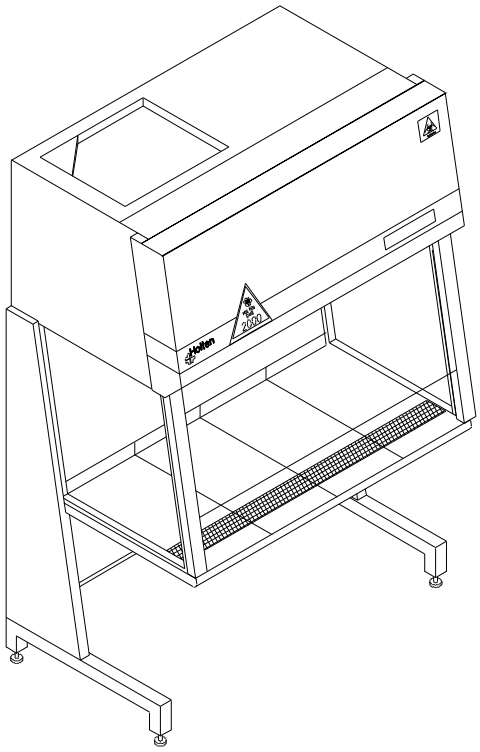
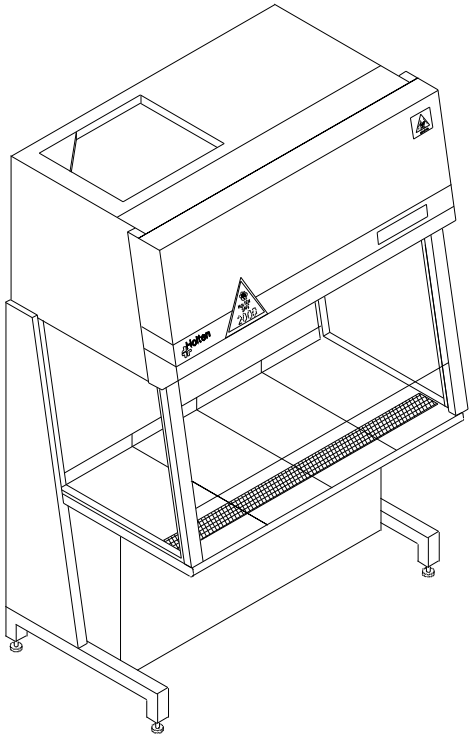




