



*Operator's Manual*

**BUFFALO FILTER<sup>®</sup>**  
**Smoke Evacuation Systems**

- PlumeSafe<sup>®</sup> 1202
- PlumeSafe<sup>®</sup> *Whisper*<sup>®</sup> 602
- Porta PlumeSafe<sup>®</sup> 603
- PlumeSafe<sup>®</sup> *Whisper*<sup>®</sup> TURBO

Rev G

## Limited Warranty

For a period of one (1) year following the date of delivery, BUFFALO FILTER warrants the PlumeSafe 1202, Porta PlumeSafe 603, and PlumeSafe Whisper 602 Smoke Evacuation Systems against any defects in material or workmanship. For a period of three (3) years following the date of delivery, BUFFALO FILTER warrants the PlumeSafe Whisper TURBO against any defects in material or workmanship. BUFFALO FILTER will repair or replace (at BUFFALO FILTER'S option) the same without charge, provided that routine maintenance as specified in this manual has been performed using replacement parts approved by BUFFALO FILTER. This warranty is void if the product is used in a manner or for purposes other than intended.

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Division of Medtek Devices, Inc.

**Customer Service: 800-343-2324 (U.S. Only)**

The revision level of this manual is specified by the highest revision letter found on either the inside front cover or enclosed errata pages (if any).

**Manual Number PSMAN Rev. G  
5/2004**

Unit Serial Number \_\_\_\_\_

PlumeSafe® 1202, Porta PlumeSafe® 603, PlumeSafe® Whisper 602 and  
PlumeSafe® Whisper TURBO

Classified by Underwriters Laboratories, Inc.® with respect to electric shock, fire and mechanical hazards only in accordance with UL2601-1  
9D93



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# *System Description*

## *Section 1.0*

### **1.1 Introduction**

The BUFFALO FILTER PlumeSafe Smoke Evacuation Systems are designed to remove smoke and noxious odors produced by surgical smoke during laser and electrosurgical procedures.

The PlumeSafe Smoke Evacuation Systems have been designed with a high suction, high flow rate centrifugal action pump. The ultra-quiet motor is used to draw the surgical smoke from the surgical site through the vacuum tubing and into the ViroSafe<sup>®</sup> filter where the surgical smoke is processed by a series of filters. A single disposable filter is used to simplify the installation and removal during filter changes. The filter is completely enclosed to protect the healthcare personnel from potential contamination during filter changes. One Buffalo Filter ViroSafe filter contains four different stages within to decontaminate the smoke plume.

The first stage filtration is a prefilter whose function is to trap and remove gross particulate and casual fluid.

The second stage filtration is a VSLI (Very Large Scale Integrated) grade ULPA (Ultra Low Penetration Air) filter whose high-tech patented (U.S. Patent #5874052) design captures particulates and micro-organisms down to 0.012  $\mu\text{m}$  at an efficiency of 99.99995%. Each VLSI grade ULPA filter is pretested and certified before use.

The third stage filtration uses the highest grade virgin activated carbon, especially designed for Buffalo Filter for the removal and adsorption of odors and toxic gases produced by burning tissues. These harmful gases may constitute a health

hazard to healthcare professionals who are subjected to prolonged exposure. The activated carbon used in the PlumeSafe Smoke Evacuation Systems preferentially removes toxic organic gases rather than water vapor and provides optimal odor removal.

The fourth stage filtration is an expanded foam and paper media used to trap activated carbon fines from migrating out of the filter.

The electronic controls on the face panel of the PlumeSafe smoke evacuation system has been designed “user friendly” and facilitate unit set up and operation. Please refer to Section 2.0 for Operating Instructions.

### **1.2 Inspection**

The PlumeSafe Smoke Evacuator has been thoroughly tested and inspected before shipment from the factory. Please check the unit before using it to insure that no damage has occurred in transit. If damage is evident, please contact BUFFALO FILTER Customer Service at 1-800-343-2324 (US Only) or (716) 835-7000 (International)

In addition, please compare the accessories you receive with the standard accessories list below. If an item is missing, please notify BUFFALO FILTER Customer Service.

