Operator's Manual

AER DEFENSE™

SMOKE EVACUATOR

ConMed™
ELECTROSURGERY

LIMITED WARRANTY

For a period of two years following the date of delivery, CONMED Corporation warrants the CONMED AER DEFENSE™ Smoke Evacuator against any defects in material or workmanship and will repair or replace (at CONMED's option) the same without charge, provided that routine maintenance as specified in this manual has been performed using replacement parts approved by CONMED. This warranty is void if the product is used in a manner or for purposes other than intended.

525 French Road
Utica, NY 13502-5994 USA

Patent Pending

For Technical Service or Return Authorization Phone:
303-699-7600 / 1-800-552-0138 Extension 5274
Fax 303-699-1628

For Customer Service or to order parts phone:
1-800-448-6506 / 315-797-8375 / Fax 315-735-6235
or contact your CONMED Representative.

EC REP

European Authorized Representative
MDSS GmbH
Schiffgraben 41
D-30175 Hannover
Germany

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: 60-8081-ENG Rev. G

Unit Serial Number_____

CE

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General Information

Section 1.0

CAUTION: FEDERAL LAW (USA) RESTRICTS THIS DEVICE TO SALE BY OR ON THE ORDER OF A PHYSICIAN.

1.1 Introduction

Indications for use: The CONMED AER DEFENSE™ Smoke Evacuator is designed to remove smoke, aerosols and mitigate odors produced by surgical smoke during electrosurgical procedures.

The CONMED AER DEFENSE™ Smoke Evacuator has been designed with a high suction, high flow rate, thru flow vacuum motor. Its quiet motor is used to draw the surgical smoke from the surgical site, through the vacuum tubing and into the CONMED AER DEFENSE™ Smoke Evacuator's FilterOne™ where the surgical smoke is processed by a series of filtration stages. A single disposable filter is used to simplify the installation and removal during filter changes. The FilterOne™ is completely enclosed to protect the health care personnel from potential contamination during filter changes. Each FilterOne™ contains three integral filter stages to capture the smoke plume.

The first stage of filtration is a pre-filter whose function is to trap and remove gross particulates and casual fluid.

The second stage of filtration uses the highest grade of virgin grade activated carbon for the removal and adsorption of odors and toxic gases produced by electrosurgical tissue effects. These harmful gases may constitute a health hazard to health care professionals who are subjected to prolonged exposure. The activated carbon used in the FilterOne™ preferentially removes toxic organic gases rather than water vapor and provides optimal odor removal.

The third stage of filtration is a ULPA (Ultra Low Penetration Air) grade filter whose high-tech design captures particulates and micro-organisms down to 0.10 μm at an efficiency of 99.9995%.

Each ULPA grade media filter is certified before use.

The electronic controls on the front panel of the CONMED AER DEFENSE™ Smoke Evacuator have been designed to be "user friendly" and facilitate unit set-up and operation. Please refer to Section 2.0 for operating instructions.

1.2 Inspection

The CONMED AER DEFENSE™ Smoke Evacuator has been thoroughly tested and inspected before shipment from the factory. Please check the unit before using it to ensure that no damage has occurred in transit. If damage is evident, please contact CONMED Customer Service at one of the numbers listed on the inside front cover of this manual.

The 100-120 VAC version of the CONMED AER DEFENSE™ Smoke Evacuator includes an AC power cord for connection to a standard (US) outlet, 4' ESU Activation Cord and an Operator's Manual. The 4' ESU Activation Cord is shipped with the 220-240 VAC version of the smoke evacuator; the AC power cord and Operator's Manual are not.

Operator's Manuals in languages other than English and mains power cords for use in other countries are available from CONMED.

Please contact CONMED Customer Service at the numbers listed on the inside front cover of this manual to order approved accessories available for use with the CONMED AER DEFENSE™ Smoke Evacuator.

1.3 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.

- The FilterOne™ is disposable, non-sterile and non-serviceable. During use, this filter may accumulate contaminated materials and fluids that are potentially bio-hazardous. Please handle this disposable filter according to your local codes or regulations and hospital policy. This filter may be disposed of or incinerated, whichever is appropriate for your institution.
- The FilterOne™, when used with the CONMED AER DEFENSE™ Smoke Evacuator, should not be used when the filter has expired which is indicated by a flashing ORANGE LED light and an audible 5 beep alarm. 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 as well as the operating room environment.
- If fluid is expected to be aspirated by the CONMED AER DEFENSE™ Smoke Evacuator, a fluid collection device must be installed in-line with the vacuum hose assembly. Failure to install a fluid collection device could cause filter blockage and electrical damage.
- Do not operate this device in the presence of flammable anesthetic gases, enriched oxygen atmospheres or nitrous oxide.
- Refer servicing to qualified biomedical technician or CONMED Technical Services.
- The AC power cord of the CONMED AER DEFENSE™ Smoke Evacuator should be connected to a properly polarized and grounded receptacle of the same voltage as listed on the nameplate on the smoke evacuator.
  WARNING: To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
- The mains disconnect device is the AC power cord.
- If outside cover of the AER DEFENSE™ is removed, there is a possibility of electrical shock if internal components are contacted.
- There is a possibility of unexpected suction due to electrical interference or component failure. If unexpected suction occurs, take unit out of service immediately.
- Do not plug AER DEFENSE™ into same power source as life support equipment. Use a separate power source for life support equipment.
- Place tubing and cords away from traffic patterns.
- This equipment has been tested and found to comply with the limits for medical devices to the IEC60601-1-2: 2007. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving device.
  - Increase the separation between the equipment.
  - Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
  - Consult CONMED Technical Services or BioMedical Technician for help.
- Portable and mobile RF communications equipment can affect the AER DEFENSE™.