INSTRUCTION MANUAL
HOLTEN LAMINAIR
SAFE 2000
MAXI SAFE 2000
ID: 807222

Fig. A
Control Panel

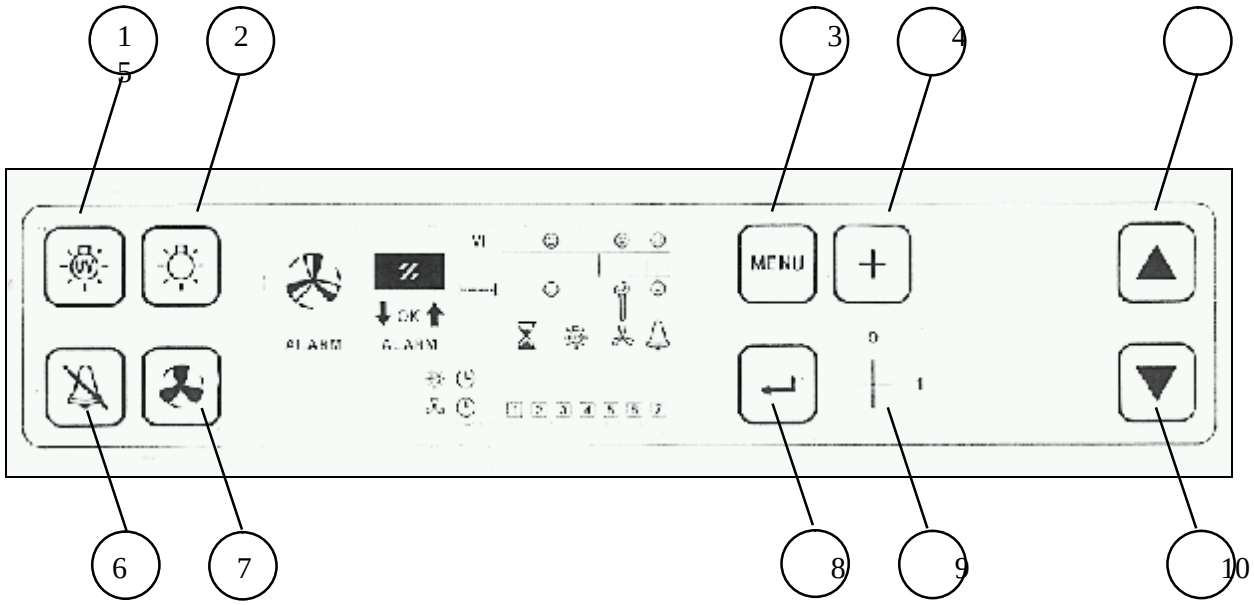
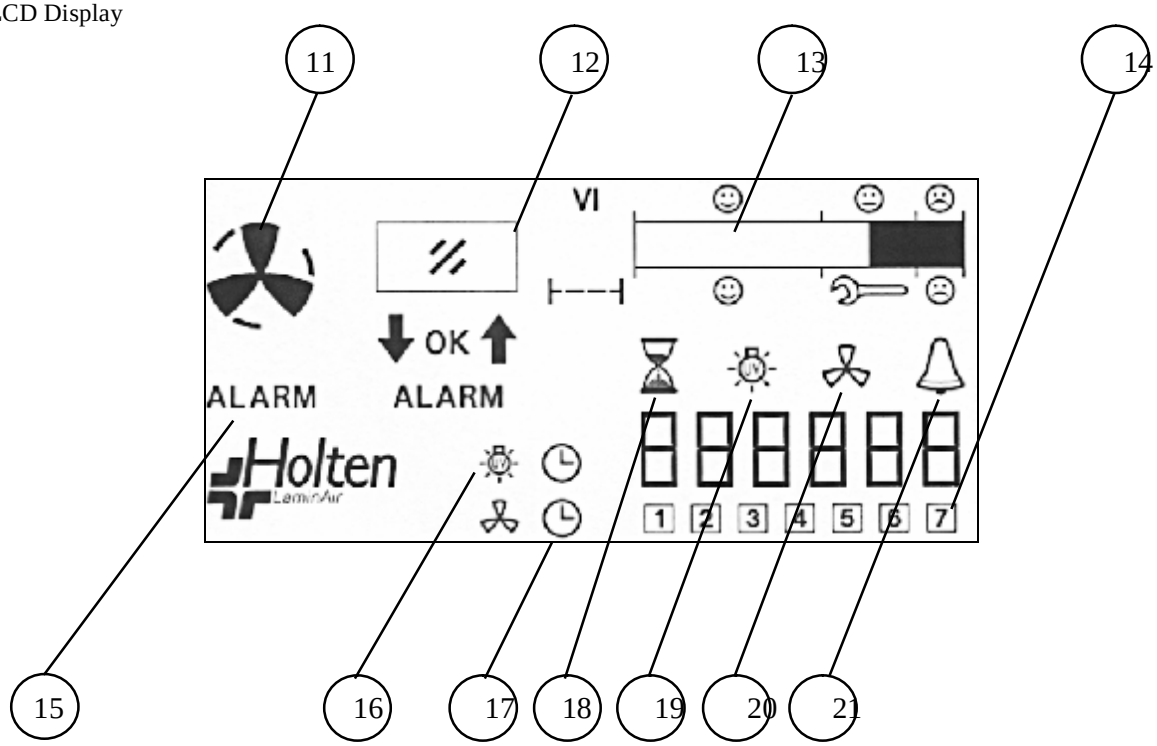


Fig. B
LCD Display



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Enclosures:

List of recommended disinfectants

Log-book

Declaration of conformity

1 Introduction

You are now in possession of a high quality microprocessor controlled class II cabinet, HOLTEN SAFE 2000, designed to provide protection of the operator, the surroundings and the work process itself against particle/microbiological contamination.
The cabinet complies with the demands stipulated in "NSF Std 49" , "Nordiska R3-Föreningens Norm for säkerhetsbänkar" , "DIN 12950 Teil 10"¨, "NF 44/201" and BS 5726 (92).

The new HOLTEN SAFE 2000 class II cabinet has ;

· **Microprocessor controller with *:***
- A clear LCD display showing your options and choices.
- Clock for pre-setting automatic start-up, UV-timer, and hour counter.
- Clear indication of required filter change.
- Alarm for malfunction.

· **Ergonomically correct sloping front** which makes work standing up or sitting down easy.

· **Side windows**, for perfect light conditions and view to the surroundings.

· **Negative pressure plenum**, for highest operator and product safety.

· **Motor driven double function front window,** with both sliding and hinged modes.

· **Key switch** for pre-selection of desired fan speeds to be eligible for user.

· **"AOS "**, Automatic Operation System as an optional accessory for automatic start/stop of the FAN when the sensor is activated by the operator.

· **Adjustable FAN speeds**.
Gives you the opportunity to select FAN off, 1/2 or 1/1 speed.

2 Safety Precautions

- In order to avoid unintended or incorrect usage please read this manual carefully.

- For the HOLTEN SAFE 2000 the following precautions should be noted!