Standard Accessories:

- Operator’s Manual
- Power Cord

Please contact BUFFALO FILTER Customer Service to purchase the following accessories:

- Replacement Filters
- Electronic or Pneumatic Footswitches
- Remote Switch Activator
- Hoses, Tubing, Laparoscopic Kits, Adapters, Wands & Other Accessories

### 1.3 Operational Information

The operational information contained in this section is intended for the customer review of regulatory issues. The information pertains to the use of the products both domestically and internationally:

1. The BUFFALO FILTER PlumeSafe Smoke Evacuation System(s) complies with IEC601.1 electrical specifications in the following systems:  
120V/60Hz, 100V/50Hz, 220V/50 Hz, 240V/50Hz
2. The PlumeSafe Smoke Evacuation System(s) has a classification under the UL2601-1, Clause 5.1 of:  
CLASS 1 Equipment
3. The PlumeSafe Smoke Evacuation System(s) has an identification under the UL2601-1, Clause 5.2 according to the degree of protection against electric shock:  
Type CF Equipment
4. The PlumeSafe Smoke Evacuation System(s) has an identification under the UL2601-1, Clause 5.3 according to the degree of protection against harmful ingress of water:  
Ordinary Equipment (enclosed equipment without protection against ingress of water).
5. The PlumeSafe Smoke Evacuation System(s) has a classification under the UL2601-1, Clause 5.4 according to the method of sterilization or disinfection recommended by BUFFALO FILTER:  
Unplug Unit. Wipe unit with a damp cloth containing mild disinfectant solution, or soapy water. Wipe dry with a clean cloth. Do not steam sterilize.
6. The PlumeSafe Smoke Evacuation System(s) has a classification under the UL2601-1, Clause 5.5 according to the degree of safety of application in the presence of flammable anesthetic mixture with air or with oxygen or nitrous oxide:  
Equipment not suitable for use in the presence of Flammable Anesthetic mixture with air or with oxygen or nitrous oxide.
7. The PlumeSafe Smoke Evacuation System(s) has a classification under the UL2601-1, Clause 5.6 according to the mode of operation:  
Continuous Operation
8. Upon request, BUFFALO FILTER will provide the following:  
Service and Repair Instructions, including Circuit Diagrams and Parts List
9. The fuses on the circuit board are to be serviced by an authorized BUFFALO FILTER technician as follows:  
PSS1202, PPSS603, PSW0602  
100/120/220/240V 50/60Hz use a 0.0625 Amp 250 Volt fuse  
PSWTURBO 100/120/220/240V,  
50/60Hz use 0.03125 Amp 250 Volt fuse

The PlumeSafe Smoke Evacuation System(s) and all filters and accessories are not intended for contact with patients.

### 1.4 Cautions and Warnings

Please note that all Cautions and Warnings should be read and understood before any use of this equipment.

This smoke evacuation system should only be operated by personnel who have been properly trained in its operation.

#### WARNINGS:

**The BUFFALO FILTER ViroSafe Filters are completely disposable. Please handle these disposable filters according to your local codes or regulations and hospital policy.**


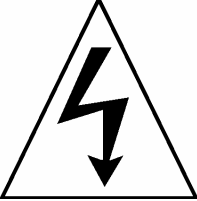



These filters may be disposed of or incinerated, whichever is appropriate for your institution.

- The ViroSafe Filter should be changed according to the life of the filter. The ViroSafe Filter, used with the PlumeSafe Smoke Evacuation System(s), should not be used for more the time specified for each filter. Failure to change the filter may result in decreased efficiency and contamination of the electric motor, vacuum pump, and sound absorbing media within the unit.

- This device is not intended for evacuation of fluid. If fluid is expected to be aspirated to the ViroSafe Filter, fluid collection devices must be installed with the vacuum hose assembly. Failure to install a fluid collection device could cause filter blockage and electrical damage.