- The use of accessories, transducers and cables other than those specified by CONMED, may result in increased emissions or decreased immunity of the equipment.
- The AER DEFENSE™ should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the AER DEFENSE™ should be observed to verify normal operation in the configuration in which it will be used.
- The AER DEFENSE™ Smoke Evacuator and Electrosurgical Generator (ESU) share a common power cord. Operating the AER DEFENSE™ at full power and the ESU at power levels greater than 150 W may have a total line current greater than 12 A @120 V or 6 A @ 230 V, but will not exceed the current rating of a 15 A / 7.5 A circuit.
- Do not block either the tubing or the filter. If either becomes occluded or is significantly restricted, the motor/blower may overheat and cause the unit to fail.
- There are no user serviceable parts in this equipment. Improper servicing of the equipment could result in improper operation and present a risk of electric shock.
- Using any other filter or accessory not supplied by CONMED may cause damage to the system and will void the warranty.
- If filter is inserted into the AER DEFENSE™ and the filter is not recognize and no green LED lights illuminate, check to make sure filter is inserted properly and completely. If filter LED lights still do not illuminate, contact your service representative.
- Care must be exercised in the installation of hoses, adapters and fluid collection devices. Failure to follow the procedures outlined in this manual may result in overheating of the motor and may void the unit warranty.
- If using a fluid collection device, do not increase the vacuum setting to more than 50%. Failure to observe this maximum may result in overheating of the motor and system failure.
- To prevent overheating, the smoke evacuator must be positioned with a minimum three inch clearance on all sides from any obstructions for ventilation.
- To prevent overheating, do not use GoldVac or ClearVac accessories continuously in the Normal Suction Mode. Run at a maximum continuous duty cycle in Normal Suction Mode of 10 seconds ON and 30 seconds OFF, at a suction level of 60%.
- Only use a Lap Tube accessory in the Laparoscopic Suction Mode.
- When AER Defense is integrated in a system, such as an Operating Room Control Center through the Serial Interface Connector, the organization responsible for system integration must ensure safety by evaluating the system using IEC 60601-1 2005 as a basis.

1.4 Compatibility

This unit is compatible with other IEC 60601-1 certified units.

Electrosurgical equipment (ESU) connected to the auxiliary Mains outlet must be certified according to IEC60601-1, including Medical Electrical System aspects. Everybody who connects additional equipment to the auxiliary mains outlet configures a medical system, and is therefore responsible that the system complies with the requirements of IEC 60601-1-1. If in doubt, consult the technical services department of your local representative.

Connecting electrical equipment to the auxiliary will increase chassis leakage. Electrical equipment connected to this outlet should be IEC 60601-1-1 compliant.

Underwriter's Laboratories has not evaluated system combinations, as it is the responsibility of the user of this device to ensure compatibility with other electrical devices.

List of compatible CONMED accessories:

- 60-8054-001, Adapter, non-sterile
- 60-6828-005, ClearVac
- 60-6829-005, ClearVac
- 60-6828-001, ClearVac
- 60-6829-001, ClearVac
- 60-6839-001, ClearVac
- 60-8056-001, Vacuum Control Assembly (This Accessory must be mounted to the system 5000 cart P/N 60-8040-001)
- 62-5862-001, AER DEFENSE™ AC Power Cord, 15'
- 60-6805-001, Tubing
- 60-6810-001, Lap tubing
- 60-6815-001, Leep tubing, non-sterile
- 60-8086-001, Excalibur Plus PC Fixed Power Cord Configuration Kit
- 60-8083-001, AER DEFENSE™ Pneumatic Footswitch
- 60-8084-001, AER DEFENSE™ FilterOne™
- 60-7510-005, GoldVac Pencil, Push Button
- 60-7520-005, GoldVac Pencil, Rocker Switch
- 60-7530-005, GoldVac Pencil, Footswitch
- 60-7507-001, Adapter, non-sterile
- 60-7508-001, Adapter, non-sterile
- 138661, ClearVac
- 138663, ClearVac
- 62-5626-004, 4' ESU Activation Cord
- 62-5626-005, 10" ESU Activation Cord
- 60-6806-001, Laser tubing, non-sterile

User-provided power cords for 230 V units should be 1.02 mm diameter (18 AWG) grounded, medical grade type.

