

Ambu



**SINGLE-USE YOU
CAN COUNT ON**

King Circuits, Masks, and Breathing Bags

King Masks

Our masks provide an excellent face seal. The cushion is extremely pliable and tacky to the touch. The ribs located on the top of the cushion provide a no-slip grip. Contains no DEHP or phthalates and is MRI safe.



King Breathing Bags

Our breathing bags provide a secure attachment to the machine as well as an excellent feel of lung compliance. The rigid material holds consistent bag tolerance. Our bags deliver the required gas volume without hand fatigue thanks to their thin, pliable material and shape.

Anesthesiology Delivery Products Designed for Children

Ambu offers brightly colored Rainbow Breathing Bags and scented Sweet Dream Masks for anxious children. They have been shown to help reduce a child's observable anxiety by distracting the child from dwelling on their fear of the surgery and/or being separated from their parents.

During pre-surgery preparations, show the child the brightly colored breathing bags (balloons), and have them smell the sweet scented masks. They can select which colored bag and scented mask they like best, and let them hold those items as they are wheeled to the operating room.



Ambu also offers the coaxial Pediatric F2 breathing circuit, designed specifically for pediatric patients.

Facts on King Circuits

King Flex2

Filter protects both patient and machine (inspiratory and expiratory machine ports) with a single, dual-chamber, high-efficiency filter. The ability to shape the flex tubing near the airway and ability to compress/expand flex tubing to ideal length between patient and machine reduces the torque on the airway device. Efficiently removes an average of 99.99% of bacteria and viruses. (Reference back of brochure for more filter efficiency details, and for sizes of common bacteria and viruses.)

King F Flex

The King F Flex single-limb co-axial expandable circuit promotes thermal efficiency and features a disposable manifold. It reduces potential for patient infection and machine contamination when used with a variety of filter options. The King F Flex helps maintain patient's body temperature and can provide 100 percent oxygen to patient during transport when combined with a King Systems Transport Kit.

King Ped F2

The Ped F2 utilizes our unique dual-chambered 2-in-1 high-efficiency filter to provide separate protection of the inspiratory and expiratory ports. Its co-axial filter increases patient safety, simplifies set-up and eliminates the need for two filters. It converts easily to a transport unit, and if necessary, to a resuscitation circuit or into a high-flow circuit with connector and fresh gas extension.

99.99%

efficiency at removing
test bacteria, staphylococcus aureus

99.99%

efficiency at removing
test bacteria, phi x 174

99.99%

efficiency at removing 0.3um
particulates

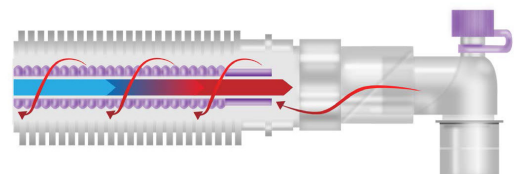
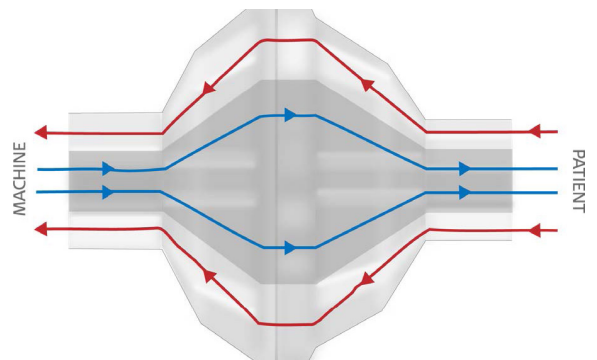




Shared Benefits

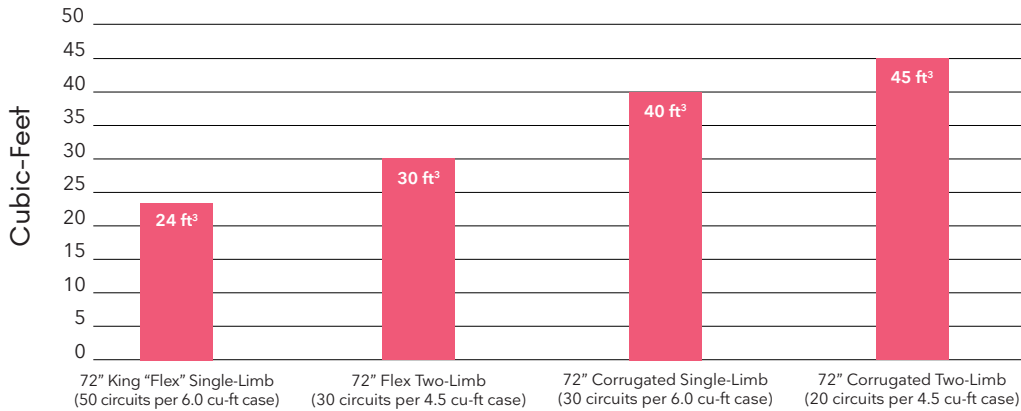
All of Ambu King Systems single-limb circuits help to maintain patient body temperature with the co-axial design. Cold inspiratory gas travels through inner lumen from the anesthesia machine, and warm expiratory gas travels through outer lumen from the patient. Anesthesia gas delivered to patient is warmed by 11°F (6°C)². They also shape the lightweight flex tubing near the airway and minimize draping by adjusting the flex tubing to the ideal length between machine and patient.

Reduces the number of circuit lengths stocked, due to flex tubing being expandable to various lengths. Minimizes circuit types stocked, because circuits can be used wherever an adult or pediatric two-limb is used. Requires significantly less storage space because flex tubing is packaged at its most compressed length.