The cabinet should not be used for group 4 pathogens.
Attention is drawn to the risk assessment requirements of the Control of Substances Hazardous to Health (COSHH) Regulations 1988. (UK)

The cabinet is not suitable for HIGH-RISK biological agents.
HIGH RISK biological agents include all etiological agents designated Class 4 by CDC, and oncogenic viruses classed high risk by NCI. (USA)

Never operate the Holten Safe 2000 cabinet without the fan compartment cover in place.
If the cover is removed, there is no personal protection, and the fan will run with uncovered rotating fan.

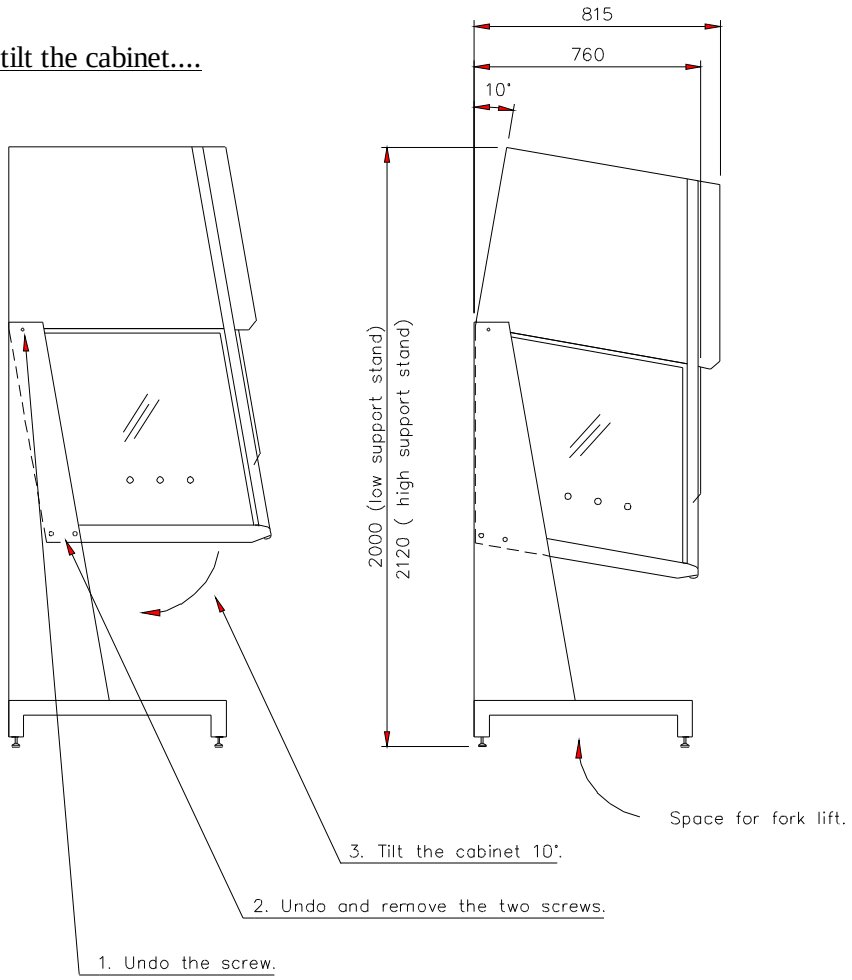
The HOLTEN SAFE 2000 class II cabinet will not provide any protection for operator or surroundings against harmful gases or vapours.

Remove hands from the work chamber prior to activating sliding mode for the front window !

3 Installation

1. Check that the dimensions of the unit provide free access to the intended site of installation. The cabinet may be tilted 10° over an axle so that the sloping front is in vertical position. Furthermore you may dismount the front shield with the control panel. The cabinet may then be moved through a standard 800-mm wide door.

How to tilt the cabinet....

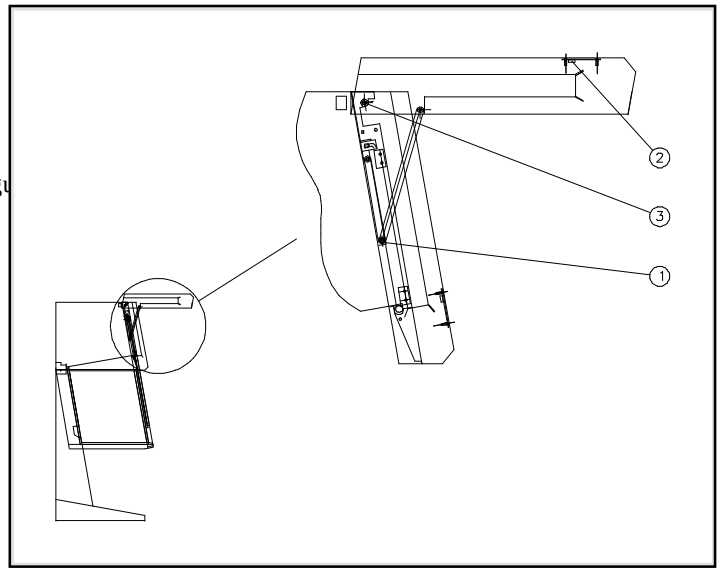


Note! It is possible to remove the clamp of the main socket.

