



**AERO/VENT<sup>TM</sup>**  
**MAX**

**Step by Step  
Instructions for Use**



**MEDI**  
**NUCLEAR**  
CORPORATION, INC.

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# Aero/Vent™ Max Overview

Aero/Vent™ Max features Medi/Nuclear's proprietary Neb 3A+ fine particle nebulizer to deliver fine and ultra-fine particles (MMAD 0.28 $\mu$ ), to the patient.

These particles are considerably smaller than those delivered by competitive systems, resulting in excellent image quality.

Aero/Vent™ Max uses unidirectional airflow to avoid particle growth, improve speed of delivery, and allow  $^{99m}\text{Tc}$ -DTPA, or an equivalent alternative, to be immediately available upon inhalation.



The combination of very fine particles, unidirectional airflow, and tidal breathing, rather than a breath hold, supports shallow breathers.



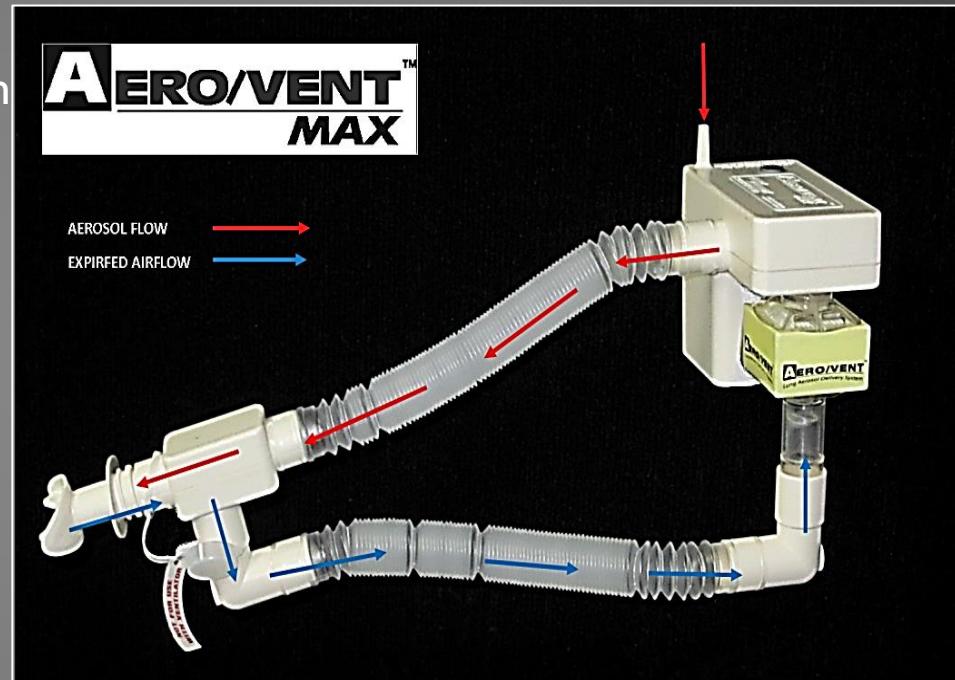
# Aero/Vent™ Max Airflow

As a patient inhales, medicated aerosol from the nebulizer moves through the upper tube, and into the mouthpiece.

When the patient exhales, the exhalation is directed through the lower tube and into a proprietary HEPA filter.

At the same time, medicated aerosol continues to flow through the nebulizer, filling the kit body and upper tube.

When the next breath is taken, the patient immediately inhales the medicated aerosol that was produced and stored during exhalation.



# Aero/Vent™ Max Assembly

- Remove the following components from the bag, and inspect.
  - Aero/Vent™ Max assembly (kit body with internal nebulizer, HEPA filter, breathing tubes, and Flow Control Block).
  - Small bag containing scuba style Safety Shield™ Mouthpiece, nose clip, and “Caution Radioactive Material” label.

