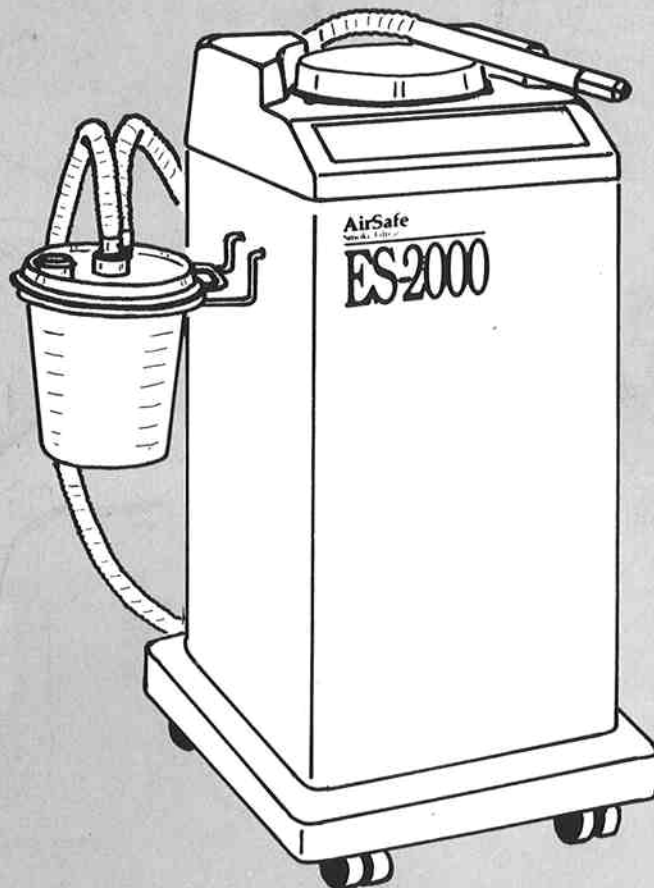


# STACKHOUSE®

## OPERATOR/SERVICE MANUAL

**AirSafe™**  
Smoke Filtration System

# ES-2000



\$10.00  
P/N 55160-0792

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# PRINCIPLES OF OPERATION

The Stackhouse® AirSafe™ ES-2000 Smoke Filtration System is a three stage system (Figure 1) designed for the capture and filtration of the surgical smoke generated during either electrosurgery or laser procedures.

It is a closed system, contaminated surfaces need never be touched by either the user or service personnel. The filters may be incinerated.

The first of the three stages is a Pre-filter. The Pre-filter's function is to capture gross particulate. This filter is designed for single use only.

The second stage filtration is by an activated charcoal filter media which is adsorptive to both odorous and toxic gases.

The third stage filtration is by an ULPA (ultra-low penetration air) filter media, designed for capture of sub-micron particulate and microorganisms in size down to 0.01 micron, with an efficiency of 99.9999%.

The second and third stage filtration media are contained within the ULPA/Charcoal Filter (ES-2000/ULC). The ES-2000/ULC Filter has been designed for 25 hours total accumulated operating time. Consumed usage is progressively indicated by an LED bar on the ES-2000 control panel. After 22-1/2 hours, the LED bar illuminates amber. After 25 hours, the LED bar flashes red. This flashing red bar is an indicator that the filter should be replaced.

Suction flow is provided by a two-stage, thru-flow, centrifugal action blower. Electronic controls provide that the unit will return to the previously used flow setting when turned on and default to "normal" if unplugged. This applies in both the use of the pneumatically activated foot switch, and in the use of the main ON/OFF switch.

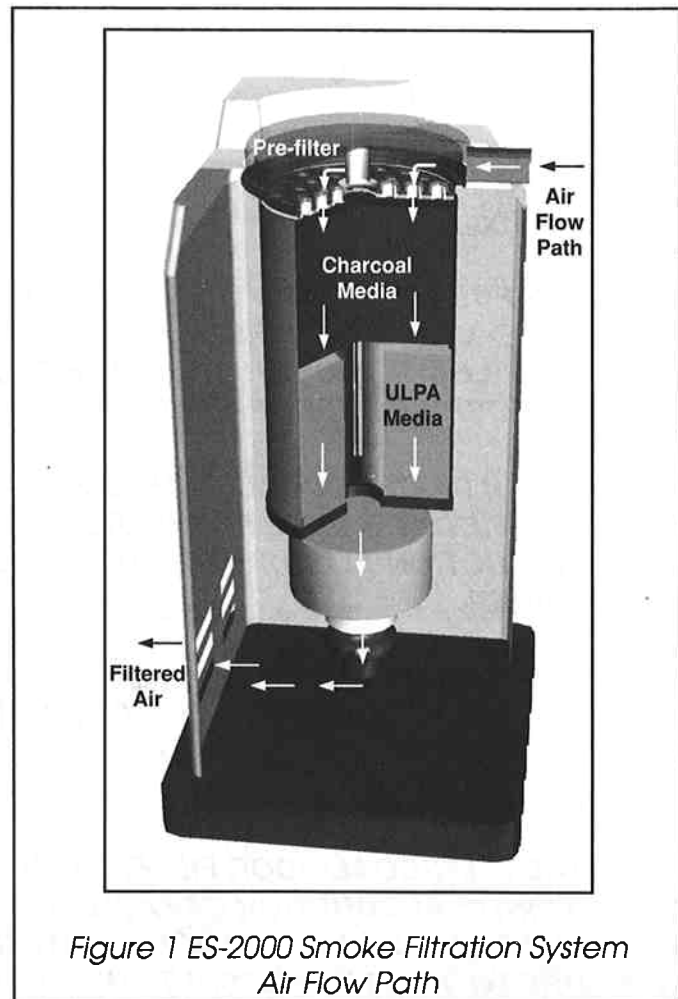


Figure 1 ES-2000 Smoke Filtration System  
Air Flow Path

## WARNINGS, CAUTIONS AND NOTES

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The Stackhouse® AirSafe™ ES-2000 Smoke Filtration System should be operated only by personnel who have been trained in its operation and are under the supervision of a licensed physician. Before clinical application, all Warnings, Cautions and Notes should be read and understood.