How to dismount the front shield :

Step 1. Bring the front window in the lowest position.
Step 2. Unscrew the screw for the gas spring, pos. 1 - fig. 2
Step 3. Pull out the plug for the control panel, pos. 2 - fig. 2
Step 4. Unscrew the screw for the lampshield, pos. 3 - fig. 2

Figure Erreur ! Argu



2. The installation site for the unit should be draught-free and should be selected so that frequent passing of persons in front of the work opening is avoided.
3. The tabletops of stainless steel are mounted over the trough.
4. Adjust the levelling screws to assure that the tabletop is in horizontal position and levelled.
5. Connect the cabinet to the Mains.

Note! *Prior to any work on the electrical installation it must be checked that the mains supply specifications corresponds to that stated on the type plate. For increased safety the connection should be made as a fixed installation. Furthermore make sure that the mains is connected to an installation which is protected by high sensitive leakage current contact breaker.*

6. Valves for gases, vacuum, or liquids are positioned in a separate plate in the left or right hand side window, and an authorised technician should carry out connection of these.

F ***PLEASE NOTE!***

- When the cabinet has been installed, check that the window hoist is functioning, as slants caused during transport/installation may cause damage.

- Check that the front window is in the correct position, i.e. parallel to the side profiles and above the side windows.

- Check that the window slides from top to bottom without any irregular sound. Please note that there will be some sound/noise from the gear when the window is pulled away from or towards the seal.

- If the window does not move when the UP/DOWN button is pressed, authorised service personnel must be called immediately to correct the fault.

Under no circumstances must hands/arms be near the table front, as the window may fall down, if the hoisting system is not working correctly.

4 Working Rules

F

Rules to follow prior to use...

- The cabinets should be used indoors in a normal clinical environment with a temperature between 18 °C and 28 °C, normal humidity and atmospheric pressure.

- All the cabinets are designed and produced to be used in clean environments.

- They are not to be used outdoors or in environments with high humidity or pollution. The cabinets are not constructed to ventilate vapours with acid or containing organic solvents. The cabinets must not be used as fume hoods.

- About 10 minutes prior to usage, the fan of the unit should be switched on for operation at normal speed.

- The work chamber and front/side windows are to be carefully cleaned and disinfected. Use 70 % ethanol or similar. It is recommended to use special lint-free wipe.

- Objects and appliances must be carefully cleaned or disinfected prior to being introduced into the work chamber.

- The front window is positioned in working position and kept in that position during the entire work process.

- Necessary appliances for use during work must be placed within easy reach.

- Ensure appropriate protection of operator as well as product (e.g. clothes, gloves, masks, visors, etc.).

Important when performing biohazard work!

- *Never perform any work with the fan at reduced speed.*

- *The front window must be in working position during the work.*

- *Place the product behind the front suction holes of the table top,- as far back as possible.*

- *Work with steady/soft movements.*

- *Never overload the work chamber.*

- *Reduce the number of transfers into and out of the work chamber.*

- *Avoid products or remedies with strong emission of heat.*

- *Do not position the cabinet in places with direct draught towards the work opening.*

-Position the cabinet so that frequent passing of persons in front of the work opening is avoided.

5 Operation

Fig. A:

1. Button ON / OFF for UV light (optional).
 - *The UV light can only be switched on when the chamber light is off and front window brought in lowest position.*
2. Button ON / OFF for chamber light.
3. [MENU] button used to enter UV, FAN, or TIME mode.
 - *A flashing icon appears in the display indicating the selected mode.*
4. [PLUS] button to set minutes, hours and day of the week.
5. Button for hoisting the front window up.
6. Button to stop acoustic alarm.
7. Button to activate fan.
   Press the [FAN] button:
   Once to select normal speed of fan.
   Twice to select reduced speed of fan.
   Three times to select fan off.
8. [ENTER] button to confirm a selection during settings.
9. Key switch for activation / deactivation of the start / stop button and switching between reduced or normal fan speed.
10. Button to lower the front window.

Fig. B:

NOTICE! *Figure B illustrates the display. All icons are shown on the drawing. This will never actually occur, and is done only for illustrative purposes.*

The icons symbolise

11. Speed of fan.
12. Front window.
13. Indication regarding filter change.
14. Selected days with automatic start up.
15. FAN alarm.
16. UV-timer active.
17. FAN timer active.
18. Stop watch mode.
19. UV icon will show up by pressing the MENU button during settings.
20. FAN icon will show up by pressing the MENU button during settings.
21. Stop watch active.