**NOTE:** Retain the resealable bag for disposal of kit after the study.

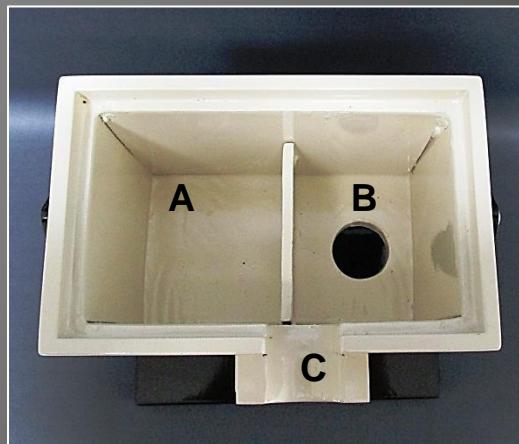


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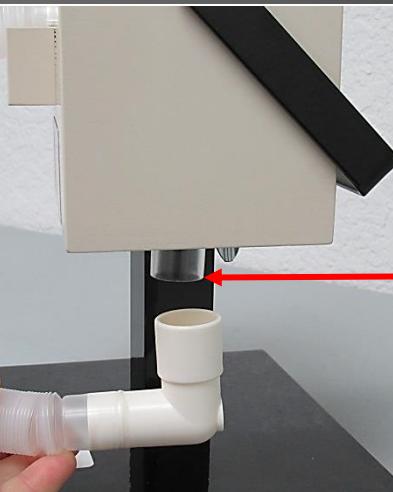
Remove the lid of the Aero/Vent™ Max shield, being careful not to misplace the lead lined Oxygen Tube Adapter, and insert the Aero/Vent™ Max kit, as follows:

- Gently lower the kit body into the shield. The rectangular section will fit in the side without a bottom opening.
- The HEPA filter will extend through the exhaust opening in the other side of the shield.
- The top tube will rest comfortably on the rounded, mouthport opening at the front of the shield.



- While holding down the top of the kit body, attach the elbow on the free end of the lower breathing tube, to the HEPA filter extension.

The HEPA filter extension can be reached through the exhaust opening in the underside of the shield.



- Attach the scuba style Safety Shield™ Mouthpiece to the mouthport. If desired, convenience kits with air cushioned face mask may be ordered, using part #AV-500M.

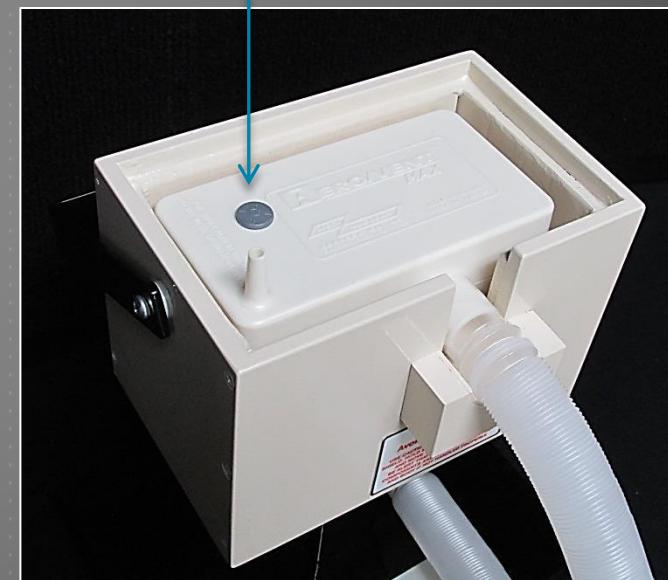
Air cushioned face masks may also be ordered separately, using model #MN5045.



- Prepare  $^{99m}\text{Tc}$ -DTPA, or an equivalent alternative, in accordance with the manufacturer's instructions.
- Using a shielded syringe and needle, held in an upright position, inject **40 mCi/2 mL** of  $^{99m}\text{Tc}$ -DTPA solution through the center of the gray stopper, on top of the kit body.

**NOTE:** Any more than 2mL of liquid will increase dosing time. Any less than 2mL of liquid will not create a steady mist.

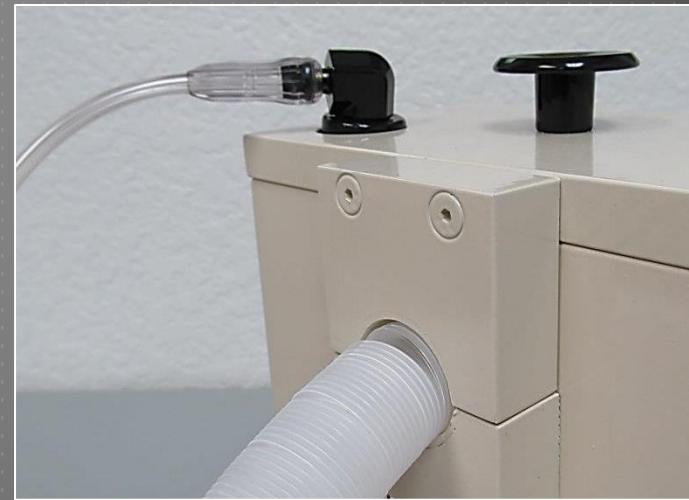
- Prior to placing the lid on the shield, ensure the kit body is properly seated.



