



Customizable Multipac® Anesthetic breathing circuits

A safe and effective one-a-day breathing circuit that may be used up to 24hrs



Anesthesia ▪ Multipac® Anesthetic Breathing Circuits



Quality, innovation and trust

Interact with us



www.intersurgicalinc.com

Multipac[®]

anesthetic breathing circuits

Multipac is a **safe** and **effective** one-a-day breathing circuit that may be used up to 24hrs



Keep

Tube, reservoir bag and monitoring line
for **duration of day**



Change

Filter, connector and mask for **each patient**

Patient Pack

Each kit has the option to include a Patient Pack
and more can be individually purchased.*



*Masks and filter are individually packaged within the Patient Pack.



Multipac® anesthetic breathing circuits

Cost savings remain a key focus in today's surgical environment. This impacts not only product selection, but also storage requirements and anesthesia set-up time. Intersurgical addresses these challenges with a fully integrated solution.

Multipac is a one-a-day breathing circuit that may be used up to 24hrs. Each circuit utilizes a single high-efficiency HMEF or pleated membrane filter at the patient interface, which is replaced between patients while the circuit remains in use.

A range of HMEF or pleated membrane filter options are available, allowing clinicians to select the most appropriate solution based on patient and clinical needs.

Available in customizable configurations, Multipac enables clinicians to tailor the circuit to their exact requirements, including circuit type, reservoir bag size, HMEF/Filter selection, and patient interface.

Multipac circuits are available for both adult and pediatric applications. Some configurations are manufactured using non-PVC and phthalate-free materials, supporting sustainability initiatives without compromising performance. Wherever you see the logo in our catalogs and website, we have reduced the environmental impact of these products compared to traditional PVC options, providing a better choice.

To support hospital infection control initiatives, Intersurgical has developed the Silver Knight™ circuit with an anti-microbial additive to help protect the circuit. This anti-microbial, silver-based ion additive has been introduced to our UniFlow™ breathing circuit for anesthesia.

By implementing Multipac, facilities can realize meaningful cost savings through reduced product usage, decreased storage demands, improved operating room efficiency, and lower waste disposal costs².

Silver Knight anti-microbial breathing circuits

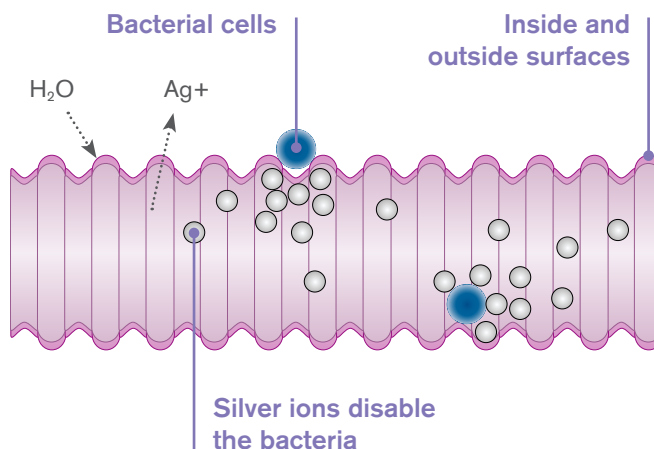
Helping the fight against Hospital Acquired Infections

How does it work?

Silver Knight is an anti-microbial additive that uses silver ions to disrupt the normal enzymatic activities of bacteria. It functions as a safe, quick and effective catalyst to deactivate pathogenic bacteria and prevent their proliferation.

The silver ions bind with the bacteria and damage the cell wall, disrupting normal cellular functions and preventing further proliferation of the bacteria. The silver ions work through catalytic oxidation therefore they are not used up following a single reaction, it may catalyze an innumerable number of reactions. This is one reason for the effectiveness of silver as an anti-microbial agent.

Silver Knight breathing circuits are all validated for up to 24 hours use, and remain active, in unopened packaging, for up to five years.



