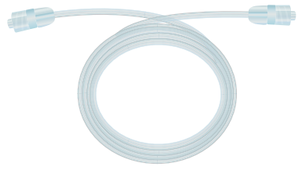
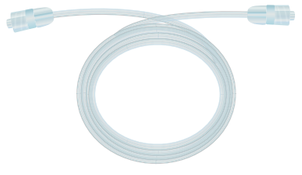
Patient Connectors and Accessories

Monitoring Lines



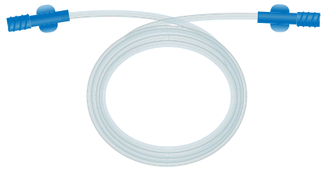
010-700 25

Monitoring line with
M / M Connectors - 2m Tubing



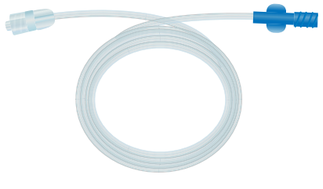
010-700X 25

Monitoring line with
M / M Connectors - 3m Tubing



010-705 25

Monitoring line with
F / F Connectors - 2m Tubing



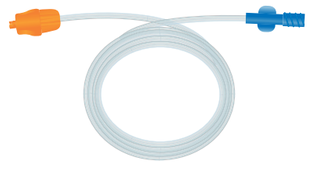
010-710 25

Monitoring line with
M / F Connectors - 2m Tubing



010-720 25

LuerSafe Monitoring line
M / M Connectors - 2m Tubing



010-725 25

LuerSafe Monitoring line
M / F Connectors - 2m Tubing

Reservoir Bags (Latex Free)



038-81-830NL	3 Litre Reservoir Bag with 22mm Female Connector	10
038-81-820NL	2 Litre Reservoir Bag with 22mm Female Connector	10
038-82-810NL	1 Litre Reservoir Bag with 22mm Female Connector	10
038-83-805NL	0.5 Litre Reservoir Bag with 22mm Female Connector - Closed Tail	10
038-82-805NL	0.5 Litre Reservoir Bag with 15mm Female Connector - Open Tail	10

Self-Sealing Water Traps



010-650 10

Adult - Self-Sealing Water Trap



020-650 10

Paediatric - Self-Sealing Water Trap



030-650 10

Neonatal - Self-Sealing Water Trap

VENTILATOR BREATHING SYSTEMS

A comprehensive range of Breathing Systems and accessories for ventilated patients and those receiving respiratory support.



Humidification

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Intermittent Positive Pressure Breathing (IPPB) Systems

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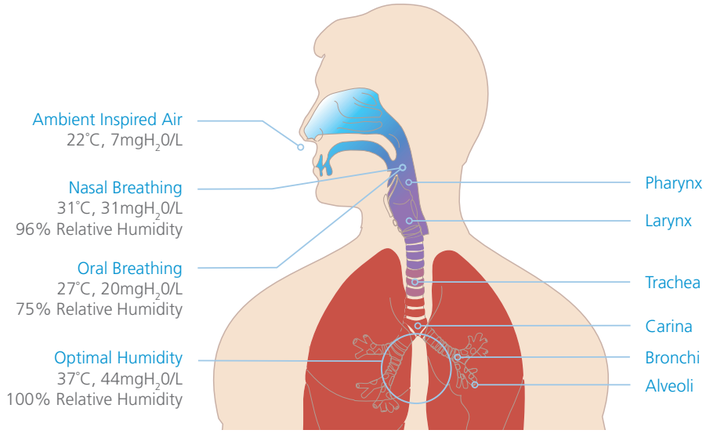
High Flow Oxygen Therapy (HFOT)

High Flow Oxygen Therapy (HFOT) 67

VentiMask and Humidity Adaptor 68

Introduction to Ventilator Breathing Systems – Humidification

Flexicare's comprehensive portfolio of breathing systems supports the range of invasive and non-invasive, passive and active humidification ventilation therapies to enhance patient care and improve clinical outcomes.