- Place the lead lined Oxygen Tube Adapter on the Aero/Vent™ Max lid, covering the air inlet tip of the convenience kit. **Press down and turn clockwise to lock in place.**

**NOTE:** Oxygen Tube Adapter is required. Its lead lined base reduces possibility of contamination, and its barbed oxygen tube connector provides a securely attached oxygen tube.

- Connect the Oxygen Tube to the Oxygen Tube Adapter. Use only the provided oxygen tube (#IV-605). Other oxygen tubes may be slightly over-sized and could allow air leaks.



# AeroVent™ Max Operation

- Place the scuba style Safety Shield™ Mouthpiece in the patient's mouth, and place nose clip on patient's nose to prevent leakage.

**NOTE:** To minimize leakage and risk of contamination, be sure nose clip is positioned properly.

- Prior to turning on oxygen/air, instruct the patient to take several test breaths from the system.

**NOTE:** If patient is unable to use a mouthpiece or nose clip, or is believed to be infectious, a face mask may be used.



To properly place a face mask, place it on the bridge of a patient's nose and carefully roll it downward, making sure it seals securely around the edges. If necessary, a face mask harness may be used to keep the mask in place.

**NOTE:** When using a face mask, encourage the patient to breathe through the mouth. Nose breathing will slow the buildup of activity because the hairs in the nose are a very efficient filter and will strip particles from the air. Breathing through the mouth will make the accumulation of activity in the lungs nearly as fast as using a mouthpiece.

**NOTE:** It's a good practice to wipe the patient's face with a damp cloth following the procedure, as airflow from the nebulizer, combined with a patient's breath, may provide an opportunity for radioactivity to settle on a patient's face.



- Gradually turn on the oxygen/air regulator, adjusting the flow rate to 10-12 liters/minute.

**NOTE:** There will be a drop in air pressure of approximately 10% when extended oxygen tubing is used. To account for this, increase the flow rate to 12-13 liters/minute.

**CAUTION:** At normal 50 PSI pressure for the oxygen/air supply, a sudden increase of flow from 0 to 10 liters/minute may blow the air line off of the shield.

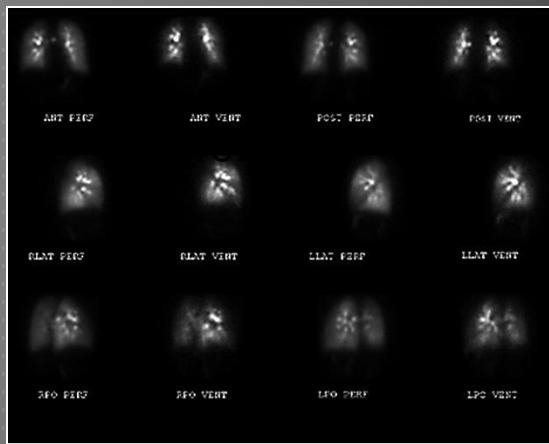
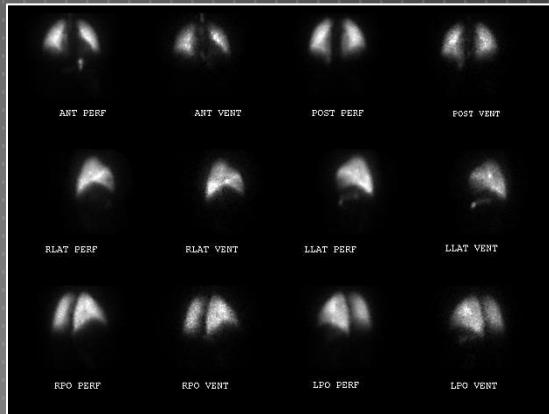
- Instruct the patient to breathe normally until the desired amount of radioactivity is delivered to the lungs.  
**Dosing time is generally around 3 minutes.**

**CAUTION:** To prevent possible radiation leakage, be prepared to shut off the oxygen flow immediately if the patient releases the mouthpiece or face mask.