Find out more

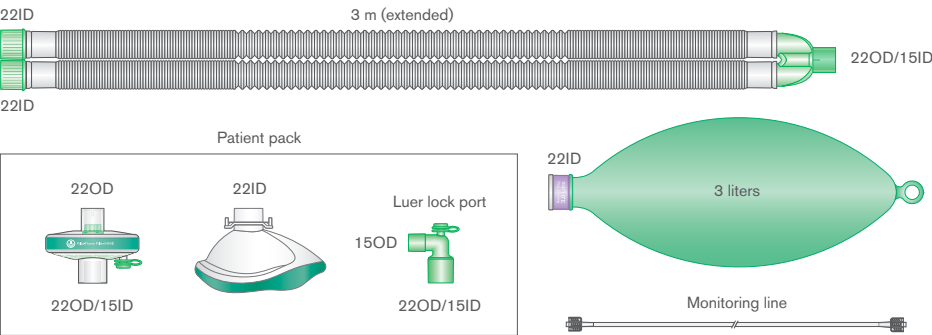
Further information available at www.intersurgicalinc.com/products/anesthesia/multipac-anesthetic-breathing-circuits

References: 1. Palmer L., Benbough J., CAMR (Centre for Applied Microbiology & Research) Biosafety Investigation Unit Quality, Safety and Scientific Resources Division Test Report. 2. Daggan R., Steinberg D., Larijani G., Gratz I., Zafeiridis A., Goldberg M.E.L Intersurgical's Multipac® Breathing Circuit allows reuse of anesthesia breathing circuits (BC) resulting in cost savings and reduced medical waste.



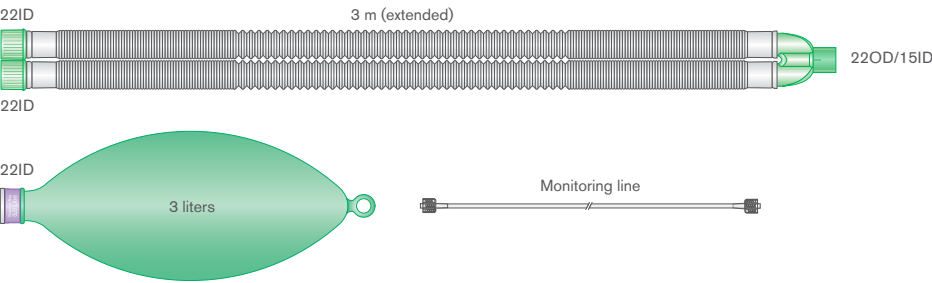
Customizable Multipac® anesthetic breathing circuits

Adult Multipac with one Patient Pack



Code	Description	Reservoir bag	Gas sampling line	One Patient Pack includes	Qty.
21580091 	Adult Multipac, 22 mm Compact™ circuit 120 in. 3 L		M–M (10 ft)	Filta-Therm™ HMEF 1941000, anesthesia mask elbow, and ClearLite™ mask size 4	12
21580101	Adult Multipac, 22 mm Compact circuit 120 in. 3 L		M–M (10 ft)	Filta-Therm HMEF 1941000, anesthesia mask elbow, and Economy mask size 4	10
29000771	Adult Multipac, UniFlow™ circuit 60 in.	3 L	M–M (10 ft)	Filta-Therm HMEF 1941000, anesthesia mask elbow, and ClearLite mask size 4	8
29000781	Adult Multipac, UniFlow circuit 60 in.	3 L	M–M (10 ft)	Filta-Therm HMEF 1941000, anesthesia mask elbow, and Economy mask size 4	8
29020221	Adult Multipac, UniFlow circuit 63 in. with integrated monitoring line	3 L	M–M (10 ft)	Filta-Therm HMEF 1941000, anesthesia mask elbow, and ClearLite mask size 4	10
2010261	Adult Multipac, UniFlow circuit 63 in. with integrated monitoring line	3 L	M–M (10 ft)	Filta-Therm HMEF 1941000, anesthesia mask elbow, and Economy mask size 4	8