Cubic-Feet of Storage for 200 Circuits

Significantly Less Space for Flex Tubing



Transport with the King Flex2

Less overall disposable waste for the hospital when using the Flex2 for both surgery and transport. Basic steps for use of transport kits/valves:

1. From OR, disconnect circuit and bag from anesthesia machine, and also bring patient's mask.
2. Assemble O2 line from transport kit, to the transport tank.
3. Assemble patient's breathing bag to transport kit.
4. Assemble patient's circuit to the transport kit.
5. Initially adjust the flow rate of the oxygen regulator to 10-15 lpm (or at least 2x minute ventilation).
6. Adjust valve as needed, to meet patient's ventilation requirements.
7. Transport with the ETT/supraglottic device in place, or change to a mask.

Minimize Waste with the King Flex2

Less overall disposable waste for the hospital when using the Flex2 for surgery, transport and the post-anesthesia care unit (PACU). Can also provide lower overall cost options when using the Flex2 for surgery, transport, and the PACU.

Reduces the number of circuit lengths stocked due to the expandable flex tubing. Significantly less storage space required because flex tubing is packaged at its most compressed length.



Filter and HME Descriptions and Performance Data

Part #	Type	Size	Design	CO2 Port	Volume (ml)	Weight (g)	Resistance (cm H2O)	Absolute Humidity (mg/l)	Bacterial/Viral Efficiency*	0.3um Particulate Efficiency **
F2 Dual Filter	FILTER	DUAL	Straight	No	149	60	1.0 @ 0.5 l/s	n/a	99.99%	99.99%
20801	FILTER	STND	Straight	No	75	29	0.9 @ 0.5 l/s	n/a	99.99%	99.99%
MS-112	FILTER	STND	Straight	Yes	37	22	0.6 @ 0.5 l/s	n/a	99.99%	99.99%
MS-121	HMEF	LRG(ICU)	Straight	Yes	95	45	1.4 @ 0.5 l/s	38 @ 1000ml Vt	99.99%	99.99%
GVS-4333	HMEF	STND	Straight	Yes	55	27	1.4 @ 0.5 l/s	34 @ 500ml Vt	99.99%	99.99%
MS-111	HMEF	STND	Straight	Yes	55	34	1.1 @ 0.5 l/s	38 @ 1000ml Vt	99.99%	99.99%
MS-113	HMEF	STND	Angled	Yes	61	35	1.4 @ 0.5 l/s	38 @ 1000ml Vt	99.99%	99.99%
KN-HMEF	HMEF	SML	Straight	Yes	38	25	2.5 @ 0.5 l/s	31 @ 500ml Vt	99.99%	99.99%
MS-101	HMEF	PED	Angled	Yes	15	10	1.4 @ 0.5 l/s	35 @ 100ml Vt	99.99%	99.99%
MS-120	HME	LRG(ICU)	Straight	Yes	95	44	1.4 @ 0.5 l/s	38 @ 1000ml Vt	99.99%	99.99%
MS-110	HME	STND	Straight	Yes	55	33	1.4 @ 0.5 l/s	38 @ 1000ml Vt	99.99%	99.99%
MS-102	HME	SML	Straight	No	22	13	1.1 @ 0.5 l/s	35 @ 500ml Vt	99.99%	99.99%
MS-131	HME	TRACH	O2 Port	No	13	6	1.4 @ 0.5 l/s	34 @ 500ml Vt	99.99%	99.99%
MS-133	HME	TRACH	O2 Port & Value	No	13	6	1.4 @ 0.5 l/s	34 @ 500ml Vt	99.99%	99.99%

* Bacterial and efficiency determined per test method ASTM F2101, which simulates the actual airborne transmission of Staphylococcus aureus in water droplets. ⁶ Viral efficiency c per test method ASTM F2101, which simulates the actual airborne transmission of bacteriophage phi x174 in water droplets. ⁶

** Particulate efficiency determined per Nelson Laboratories' test protocol, which transmits dry and inert 0.3um airborne particulates.

Data on Common Bacteria and Viruses – Including Those Used for Filter Efficiency Tests

Name	Bacteria, Virus, or Particulate	Flex2 Filter Efficiency ⁶	Bacteria/Virus/Particulate Average Size (um) ⁵	Transmission of Diseases (actual or in tests) ^{3,4,5}
Staphylococcus aureus	TEST bacteria	99.9999%	0.90 diameter	airborne water droplets
Neisseria meningitidis	bacteria	---	0.80 diameter	airborne water droplets
Bacillus anthracis	bacteria	---	6.50 length 1.15 diameter	airborne water droplets
Myobacterium tuberculosis	bacteria	---	2.75 length 0.35 diameter	airborne water droplets
Phi X174	TEST virus	99.9996%	0.027 diameter	airborne water droplets
Flu type A- H1N1 & H3N2	virus	---	0.100 diameter	airborne water droplets
Flu type B- Victoria & Yamagata	virus	---	0.100 diameter	airborne water droplets
Norovirus	virus	---	0.030 diameter	airborne water droplets
Inert particulate	TEST particulate	>99.97%	0.300 diameter	dry particulate only

References/Studies:

1. The Universal F Breathing System Reduces the Number of Hypothermic Patients Entering the PACU. Thompson, Rast, Carson.

2. Evaluation of the King Systems Universal F Anesthesia Breathing Circuit. Campbell, Branson, Johnson, et. al.

3. Transmission by water droplets per ASTM F2101 test method, CDC Principles of Epidemiology, and Boston University "Transmission of Infectious Disease".

4. Examples of diseases spread by airborne respiratory water droplets. Boston University "Transmission of Infectious Disease" and Wikipedia-Airborne-Disease.

5. Data on file.

6. Testing and reported results by Nelson Laboratories

Questions? Contact your Ambu representative at **800-262-8462** or visit **www.ambuUSA.com**



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