1.4.1 Accessory Diagram

All adapters, tubing, ClearVac and GoldVac smoke pencils attach to the front nozzle on the FilterOne™.

Image Shown: 60-7510-005, GoldVac Pencil, Push Button

1.5 Explanation of Symbols

1.5.1 Control Panel

	Power Standby
	Suction
	New Filter
	Expired Filter

	Laparoscopic Mode
	CONMED ESU Automatic Mode
	Footswitch Mode
	Continuous Mode

1.5.2 Rear Panel

	Pneumatic Foot Pedal
	Remote Vacuum
	Explosion risk if used in the presence of flammable anesthetics.
	CAUTION: Grounding reliability can only be achieved when the equipment is connected to a receptacle marked "Hospital Grade" or "Hospital Only". CAUTION: Electrical shock hazard. Do not remove cover. Refer servicing to qualified service personnel.
	Refer to Instruction Manual/ Booklet (for critical safety instruction). The color of the symbol is blue.
	Defibrillation – Proof, Type CF, Applied part.
	Unit functions on alternating current only.
	Medical Electrical Eqp: With respect to electrical shock, fire and mechanical hazards only in accordance with IEC/AAMI ES60601-1/ CAN/CSA-C22.2 No. 60601-1 (2008) (Applies to the Smoke Evacuator Only)
	CE Classification

IPX1	Enclosure resists entry of vertically falling water.
	Connect only to devices meeting the leakage requirements of the IEC 60601-1:2005

Operation
Section 2

2.1 System Controls

The electronic system controls on the CONMED AER DEFENSE™ Smoke Evacuator are easy to understand and simple to use. The control panel contains the Suction Level Control buttons, Laparoscopic Mode button, Continuous Mode button, CONMED ESU Automatic Mode button, Footswitch Mode button, and filter life indicator. See Figure 2.1.1.

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: The power button that completely disables the electrical power to the AER DEFENSE™ unit is located on the control panel. To power up the smoke evacuator, depress the power button down until the indicators on the control panel illuminate. Turn the unit main power off by depressing down on the power button until the lights on the control panel turn off. This power button does not control the power of the attached ESU. See Figure 2.1.1

- Suction Level Control: The amount of suction may be adjusted by pressing the up or down arrows on the control panel. Press the up arrow to increase suction. Press the down arrow to decrease suction. The suction control should be set to the lowest setting that completely removes surgical smoke from the operative site. Pressing the up or down arrow buttons will increase or decrease the amount of suction in 10% increments respectively. See Figure 2.1.1

- Normal ESU Activation Mode: This is the default activation mode. The unit will run in this default mode when none of the available specialty modes have been selected and illuminated on the control panel (Laparoscopic, Continuous, Automatic or Footswitch). While in Normal Mode, the AER DEFENSE™ Smoke Evacuator will initiate suction upon activation from an ESU. See Figure 2.1.1

- Laparoscopic Suction Mode: This specialty suction mode button on the control panel has been designed to provide a low flow range suction control to be used in minimally invasive procedures in order to maintain pneumoperitoneum. Laparoscopic mode can be controlled by Normal, CONMED ESU Automatic, Footswitch or Continuous activation modes. See Figure 2.1.1

- Continuous Activation Mode: This specialty mode button on the control panel will run the AER DEFENSE™ Smoke Evacuator at the selected power level continuously until the mode has been deselected, another mode is selected or the unit is powered off. Continuous activation mode can be run while in Normal or Laparoscopic Modes. See Figure 2.1.1

- CONMED ESU Automatic Mode: This specialty activation mode button on the control panel will initiate suction upon activation from a CONMED System 5000 or System 2450 ESU. The AER DEFENSE™ Smoke Evacuator will also employ automatic adjustments of the flow level based on the ESU power usage. See Figure 2.1.1

- Footswitch Activation Mode: This specialty mode button on the control panel will initiate suction upon activation of the footswitch only. The unit may be turned on or off by depressing the footswitch pedal once to turn the suction on and again to turn it off. When Footswitch mode is selected, the unit will not initiate suction with ESU activation. See Figure 2.1.1

- Filter Life Indicator: The filter life indicator on the control panel provides a visual

indication of the status of the life of the filter in-use. Each LED segment represents 1/8 or 12.5% of the filter life. The life of the filter is a minimum of 10 hours and is based on the amount of flow through the filter. After each filter change, the filter life indicator will be reset for the new filter. See Figure 2.1.1