A "WARNING" indicates that a condition may exist which could adversely affect the operator or patient. A "CAUTION" indicates that a condition may exist that could damage the AirSafe™ Smoke Filtration System or other equipment. A "NOTE" is a specific point made to assist the operator's understanding.

### **WARNINGS:**

- **THE PRE-FILTER AND ULPA/CHARCOAL FILTERS ARE DESIGNED TO CAPTURE MICROORGANISMS, PARTICLES AND GASES. WHEN REMOVED, HANDLE AS THOUGH THEY ARE CONTAMINATED AND INCINERATE OR DISPOSE OF APPROPRIATELY.**
- **THE ULPA/CHARCOAL FILTER EFFICIENCY MAY BE COMPROMISED IF THE PRE-FILTER IS USED FOR MORE THAN ONE PROCEDURE OR IF ALLOWED TO SUCTION FLUIDS WITHOUT THE USE OF A FLUID COLLECTION CONTAINER.**
- **THE ULPA/CHARCOAL FILTER HAS A FINITE CAPACITY FOR CAPTURING PARTICLES. THE FILTER SHOULD BE CHANGED EVERY 25 HOURS (THE LED BAR WILL FLASH RED). FAILURE TO DO SO MAY REDUCE FLOW SUCTION CAPACITY AND COMPROMISE THE EFFICIENCY OF THE FILTER.**
- **THE CHARCOAL/ODOR FILTER IS BUILT INTO THE ULPA FILTER AND HAS A FINITE ADSORPTION CAPACITY FOR ODOR MOLECULES. THE FILTER IS AUTOMATICALLY REPLACED WITH THE ULPA/CHARCOAL FILTER. FAILURE TO DO SO MAY RESULT IN DECREASED EFFICIENCY AND CONTAMINATION OF THE SOUND ABSORBING FOAM WITHIN THE UNIT.**
- **DO NOT REMOVE AND REINSTALL THE SAME ULPA/CHARCOAL FILTER INTO THE UNIT. THE REPLACEMENT INTERVAL TIMER WILL BE RESET TO ZERO AND THE REPLACEMENT LED BAR ON THE CONTROL PANEL WILL NOT INDICATE ACTUAL TIME OF USE.**

## **WARNINGS, CAUTIONS AND NOTES**

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### **CAUTIONS:**

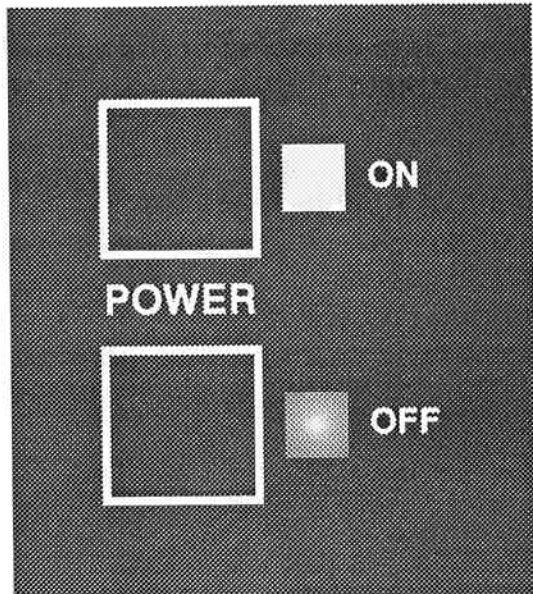
- **If one of the filters or tubing becomes clogged or is occluded or the airflow through the device is significantly restricted, the motor/blower may overheat and eventually cause the device to fail.**
- **DO NOT allow the Pre-filter to come into contact with fluids. Use a Stackhouse Suction Collection Canister (Catalog #SCC-1200 or SCC-2000) mounted in the ring on the side of the unit with the appropriate hoses.**
- **Using any filter or accessory not manufactured by Stackhouse Incorporated, may cause damage to the system and will be cause for voiding the warranty.**

### **NOTE:**

When suctioning fluids into the Stackhouse Fluid Suction Container, it is recommended that a 1/4" or smaller wand/tubing be used at the patient end. The flow rates when using a 7/8" tubing may be too high for suctioning fluids in and around the surgical site and will cause the collected fluids to possibly pass into the Pre-filter. Always use a fluid container in line with the Pre-filter when suctioning fluid.



## DESCRIPTION OF CONTROLS AND INDICATORS

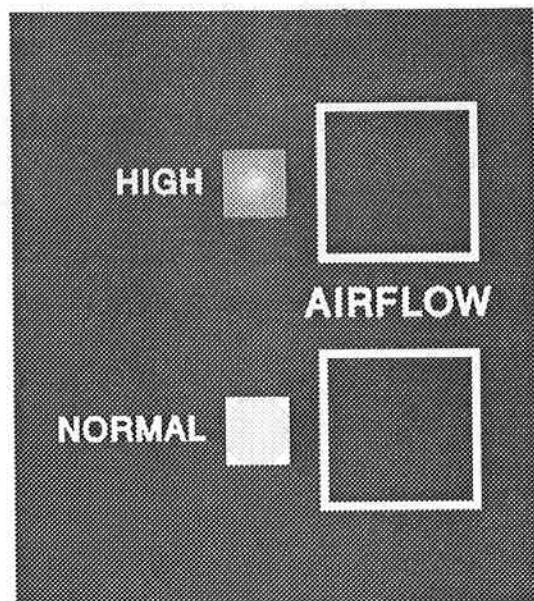


### POWER

When the system is on, the green light to the right of the control is illuminated.