**WARNING: DO NOT OPERATE THIS DEVICE IN THE PRESENCE OF EXPLOSIVE GASES.**

**WARNING: REFER ROUTINE SERVICING TO QUALIFIED BIOMEDICAL TECHNICAL PERSONNEL.**

SYMBOL	DESCRIPTION/MEANING
	<p><b>DANGER -</b> RISK OF EXPLOSION IF USED IN THE PRESENCE OF FLAMMABLE ANESTHETICS</p>
	<p><b>CAUTION -</b> GROUNDING RELIABILITY CAN ONLY BE ACHIEVED WHEN THE EQUIPMENT IS CONNECTED TO A RECEPTACLE MARKED "HOSPITAL GRADE" OR "HOSPITAL ONLY"</p> <p><b>CAUTION -</b> ELECTRICAL SHOCK HAZARD. DO NOT REMOVE COVER. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>
	<p><b>CAUTION -</b> BEFORE CONNECTING READ INSTRUCTION</p>
	<p>TYPE CF EQUIPMENT CLASS 1</p>
<p><b>IPX1</b></p>	<p>PROTECT AGAINST DRIPPING WATER</p>
	<p>ALTERNATING CURRENT</p>

**There are no user serviceable components in the PlumeSafe Smoke Evacuation System(s). Refer service to qualified service personnel.**

**Use only with the power cord provided and always plug into a grounded outlet.**

**CAUTIONS:**

- **Do not block either the tubing or the filter. If either becomes occluded or significantly restricted, the motor/blower may overheat and cause the unit to fail.**
- **Using any other filter or accessory not supplied by BUFFALO FILTER may cause damage to the system and will void the warranty.**
- **Care must be exercised in the installation of hoses, adapters and suction canisters. Failure to follow the procedures outlined in this manual may result in overheating of the motor and may void the unit warranty.**



# Operating Instructions

## Section 2.0

### 2.1 System Controls

The electronic system controls on the PlumeSafe Smoke Evacuation System(s) are easy to understand and simple to use. The membrane control panel contains the power on/off switch, suction power adjustment, remote activation indicator, filter life reset button, filter life indicator, and service indicator light. See Figure 1.

**Note: Please be sure to read all instructions before installing accessories or operating this equipment. Failure to do so may result in damage to the unit and/or personal injury.**

- **POWER ON/OFF & Standby**

There are two ON/OFF switches on the PlumeSafe Smoke Evacuation System(s). The ON/OFF switch that completely disables the electrical power to the unit is normally located on the back or side of the unit. The ON/OFF switch on the electronic membrane control panel is located in the upper right hand corner of the membrane panel. To power up the machine, place the power switch on the rear or side of the machine in the ON position and press the ON/OFF switch on the membrane panel until the suction control lights illuminate. Place the unit in “standby” by pressing the ON/OFF membrane switch to the OFF position. Turn the system main power off by placing the power switch on the back or side of the system in the OFF position.

- **SUCTION CONTROL**  
(*Membrane Control Panel*)

The amount of suction may be adjusted by pressing the UP and DOWN Arrow keys. Pressing the UP arrow button increases suction and pressing the DOWN arrow button decreases suction. The suction control should be set at the lowest practical setting to completely remove the surgical smoke from the operative site. Each time either arrow button is pressed, the suction will increase or decrease by 10%. When two lights are lit on the flow suction indicator, the actual air flow is the value between the two illuminated percentages.

- **WHISPER TURBO BUTTON**

The “TURBO” button is located just below the lower left corner of the membrane keypad on the front of the PlumeSafe Whisper TURBO system. During *standard* operation, the amount of suction may be adjusted by pressing the UP and DOWN Arrow keys. Pressing the UP arrow button increases suction and pressing the DOWN arrow button decreases suction. The suction control should be set at the lowest practical setting to completely remove the surgical smoke from the operative site. Each time either arrow button is pressed, the suction will increase or decrease by 10%. When two lights are lit on the flow suction indicator, the actual air flow is the value between the two illuminated percentages.

When additional smoke removal is necessary during any surgical procedure, the TURBO button may be pressed at anytime. The TURBO button will illuminate once pressed. TURBO mode effectively doubles the airflow to quickly remove smoke plume from the surgical site.

- **FOOTSWITCH / REMOTE SWITCH**  
*ACTIVATOR (Membrane Control Panel)*

A footswitch or a Remote Switch activator may be added to any system by simply plugging in a BUFFALO FILTER activation accessory into the appropriate jack on the back or side of the unit. When the footswitch is plugged in, the unit may be turned on or off by depressing the footswitch pedal once for each operation. For footswitching operation, the power switch on the membrane control panel should be in the ON position. When the electronic footswitch is plugged in, the light on the membrane control panel entitled REMOTE SWITCH will light to indicate that the electronic footswitch is active. For directions on using the Remote Switch Activator, please see instructions that accompany that product.

