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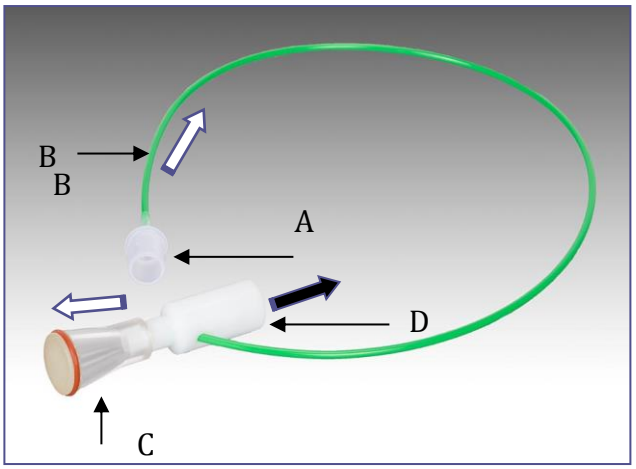
Nose Cone User Instructions

CAUTION: THIS PRODUCT CONTAINS NATURAL LATEX RUBBER WHICH MAY CAUSE ALLERGIC REACTIONS IN SOME INDIVIDUALS.



SomnoSuite Mouse Non-Rebreathing Nose Cone and Circuit

Figure 1
Components may have been added to your nose cone to enable its use with the SomnoSuite

A. 3.0mm male X 15mm male endotracheal tube adapter. This adapter plugs into the 15mm vaporizer Common Outlet (fresh gas outlet) on the inhalant anesthesia system or diverter system tubing with Common Outlet on the end.
B. Fresh Gas Feed Tube (note direction of flow of fresh gas marked by **white bold** arrow).
C. Nosecone.
D. Body of system (note direction of fresh gas flow marked by **white bold** arrow, and direction of waste gas flow marked by **black bold** arrow).

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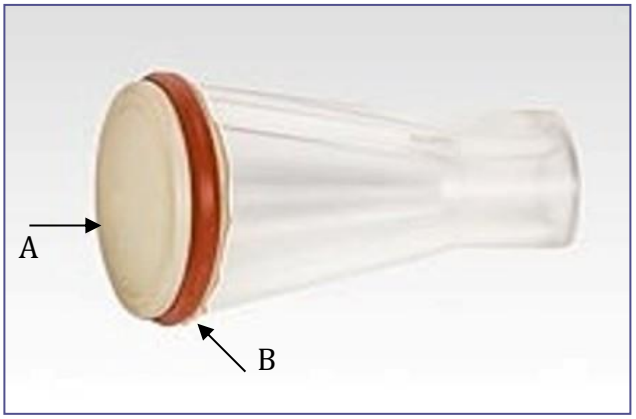

Figure 2

NOSE CONE

A. 12 mil Latex Diaphragm. **Note:** Each system comes with an extra 6 inch X 6 inch sheet of latex diaphragm material to facilitate replacing defective diaphragms. **Note:** Extra diaphragm material may be purchased separately.
B. Silicone "O" ring for nosecone. **Note:** Each system comes with an extra "O" ring.

Application:

The system is a coaxial non-rebreathing system and is designed to be used primarily with mice and rats. This device is usually used in conjunction with an inhalant anesthesia system; however, it can be used to administer oxygen and/or other metabolic gases without inhalant anesthesia (for example if the subject were anesthetized with an injectable anesthetic).
Any species can be safely anesthetized with the nose cone as long as:

1. The subject's muzzle and/or breathing apparatus can fit within the nosecone.
2. The reservoir of fresh gas in the nosecone is large enough to meet and/or exceed the tidal volume of the subject.
3. The proper oxygen flow rate is maintained to ensure no buildup of CO_2 in the nosecone.

Use and Operation:

The nose cone is a coaxial flow system in which the fresh gases flow towards the subject via the fresh gas feed tube (see arrows ⇨ for direction of flow). The exhausted gases (CO_2) and other unused waste anesthetic gases flow away from the subject towards the waste gas management system (see arrow ➡ for direction of flow).