### OFF/RECHARGE

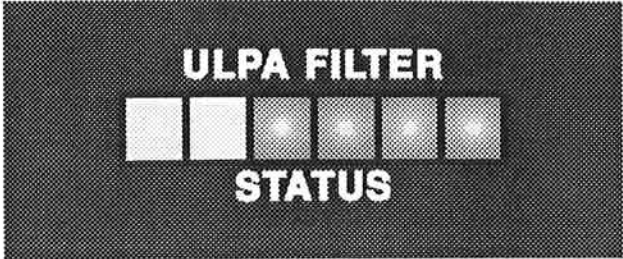
When illuminated (amber) the system is off.



### AIR FLOW

The unit is normally operated at the "NORMAL" position. Depressing the "HIGH" button will cause the system to run at maximum flow as required.

## DESCRIPTION OF CONTROLS AND INDICATORS

	<b>ULPA FILTER STATUS</b>
<p>When a filter is properly placed in the ES-2000 Smoke Filtration System, the first LED will illuminate green, indicating that a filter is present and properly installed.</p> <p><b>NOTE:</b> If the filter is out or not properly installed, the first LED will illuminate red and will remain red until properly placed. Unit will not operate until first LED illuminates green.</p> <p>As the filter is used, the illumination of successive green LED bars displays progressively consumed usage; for example, illumination of bar #2 indicates 20% life used, bar #3 40% life used, etc. The first five lights will illuminate amber at 22-1/2 hours indicating time approaching to change; all 6 LED's will flash red at 25 hours indicating the need to change the ULPA/Charcoal Filter. (Refer to Page 14 for ULPA Filter replacement instruction.)</p>	



# PERFORMANCE CHECK: First Time Used

Upon receipt of the ES-2000 Smoke Filtration System, execute the following steps to verify that no damage occurred during shipping.

1. Visually inspect unit for any dents, cracks or damage which may have occurred during shipment. If any are present, notify carrier for damage assessment.
2. Install an ULPA/Charcoal Filter (first LED is green) - (see Page 14).
8. Turn unit ON by depressing the power button or depressing the Footswitch bellows.
9. Depress power "OFF" button. Check to verify that the amber OFF light illuminates.
10. Depress the Footswitch bellows. The green "ON" light will illuminate, and the motor will run.

**NOTE:**

When suctioning fluids into the Stackhouse Fluid Suction Container, it is recommended that a 1/4" or smaller wand/tubing be used at the patient end. The flow rates when using a 7/8" tubing may be too high for suctioning fluids in and around the surgical site and will cause the collected fluids to possibly pass into the Pre-filter. Always use a fluid container in line with the Pre-filter when suctioning fluid.

**CAUTION:**

**Do not do a performance check with Pre-filter capped (motor could over-heat).**

**NOTE:**

The unit can be pre-set to the desired airflow and come back on at the same speed that it was on prior to switching it off.

3. Install a Pre-filter and tubing (see Page 12).
4. Plug system into a hospital grade power receptacle.
5. The amber "OFF" light will illuminate and the airflow "NORMAL" light will illuminate. If not, check to see if the circuit breaker on lower rear of unit is "ON".
6. Check to see that the "ULPA FILTER STATUS" light is illuminated green. (If filters are installed and the status indicator is not illuminated green, refer to pages 14-15 for proper installation instruction.)
7. By alternately depressing on the "HIGH" and "NORMAL" buttons, verify that the indicator lights change from normal to high, and high to normal.
11. Depress the bellows again to ensure that the unit comes back "OFF". Repeat at both speeds to ensure proper switching.
12. Turn the unit off and on with the airflow in the "NORMAL" mode and repeat off and on with the unit in the "HIGH" mode. The unit should come back on at the same speed selected prior to switching it off.
13. The power switches on the control panel "ON" and "OFF", and the Footswitch bellows can be used interchangeably.
14. The unit is now ready for use. If any problems have occurred, refer to the Troubleshooting Guide on Page 18.

**NOTE:**

The unit can be turned on with either the "ON" button, or the Footswitch bellows. The unit can be turned off with either the "OFF" button or the Footswitch bellows. The system logic will respond to either command mode in any sequence.

## PERFORMANCE CHECK: Every Procedure

1. Pre-filter and tubing should be installed on top of the ULPA/Charcoal Filter (see Page 12). A spare filter may be stored in the optional Storage Bin (ES-2000/SB) or optional Wire Accessory Basket (ES-2000/WB).
6. Turn unit ON by depressing the "ON" button, the green "ULPA FILTER STATUS" light will illuminate, and the motor will run.

**WARNING:**

**THE ULPA/CHARCOAL FILTER EFFICIENCY MAY BE COMPROMISED IF THE PRE-FILTER IS USED FOR MORE THAN ONE PROCEDURE OR IF ALLOWED TO COME INTO CONTACT WITH FLUIDS.**

7. Turn unit off by depressing the "OFF" button.
8. Depress the Footswitch bellows. The green "ON" light will illuminate and the motor will run.
9. Depress the Footswitch bellows to turn off.

**NOTE:**

When suctioning fluids into the Stackhouse Fluid Suction Container, it is recommended that a 1/4" or smaller wand/tubing be used at the patient end. The flow rates when using a 7/8" tubing may be too high for suctioning fluids in and around the surgical site and will cause the collected fluids to possibly pass into the Pre-filter. Always use a fluid container in line with the Pre-filter when suctioning fluid.