Humidification Principles

The upper airway plays a key role in filtering, warming and adding moisture to inspired gases as they travel into the lungs.

When the upper airway is bypassed during invasive ventilation, delivery of cold and dry gases desiccate and cool the lining of the airway, leading to dysfunction of the Mucociliary Transport System. Dysfunction has been associated with retention of tracheobronchial secretions[1], loss of airway patency, mucous plugging, atelectasis, infection[2] and Ventilator-Associated Pneumonia (VAP)[3].

Although gas conditioning by the upper airway is retained during non-invasive respiratory support, the high pressure and flow rate of dry and cold medical gases may overwhelm the upper airway, cause discomfort and reduce patient compliance with the therapy.

Artificial warming and humidification of inspired respiratory gases to close to physiological levels maintains the position of the Isothermic Saturation Point and reduces the adverse effects of low temperature and humidity on lung function and the Mucociliary Transport System during prolonged use.

Humidification in Anaesthesia

With the focus on optimising patient outcomes, humidified breathing circuits are being used for patients undergoing general anaesthesia. Studies have shown that heated humidified breathing systems are more effective in maintaining mucociliary clearance during 3 hours of general anaesthesia than the use of conventional anaesthetic circuits[4].

In addition, active humidification delivers gas at 37°C directly to the patient's lungs, helping maintain core body temperature and reducing the incidence and duration of hypothermia during surgery.

Invasive Ventilation

When the upper respiratory tract is bypassed by an endotracheal or tracheostomy tube, normal warming and humidification of inspired gases cannot take place. Dysfunction of the Mucociliary Transport System can occur if gases reaching the lowest respiratory tract are insufficiently warmed and humidified.

For long term intubated patients, active humidification is recommended to deliver gases close to the Optimal Temperature and Humidity.

Optimal Humidity	37°C, 44 mgH_2O/L 100% Relative Humidity

Non-Invasive Ventilation (NIV)

For non-intubated patients, respiratory support can be delivered by High Flow Oxygen Therapy (HFOT) via a High Flow Nasal Cannula or other Non-Invasive Ventilation (NIV) therapies such as Continuous Positive Airway Pressure (CPAP) or Bi-Level Positive Airway Pressure (Bi-PAP).

Delivering a high gas flow during the inspiratory phase improves alveoli recruitment and gas exchange in the lungs. However, the cold and dry medical gases at a high flow rate may overwhelm the Mucociliary Transport System. Therefore, active humidification is recommended to deliver Essential Humidity during HFOT or NIV therapy to support the patient's upper airway function to deliver Optimal Humidity to the lungs, and to improve patient comfort and compliance.

Essential Humidity	31°C, 32 mgH_2O/L 100% Relative Humidity

[1] Irwin, R.S & Rippe, J. M (2008), Irwin and Rippe's Intensive Care Medicine (Sixth Edition), Philadelphia, PA: Lippincott Williams & Wilkins.
[2] Lemin, M, New Developments in Mechanical Ventilation and Humidification, AARC Times, March 2009, Vol. 33 Issue 3, P32.
[3] Lorente L, Lecuona M, Jiménez A, Mora ML, Sierra A, Ventilator-Associated Pneumonia Using A Heated Humidifier Or A Heat And Moisture Exchanger: A Randomized Controlled Trial, Crit Care, 2006, 10(4), R116.
[4] Effect of Heated Humidified Ventilation on Bronchial Mucus Transport Velocity in General Anaesthesia: A Randovmized Trial by Seo HS, Kim SH, Hong JY, and Hwang JH, Dept. of Anesthesiology and Pain Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea.

Double Valve Auto-Fill Humidification Chamber

Flexicare's Double Valve Auto-Fill Humidification Chamber is part of a complete system to actively warm and humidify inspired respiratory gases delivered to ventilated patients and those receiving respiratory support. The chamber is used in conjunction with a respiratory humidifier, breathing circuits and other accessories.