Start and adjustment.

You have to set the main timer and the date prior to setting UV timer, FAN timer, and the stopwatch.

Note! *If the time interval between activation exceed 5 seconds the display will return to normal mode.*

ØHow to set time and day of the week...

Turn the lock-switch to position 1 and....

1. Press the [ENTER] button while connecting the cabinet to power
2. Press the [MENU] button once, *and the display will flash for setting minutes.*
3. Press the [+] button until the correct number of minutes is obtained.
4. Press the [MENU] button once, *and the display will flash for setting hours.*
5. Press the [+] button until the correct number of hours is obtained.
6. Press the [MENU] button once, *and the display will flash for setting days of the week.*
7. Press the [+] button until correct weekday is obtained.
8. Press the [ENTER] button to go to normal mode. - *If you choose to press the [MENU] button, you return to pos. 3.*

Setting time for operation of the UV light, the FAN, or the STOPWATCH.

Press the [MENU] button to reach UV time, FAN time, or STOPWATCH mode.

ØHow to set UV time...

- Place the front window in closed position.
- Turn the UV light on by pressing the [UV] button

1. Press the [MENU] button to reach the UV position, *the UV icon will appear in the display.*
2. Press the [ENTER] button and the display will flash for setting of minutes.
3. Press the [+] button to set the number of minutes, *(select from 1 to 59 minutes).*
4. Press the [MENU] button and the display will flash for setting of hours.
5. Press the [+] button to set the number of hours, *(select from 1 to 23 hours)*
6. Press the [ENTER] button to store the chosen values, *and the [UV] icon will appear in the display.*
7. Press the [UV] button to start count down.

ØHow to set FAN timer...

- *It is possible to make the cabinet start up automatically, prior to working hours.*
- *You may programme which days this function is active.*

1. Press the [MENU] button to reach FAN position *and the icon for FAN will appear in the display.*
2. Follow points 2 to 5 in the previous description of the UV timer.
3. Press the [ENTER] button to store the chosen values. Select the weekdays with automatic start up t*o switch from day 1 to 2 etc.:*
4. Press the [+] button. *To store a day:*
5. Press the [ENTER] button.
6. Press the [MENU] button to store the chosen values, *and the icon for FAN timer will appear in the display.*

Ø How to set the stopwatch...

1. Press the [MENU] button to reach the stopwatch position, *the stop watch icon will appear in the display.*
2. Follow points 2 to 5 in the previous description for the UV timer.

3. Press the [ENTER] button to start count down. *When the stopwatch has counted down to 00:00 the acoustic alarm sounds.*

ØAlarm... ***When the alarm is activated, the acoustics alarm sounds and the display light flashes indicating that the cabinet does not provide full protection for the operator and the product.***

The alarm will start if:

- *The fan is running at reduced speed.*
- *The front window is not placed in its working position.*
- *The hinged window is not completely closed or in incorrect position.*
- *The stopwatch has counted down to 00:00 from the pre-set time, (only acoustic alarm).*

Stop of the acoustic alarm:

- Press the [**%**] button to silence the acoustic alarm signal.

ØHow to use the lock switch

The authorised person to select which FAN speeds should be eligible for the user uses the lock switch.

a. Lock switch in position 1

m Press the [FAN] button:
.... Once to select normal speed of the fan
.... Twice to select reduced speed of the fan
.... Three times to select the fan off

b. At priority

- Turn the lock switch to position 1 to choose which fan speeds should be eligible in position 0.

, Press the [FAN] button:
.... once, *to let the fan run with only normal speed.*
.... twice, *to let the operator choose between normal and reduced speeds.*
.... third time, *to lock the fan in stop mode.*