2. Install suction tubing to the Pre-filter.

**CAUTION:**

**Do not do a performance check with Pre-filter capped (motor could over-heat).**

3. Plug system into a hospital grade power receptacle.
4. The amber OFF light will illuminate.
5. "ULPA FILTER STATUS" lights should illuminate green.

## USER MAINTENANCE/DISPOSABLE REPLACEMENT INTERVALS

### USER MAINTENANCE

1. Wipe machine down with clean wet cloth and/or germicide after use. Avoid abrasive cleaners.
3. Change the Pre-filter after each procedure. This will maintain the efficiency of the ULPA/Charcoal Filter. (See Page 12.)
4. Change the ULPA/Charcoal Filter when the red lights flash or earlier at amber light warning. (See Page 14-15).

### REPLACEMENT INTERVALS

CATALOG #	DESCRIPTION	INTERVALS
ES-2000/PF	ES Pre-filter (Gross Particulate)	Every procedure
ES-2000/PFC	ES Pre-filter (Gross Particulate) with Charcoal	Every procedure
ES-2000/ULC	ES ULPA/Charcoal Filter	When red lights flash
IW-106	Suction Tubing & Integral Wand, 6'	Every procedure
IW-106/S	Suction Tubing & Integral Wand, 6' (Sterile)	Every Procedure
IW-110	Suction Tubing & Integral Wand, 10'	Every procedure
IW-110/S	Suction Tubing & Integral Wand, 10' (Sterile)	Every procedure
IWT-106	Suction Tubing & Integral Wand w/ Tip, 6'	Every procedure
IWT-106/S	Suction Tubing & Integral Wand w/ Tip, 6' (Sterile)	Every procedure
IWT-110	Suction Tubing & Integral Wand w/ Tip, 10'	Every procedure
IWT-110/S	Suction Tubing & Integral Wand w/ Tip, 10' (Sterile)	Every procedure
L8014S	Surgical Smoke Tubing Clamp	Replace as needed
CSF-100/S	Combination Smoke Evacuation and Fluid Aspiration Kit (Sterile)	Every procedure
SCC-1200	Fluid Suction Container (1200cc) w/ Fitting	Every procedure
SCC-2000	Fluid Suction Container (2000cc) w/ Fitting	Every procedure
LAP-100/S	Laparoscopic Smoke Evacuator Tubing Kit (Sterile)	Every procedure
LAP-100V/S	Laparoscopic Smoke Evacuator Tubing Kit w/ Control Valve (Sterile)	Every procedure
LSP-101/ST	Laser Resistant Wand, 1/4" x 8" Suction Probe (Sterile)	Every procedure
LTV-105	1/4" Tubing x 24"	Every procedure
RTA-111	1/4" Tubing x 24" with a 7/8" Reducer Fitting	Every procedure
RTA-111/ST	1/4" Tubing x 24" with a 7/8" Reducer Fitting	Every procedure
LTR-104	Reducer Fitting, 7/8" x 1/4"	Every procedure

## FILTER REPLACEMENT INSTRUCTIONS

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### FILTER REPLACEMENT INSTRUCTIONS

The Stackhouse® ES-2000 Smoke Filtration System utilizes two filters. As described on Page 3, Principles of Operation, the two filters are designed to work in conjunction.

Both filters may be incinerated or disposed of according to hospital protocol.

**WARNING:**

**THE PRE-FILTER AND ULPA/CHARCOAL FILTERS ARE DESIGNED TO CAPTURE POTENTIALLY HAZARDOUS MICROORGANISMS, PARTICLES AND GASES. WHEN REMOVED, HANDLE AS THOUGH THEY ARE CONTAMINATED AND INCINERATE OR DISPOSE OF APPROPRIATELY.**

# FILTER REPLACEMENT INSTRUCTIONS

## PRE-FILTER (Change After Every Procedure)

Replacement Catalog No. ES-2000/PF and ES-2000/PFC (with charcoal)

Designed to remove gross particulate from surgical smoke. Pre-filter with Charcoal is designed for use during heavy smoke producing procedures for added odor control.

### CAUTION:

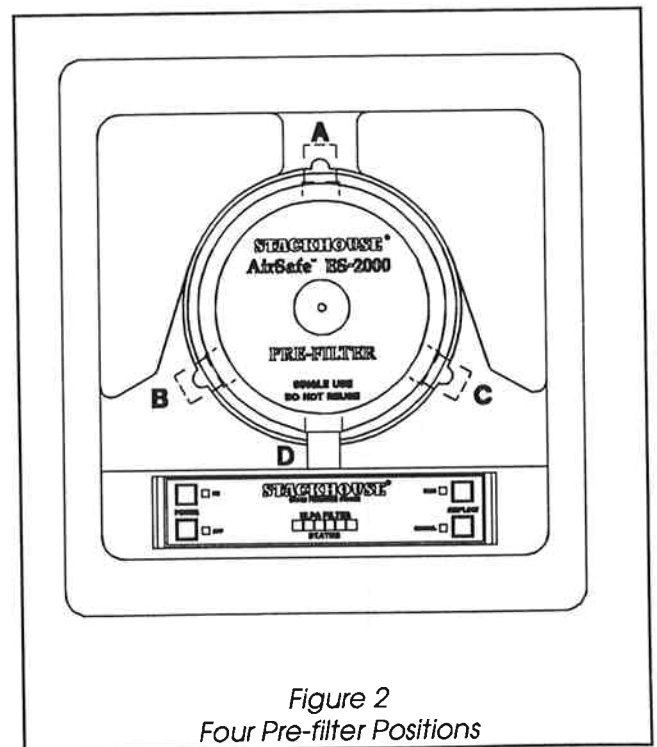
- DO NOT allow the Pre-filter to come into contact with fluid. This could result in damage to the ULPA/Charcoal Filter. Use of a Stackhouse Fluid Suction Container (Catalog #SCC-1200 or SCC-2000) mounted on the side of the unit along with proper tubing is recommended.
- If one of the filters or tubing becomes clogged or is occluded or the airflow through the device is significantly restricted, the motor/blower may overheat and eventually cause the device to fail.