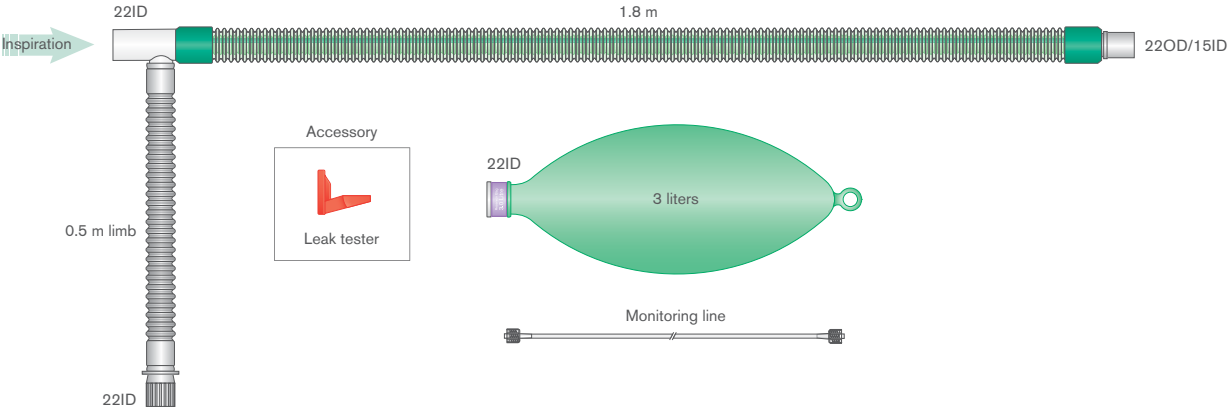
Adult Compact Multipac



Code	Description	Reservoir bag	Gas sampling line	Qty.
MMC12033M000000	Adult Multipac, 22 mm Compact circuit 120 in.	3 L	M–M (10 ft)	10
MMC12023M000000	Adult Multipac, 22 mm Compact circuit 120 in.	2 L	M–M (10 ft)	10
MMPC1213M000000	Pediatric Multipac, 15 mm Compact circuit 120 in.	1 L	M–M (10 ft)	10
MMC07233M000000	Adult Multipac, 22 mm Compact circuit 72 in.	3 L	M–M (10 ft)	10

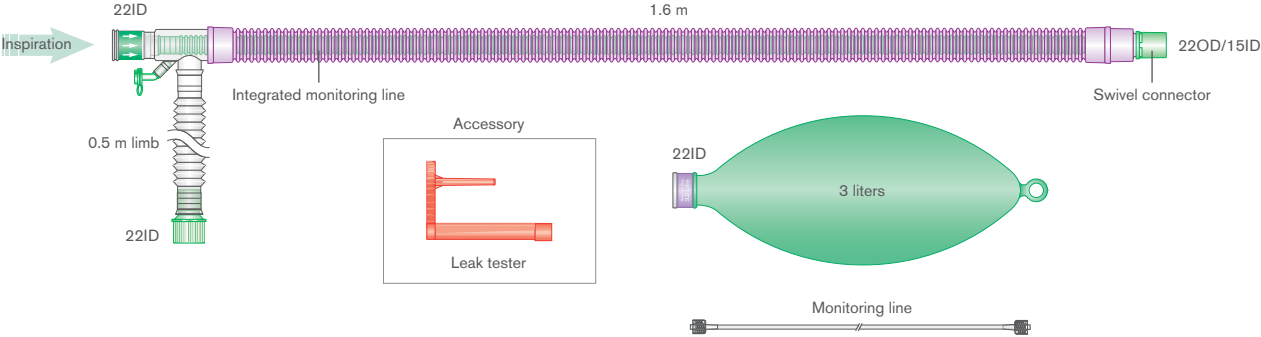


Adult DuoFlow™ Multipac®



Code	Description	Reservoir bag	Gas sampling line	Qty.
MMD12033M000000	Adult Multipac, DuoFlow circuit 120 in.	3 L	M–M (10 ft)	10