Improved Responsiveness

The lower water capacity enables rapid achievement of optimum operating temperature and minimises fluctuations.

Gas Flow Diverters

Flow diverters optimise gas flow through the chamber, maximising efficiency of warming and humidification of the gases.

Heat Transfer

Flat aluminium base for efficient, rapid and responsive water heating.

Highly Compatible

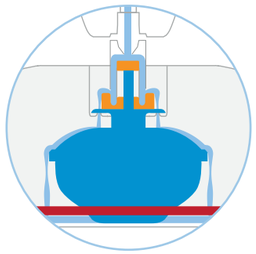
22mm connectors allow compatibility with a wide range of ventilator circuits.

Clear Construction

Transparent construction, red floating fill indicator and clear markings for quick and easy monitoring of the water level.

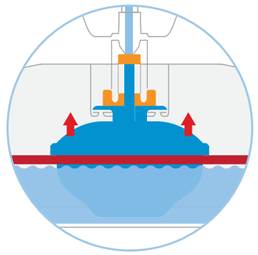
Overfill Protection

Flexicare's Double Valve Auto-Fill Humidification Chamber features two independent floats and a primary and a secondary seal to regulate the flow of water into the chamber and provide assured protection against overfilling.



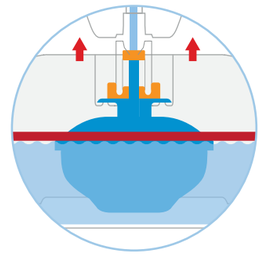
Open Valve

Valve opens to allow sterile water to fill the chamber.



Primary Valve

When normal operating level is reached, the primary float shuts off the water flow.



Secondary Valve

To protect against overfill, should the primary valve fail, the independent secondary valve prevents any further water entry.

038-31-742	Double Valve Auto-Fill Humidification Chamber - Sterile	20
038-31-750	Manual Fill Humidification Chamber - Sterile	20





The FL-9000 Respiratory Humidifier is part of a complete system to provide warmed and humidified inspired respiratory gases to ventilated patients and those receiving respiratory support.

Fully automatic for simple and rapid set-up, the FL-9000 Respiratory Humidifier has many advanced features, including preset default temperatures, a selectable temperature display, alarm panel with location indicators and a range of safety features.

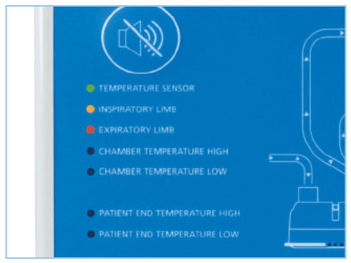
Suitable for Invasive or Non-Invasive Ventilation and Heated or Non-Heated Wire Breathing Systems.



Misconnection Prevention
Easy-connect wire and probe sockets of different design ensure correct connection.



Multi-Function Display
Clear easy-to-read LED Display with the option to check Airway, Chamber or Heater Plate Temperature, or hold on a preferred parameter.



Alarm Indicator
Clear, colour coded visual identification of fault source for quick clinical resolution.

PRODUCT SPECIFICATIONS:	
DIMENSIONS	W135mm x D170mm x H156mm[1]
WEIGHT	2.9 kg[1]
DISPLAY	4 digit, 14 segment LED
RANGE	5.0°C to 80.0°C
ACCURACY	±0.3°C (in 25.0°C - 45.0°C temperature range)
HEATER PLATE THERMAL CUTOUT	115±3°C

ELECTRICAL RATING:	
SUPPLY VOLTAGE:	230V ± 23V
SUPPLY CURRENT	1.0A max at 230V
SUPPLY FREQUENCY:	50 - 60 Hz
HEATER PLATE CAPACITY:	150W
HEATED WIRE CAPACITY:	60W Max
OVERCURRENT PROTECTION:	230V/1.5A

[1] Without chamber fitted.

Simple to operate, with intuitive controls and easy to select functions, the FL-9000 Respiratory Humidifier offers a complete solution.



LED Indicators
Clear visual indication of functions and alarms.

