

KING SYSTEMS CORPORATION

Relentless Innovation. Compassionate Solutions.



The Circuits On The Move...



U n i v e r s a l F 2[®] a n d P e d F 2[®]

The Universal F2® and PedF2® Options

Scented or Non-scented Face Masks (Size 1, 2, 3, 4, 5, 6 and Round)
Reusable or Disposable Transport Adapters
Multiple hose lengths
40" or 60" circuit extension
Metal or Polymer Manifolds
Filtered and Non-filtered Versions

Breathing Bag – Regular, Textured, Latex-free, Rainbow Breathing Bags® or Contour®
Gas Sampling Lines with and without Filters and Co-extruded
90° Swivel Sample Port
Sample port elbow
Bain/Mapelson D Arm Adapter

Universal F2® Testing Data

Thermal Efficiency (°C) in Anesthesia only		
<i>Temperature was continuously monitored at four positions in the circle system during the test: inspiratory dome valve (I_{insp}) and patient inspiratory (I_{psua}).</i>		
Temp. (Initial)	I _{insp}	I _{psua}
Univ. F2	22.3	23.2
Std. Circle	21.5	23.1
Temp. (at 15 min.)		
Univ. F2	23.6	29.2
Std. Circle	21.6	21.9

Resistance (cmH ₂ O/L/sec)		
<i>Defined as the pressure difference from inlet to outlet of the device per unit of flow.</i>		
Flow (L/sec)	0.5	1.0
Univ. F2 (insp.)	0.97	2.13
Univ. F2 (exp.)	1.30	2.64
Univ. F2 Filter	—	1.50
<i>Comparison: The combined resistance of a standard adult breathing circuit with an HME could exceed 3.5 cm H₂O/L/sec.</i>		

Humidification Delivery (at 15 min.) in Anesthesia only	
<i>(Fresh gas flow rate: 2L/min.; tidal volume: 800ml; respiratory rate: 12 breaths/min.)</i>	
Absolute Humidity:	27.1 mg H ₂ O/L
Relative Humidity:	91% at 29.5 °C
Compliance (cc/cm H ₂ O)	
<i>Defined as the change of volume per unit of pressure.</i>	
Univ. F2	1.61 cc/cm H ₂ O

Universal PedF2® Testing Data

Humidification Delivery (at 15 min.) in Anesthesia only	
<i>(Fresh gas flow rate: 1L/min.; tidal volume: 200ml; respiratory rate: 20 breaths/min.)</i>	
Absolute Humidity:	21.7 mg H ₂ O/L
Relative Humidity:	84% at 27.8 °C
<i>(Fresh gas flow rate: 5L/min.; tidal volume: 250 ml; respiratory rate: 20 breaths/min.)**</i>	
Absolute Humidity:	26.2 mg H ₂ O/L
Relative Humidity:	93% at 27.4 °C
<i>Note: The more exhaled gas that passes through the absorber the higher the humidity output will be.</i>	
** Narkomed 6000 used for testing	

Resistance (cmH ₂ O/5L/sec) ISO 5367	
<i>Defined as the pressure difference from inlet to outlet of the device per unit of flow.</i>	
PedF2 (Mean)	1.51
PedF2 (Mean with filter)	3.01
Pediatric two-limb with HME	<2.9
Pediatric two-limb with HME/T	>2.9

Compliance (ml/cm H ₂ O) ISO 5367	
<i>Defined as the change of volume per unit of pressure.</i>	
Univ. PedF2	.74
Pediatric two-limb circuit	.78
Weight comparison (grams)	
PedF2	156
Pediatric two-limb circuit	>224
Average Mapleson circuit	>237

The Universal F2® and PedF2® Filter Data

Viral: MIL Test
Average viral (X174, 0.027 micron size) removal efficiency of >99.9996%
Bacterial: MIL Test
Average bacterial Staphylococcus Aureus removal efficiency of >99.9999%
0.3 Micron: HEPA level challenge
Average >99.97%

Test results on file. All testing conducted by Independent Labs.

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SURGERY

The Universal F2[®] and the PedF2[®] ...



Both the Universal F2 and PedF2 have a **tube-within-a-tube design**, which creates a self-contained, **thermally efficient atmosphere** for anesthesia; successfully used on **over 4 million patients** worldwide.