Adult UniFlow™ Silver Knight™ Multipac



Code	Description	Reservoir bag	Gas sampling line	Qty.
MMU09633M000000	Adult Multipac, UniFlow Silver Knight circuit 96 in.	3 L	M–M (10 ft)	10
MMPU9613M000000	Pediatric Multipac, UniFlow Silver Knight circuit 96 in.	1 L	M–M (10 ft)	10



Multipac® Patient Packs

Additional customizable options are available through a selection of Patient Packs, enabling clinicians to choose from a range of HMEF filters, a pleated membrane filter, and anesthetic face masks including ClearLite™, Economy, and Adjustable air designs. Packs must be exchanged between each patient.

ClearLite anesthetic face mask Patient Packs

Code	Description	HMEF/Filter	Mask size	Qty.
72936000	Multipac Patient Pack (Includes one Filta-Therm™ HMEF 1941000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7293000)	●	3	20
72946000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7294000)	●	4	20
72956000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7295000)	●	5	20
72966000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7296000)	●	6	20
ZZ0000000020000	Multipac Patient Pack (Includes one Inter-Therm™ HMEF 1341000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7294000)	●	4	20
ZZ0000000030000	Multipac Patient Pack (Includes one Inter-Therm HMEF 1341000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7295000)	●	5	20
ZZ0000000340000	Multipac Patient Pack (Includes one Inter-Therm Mini pediatric HMEF 1331000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7291000)	●	1	20
ZZ0000000410000	Multipac Patient Pack (Includes one Clear-Therm™ Micro HMEF 1441000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7290000)	●	0	20
ZZ0000000420000	Multipac Patient Pack (Includes one Clear-Therm Micro HMEF 1441000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7291000)	●	1	20
ZZ0000000350000	Multipac Patient Pack (Includes one Inter-Therm Mini pediatric HMEF 1331000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7292000)	●	2	20
ZZ0000000430000	Multipac Patient Pack (Includes one Clear-Therm Micro HMEF 1441000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7292000)	●	2	20
ZZ0000000360000	Multipac Patient Pack (Includes one Inter-Therm Mini pediatric HMEF 1331000, one anesthesia mask elbow and one ClearLite anesthetic face mask 7293000)	●	3	20

Economy anesthetic face mask Patient Packs

Code	Description	HMEF/Filter	Mask size	Qty.
15146000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one Economy anesthetic face mask 1514000)	●	3	20
15156000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one Economy anesthetic face mask 1515000)	●	4	20
15166000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one Economy anesthetic face mask 1516000)	●	5	20
15176000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one Economy anesthetic face mask 1517000)	●	6	20
ZZ0000000530000	Multipac Patient Pack (Includes one Hydro-Guard™ Mini breathing filter 1745000, one anesthesia mask elbow and one Economy anesthetic face mask 1514000)	●	3	20
ZZ0000000540000	Multipac Patient Pack (Includes one Hydro-Guard Mini breathing filter 1745000, one anesthesia mask elbow and one Economy anesthetic face mask 1515000)	●	4	20
ZZ0000000550000	Multipac Patient Pack (Includes one Hydro-Guard Mini breathing filter 1745000, one anesthesia mask elbow and one Economy anesthetic face mask 1516000)	●	5	20
ZZ0000000560000	Multipac Patient Pack (Includes one Hydro-Guard Mini breathing filter 1745000, one anesthesia mask elbow and one Economy anesthetic face mask 1517000)	●	6	20



