

# Microstream®

## ETCO<sub>2</sub> SAMPLING

### Products for Intubated Patients Adult and Pediatric Infant and Neonatal Directions for Use

#### Airway Adapters for Adult to Pediatric patients:

- Added dead space <6.6 cc.
- To be used with an endotracheal tube > 4.5mm bore.
- Suitable for use with 22mm and 15mm patient tubing.

#### Airway Adapters for Infant and Neonatal patients:

- Added dead space <0.5 cc.
- To be used with an endotracheal tube ≤ 4.5mm bore.

#### Instructions for use:

1. Firmly connect the small-end (male) of the Microstream® Airway Adapter ① to the female-end of the Wye piece (ventilation source).
2. Firmly connect the patient's endotracheal tube connector into the large-end (female) ② of the Microstream® Airway Adapter.
3. Ensure that the tubing is not twisted or crimped.
4. Twist the female luer connector ③ securely but gently into the Microstream® input connector ④.
5. Following connection of the CO<sub>2</sub> sampling line, check that CO<sub>2</sub> values appear on the monitor display.

For use with all Microstream-enabled monitors.

Single patient use, not to be re-processed / Non-sterile / non-pyrogenic / Does not contain natural rubber latex

**Warning:** When used with closed suction system, do not place the airway adapter between the suction catheter and endotracheal tube. This is to ensure that the airway adapter does not interfere with the functioning of the suction catheter.

**Warning:** Loose or damaged connections may compromise ventilation or cause an inaccurate measurement of respiratory gases. Securely connect all components and check connections for leaks according to standard clinical procedures.

**Warning:** Do not use the FilterLine® H Set Infant/Neonatal during magnetic resonance imaging (MRI) scanning. Using the products during MRI scanning could create an artefact on the MRI image.

**Warning:** Do not use the FilterLine® H Set Infant/Neonatal with products with protruding inner connector pieces (i.e., the Hamilton flow sensor), as this may cause breakage of the airway adapter.

**Caution:** Non-standard dimensioning of some fittings on ventilator or anesthesia equipment may make secure mating with the airway adapter difficult. Use the FilterLine® H Set Infant/Neonatal only with equipment having standard 15 mm fittings. The sampling lines are to be used with an inlet ET tube connector with an inner diameter of greater than 10 mm.

**Caution:** Check CO<sub>2</sub> and O<sub>2</sub> tubing regularly during use to ensure that no kinks are present. Kinked tubing may cause inaccurate CO<sub>2</sub> sampling or affect O<sub>2</sub> delivery to patient.

**Caution:** Ensure that tubing is not stretched during use.

**Caution:** Do not attempt to clean, disinfect, sterilize or flush any part of the sampling line as this can cause damage to the monitor.

**Caution:** Dispose of sampling lines according to standard operating procedures or local regulations for the disposal of contaminated medical waste.

**Caution:** Use of a CO<sub>2</sub> sampling line with H in its name (indicating that it is for use in humidified environments) during MRI scanning may cause interference. These sampling lines include FilterLine H Set and FilterLine H Set Long. The use of non H sampling lines is advised.

**Note:** During nebulization or suction, in order to avoid moisture buildup and sampling line occlusion, remove the sampling line luer connector from the monitor.

**Note:** Replace the sampling line according to hospital protocol or when a blockage is indicated by the device. Excessive patient secretions or a build-up of liquids in the airway tubing may occlude the sampling line, requiring more frequent replacement.

**Note:** When connecting a sampling line to the monitor, insert the sampling line connector clockwise into the monitor CO<sub>2</sub> port and turn the connector until it can no longer be turned, to ensure that it is connected securely to the monitor. This will assure that there is no leak of gases during measurement at the connection point and that measurement accuracy is not compromised.

**Note:** Following connection of the CO<sub>2</sub> sampling line, check that CO<sub>2</sub> values appear on the monitor display.

**Note:** To remove the infant/neonatal airway adapter from the breathing circuit, twist the airway adapter outwards by a quarter turn while firmly gripping the closest section of the ventilation source or patient's endotracheal tubing, and disconnect.

**Note:** During setup, ensure that airway adapter can be easily attached and detached from the breathing circuit before proceeding.

**Note:** Expect delay times for the following products to be longer than the standard by the given times: Long (4m) FilterLines - 3 seconds.

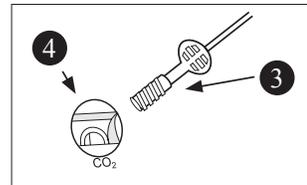
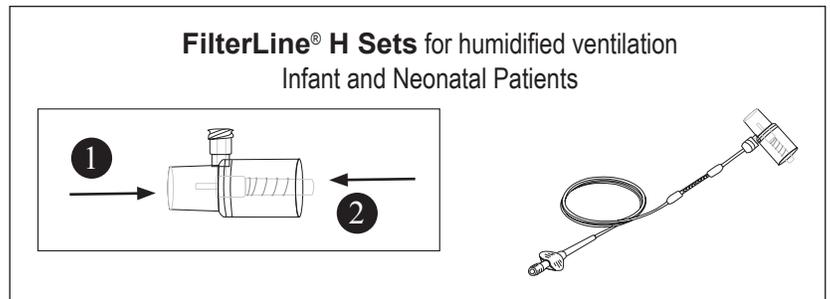
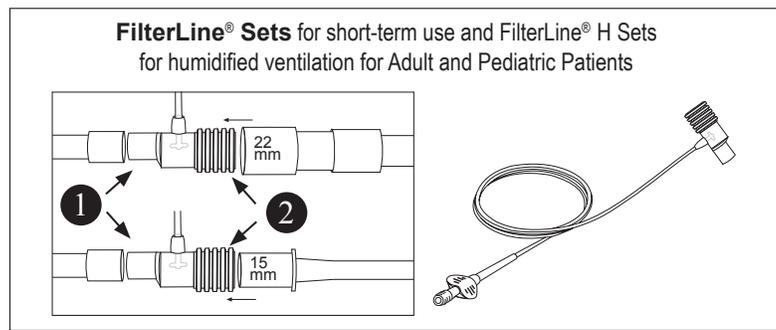
**Note:** Sampling lines with H in their names include a moisture reduction component (Nafion® or its equivalent) for use in higher humidity environments where long duration use of CO<sub>2</sub> sampling is required.