### To install a new Pre-filter:

1. Place the matching multiple hole side of the Pre-filter on the top of the ULPA/Charcoal Filter.
2. Rotate the Pre-filter slightly to one of the four Pre-filter positions (see Figure #2). The Pre-filter will drop and lock into position.
3. The Pre-filter can be properly installed in four different positions:
  - a) Inlet port out the rear saddle of unit.
  - b) Inlet port to the left of control panel.
  - c) Inlet port to the right of control panel.
  - d) Inlet port to the center of control panel.
4. Connect vacuum tubing to Pre-filter and verify fit to ULPA by jostling Pre-filter. This will indicate the correct alignment of the Pre-filter.

### NOTE:

When suctioning fluids into the Stackhouse Fluid Suction Container, it is recommended that a 1/4" or smaller wand/tubing be used at the patient end. The flow rates when using a 7/8" tubing may be too high for suctioning fluids in and around the surgical site and will cause the collected fluids to possibly pass into the Pre-filter. Always use a fluid container in line with the Pre-filter when suctioning fluid.



### WARNING:

THE INTAKE PORT ON THE PRE-FILTER WITH CHARCOAL SHOULD BE CAPPED WHEN NOT IN USE. ENSURE CAP IS REMOVED BEFORE TURNING UNIT ON.

## FILTER REPLACEMENT INSTRUCTIONS

### To remove a used Pre-filter:

1. Lift the Pre-filter and tubing from the top of the unit.
2. Dispose of the Pre-filter and tubing according to the protocols of your facility (may be incinerated).
3. Install a new Pre-filter until ready for use. To protect the charcoal when using the ES-2000/PFC Pre-filter, leave the cap on until ready to use. **ENSURE THAT THE CAP IS REMOVED FROM PRE-FILTER BEFORE TURNING UNIT ON.**
4. Do a performance check. (See Page 9).

### **WARNING:**

- **THE PRE-FILTER AND ULPA/CHARCOAL FILTERS ARE DESIGNED TO CAPTURE MICROORGANISMS, PARTICLES AND GASES. WHEN REMOVED, HANDLE AS THOUGH THEY ARE CONTAMINATED AND INCINERATE OR DISPOSE OF APPROPRIATELY.**
- **THE INTAKE SURFACE ON THE ULPA/CHARCOAL FILTER SHOULD BE COVERED WITH A NEW PRE-FILTER WHEN NOT IN USE.**
- **ENSURE THAT CAP IS REMOVED FROM PRE-FILTER BEFORE TURNING UNIT ON.**

## USER MAINTENANCE/DISPOSABLE REPLACEMENT INTERVALS

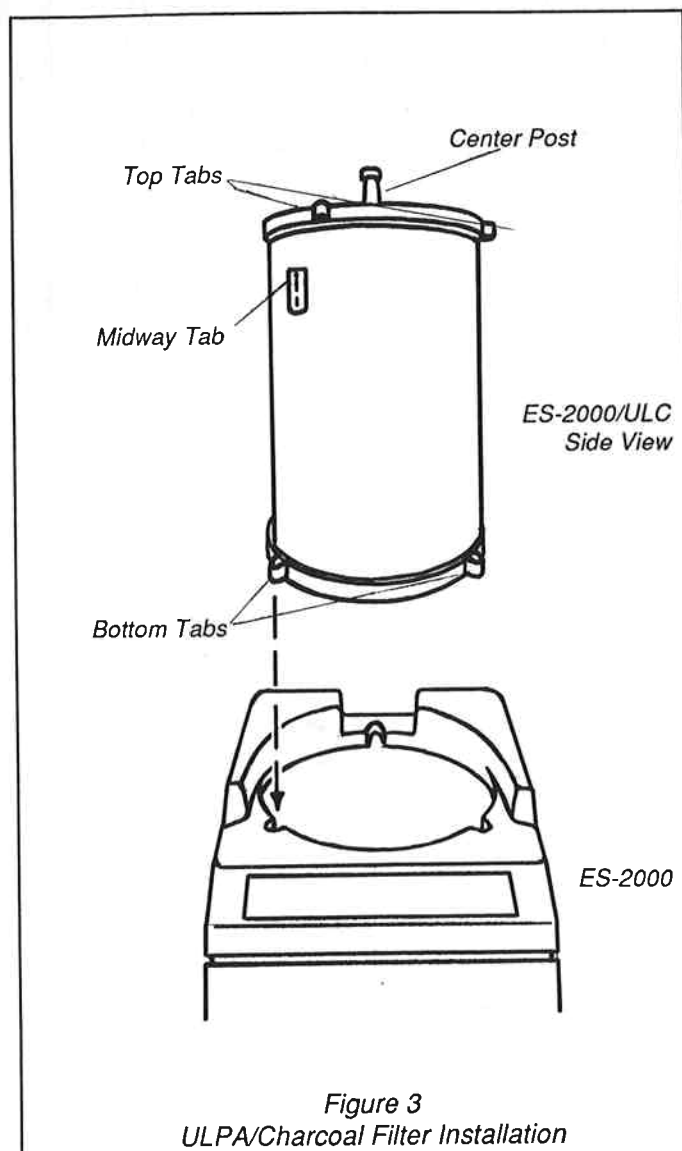
### ULPA/CHARCOAL FILTER (Change after a maximum of 25 hours of use)

Replacement Catalog No. ES-2000/ULC

The ULPA/Charcoal Filter is designed to remove toxic gases (odors) and sub-micron particles and debris in surgical smoke for 25 hours of use.