Anesthetic face mask with adjustable air cushion Patient Packs

Code	Description	HMEF/Filter	Mask size	Qty.
ZZ0000000130000	Multipac® Patient Pack (Includes one Inter-Therm™ HMEF 1341000, one anesthesia mask elbow and one adjustable cushion face mask 1223000)	●	3	20
ZZ0000000140000	Multipac Patient Pack (Includes one Inter-Therm HMEF 1341000, one anesthesia mask elbow and one adjustable cushion face mask 1224000)	●	4	20
ZZ0000000150000	Multipac Patient Pack (Includes one Inter-Therm HMEF 1341000, one anesthesia mask elbow and one adjustable cushion face mask 1225000)	●	5	20
ZZ0000000160000	Multipac Patient Pack (Includes one Inter-Therm HMEF 1341000, one anesthesia mask elbow and one adjustable cushion face mask 1226000)	●	6	20
ZZ0000000290000	Multipac Patient Pack (Includes one Filta-Therm™ HMEF 1941000, one anesthesia mask elbow and one adjustable cushion face mask 1223000)	●	3	20
ZZ0000000300000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one adjustable cushion face mask 1224000)	●	4	20
ZZ0000000310000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one adjustable cushion face mask 1225000)	●	5	20
ZZ0000000320000	Multipac Patient Pack (Includes one Filta-Therm HMEF 1941000, one anesthesia mask elbow and one adjustable cushion face mask 1226000)	●	6	20
ZZ0000000610000	Multipac Patient Pack (Includes one Hydro-Guard™ Mini breathing filter 1745000, one anesthesia mask elbow and one adjustable cushion face mask 1223000)	●	3	20
ZZ0000000620000	Multipac Patient Pack (Includes one Hydro-Guard Mini breathing filter 1745000, one anesthesia mask elbow and one adjustable cushion face mask 1224000)	●	4	20
ZZ0000000630000	Multipac Patient Pack (Includes one Hydro-Guard Mini breathing filter 1745000, one anesthesia mask elbow and one adjustable cushion face mask 1225000)	●	5	20
ZZ0000000640000	Multipac Patient Pack (Includes one Hydro-Guard Mini breathing filter 1745000, one anesthesia mask elbow and one adjustable cushion face mask 1226000)	●	6	20
ZZ0000000450000	Multipac Patient Pack (Includes one Clear-Therm™ Micro HMEF 1441000, one anesthesia mask elbow and one adjustable cushion face mask 1220000)	●	0	20
ZZ0000000460000	Multipac Patient Pack (Includes one Clear-Therm Micro HMEF 1441000, one anesthesia mask elbow and one adjustable cushion face mask 1221000)	●	1	20
ZZ0000000470000	Multipac Patient Pack (Includes one Clear-Therm Micro HMEF 1441000, one anesthesia mask elbow and one adjustable cushion face mask 1222000)	●	2	20
ZZ0000000380000	Multipac Patient Pack (Includes one Inter-Therm Mini pediatric HMEF 1331000, one anesthesia mask elbow and one adjustable cushion face mask 1221000)	●	1	20
ZZ0000000390000	Multipac Patient Pack (Includes one Inter-Therm Mini pediatric HMEF 1331000, one anesthesia mask elbow and one adjustable cushion face mask 1222000)	●	2	20



Intersurgical filters

Color coding

Enhances identification, ensuring that the correct filter/HME is used for the correct clinical application, minimizing any potential harm to the patient.

Tethered luer cap

For safety reasons it is advised, from the EGBAT¹ report and the more recent NPSA², the luer caps should be tethered and brightly colored to avoid any loose caps minimizing potential occlusion of the breathing circuit.

Tidal volume

The tidal volume range is written on the label of each Breathing Filter/HME. This allows the clinician to choose the correct filter/HME according to the patient size/weight.

Proven filtration efficiency

All validation testing is independent, up to date and reflective of the product being manufactured and supplied today

Hydrophobic

All the Intersurgical filters/HMEFs provide clinically relevant level of hydrophobic protection.

 Watch the video

Leak free

During manufacture, 100% testing for leakage and resistance to flow, which improves patient safety.

Choice of HME media

Intersurgical HMEs are available with a choice of white corrugated paper or green foam as Heat and Moisture media in order to provide choice to clinicians.