The Whisper TURBO Smoke Evacuation System also comes equipped with a pneumatic footswitch which can easily be connected by inserting the pneumatic tubing that accompanies the footpedal into the connector port. Upon insertion of the

pneumatic tubing in the connector port, the pneumatic footswitch becomes active. However, the “remote/Footswitch” LED on the front keypad panel will not be lit.

- ***FILTER LIFE INDICATOR (Membrane Control Panel)***

The filter life indicator on the membrane control panel provides a visual indication of the status of the life of the filter in use. The filter life indicator for the PlumeSafe Smoke Evacuation System(s) ViroSafe filters are as follows:

	Filter Life Time
PSS1202	24 Hours
PPSS603	6 Hours
PSW0602	6 Hours
PSWTURBO	6 Hours*

\*The PSWTURBO Filter Life Indicator is factory set at 6 hours. When using a 12 hour ViroSafe EY filter, the filter life timer will need to be reset for the second 6 hours of filter life. For more details on ViroSafe Filters, see instructions that come with filters.

To reset the filter life: After each filter change, press the RESET button for five seconds to restart the timer for the next filter.

### **Reading the Filter Life Indicator**

Install a ViroSafe Filter into the system per the installation instructions contained in this operator’s manual. When the system is turned on, the filter life indicator will light up all the GREEN, AMBER, and RED LED’s this indicates full filter life. The indicator will progress to red indicators only as the life of the filter is exhausted. After the appropriate time has elapsed, the RED LED indicator will start blinking to indicate that the filter has expended its useful life and requires replacement.

- ***CIRCUIT BREAKER (Rear or Side Panel)***

Two 15 AMP circuit breaker or fuses (8 AMP for international systems) are located on the rear or side of the system. It electrically protects both the system and the operator from damage or injury. If the system is overheated or if there is an electrical surge in the electrical system, the circuit breaker or fuses will “trip” and the system will not operate. To re-start the system, depress the circuit breaker into its original position, or replace the fuses within the power entry module.

**When the Service light illuminates, please contact BUFFALO FILTER Technical Services for system service instructions.**

## **2.2 ViroSafe Filter Instructions**

**Note: Before installing or removing any filter, be sure that the system is turned off and the electrical plug has been disconnected.**

### **Filter Installation Instructions:**

The installation of the ViroSafe Filter into the BUFFALO FILTER PlumeSafe Smoke Evacuation System(s) is quick and simple.

1. Remove the ViroSafe Filter from the shipping box and discard any protective wrapping. Examine all filters for damage during shipping and storage. Do not install any filter with visible signs of structural damage.
2. Insert the ViroSafe Filter into the filter receptacle. Be sure that the filter is seated completely against the bottom of the filter chamber.
3. Press the FILTER LIFE RESET button on the membrane control panel for 5 seconds to rest the filter life clock for the newly installed BUFFALO FILTER ViroSafe Filter.

**WARNING: This device is not intended for evacuation of fluid. If fluid is expected to be aspirated using the ViroSafe Filter or the BUFFALO FILTER PlumeSafe system, fluid collection devices must be installed with the vacuum hose assembly. Failure to install a fluid collection device may cause filter blockage and/or electrical damage.**

### Filter Removal Instructions:

1. After the ViroSafe Filter has been exhausted and requires changing, turn the smoke evacuation system off and disconnect the unit's electrical cord and any accessory tubing attached to the filter.
2. Pull the ViroSafe Filter from the smoke evacuation system and dispose of in accordance with hospital policy. The ViroSafe Filter may be disposed of or incinerated.
3. Clean the unit with appropriate germicide prior to re-use. Follow the indicated instructions for maintenance and installation of a new ViroSafe Filter.