**To install an ULPA/Charcoal Filter requires successively lowering each of the three tabs (bottom, midway and top) through any of the three tab slots located in the top of the ES-2000 unit:**

1. Grasp the center post of the new ULPA/Charcoal Filter and lift above the ES-2000 unit (see Figure 3).
2. Align the three tabs on the ULPA/Charcoal Filter bottom with the three tab slots on the ES-2000 unit.
3. Lower the ULPA/Charcoal Filter into the unit until midway locator tab rests on the top of the ES-2000 unit.
4. Rotate the filter clockwise until the midway tab enters the tab slot.
5. Lower the ULPA/Charcoal Filter into unit until top tabs rest on the top of the ES-2000 unit.
6. Rotate the filter clockwise until the top tabs are lowered into the tab slots.
7. Lower the filter until it sits firmly in the ES-2000 unit.
8. Correct installation of the ES-2000/ULC Filter is verified by the observation of a green light on the "ULPA FILTER STATUS" bar on the control panel. (If light remains red, refer to Troubleshooting Guide, page 18.)
9. Do a performance check (see Page 9).



#### **CAUTION:**

**Do not do a performance check with Pre-filter capped (motor could overheat).**



## FILTER REPLACEMENT INSTRUCTIONS

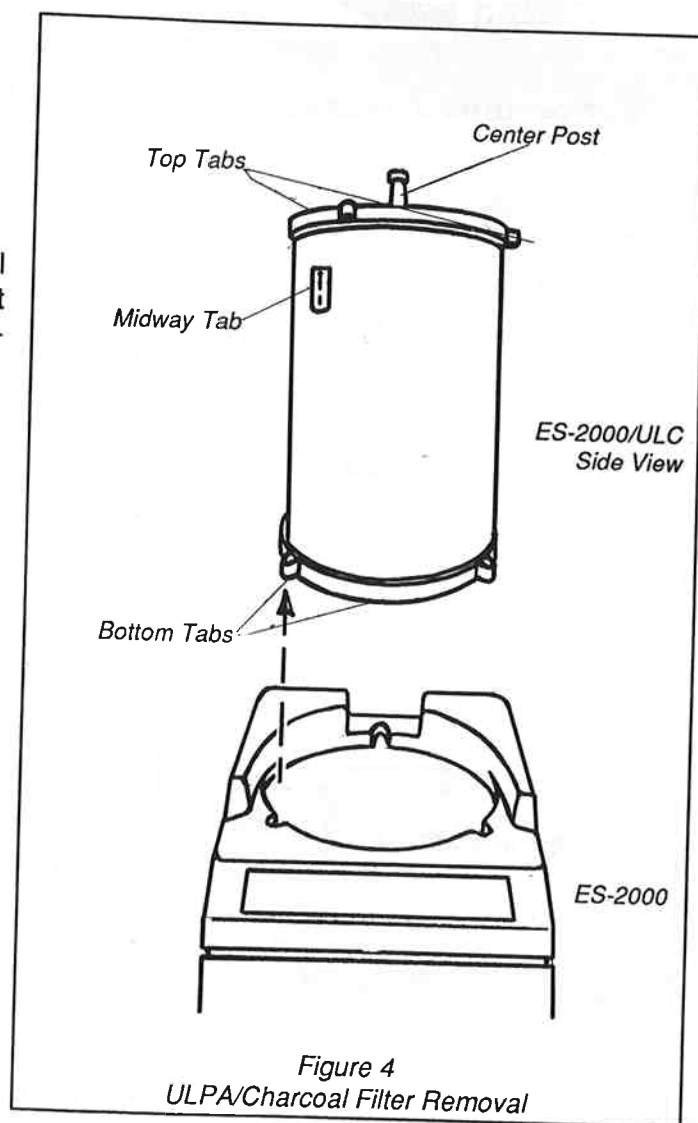
Flashing red lights on the "ULPA FILTER STATUS" LED bar indicate when it is time to change the filter.