- After inhalation, turn off the oxygen/air and instruct the patient to continue breathing through the mouthpiece, or face mask, for an additional four or five tidal breaths, to clear the system of aerosol.
- Remove the nose clip and the mouthpiece, or the face mask, from the patient.
- Have the patient expel any saliva into a disposable towel and discard the towel into the kit's plastic bag.
- Start the patient imaging procedure as soon as it is convenient. Imaging time should be approximately one minute for 100-150,000 count images.

**NOTE:** SPECT may be performed with  $^{99m}\text{Tc}$ -DTPA or equivalent alternatives such PYP, Sulfur Colloid, and MIBI, with a physician's order.

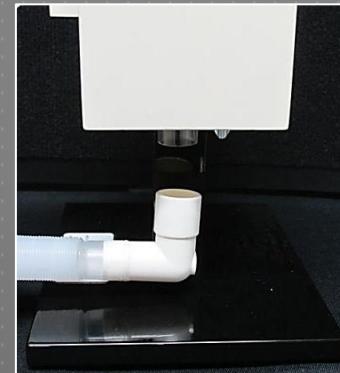
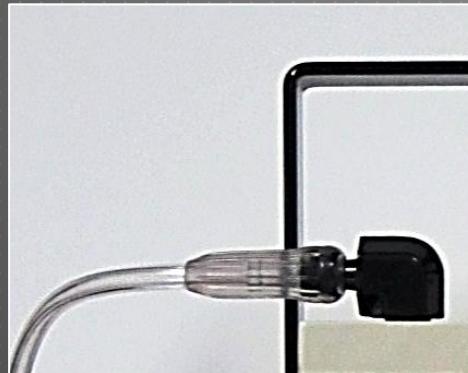


# Aero/Vent™ Max Disposal

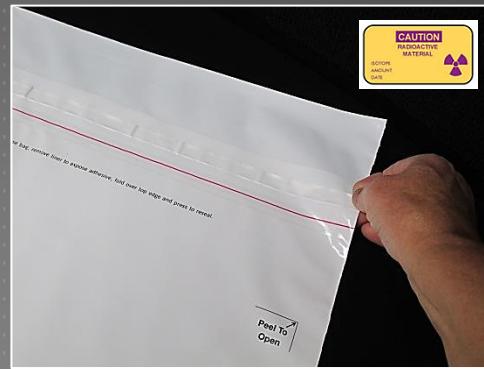
- Be sure the oxygen/air supply is off.
- Turn Oxygen Tube Adapter counter-clockwise to release it from the kit.

**NOTE:** Take care not to lose Oxygen Tube Adapter during or after kit disposal, as it is lead lined and will be needed for future studies.

- Disconnect the elbow from the HEPA filter extension, under the shield.
- Open the shield and remove the used radioaerosol kit.



- Place the kit in the resealable plastic bag and seal securely.
- Quickly attach the radioactive material label, and place the kit in a shielded disposal area to allow for radioactive decay.
- Discard decayed waste according to the radioactive waste procedures established by your facility.



# Aero/Vent™ Convenience Kit #AV-400+ for Patients on a Ventilator

For patients on a ventilator, specially designed convenience kit #AV-400+ may be used.

These special convenience kits:

- Come in a small case of just 6/each.
- Fit all standard 15mm endotracheal and tracheotomy tubes.
- Come complete and ready to use.



Quotes and detailed information available.

**CAUTION:** Standard Aero/Vent™ convenience kits may not be used for patients on a ventilator.



# Aero/Vent™ Max Ordering Information

Catalog No.	Product Description	Qty/ Units
AV-400+	Aero/Vent™ Plus Radioaerosol Kit Single Tube System	24/cs
AV-400+M	Aero/Vent™ Plus Radioaerosol Kit with Mask Single Tube System	24/cs
AV-500	Aero/Vent™ Max Radioaerosol Kit Two Tube System	24/cs
AV-500M	Aero/Vent™ Max Radioaerosol Kit with Mask Two Tube System	24/cs
AV-400+V	Aero/Vent™ Plus Ventilator Kit for ventilator dependent patients	6/cs
AV-501A	Aero/Vent™ Max Lead Shield, Aluminum	Each
IV-605	Oxygen Supply Tubing	3/pk



For additional information, please contact:



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We're here to be of assistance!