**CAUTION: Using any other filter or accessory not supplied by BUFFALO FILTER may cause damage to the system and may void the warranty.**

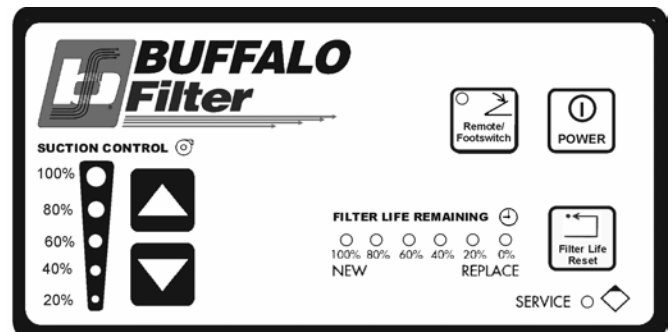
**WARNING: The ViroSafe Filter should be changed when the Filter Life Indicator shows 0% life remaining. Failure to change this filter may result in decreased efficiency and contamination of the electric motor, vacuum pump, and sound absorbing media within the system.**

### 2.3 Set-Up and Operation

The operation of the PlumeSafe Smoke Evacuation System(s) are as follows:

1. Install the appropriate ViroSafe Filter.
2. Attach unit power cord to the receptacle on the side or rear panel of the system. Plug the pronged power cord into an appropriate grounded power outlet.
3. Optional: Attach either Remote Activator Switch or Footswitch plug into appropriate receptacle on rear or side of machine.
4. Ensure that the evacuation tubing is fully seated in the inlet of the filter.

5. Turn on unit main power by placing the power switch on the rear or side panel of the machine in the "ON" position.
6. Activate the power unit by:
  - a. Pressing the ON/OFF switch on the membrane panel,
  - b. Depressing and releasing the footswitch (if connected), or
  - c. Activating either CUT or COAG on the Smoke Evacuation Pencil (if Remote Activator is connected).
7. Adjust the suction level to the desired setting by pressing the UP and DOWN arrow keys while the unit is activated. Noise created by the smoke excavation power unit may be minimized by selecting the lowest vacuum setting that effectively clears the operative field of surgical smoke. When two indicators are illuminated on the suction control scale, the suction control setting is the value between the two illuminated percentages.
8. Deactivate the unit by:
  - a. Pressing the ON/OFF switch on the membrane panel,
  - b. Depressing and releasing the footswitch (if connected), or
  - c. Releasing either the CUT or COAG button on the Smoke Evacuation Pencil (If Remote Activator is connected).
9. Replace the ViroSafe Filter when the Filter Life Remaining Scale FLASHES RED (0% Life Remaining). Failure to change the filter will effect the performance of the system.