**WARNING:**

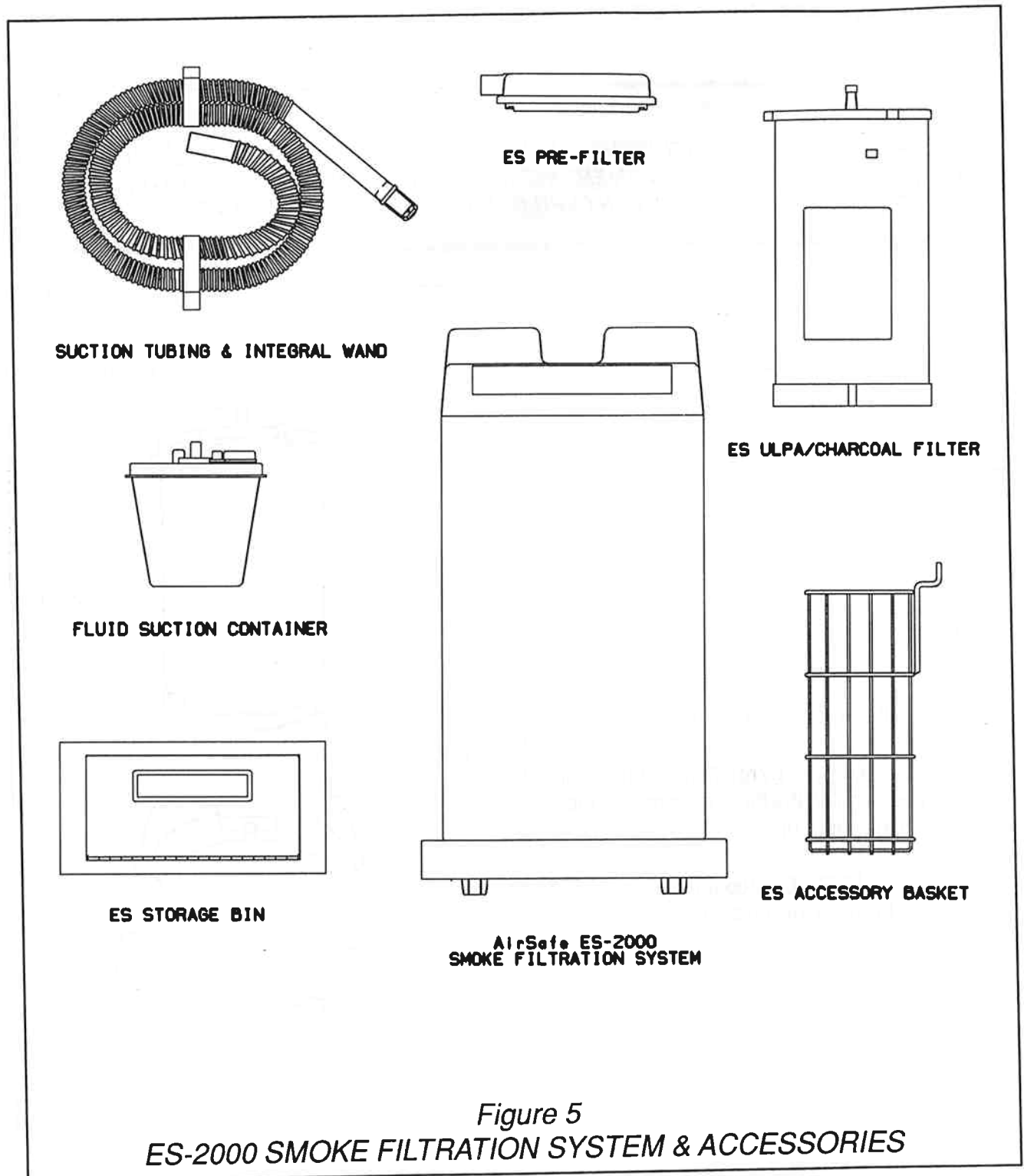
**DO NOT REMOVE AND REINSERT THE SAME ULPA AND/OR CHARCOAL FILTER INTO THE UNIT. THE REPLACEMENT INTERVAL TIMERS WILL BE RESET TO ZERO AND NULLIFY THE REPLACEMENT LED BAR ON THE CONTROL PANEL.**

### To remove an ULPA/Charcoal Filter:

1. Unplug the system from electrical power.
2. Remove the Pre-filter.
3. Grasp the center post of the ULPA/Charcoal Filter top and lift until the three alignment tabs are above the three top slots (see Figure 4).
4. Rotate the filter counter clockwise until the midway locator tab is visible through a unit top slot.
5. Lift the filter midway tab through the slot.
6. Continue lifting filter by rotating counter clockwise and aligning the three bottom filter tabs. Raise filter out of unit.
7. Dispose of ULPA/Charcoal Filter according to your facilities protocol (may be incinerated).





## ORDERING INFORMATION



# ORDERING INFORMATION

To order parts and accessories for the AirSafe ES-2000 Smoke Filtration System, call Stackhouse, Incorporated at 1-800-325-0082, or your local distributor.

CATALOG NUMBER	DESCRIPTION	QTY (Each)
<b>HARDWARE</b>		
ES-2000	AirSafe ES-2000 Smoke Filtration System (w/ Footswitch)	1
<b>FILTERS</b>		
ES-2000/PF	ES Pre-filter	6
ES-2000/PFC	ES Pre-filter with Charcoal	6
ES-2000/ULC	ES ULPA/Charcoal Filter (25 hour life) 24152 	1
<b>ACCESSORIES</b>		
ES-2000/SB	ES Storage Bin (assembly required)	1
ES-2000/WB	ES Wire Accessory Basket (side mounted)	1
<b>TUBING</b>		
IW-106	Suction Tubing & Integral Wand, 6'	24
IW-106/S	Suction Tubing & Integral Wand, 6' (Sterile)	24
IW-110	Suction Tubing & Integral Wand, 10'	24
IW-110/S	Suction Tubing & Integral Wand, 10' (Sterile) 24145 	24
IWT-106	Suction Tubing & Integral Wand with Tip, 6'	24
IWT-106/S	Suction Tubing & Integral Wand with Tip, 6' (Sterile)	24
IWT-110	Suction Tubing & Integral Wand with Tip, 10'	24
IWT-110/S	Suction Tubing & Integral Wand with Tip, 10' (Sterile)	24
L8014S	Surgical Smoke Tubing Clamp	10
<b>SMOKE/FLUID ACCESSORIES</b>		
CSF-100/S	Combination Smoke Evacuation and Fluid Aspiration Kit (Sterile)	12
SCC-1200	Fluid Suction Container (1200 cc)	6
SCC-2000	Fluid Suction Container (2000 cc)	6
<b>LAPAROSCOPIC SMOKE ACCESSORIES</b>		
LAP-100/S	Laparoscopic Smoke Evacuator Tubing Kit (Sterile)	12
LAP-100V/S	Laparoscopic Smoke Evacuator Tubing Kit with Control Valve (Sterile)	12