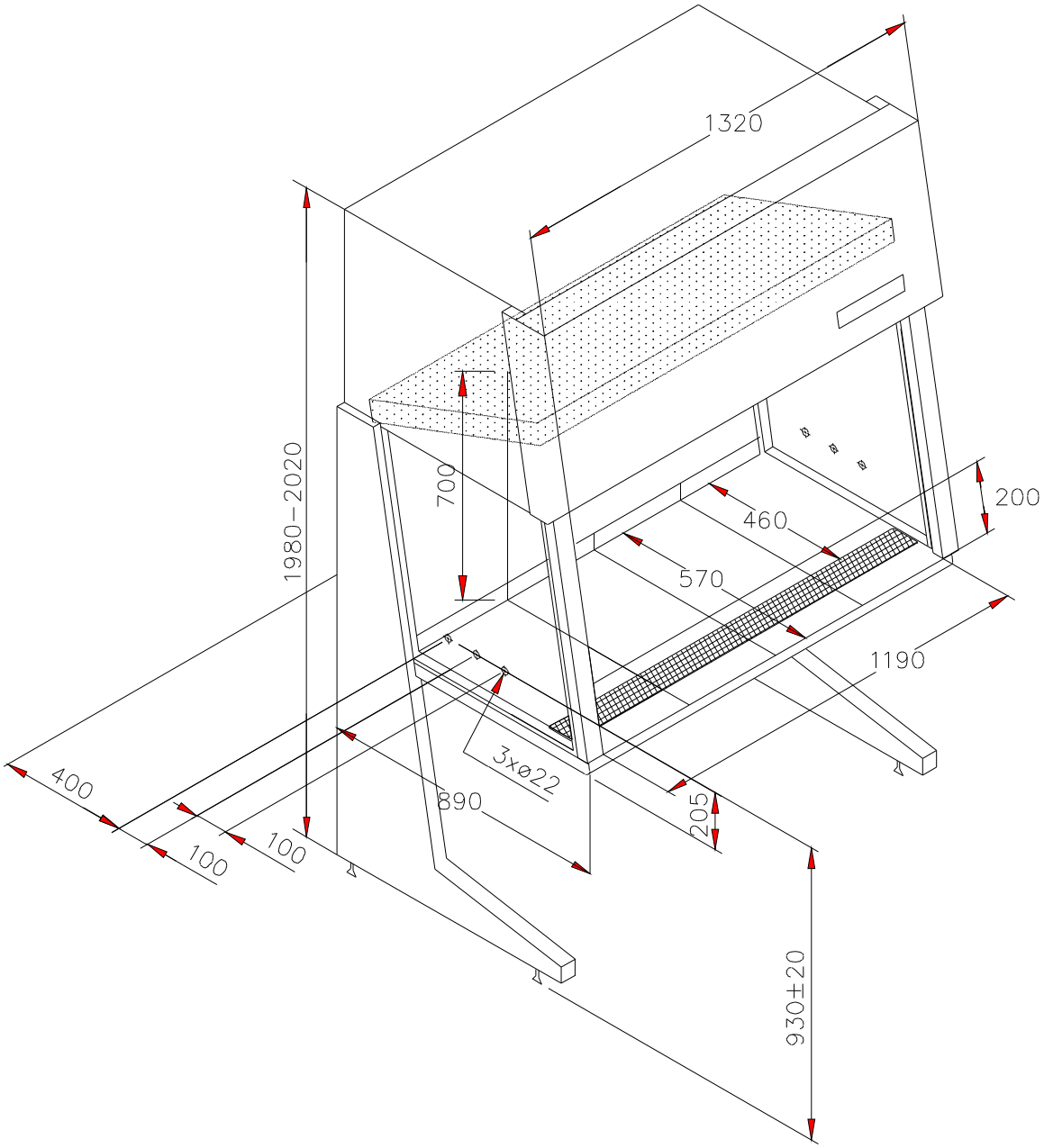
f ..After adjustment turn back the lock switch and remove the key.

Note!

- At reduced speed the light in the display will flash and the acoustic alarm will sound. This indicates that the unit does not provide full protection of the operator and the product.

- The UV light is switched on independently of the fan, however, only with the internal light switched off.
- When the internal light is switched on, the UV light will automatically be turned off.

Power failure:
- If 1/1 FAN speed is selected with the key switch, the HOLTEN SAFE 2000 will after power failure always restart at full fan speed and the internal light will be switched off.


1320
1980–2020
700
200
460
570
1190
3xø22
890
205
400
100
100
930±20

6 Technical Specifications

	Model 0.9		Model 1.2		Model 1.5		Model 1.8	
	Safe	Maxi Safe	Safe	Maxi Safe	Safe	Maxi Safe	Safe	Maxi Safe
Cat. no.	57240000	47240000	57250000	47250000	5726000	47260000	5727000	47270000
External Dimensions floor model DxWxH	867x1020x2000 mm		867x1320x2000 mm		867x1620x2000 mm		867x1920x2000 mm	
Chamber DxWxH	580x900x700 mm		580x1200x700 mm		580x1500x700 mm		580x1800x700 mm	
Weight	190 kg	215 kg	200 kg	225 kg	215 kg	290 kg	250 kg	300 kg
Spillage	13.0 l	4.5 l	18.0 l	6.0 l	22.0 l	7.5 l	27.0 l	9.0 l
Exhaust air volume	300m^3/h ±10%		400m^3/h ±10%		500m^3/h ±10%		600m^3/h ±10%	
Power	2 A		2 A		3,5 A		3,5 A	
Power consumption	0.5 kW		0.5 kW		0.8 kW		0.8 kW	
HEPA filter efficiency	99.999 %		99.999 %		99.999 %		99.999 %	
Sound level max.	60 dBA		60 dBA		60 dBA		60 dBA	
Noise level (ISO)	58 dBA		58 dBA		59 dBA		59 dBA	
Light intensity	1400 Lux		1400 Lux		1400 Lux		1400 Lux	
Air velocity downflow	0.4 m/sec		0.4 m/sec		0.4 m/sec		0.4 m/sec	
Voltage/frequency	230 V / 50 Hz		230 V / 50 Hz		230 V / 50 Hz		230 V / 50 Hz	