The patented **Manifold system** is a semi-permanent attachment to the inspiratory and expiratory valves of anesthesia machines and ventilators.

- This creates an easy-to-use, cost-effective product.



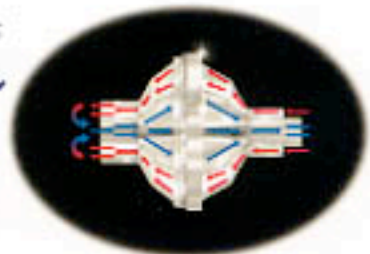
Within the Universal F2 and PedF2 circuits, the inspired gases are **warmed and humidified** by the patient's expired gases.

- This creates a thermally efficient atmosphere.



The patented design of the co-axial filter provides filtration for **both inspiratory and expiratory flow**, with **only one filter**.

- Patient safety is increased, while simplifying set-up and eliminating the need for two filters.



The Universal F2[®] and PedF2[®] ... The Circuits On The Move

SURGERY

The Universal F2 and PedF2 provide:

- The convenient tube-within-a-tube design that you've come to trust
- A thermally efficient atmosphere
- Filtration for both inspiratory and expiratory flow, with only one filter



TRANSPORT

The Universal F2 and PedF2:

- Easily convert to a transport system offering continuity of care
- Eliminate the need for resuscitation bags
- Offer reusable versions of transport valves, allowing one time only cost for oxygen-assisted post-operative patient transport
- Transport valves are also available in Adult and Pediatric Disposable versions, offering the ease of a disposable unit



POST-OPERATIVE

The Universal F2 and PedF2:

- Eliminate the need for a second circuit in ICU
- Multi-functional circuits eliminate the need to stock other configurations of circuits and miscellaneous components
- Provide a less cluttered atmosphere





TRANSPORT

...Designed To Stay With Your Patient...

In fact, all pediatric and adult patients can be transported with the Universal F2 and PedF2 Transport Systems.

With a Transport Valve, you can **quickly and easily** convert the Universal F2 and PedF2 from an Anesthesia Delivery System to a **Transport System**, insuring:



Cost Savings, by eliminating the need for expensive resuscitation bags.



Maximum delivery of oxygen (100%) during transport.

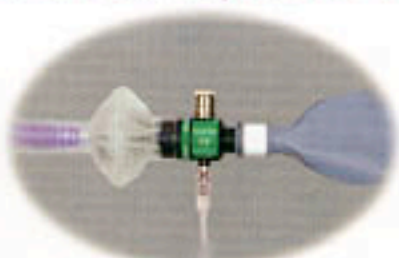


A flow-dependent resuscitation system utilizing an **anesthesia breathing bag** that allows the user to **"feel the lungs"**.

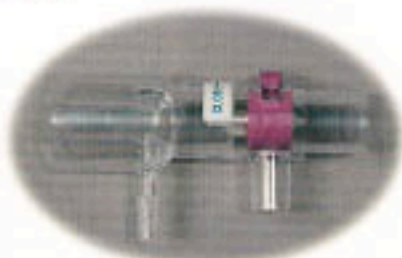
The Transport System is available with either a reusable or disposable valve.



Disposable Pediatric Thumbslide Transport Valve (F02)



Reusable Pop-Off Transport Valve (MD103)



Disposable Adult Thumbslide Transport Valve (F01)

POST-OPERATIVE

...From Surgery Through Recovery!

Continuing to utilize the Universal F2 and PedF2 from **Surgery**, through **Transport**, and finally through **Post-Operative Care**

eliminates the need for a second short-term circuit in the ICU and the need to stock multiple circuit configurations.



Reducing the risk of contamination to the patient



Conserving storage space



Eliminating the cost of additional circuits



Autoclavable polymer manifold available with or without a hanger



Providing a less cluttered atmosphere



Ideal for "Fast Trac Weaning"

"This change in practice using single circuitry in a triple function role [surgery, transport, and post-operative] resulted in increased patient satisfaction, decreased patient length of stay, decreased cost in equipment and labor, and increased staff productivity alone."

David L. Batcheller, RRT, Arkansas Heart Hospital, Little Rock, Arkansas
Respiratory Care, October 1999, Volume 44, Number 10