Figure 2.1.1 Control Panel

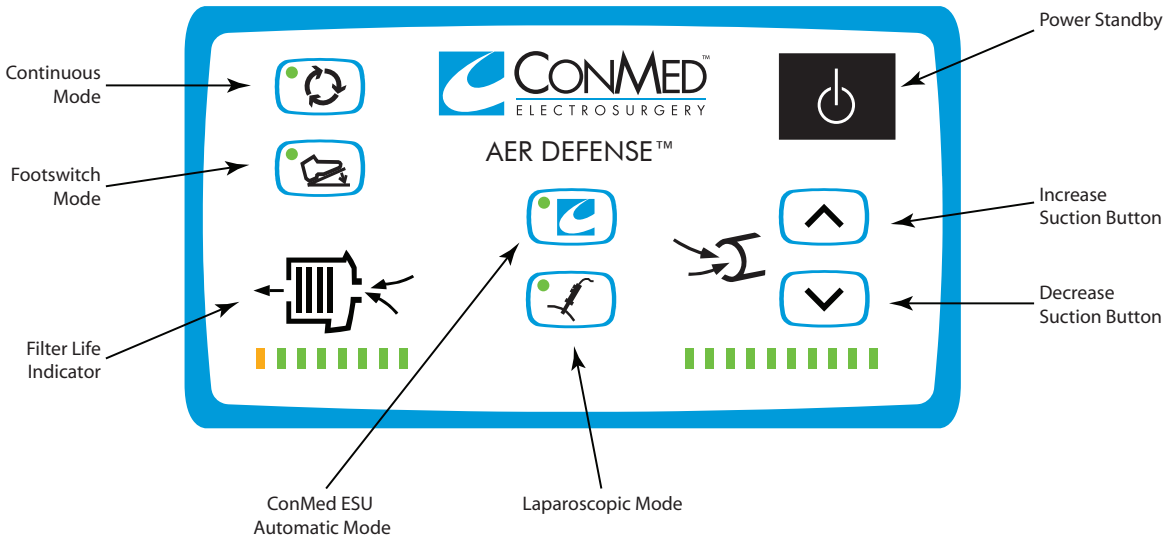
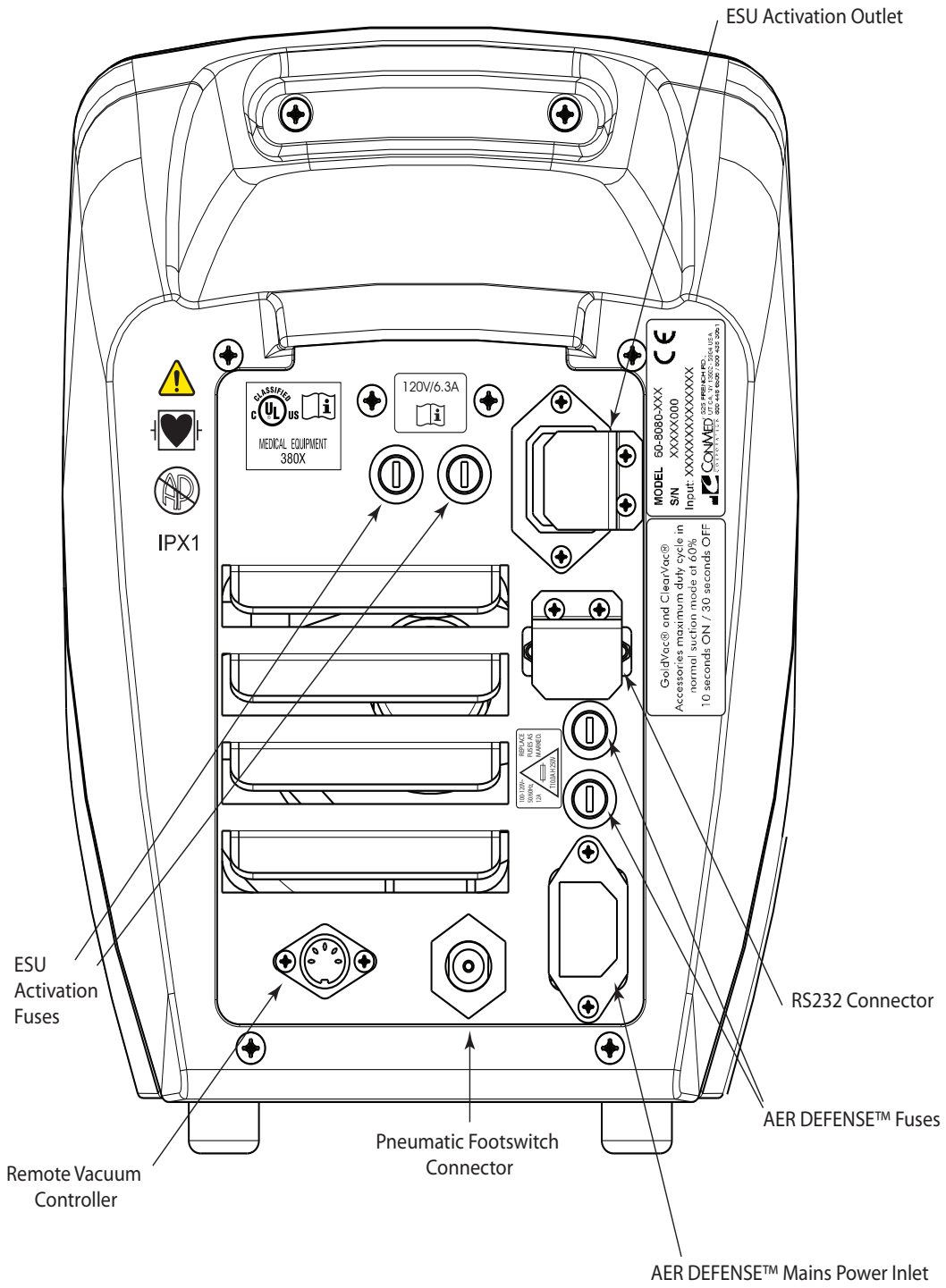