PROPERTY OF MATERIALS		
UNITS	MATERIAL	TREATMENT
Front windows and side windows	Glass	Laminated / hardened
Window frames	Stainless steel AISI 304	Polished
Upper part, return duct and bottom part	Steel plate 1203	Polyester-coated
Stand	Steel plate 1203	Polyester-coated
Trough, table tops and suction gate	Stainless steel AISI 304	Polished

7 Maintenance

Recommended maintenance:

• **DAILY:**

The work area is disinfected. Also lift the table tops and carefully wipe the backside and the trough.

· **WEEKLY:**

Wipe the exterior of the unit with a mild household detergent.

HOW TO CLEAN THE INSIDE FRONT WINDOW:

1. Bring the front window in highest position by pressing the [Δ] button.
2. Open the front shield.
3. Clean the inside window...

· **REGULARLY:**

Reliable operation of the safety cabinet and compliance with standards are based on the following conditions:

1) Correct air velocities.
2) Efficiency of the installed HEPA filters.
3) Tightness of the construction.

A qualified technician should test these parameters at intervals of approx. 5000 hours of operation or at least once a year. The LCD display will give you a clear indication for filter change, see fig. 3, next page.

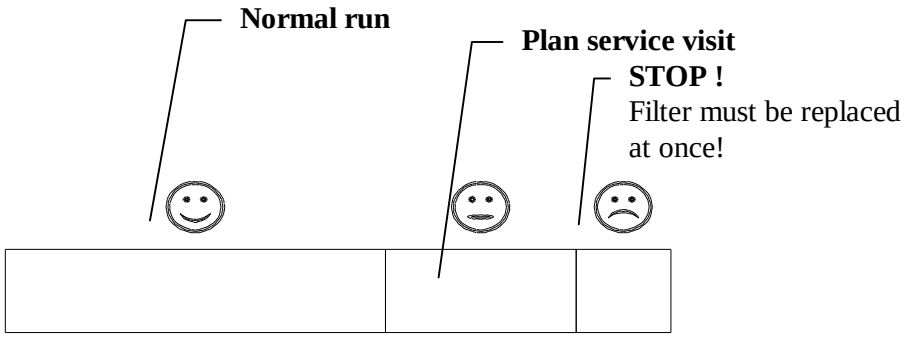
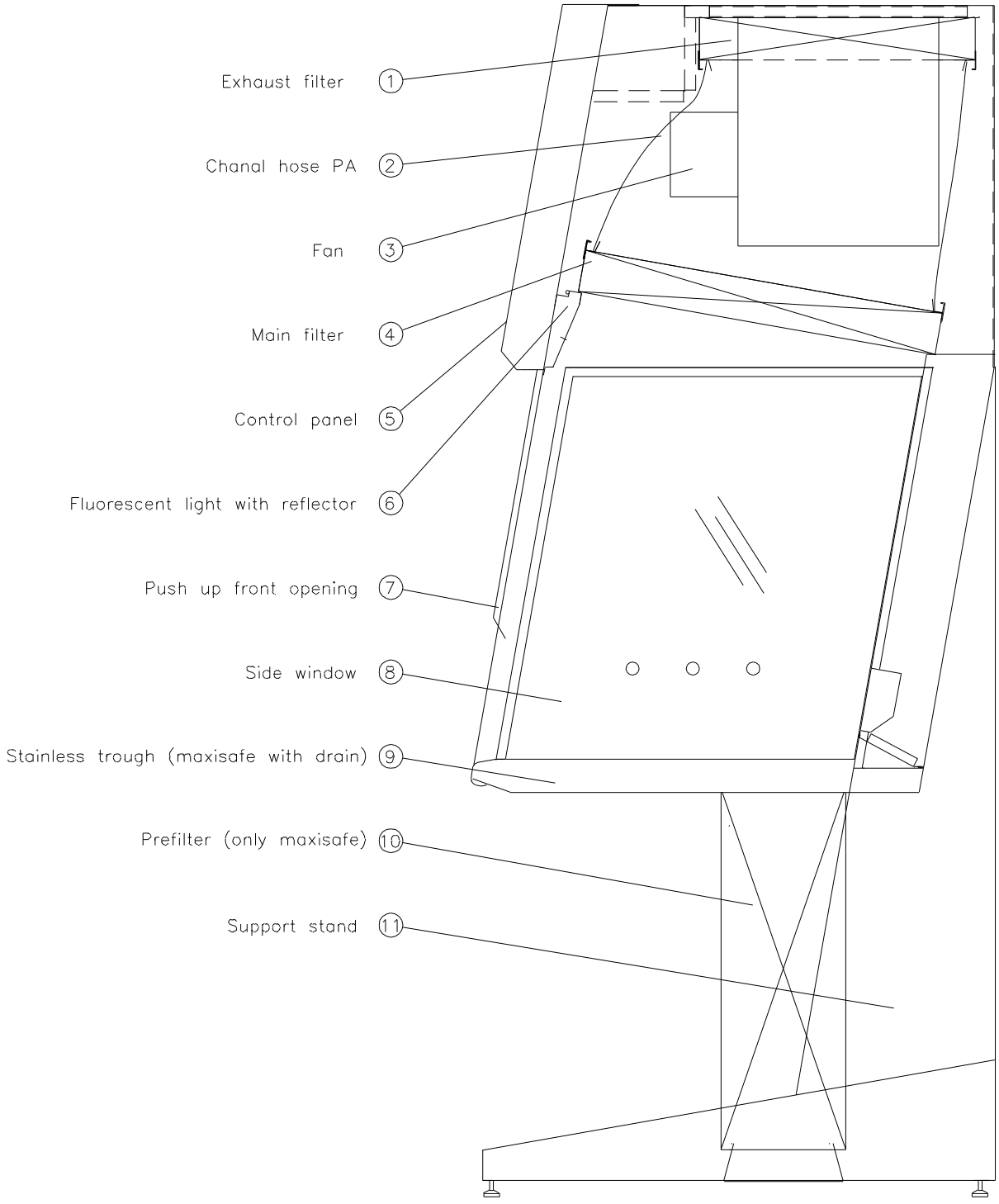