## 2.4 Specifications

		PlumeSafe <i>Whisper</i> TURBO	Porta PlumeSafe 603	PlumeSafe 1202	PlumeSafe <i>Whisper</i> 602
<i>BUFFALO FILTER P/N</i>		PSWTURBO	PPSS603	PSS1202	PSW0602
CONFIGURATION		Portable or tabletop	Portable or tabletop	Portable with shelving	Portable with handle
<b>ViroSafe® Filters -- single or double ports 7/8" (22mm) and/or 1-1/4" (32mm)</b>		4-Stage filtration in one casing (pre-filter, ULPA, Carbon, post-filter)	4-Stage filtration in one casing (pre-filter, ULPA, Carbon, post-filter)	4-Stage filtration in one casing (pre-filter, ULPA, Carbon, post-filter)	4-Stage filtration in one casing (pre-filter, ULPA, Carbon, post-filter)
Filter(s)		ULPA, VLSI Grade	ULPA, VLSI Grade	ULPA, VLSI Grade	ULPA, VLSI Grade
Particle size, µm		0.01 with 99.99995% efficiency	0.01 with 99.99995% efficiency	0.01 with 99.99995% efficiency	0.01 with 99.99995% efficiency
Filter life		6 hours (standard filter) 12 hours (With EY Filter and Prefilters)	6 hours	24 hours	6 hours
Filter life indicator		Timed replacement	Timed replacement	Timed replacement	Timed replacement
ViroSafe Filter P/N		VS06002 (2-PK) VS06004 (4-PK) VS06012 (12-PK) VSEYAG1-4 (ViroSafe Erbium: YAG filter w/4 prefilters)	VS06002 (2-PK) VS06004 (4-PK) VS06012 (12-PK)	VS12001 (SINGLE) VS12002 (2-PK)	VS06002 (2-PK) VS06004 (4-PK) VS06012 (12-PK)
<b>MAX. FLOW SETTING</b>	Tubing Size	All SCFM testing measured at standard temperature 25°C (77°F) and pressure equal to 1 atmosphere (14.7 psig). All ACFM testing performed using standard practices for engineering/airflow technology			
SCFM (Std. cubic ft./min)	1 3/8"	47	NA	NA	NA
	1 1/4"	46	38	46	29
	7/8"	34	28	32	24
SLPM (Std. Liters/min)	35mm	1332	NA	NA	NA
	32mm	1303	1076	1303	821
	22mm	963	793	906	680
ACFM (actual cubic feet/minute)	1 3/8"	79	NA	NA	NA
	1 1/4"	76	59	83	40
	7/8"	44	42	48	33
	1/4"	5.2	4.8	5.2	4.4
ALPM (actual liters/minute)	35mm	2239	NA	NA	NA
	32mm	2152	1671	2351	1133
	22mm	1246	1189	1359	935
	6mm	147	136	147	125
Variable flow control		Yes	Yes	Yes	Yes
Motor, hp (kW)		1.0 (0.75)	1.25 (0.93)	1.25 (0.93)	0.33 (0.25)
<b>STATIC SUCTION</b>					
Inches H <sub>2</sub> O (mbar)		85 (211)	91.5 (227)	91.5 (227)	75 (187)
<b>HOSES/TUBING</b>					
		1/4", 7/8", 1 1/4", 1 3/8" 6mm, 22mm, 32mm, 35mm	1/4", 7/8", 1 1/4" 6mm, 22mm, 32mm	1/4", 7/8", 1 1/4" 6mm, 22mm, 32mm	1/4", 7/8", 1 1/4" 6mm, 22mm, 32mm
<b>NOISE LEVEL, dBA</b>					
AT MIN. POWER		≤ 49	≤ 50	≤ 47	≤ 39
AT MAX. POWER		≤ 68	≤ 77	≤ 68	≤ 59
<b>FOOTSWITCH</b>		Yes-Pneumatic (Elec. Optional)	Yes (Optional)	Yes (Optional)	Yes (Optional)
<b>REMOTE CONTROL ACTIVATION</b>		Yes (Optional)	Yes (Optional)	Yes (Optional)	Yes (Optional)
<b>SAFETY FEATURES</b>		Filter housing and handles remain temperate with the outer surface to prevent burns; circuit breaker; <b>CE and UL classified in U.S. and Canada</b>	Filter housing and handles remain temperate with the outer surface to prevent burns; circuit breaker; <b>CE and UL classified in U.S. and Canada</b>	Filter housing and handles remain temperate with the outer surface to prevent burns; circuit breaker; <b>CE and UL classified in U.S. and Canada</b>	Filter housing and handles remain temperate with the outer surface to prevent burns; circuit breaker; <b>CE and UL classified in U.S. and Canada</b>
<b>DISPLAYS</b>		LED	LED	LED	LED
Data displayed		Filter Status, flow rate, footswitch control	Filter Status, flow rate, footswitch control	Filter Status, flow rate, footswitch control	Filter Status, flow rate, footswitch control
<b>VOLTAGE AVAILABLE</b>		100/120/220/240 volts	100/120/220/240 volts	100/120/220/240 volts	100/120/220/240 volts
<b>FREQUENCY</b>		50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
<i>H x W x D</i>		13.5 x 8 x 17 inches 34 x 20 x 43 cm	10 x 6.5 x 18 inches 25.4 x 16.5 x 45.7 cm	35 x 14 x 22 inches 88.9 x 35.6 x 55.9 cm	20 x 14 x 14 inches 50.8 x 35.6 x 35.6 cm
<b>Weight, lbs. (kg)</b>		19.5 (8.9)	13.1 (5.9)	66.5 (30.2)	28.5 (13.0)

# PlumeSafe Smoke Evacuation Systems



*PlumeSafe 1202  
With ViroSafe 12 Filter*



*PlumeSafe **Whisper** 602  
With ViroSafe 6 Filter*



*Porta PlumeSafe 603*



*PlumeSafe **Whisper** TURBO  
With Pneumatic Footswitch  
and ViroSafe 6 Filter.  
Optional Filters for  
Erbium:YAG Laser  
Procedures*