Figure 2.1.2 Rear Panel



- Reading the Filter Life Indicator: Install a new CONMED FilterOne™ into the AER DEFENSE™ per the installation instructions contained in Section 2.2. When the system is turned on, the filter life indicator will light up all the GREEN LEDs. This indicates full filter life. The GREEN LEDs will diminish as the life of the FilterOne™ is exhausted until an Orange LED indicator light is illuminated. When the filter has reached 7/8 or 88% of its useful life, the Orange LED indicator will turn on continuously to indicate that the FilterOne™ needs to be replaced. After the filter is fully expired, the Orange LED indicator will start flashing and there is an audible warning (5 beeps) to indicate that the FilterOne™ has expired its useful life and requires replacement.
- The CONMED AER DEFENSE™ Smoke Evacuator will continue to operate until the power switch is turned off. Once the smoke evacuator is turned off, a new filter MUST be installed to activate the unit. If the AER DEFENSE™ is turned back on, the Orange LED in the filter life indicator will flash and there is an audible warning (5 beeps) to indicate that a new filter must be installed. The unit will not operate until a new filter is installed. This feature insures that operating room personnel are protected against smoke plume contamination.
- Remote Vacuum Control (optional): An optional Remote Vacuum Control Assembly is available that allows the user to adjust the suction level from The System™ 5000 Mobile Pedestal. See Figure 2.1.2

2.2 FilterOne™ Installation

The installation of the FilterOne™ into the CONMED AER DEFENSE™ Smoke Evacuator is quick and simple.

1. Remove the CONMED FilterOne™ from the shipping box and discard any protective wrapping. Examine filter for damage during shipping and storage. Do not install any filter with visible signs of structural damage.
2. Insert the CONMED FilterOne™ into the opening in the front of the smoke evacuation system. Ensure that the filter is in the correct orientation. See Figure 2.2.1.
3. Turn the power switch on and ensure that all of the Green LEDs in the Filter Life indicator are illuminated.

Figure 2.2.1 FilterOne™ Installation

WARNING: If fluid is to be aspirated using the CONMED AER DEFENSE™ Smoke Evacuator, fluid collection devices must be installed in line with the vacuum hose assembly. Failure to install a fluid collection device may cause filter blockage and/or electrical damage.

FilterOne™ Removal Instructions:

1. After the CONMED FilterOne™ has expired and requires changing; remove any fluid collection device or accessory tubing attached to the FilterOne™.

2. Remove the FilterOne™ from the smoke evacuation system by gripping the round handle around the filter nozzle. Dispose of in accordance with hospital policy. The CONMED FilterOne™ may be disposed of or incinerated.

3. Clean the unit with an appropriate germicide prior to re-use. Follow the indicated instructions for maintenance and installation of a new CONMED FilterOne™.

CAUTION: There is a potential for the presence of pathogens and by-products of smoke plume in the filter nozzle, smoke tubing, and/or other accessories that attach to the nozzle of the FilterOne™. Use hospital guidelines for handling contaminated material.

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

WARNING: The CONMED FilterOne™ should be changed when the Orange LED is illuminated and flashing in the Filter Life Indicator. Failure to change this filter may result in decreased efficiency and contamination of the electric motor, vacuum pump, and sound absorbing media within the unit.

2.3 Set-up and Operation with Instant ESU Activation

The operation of the CONMED AER DEFENSE™ Smoke Evacuator is as follows:

1. Install the CONMED FilterOne™. See Section 2.2

2. Attach unit power cord to the AER DEFENSE™ Mains Inlet on the lower right of the rear panel of the unit. See Figure 2.3.1 Plug the three prong power connector into an appropriate power outlet.

3. Attach the male end of the ESU Activation Cord into the AER DEFENSE™ ESU Activation Outlet located on the upper right of the rear panel. See Figure 2.3.1 Attach the female end of the ESU Activation Cord into the ESU Mains Inlet on rear panel of the ESU. See Figure 2.3.1

   NOTE: If using Excalibur Plus PC with fixed cord, see Section 1.4 for configuration kit.

4. Optional: The pneumatic footswitch may also be attached by pushing the end of the tubing over the pneumatic fitting on the back panel of the Smoke Evacuator.

5. Optional: Connect the Remote Vacuum Control Assembly.

6. Optional: Install fluid collection device if needed.

7. Attach the CONMED Smoke Evacuation Pencil or tubing set to the inlet of the CONMED FilterOne™. Ensure that the evacuation tubing is fully seated on the inlet of the FilterOne™.