COVID-19 statement

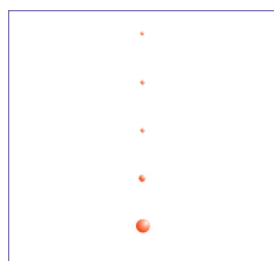
Intersurgical filters and HMEFs provide at least the same level of protection against COVID-19 as the viral filtration efficiency reported in the independent microbiology tests.

Turbo webs

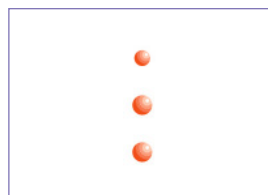
Product design incorporates turbo webs which help reduce the resistance to flow by directing the gas flow across the whole filtration surface area.

Number of organisms challenging the filter	Number of organisms passing through the filter	Efficiency of the filter
100,000	1,000	99%
	100	99.9%
	10	99.99%
	1	99.999%

Potential infectious viruses [Particle sizes μ microns]

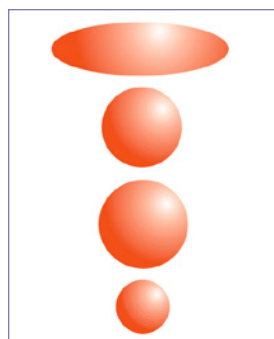


Coliphage T1 [0.017 μ]
MS-2 coliphage [0.02 μ]
Hepatitis C [0.03 μ]
COVID-19 [0.05 μ]
Adenovirus [0.07 μ]

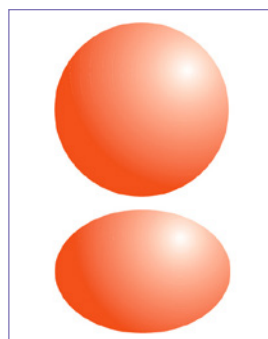


HIV [0.11 μ]
Cytomegalovirus (CMV) [0.1 μ]
Orthomyxovirus [0.1 μ]

Potential infectious bacteria [Particle sizes μ microns]



Mycobacterium tuberculosis [0.3 μ x 1.0 μ smallest size]
Serratia marcescens [0.45 μ]
Pseudomonas aeruginosa [0.5 μ]
Brevundimonas diminuta [0.3 μ]



Staphylococcus aureus [1.0 μ]
Bacillus subtilis [1.0 μ x 0.7 μ]

References

1: Department of Health. 2004. protecting the breathing circuit in anaesthesia – Report to the Chief Medical Officer of an Expert Group on block anaesthetic tubing. Available from: <http://www.frca.co.uk/documents/Protecting%20the%20PBC.pdf>

2: National Health Service. 2020. National Patient Safety Alert: Foreign body aspiration during intubation, advanced airway management or ventilation. Available from: <https://www.england.nhs.uk/publication/national-patient-safety-alert-foreign-body-aspiration-during-intubation-advanced-airwaymanagement-or-ventilation>.



Build your Multipac®

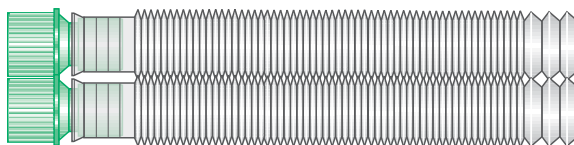
Tube, monitoring line and reservoir bag may be used up to 24 hours

What circuits we offer

Our portfolio consists of an extensive range of anesthetic breathing circuits, available in various lengths, to meet all clinical requirements.

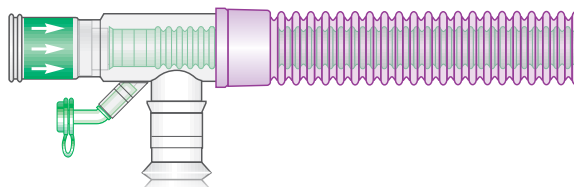
Compact™

Designed with extendable tubing expanding to up to 5 times its compressed size, Compact circuits can be adjusted and positioned to suit a range of clinical requirements. Supplied in a compressed form, this increases the number of circuits per box for more cost effective storage and disposal. Available in 22 mm Compact lengths 60 in, 72 in, or 120 in or 15 mm Compact lengths 60 in, 72 in, or 120 in for pediatric use (lengths relative to fully extended circuit).