## ViroSafe Filters



*ViroSafe 6 and ViroSafe 12 Filter  
Single or Double Port Available  
Standard Single Port at 7/8" or 1-1/4"  
Double Hole can be single size or combination*



*ViroSafe EY filter with EY prefilters.  
Prefilters must be used for maximum  
filtration effect during Erbium:YAG  
laser procedures and to obtain full 12  
hour filter life.*

# *Maintenance*

## *Section 3.0*

### 3.1 General Maintenance Information

This section contains information for ordinary upkeep of the BUFFALO FILTER PlumeSafe Smoke Evacuation System(s). While the system has been designed and manufactured to high industry standards, it is recommended that periodic inspection and performance testing be performed by a qualified Biomedical Technician to ensure continued safe and effective operation.

### 3.2 Cleaning

The exterior of the system may be cleaned by wiping it with a cloth that has been dampened (not dripping) with a mild detergent such as Windex® or Formula 409®. Windex® is a registered trademark of the Drackett Products Company. Formula 409® is a registered trademark of the Clorox Corporation.

### 3.3 Periodic Inspection

The PlumeSafe Smoke Evacuation System(s) should be visually inspected at least every year. This inspection should include checks for:

- Damage to the power cord.
- Damage to the power plug.
- Tightness of the power plug.
- Proper mating, cleanliness and absence of damage to the filter inlet.
- Obvious external or internal damage to the system.

### 3.4 Troubleshooting the System – see below.

<b>PROBLEM</b>	<b>POTENTIAL CAUSE</b>	<b>CORRECTIVE ACTION</b>
1. Smoke Evacuation System is ON but suction is minimal or none	<ol style="list-style-type: none"> <li>1. Filter not seated completely</li> <li>2. Filter clogged</li> <li>3. Vacuum hose clogged</li> <li>4. Motor/blower obstructed</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-install ViroSafe Filter, press firmly into place</li> <li>2. Replace filter – use ViroSafe EY filter and pre-filters for Erbium:YAG laser procedures</li> <li>3. Check or replace Smoke Evacuation Tubing.</li> <li>4. Call BioMed or BUFFALO FILTER Technical Services at: 1-800-343-2324 or (716) 835-7000</li> </ol>
2. Smoke Evacuation System does not function even though ON button is depressed	<ol style="list-style-type: none"> <li>1. Not plugged into electrical outlet</li> <li>2. Circuit breaker(s) tripped or fuses blown</li> <li>3. Footswitch plugged in</li> <li>4. Electronic system failure</li> <li>5. Main power switch in OFF position</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power outlet and connection to rear or side panel of machine</li> <li>2. Reset circuit breaker(s) on rear or side of system or replace fuses located within the power entry module.</li> <li>3. Unplug footswitch</li> <li>4. Check main power switch on rear or side of system to ensure that it is in on the ON (I) position</li> <li>5. Call BioMed or BUFFALO FILTER Technical Services at: 1-800-343-2324 or (716) 835-7000</li> </ol>

# *Customer Service*

## *Section 4.0*

### **4.1 Equipment Return**

For the quickest response to your service needs, please follow these procedures:

Step 1: Write down model and the serial number of the PlumeSafe Smoke Evacuation System.

Step 2: Call Customer Service at the toll free or local number listed and describe the problem.

Step 3: If the problem cannot be resolved over the phone and the equipment must be returned for repair, you must obtain a "Return Goods Authorization" (R.G.A.) number from Customer Service before returning the system.

Step 4: If you have the original packing for your PlumeSafe Smoke Evacuation System, use it to properly return your unit. If you do not have the original packing material, ask Customer Service for advice on how to pack the unit for return shipment.

Step 5: Freight for all returned goods should be prepaid by the shipper.

Return to:

***BUFFALO FILTER***  
595 Commerce Drive  
Buffalo, New York 14228  
**Attn: Technical Services**

**R.G.A. Number** \_\_\_\_\_

### **4.2 Ordering Information**

To reorder, obtain replacement parts or to return a unit for service, call Customer Service at:

**800-343-2324 OR  
(716) 835-7000**

or contact your authorized BUFFALO FILTER Distributor/Representative.