8. Turn on the unit's main power by depressing the power button on the control panel. See Section 1.4.1 The unit will default to the last settings used. If a different specialty mode is desired, press the desired specialty mode button(s) on the control panel.

9. Activate the unit by:

    a. Depressing and releasing the footswitch (if connected), select Continuous Activation Button on front panel or

    b. Activating CUT, COAG or BIPOLAR on the ESU.
    NOTE: Do not activate before both the AER DEFENSE™ and ESU have been turned on for at least 30 seconds.

10. Adjust the suction level to the desired setting by pressing the up or down arrow buttons on the control panel while the unit is activated. Noise created by the smoke evacuator may be minimized by selecting the lowest suction setting that effectively clears the sterile field of surgical smoke.

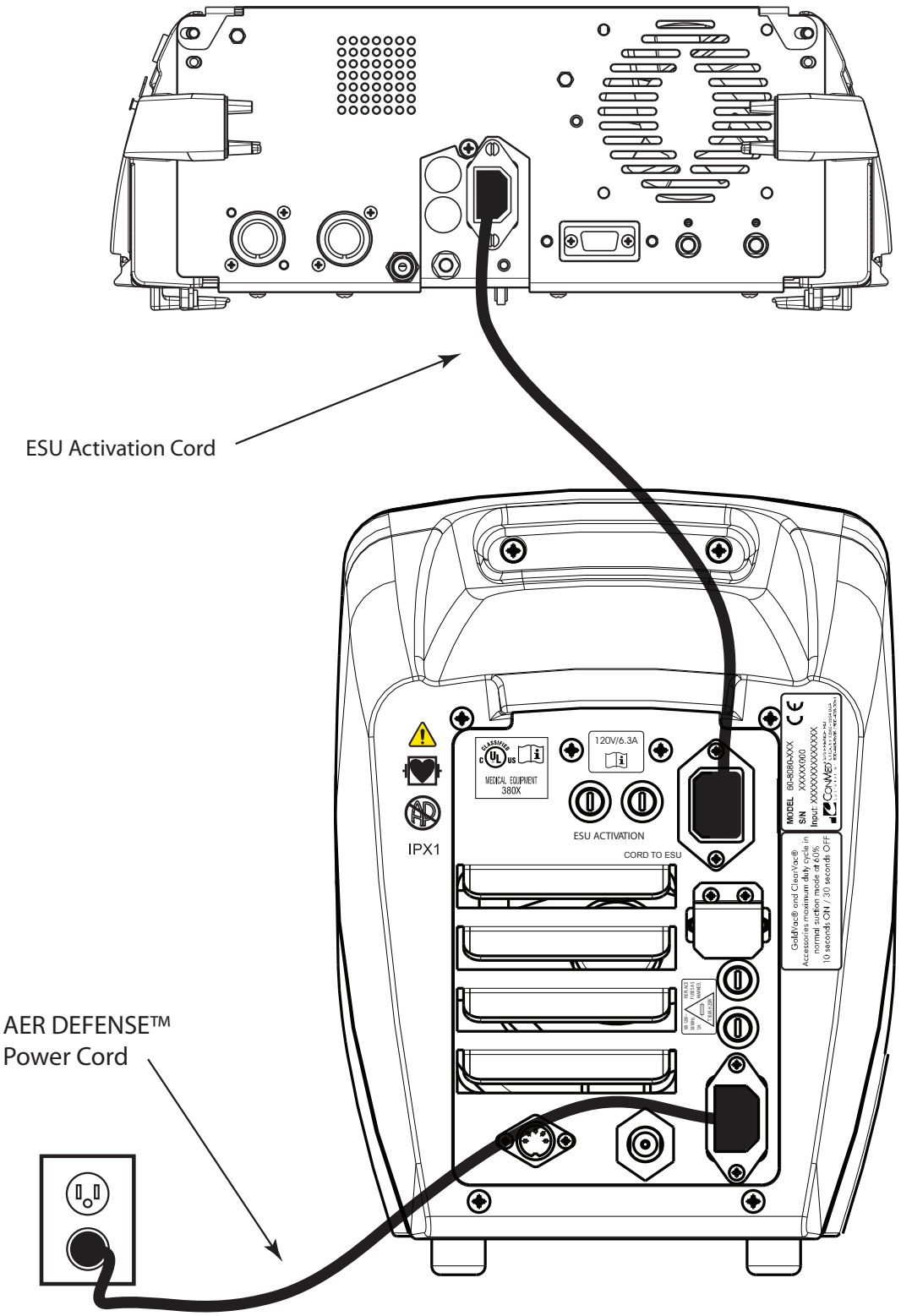
11. Deactivate the unit by:

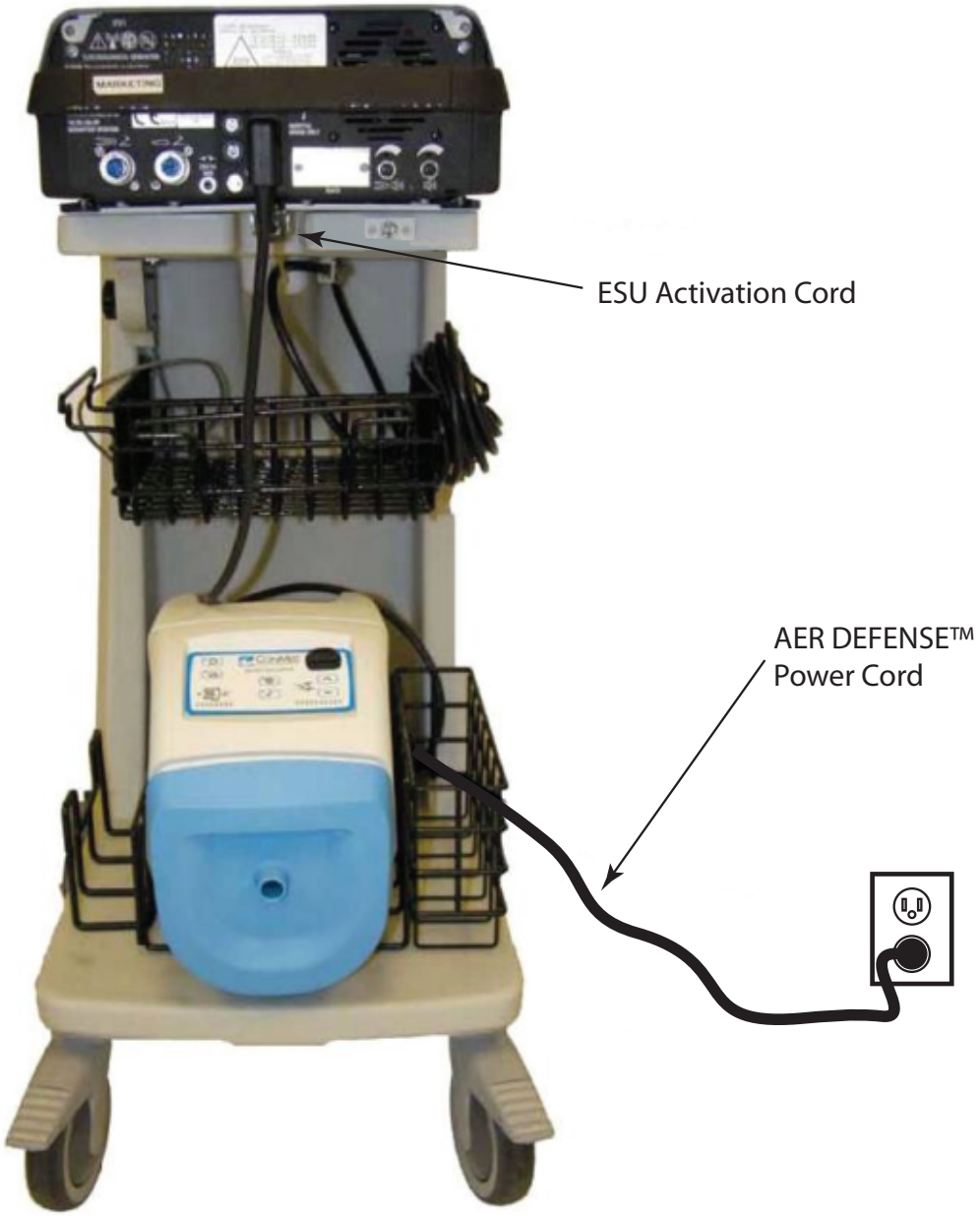
    a. Depressing and releasing the footswitch (if connected), selecting Continuous Activation button or

    b. Deactivating the CUT, COAG or BIPOLAR function on the CONMED ESU.

12. Replace the CONMED FilterOne™ when the ORANGE LED is illuminated in the Filter Life Indicator. Failure to change the filter will affect the performance and efficacy of the system.

Figure 2.3.1 AER DEFENSE™ ESU Activation Connection Set-Up




ESU Activation Cord
AER DEFENSE™
Power Cord

2.4 Specifications

Flow Rate: 25 SCFM max with 10' (3.05 m) x 7/8" (22 mm) hose (Normal Mode)

30 SLPM max with 10' (3.05 m) x ¼" (6.4 mm) hose (Lap Mode)

Power: 12 A @100-120 V (with ESU powered on)

6 A @ 220-240 V (with ESU powered on)

Mains Internal Overcurrent Protection:

AER Defense fuses:

- 120 Volt Model: T10.0A Type T, High Breaking (Littlefuse 215010.P)
- 230 Volt Model: T5.0A Type T, High Breaking (Littlefuse 215005.P)

ESU Activation Fuses: T10.0A Type T, High Breaking (Littlefuse 215010.P)

Dimensions: Height – 11.5" (29.2 cm)
Width – 8.2" (20.8 cm)
Length – 18.7" (47.5 cm)

Weight: 20 lbs. (9.07 kg)

Filter: ULPA grade with Carbon Filtration Efficiency: 99.999%, 0.12μm particles

Tubing Sizes: 7/8" (22 mm)

