.873.7202 • Fax: 704.873.5160
Website: www.kewaunee.com
Email: kscmarketing@kewaunee.com

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