BUFFALO FILTER PlumeSafe Smoke Evacuation System versions available:

- 120 VAC 50/60 Hz
- 220 VAC 50/60 Hz
- 240 VAC 50/60 Hz
- 100 VAC 50/60 Hz

Available accessories:

- ViroSafe Filters
- Footswitch
- Remote Switch Activator
- Hoses & Tubing
- Reducer Fittings

# Terms & Warranty

## Section 5.0

### SPECIFICATIONS:

Specifications are subject to change without notice.

### SHIPMENT OF ORDER:

Buffalo Filter will try to accommodate individual customer requests for shipping method. Buffalo Filter reserves the right to decide shipping method on prepaid orders. Care is exercised in the checking and packaging of all merchandise to avoid error, but should discrepancies arise, claims should be made within 24 hours after delivery.

Buffalo Filter's responsibility ceases with the safe delivery to the carrier at our dock. If the merchandise is damaged in transit, a claim must be made to the carrier involved. Buffalo Filter will assist customers in pursuing these claims.

### RETURN OF MATERIAL:

Return merchandise must have a pre-authorized return number from Buffalo Filter and be marked with this number prior to returning. Transportation costs must be prepaid by the shipper and all risks of loss and damage of goods are the responsibility of the shipper. Unauthorized returns will be refused. Include a copy of the packing papers and/or invoice with the return. Exchange will be of an equivalent dollar value of returned merchandise less a restocking and handling fee on new, unused, unopened equipment or disposables.

### EXCEPTIONS:

1. Defective merchandise may be returned for replacement only. Please contact Buffalo Filter Customer Service before shipping back merchandise.

2. Incorrectly shipped merchandise is exempt from restocking fees. Please contact Buffalo Filter customer service before shipping back merchandise.

### WARRANTY:

Buffalo Filter warrants that the filter system manufactured by Buffalo Filter shall be free from defects in material and workmanship. **Products are warranted only to the extent that Buffalo Filter will replace without charge any filter systems proved to have defects within one (1) year of the date of delivery thereof for P/N PPSS603, PSS1202 and PSW0602 and three (3) years of the date of delivery**

for P/N PSWTURBO and provided Buffalo Filter has been given the opportunity to inspect the system alleged to be defective and the installation or use thereof. **No warranty is included for incidental or consequential damages of any nature arising from any defect. The warranty above is the only warranty made by Buffalo Filter and is expressly in lieu of all other warranties, expressed or implied, including, without limitation, the warranties of merchantability and fitness for a particular purpose. All warranties implied by any course of dealing or usage between parties are expressly excluded.**

### CONFIDENTIAL INFORMATION:

The information, drawings, plans, and specifications being furnished by Buffalo Filter have been developed at Buffalo Filter's expense and shall not be used or disclosed by purchaser for any purpose other than to install, operate, and maintain the system supplied.

### CONSEQUENTIAL DAMAGES/LIMITS OF LIABILITY:

**Buffalo Filter shall not in any case whatsoever be liable for special, incidental, indirect or consequential damages of any kind. In no case shall Buffalo Filter's liability exceed the amount paid Buffalo Filter by purchaser for the specific system giving rise to the liability. Purchaser agrees to indemnify and hold Buffalo Filter harmless from and against all liabilities, claims, and demands of third parties of any kind relating to the system and its use.**

### ENTIRE AGREEMENT:

Purchaser by acceptance of Buffalo Filter's offer does acknowledge and agree to the terms and conditions contained herein. All matters involving the validity, interpretation and application of this agreement shall be controlled by the laws of New York State. Using any filter not manufactured by Buffalo Filter may cause damage to the systems and will be cause for voiding the warranty.

### JURISDICTION:

Purchaser hereby consents to the jurisdiction of the New York Courts with respect to any controversy or dispute arising out of this agreement or the merchandise sold hereunder.





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595 Commerce Drive  
Buffalo, New York USA 14228  
(716) 835-7000 or (716) 835-3414 fax  
Division of Medtek Devices, Inc.

Customer Service: 800-343-2324 (U.S. Only) - [www.buffalofilter.com](http://www.buffalofilter.com)