# TROUBLE SHOOTING (CLINICAL)

PROBLEM	POTENTIAL CAUSE	CORRECTIVE ACTION
1. System is functional but there is minimal or NO vacuum at the wand.	<ol style="list-style-type: none"> <li>1. Pre-filter not installed properly.</li> <li>2. Clogged tubing.</li> <li>3. Clogged Pre-filter.</li> <li>4. Clogged ULPA Filter.</li> <li>5. Obstructed motor/blower.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check to ensure Pre-filter is seated properly onto the ULPA/Charcoal Filter top.</li> <li>2. Check tubing.</li> <li>3. Replace Pre-filter.</li> <li>4. Replace ULPA Filter.</li> <li>5. Refer to BioMed Servicing, Authorized Distributor or Stackhouse.</li> </ol>
2. System does not run when POWER button is depressed.	<ol style="list-style-type: none"> <li>1. No main power.</li> <li>2. ULPA/Charcoal Filter not installed.</li> <li>3. Circuit breaker popped.</li> <li>4. Electronic module defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. If amber "OFF" LED is not illuminated, check outlet for power.</li> <li>2. Install filter.</li> <li>3. Reset circuit breaker by switching the breaker off, then on, once. If breaker pops again, notify Service Technician.</li> <li>4. Refer to BioMed Servicing, Authorized Distributor or Stackhouse.</li> </ol>
3. Footswitch is not working.	<ol style="list-style-type: none"> <li>1. Footswitch not connected properly to unit.</li> <li>2. ULPA/Charcoal Filter not properly seated in unit.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check connection of Footswitch to bottom rear of unit.</li> <li>2. Rotate ULPA/Charcoal Filter slightly until green LED light illuminates on "ULPA FILTER STATUS" display.</li> </ol>
4. Indicator lights do not function as prescribed.	<ol style="list-style-type: none"> <li>1. Dead memory battery cells. <ol style="list-style-type: none"> <li>a. Unit has not been used for 12 months.</li> <li>b. Battery has not been replaced within 5 years.</li> </ol> </li> <li>2. Electronic module defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to BioMed Servicing, Authorized Distributor or Stackhouse for memory battery replacement.</li> <li>2. Refer to BioMed Servicing, Authorized Distributor or Stackhouse.</li> </ol>

# PRODUCT SPECIFICATIONS

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**CFM\*:** 20 (Normal Setting), 30 (High Setting)

\* Measured at the end of a six (6) foot, 7/8" hose.

**STATIC SUCTION:** 75" H<sub>2</sub>O Suction Pressure, 100-Motor Rating

## **FILTERS:**

- a. **Particulate Pre-filter:** Medium and large size particles
- b. **Particulate Pre-filter w/ Charcoal:** Medium and large size particles. Activated virgin coconut shell charcoal for gas and odor adsorption (used during heavy smoke producing procedures).

### **NOTE:**

When suctioning fluids with the Stackhouse Fluid Suction Container it is recommended that a 1/4" or smaller wand/tubing be used at the patient end. The flow rates when using a 7/8" tubing may be too high for suctioning fluids in and around the surgical site.

- c. **ULPA/Charcoal Filter:** 99.9999% efficiency on particles 0.01 micron and larger  
Activated virgin coconut shell charcoal for gas and odor adsorption.

**TUBING ADAPTION:** 7/8 inch, 1/4 inch Smoke Suction Tubing  
Laparoscopic Suction Tubing capabilities

**POWER:** 8 AMPS at 120 VAC or  
4 AMPS at 220/240 VAC

## **PHYSICAL CHARACTERISTICS:**

	<u>SYSTEM</u>	<u>SHIPPING</u>
Height	27 inches	31 inches
Width (at base)	14 inches	18.5 inches
Depth (at base)	15 inches	19 inches
Weight	50 pounds	61 pounds

All product specifications and instructions are subject to change without notice.

# WARRANTY

**THE PRODUCTS OF STACKHOUSE INCORPORATED (HEREIN STACKHOUSE) ARE WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP AND TO MEET THE PUBLISHED SPECIFICATIONS FOR ONE YEAR FROM THE DATE OF SHIPMENT.**

The liability of Stackhouse under this warranty is limited to replacing, repairing or issuing credit, at the discretion of Stackhouse, for parts that become defective or fail to meet published specifications during the warranty period; Stackhouse will not be liable under this warranty unless (A) Stackhouse is promptly notified in writing by Buyer upon discovery of defects or failure to meet published specifications; (B) the defective unit or part is returned to Stackhouse, transportation charges prepaid by Buyer; (C) the defective unit or part is received by Stackhouse for adjustment no later than four weeks following the last day of the warranty period; and (D) Stackhouse's examination of such unit or part shall disclose, to its satisfaction, that such defects or failures have not been caused by misuse, neglect, improper installation, unauthorized repair, alteration or accident.

Any authorization of Stackhouse for repair or alteration by the Buyer must be in writing to prevent voiding warranty. In no event shall Stackhouse be liable to the Buyer for loss of profits, loss of use, consequential damage or damages of any kind based upon a claim for breach of warranty, other than the purchase price of any defective product covered hereunder.

Stackhouse warranties as herein and above set forth shall not be enlarged, diminished or affected by, and no obligation or liability shall arise or grow out of the rendering of technical advice or service by Stackhouse or its agents in connection with the Buyer's order of the products furnished hereunder.

## ■ LIMITATIONS OF LIABILITIES

This warranty does not cover normal maintenance such as cleaning, adjustment or lubrication and updating of equipment or parts. This warranty shall be void and shall not apply if the equipment is used with accessories or parts not manufactured by Stackhouse or authorized for use in writing by Stackhouse, or if the equipment is not maintained in accordance with a prescribed schedule of maintenance.

The warranty stated above shall extend for a period of one (1) year from date of shipment with the following exceptions:

- Using any filter or accessory not manufactured by Stackhouse, Inc., may cause damage to the system and will be cause for voiding the above warranty.

**THE FOREGOING IS IN LIEU OF ANY WARRANTY, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OR MERCHANTABILITY, EXCEPT AS TO TITLE, AND CAN BE AMENDED ONLY IN WRITING BY A DULY AUTHORIZED REPRESENTATIVE OF STACKHOUSE.**