

Technical Bulletin

Ref: **TB- 09002**

Product: INOmax[®] DS

Affected parts: INOmax DS

Subject: **Coaxial Anesthesia circuits not recommended for use with the INOmax DS**

Issue date: **May 2009**

Priority: Low

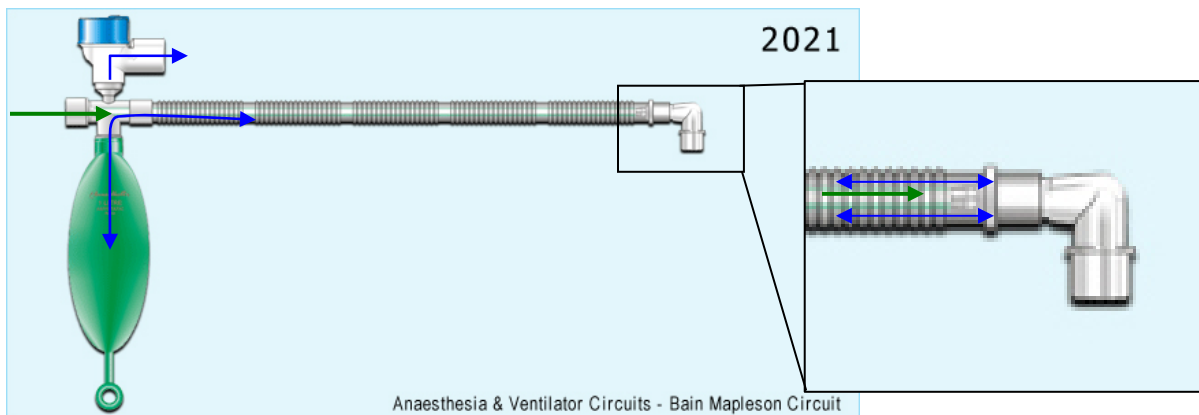
Classification: Information

The following Technical Bulletin is provided to identify issues when using anesthesia circuits other than the circle circuit recommended in the INOmax DS operation manual.

Note: The breathing circuit between the sample tee and the patient Y should be between 6 and 12 inches (150-300mm) long: greater than 6 inches to minimize the sampling of mixed inspired/expired concentrations and less than 12 inches to help ensure correct patient NO₂ measurement.

The Bain Mapleson Circuit (see Figure #1) is a modification of the Mapleson D system. It is a coaxial system in which the fresh gas (green arrow; Figure #1) flows through a narrow inner tube within the outer corrugated tubing. The patient inspires and expires gases (blue arrows; Figure #1) through the outer reservoir tube. It also contains a reservoir bag which allows the user to manually ventilate the patient when necessary. When the bag is squeezed it provides inspiratory gas flow through the outer reservoir tube to the patient.

Figure #1

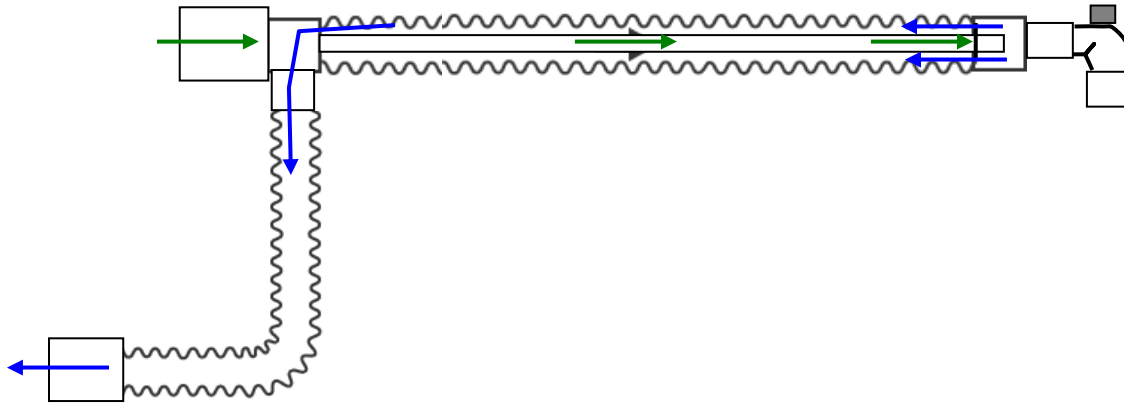


Issues:

- The inability to break into the inspiratory limb of this circuit creates a situation where the user will need to place the sampling line prior to the inspiratory limb or at the patient wye.
 - Sampling before the inspiratory limb may result in lower measured NO₂ readings than actually delivered due to the increased residence time of NO in the circuit.
 - Sampling at the patient wye will result in analyzing mixed inspired/expired gases, which will lead to fluctuating values and a tendency to under-read monitored values due to the patient uptake of NO.

The F Type Anesthesia Circuit (see Figure #2) is a coaxial system in which the inspired gases (green arrow; Figure #2) flow through a narrow inner tube within the outer corrugated tubing. The patient expires gases (blue arrow; Figure #2) through the outer reservoir tube.

Figure #2



Issues:

- The inability to break into the inspiratory limb of this circuit creates a situation where the user will need to place the sampling line prior to the inspiratory limb or at the patient wye.
 - Sampling before the inspiratory limb may result in lower measured NO_2 readings than actually delivered due to the increased residence time of NO in the circuit.
 - Sampling at the patient wye will result in analyzing mixed inspired/expired gases, which will lead to fluctuating values and a tendency to under-read monitored values due to the patient uptake of NO.