1. Cut an appropriate sized hole in diaphragm nosecone.
    a. The diaphragm can be cut appropriately (see section entitled "Replacing the Diaphragm") using a pair of delicate sharp/sharp scissors.
    b. It is vital to the proper operation of the system that the diaphragm of nosecone is cut with the proper sized orifice--appropriate for the size of the subject and the position of the subject. The circular hole in the diaphragm needs to be small enough such that the diaphragm forms a tight seal around the subject's muzzle, but

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large enough so that it is not too tight and occludes the nares preventing proper spontaneous breathing.

i. **Do not cut a cross (+) or an "X" in the diaphragm for the subject's nose because diaphragm will not seal properly around the subject's muzzle and anesthetic gases will escape into work space.**

2. Connect the Fresh Gas Feed Tube (Figure 1, B) to your inhalant anesthesia machine fresh gas outlet utilizing the male endotracheal tube adaptor (Figure 1, A).
    a. Connect directly to anesthetic vaporizer Common Outlet or diverter system tubing with Common Outlet adaptor at the end.
3. Connect blue 19mm EVAC tubing to end of body (Figure 1, D), opposite from the nosecone- connect EVAC tubing to waste gas management system:
    a. Activated Charcoal Canister, non-recirculating vent, hood or snorkel system.
4. Insert the anesthetized subjects muzzle into the diaphragm of the nosecone.
    a. Since rodents are obligatory nose breathers in *sternal recumbence (*lying on the stomach), it is not necessary to insert more than the subject's nose into the nosecone.
    b. If the subject is in dorsal recumbence (lying on the back) or lateral recumbence (lying on the side), mouth breathing is possible and both the nose and mouth should be within the diaphragm of the nosecone.
5. Turn on the fresh gas flow from the inhalant anesthesia system.
    a. The flow rate of fresh gas is set relatively high in relation to the subject's tidal volume. This is done to ensure that the exhaled CO_2 from the subject is flushed towards the waste gas management system.
    b. Suggested minimum flow rate for a mouse: 500cc/minute.
    c. Suggested minimum flow rate for a rat: 1 lpm.

<u>CAUTION:</u> Using fresh gas flowrates lower than the suggested flowrates may result in CO_2 buildup within the nosecone.

Replacing the "O" ring and the diaphragm on the nosecone:

- The silicone "O" ring holds the diaphragm material in place on the Nosecone.
    - Silicone is more resistant to photo degradation and oxidation than latex. However, when it becomes cracked or broken and will no longer hold the diaphragm material in place and must be changed. An extra "O" ring comes with each kit and can be purchased separately if needed.
- The diaphragm is made of 12 mil thickness latex sheet material. This latex is much thicker, more durable, and more resistant to tearing; and more resistant to oxidation than surgery glove material (2 - 3 mil thickness). **We do not recommend that you replace the diaphragms with surgery glove material.** Surgery gloves are potentially permeable to anesthetic gases allowing the waste gases to escape into the environment.

1. The "O" ring can be removed by rolling it from the groove it rests in. Using your thumb, press down and roll the "O" ring to the front of the nosecone to dislodge it from its groove.

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2. Discard defective latex. “O” ring can be reused if not cracked or broken.
3. Install new latex.
    a. Stretch the new diaphragm material over the end of the face mask, holding it in place with the thumb and forefinger of one hand.
    b. Reinstall the "O" ring over the new diaphragm material and allow it to rest in the groove in the face mask.
        i. Make certain that there is no gap around the periphery of the diaphragm where trace anesthetic gases might escape.
    c. Pull the diaphragm material around the edges to smooth out the diaphragm and create a slight tension on the diaphragm.
    d. Using a pair of delicate sharp/sharp scissors, cut off the excess diaphragm material from around the "O" ring. Save the rest of the new diaphragm material for subsequent diaphragm replacements.

PLEASE CONTACT TECHNICAL SUPPORT WITH ANY QUESTIONS