**Note:** Following connection of the CO<sub>2</sub> sampling line, check that CO<sub>2</sub> values appear on the monitor display.

**Note:** During setup, ensure that airway adapter can be easily attached and detached from the tubing before proceeding.

**Note:** Expect delay times for the following products to be longer than the standard by the given times: Long (4m) FilterLines - 3 seconds.

Federal law (U.S.) restricts this device to sale by or on the order of a physician.



	For use with a single patient
	Rx Only
	Consult instructions for use
	Caution, consult accompanying documents
	Storage temperature
	Does not contain natural rubber latex
	Not safe for use in MR environments
	CE Mark



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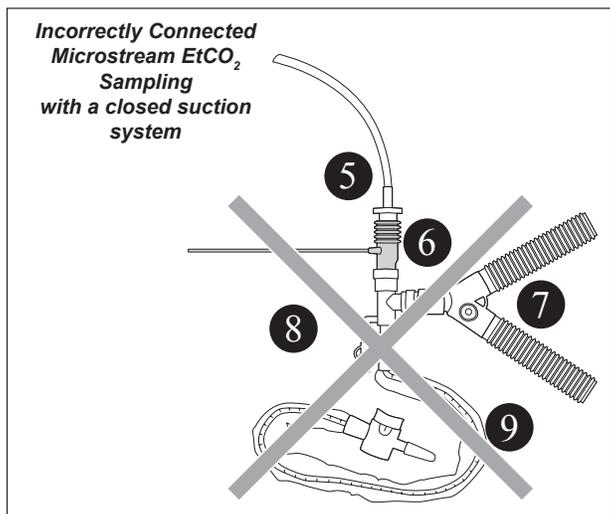
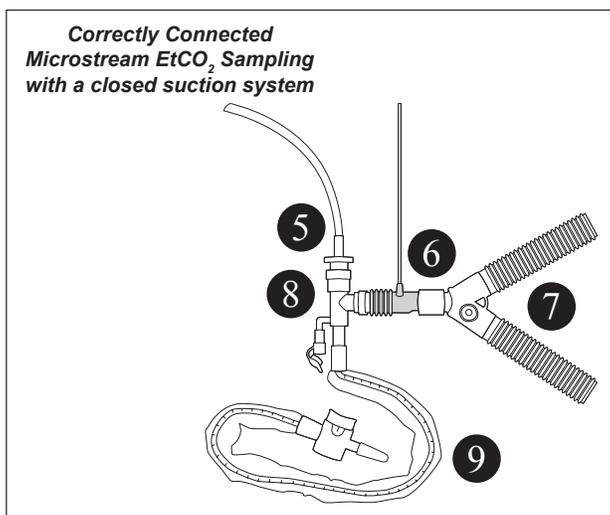
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## Microstream® EtCO<sub>2</sub> Sampling with a Closed Suction System Adult and Pediatric Patients

### Instructions for use with a closed suction system:

1. Set up the parts of the system as seen below. See legend.
2. Connect the system as seen in **Correctly Connected Microstream EtCO<sub>2</sub> Sampling** below, as follows:
3. Firmly connect the small-end (male) of the Microstream® Airway Adapter (6) to the female-end of the Wye piece (ventilation source) (7).
4. Firmly connect the large-end (female) of the Microstream® airway adapter (6) to the ventilator connector on the closed suction system (8), so that the airway adapter does not interfere with the functioning of the suction tubing (9).
5. The setup seen at bottom is incorrect; if set up in this way, the airway adapter will interfere with the functioning of the suction tubing.



### Legend

1. Male-end of airway adapter
2. Female end of airway adapter
3. Female luer connector
4. Microstream® input port
5. Endotracheal tube
6. FilterLine Set with airway adapter
7. Wye piece (ventilation source)
8. Ventilator connector on closed suction system, with lavage
9. Suction tubing

## Microstream® EtCO<sub>2</sub> Sampling with a Closed Suction System Infant and Neonatal Patients

### Instructions for use with a closed suction system:

1. Set up the parts of the system as seen below. See legend.
2. Connect the system as seen in **Correctly Connected Microstream EtCO<sub>2</sub> Sampling** below, as follows:
3. Firmly connect the small-end (male) of the Microstream® Airway Adapter (6) to the female-end of the Wye piece (ventilation source) (7).
4. Firmly connect the large-end (female) of the Microstream® airway adapter (6) to the ventilator connector on the closed suction system (8), so that the airway adapter does not interfere with the functioning of the suction tubing (9).
5. The setup seen at the bottom is incorrect; if set up in this way, the airway adapter will interfere with the functioning of the suction tubing.