¼" (6.4 mm)

Operating Temperature: 10°C to 30°C

Transportation Environmental Limitations: -34°C (-29°F) to 65°C (149°F), 95% RH Non-condensing maximum

Storage Environmental Limitations: -34°C (-29°F) to 65°C (149°F), at altitude from -60 to +4500 meters above mean sea level (1020.5 hPa – 577.1 hPa) when sealed in original poly bag, packing material and shipping carton

Regulatory Compliance:

Designed to comply with Medical Electrical Equipment standards (IEC 60601-1: 2005 and related standards)

60-8080-120 100-120 VAC 50/60 Hz

60-8080-230 220-240 VAC 50/60 Hz

IEC60601-1:2005 Classifications: Class I Type CF, IPX1

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Maintenance

Section 3

3.1 General Maintenance Information

This section contains information for general maintenance of the CONMED AER DEFENSE™ Smoke Evacuator. While the CONMED AER DEFENSE™ Smoke Evacuator 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.

WARNING: No modification of this equipment is allowed.

3.2 Cleaning

Before cleaning the CONMED AER DEFENSE™ Smoke Evacuator, unplug the unit from the power outlet. The exterior of the unit may be cleaned by wiping it with a cloth that has been dampened (not dripping) with a disinfectant or a mild soap or detergent solution such as Windex® or Formula 409®. Wipe dry with a clean cloth. Do not steam sterilize.

(Windex® is a registered trademark of the S.C. Johnson Company. Formula 409® is a registered trademark of the Clorox Corporation.)

3.3 Periodic Inspection

The CONMED AER DEFENSE™ Smoke Evacuator 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 unit.
- Damage to accessories and accessory cables.

3.4 Troubleshooting the AER DEFENSE™

Problem	Potential Cause(s)	Corrective Actions
Smoke Evacuation System is on but suction is minimal.	1. FilterOne™ not seated completely. 2. FilterOne™ clogged. 3. Vacuum hose clogged. 4. Motor/Blower obstructed.	1. Re-install CONMED FilterOne™, press firmly into place. 2. Replace FilterOne™. 3. Check or replace Smoke Evacuation Tubing. 4. Call biomedical technician or CONMED Technical Services at the numbers listed on the inside front cover of this manual.
Smoke Evacuation System does not function even though power switch is ON.	1. Not plugged into electrical outlet. 2. Fuses are blown. 3. Footswitch not plugged in. 4. Electronic system failure. 5. Main power is OFF. 6. FilterOne™ Life has expired. ORANGE LED on the filter life indicator is flashing. 7. ESU Power Cable not functioning or not plugged into AER DEFENSE™ rear panel. 8. 4ft ESU Activation Cord not functioning or plugged into ESU rear panel and AER DEFENSE™ rear panel. 9. Blower/Motor needs servicing.	1. Check power outlet and connection to rear panel of machine. 2. Refer to qualified biomedical technician to replace fuses. 3. Check connection of footswitch. 4. Call biomedical technician or CONMED Technical Services at the numbers listed on the inside front cover of this manual. 5. Verify power is on by checking the LED lights on the front panel are lit. 6. Replace FilterOne™ to reset filter life indicator. 7. Check the ESU Activation Cord is plugged in properly to ESU and AER DEFENSE™ rear panels.
Mated ESU does not power ON.	1. Blown fuse	1.Check ESU for proper operation by plugging directly into a known good power source; replace fuse.

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Service

Section 4

4.1 Equipment Return

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

- Step 1: Write down the serial number of the CONMED AER DEFENSE™ Smoke Evacuator.
- Step 2: Call Technical Services at the numbers listed on the inside front cover of this manual 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 Authorization" (R.A.) number from Technical Services before returning the unit.
- Step 4: If you have the original packing for your CONMED AER DEFENSE™ Smoke Evacuator, use it to properly return your unit. If you do not have the original packing material, ask Technical Services for advice on how to pack the unit for return shipment.
- Step 5: Freight charges for all returned goods are to be prepaid by the shipper. Return to the shipping address listed on the inside front cover of this manual. Note the R.A. number on the outside of the carton.

4.2 Service/Ordering Parts

To reorder, obtain replacement parts or to return a unit for service, call Customer Service at the number listed on the inside front cover of this manual or contact your authorized CONMED Distributor.

To ensure proper operation, service should only be attempted by a Hospital Qualified Biomedical Technician in accordance with the AER Defense Service Manual (Catalog Number 60-8082-ENG), provided by CONMED. The Service Manual provides preventive maintenance requirements, calibration instructions, circuit diagrams and circuit component listing.

4.3 Environmental Protection

At the end of equipment life, AER Defense should be disposed of in accordance with your local regulations. Component materials are:

- Aluminum enclosure and heatsinks
- Thermoset printed wiring boards containing miscellaneous electronic components
- Motors and transformers made of steel, ferrite, and copper
- Mains cord made of thermoplastic and copper
- Shipping container is cardboard; packing materials are a combination of Urethane foam and Polyethylene film

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