UniFlow™ with Silver Knight™

UniFlow is a convenient tube-within-a-tube breathing circuit designed with low flow anesthesia in mind, offering improved thermal efficiency with warmer, more humid inspiratory gases.

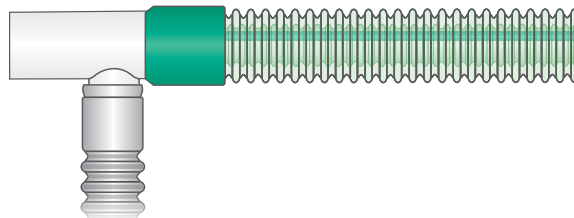


Silver Knight is an anti-microbial additive that uses silver ions to disrupt the normal enzymatic activities of bacteria. It functions as a safe, quick and effective catalyst to deactivate pathogenic bacteria and prevent their proliferation.

Available in lengths of 60 in or 96 in for adult and pediatric use.

DuoFlow™

Our DuoFlow bi-lumen circuits have an internally molded inner septum, which creates a gas tight division between the two pathways. This improves thermal efficiency as it allows for the transfer of heat between inspired and expired gases. The single limb design reduces the number of connections between the patient and the machine. Available in lengths 72 in or 120 in for adult and pediatric use.



CO₂ monitoring line

Our respiratory gas monitoring lines are designed to connect via a luer lock connection or port at the patient end to the machine.



Reservoir bags

We offer a wide range of single-use, latex-free reservoir bags that have excellent compliance characteristics for use in various clinical applications. Choose from a 0.5 L, 1 L, 2 L or a 3 L bag.





Build your Patient Pack

Filter, connector and mask change for each patient

What anesthetic face masks we offer

A range of single-use anesthetic face masks in various sizes to meet the clinical needs of different patient sizes and ages.

ClearLite™ anesthetic face mask

Due to the enhanced anatomical design, the ClearLite mask offers superior seal performance with minimum pressure, reducing the risk of unnecessary discomfort or potential trauma. The superior seal will also assist the clinician in providing optimum manual ventilation of the patient in both the anesthetic and emergency situation. ClearLite is non-PVC and phthalate free which significantly minimizes the impact upon the environment. The range is available in sizes 0 neonatal to size 6 large adult.



Anesthetic face mask with adjustable air cushion

A range of single use PVC anesthetic face masks with adjustable cushion, available in sizes 0 neonatal to size 6 large adult.



Economy anesthetic face mask

A range of four color-coded economy PVC anesthetic face masks with a soft cushion and clear housing. Four sizes from small adult to extra large adult.



Intersurgical filters

Our range of Heat and Moisture Exchanging Filters (HMEFs) combines the filtration efficiency of dedicated breathing filters with optimum moisture return provided by the addition of an HME element. Designed for use at the patient connection. All Intersurgical breathing filters have been independently tested for bacterial and viral efficiency and conform to International Standard 23328.

Filta-Therm™ HMEF

Filta-Therm is a high-efficiency HMEF available for adult use.



Inter-Therm™ HMEF

The Inter-Therm range of heat and moisture exchange filters (HMEFs) is designed for use in breathing circuits in the operating room and the intensive care unit. For adult and pediatric use.



Clear-Therm Micro™ HMEF

Designed with a rounded ergonomic polypropylene housing, Clear-Therm Micro represents our most cost-effective HMEF product. For pediatrics and neonates.



Hydro-Guard™ Mini breathing filter

Hydro-Guard is a versatile, low-volume breathing filter with a pleated membrane for use in anesthesia as an HMEF



Elbow

All Intersurgical port caps are fixed to the connectors for added safety. This prevents loss or misplacement in use. Luer ports are for secure attachment of gas sampling lines with luer lock fittings.





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