Figure 4

The flow graph will illuminate in all segments when the filter is new and clean. Gradually as the filter becomes contaminated the segments will be turned off.

Please contact your supplier for further information on test procedures.



Manual 00346609 replacing 00346608 990104

RECOMMENDED DISINFECTANTS FOR USE IN CLASS II CABINETS FROM HOLTEN LAMINAIR

Note: Most disinfectants are mixtures containing several components.

Avoid the use of products containing iodine, chloramine, chlorine dioxide, hypochloride, phenol, and perchloric acid.

Useable disinfectants contain

alcohol or aldehydes.

Recommended disinfectants are

70% (volume) pure ethanol
or
2% (volume) glutoric aldehyde
or
15% (volume) formaldehyde.

The use of other disinfectants is not recommended. HOLTEN LAMINAIR cannot take any responsibility regarding effectiveness or eventual deterioration of materials of Class II cabinet.

LOG-BOOK

Type :	Product name :	Serial no. :	Supplier :

Service interval : _____ *Laboratory :* _____

Service / repair	*Fault occurred on*	*Notified / date*	*Repaired / date*	*Remark / fault*	*Caused by / action*	*Service internal/external*	*Carried out by*

Service / repair	*Fault occurred on*	*Notified / date*	*Repaired / date*	*Remark / fault*	*Caused by / action*	*Service internal/external*	*Carried out by*

Service / repair	*Fault occurred on*	*Notified / date*	*Repaired / date*	*Remark / fault*	*Caused by / action*	*Service internal/external*	*Carried out by*

EC-Declaration of conformity

Heto Holten

Form.nr.: 00243167

DS/EN 45014 Annexe A (Recommended form for declaration of conformity)

We: Heto-Holten A/S
Gydevang 17-19, DK-3450 Allerød

declare under our sole responsibility that the product

Model: SAFE 2000 / MAXI SAFE 2000

to which this declaration relates is in conformity with the following standard(s) or other normative document(s):

EN 292-1:1993 Safety of machinery
(Basic concepts - General principles)

EN 292-2:1993 Safety of machinery
(Technical principles and specifications)

EN 60204-1:1992 Safety of machinery
(Electrical equipment of machines - General requirements)

EN 50081-1 and -2:1992, 50082-1:1992 Electromagnetic compatibility
(Generic immunity/emission standard)

(if applicable) following the provisions of:

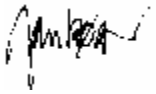
Directive 89/392/EEC Machinery

Directive 91/368/EEC Machinery (1. amendment)

Directive 93/44/EEC Machinery (2. amendment)

Directive 73/23/EEC Low voltage

Directive 89/336/EEC Electromagnetic compatibility



Allerød, June 16th 1998

Jan Bøger, President