Warning System
Visual and audible alarms notify user of set-up errors, accidental disconnection during use or delivered temperatures outside the set parameters.

Positive Connection
Heater Plate with spring loaded locking mechanism for secure placement of humidification chamber.

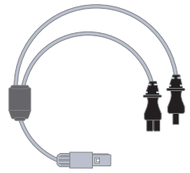
Misconnection Prevention
Heated wire and temperature probe sockets designed to prevent misconnection.

For optimal function and patient safety, the FL-9000 should only be used with breathing circuits, humidification chambers and other accessories that have been approved by Flexicare. Please refer to the FL-9000 Respiratory Humidifier Operating Manual for further information on the technical specification, set-up and usage.

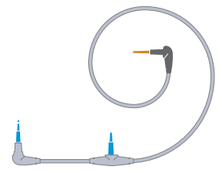
FL9000	Respiratory Humidifier UK	230V with 3 Pin Plug	1
FL9000EU	Respiratory Humidifier Europe	230V with 2 Pin Plug	1
FL9000AUS	Respiratory Humidifier Australia	230V with 3 Pin Plug	1
FL9000CH	Respiratory Humidifier China	220V with 3 Pin Plug	1
FL9000 INDIA	Respiratory Humidifier India	230V with 3 Pin Plug	1



FL9000-01 Single Heated Wire Humidifier Adapter 1



FL9000-02 Dual Heated Wire Humidifier Adapter 1



FL9000-03 Humidifier Temperature Probe (1.5m) 1



FL2000-01 Mounting Accessory Pole Clamp (30-50mm) 1



FL2000-02 Mounting Accessory C-Clamp (19-40mm) 1



FL2000-03 Mounting Accessory Wall Bracket 1



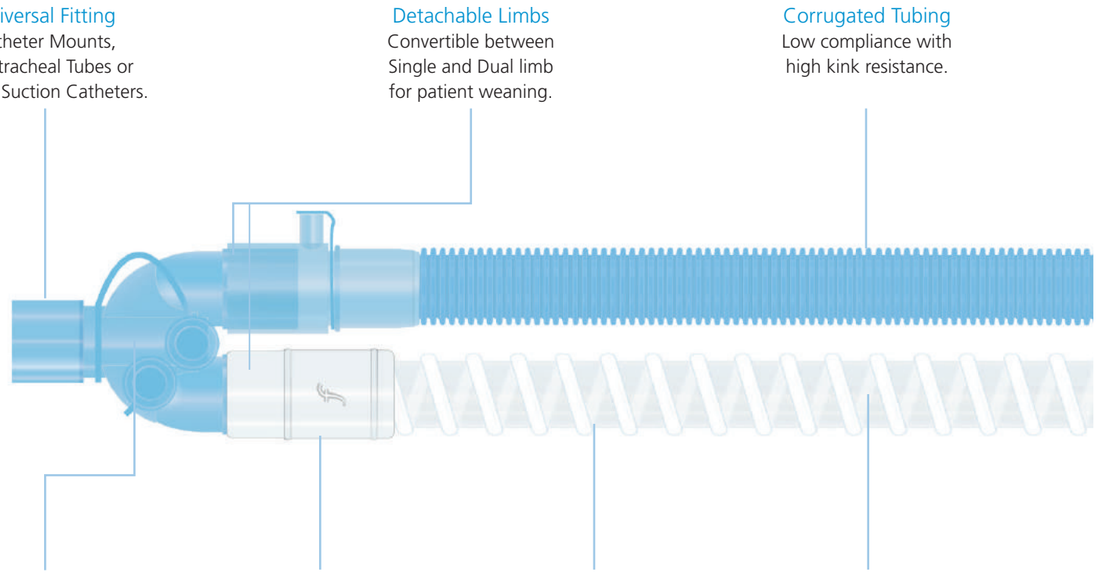
FL2000-04 Mounting Accessory Rail Bracket 1



FL2000-05 Mounting Accessory Offset Rail Bracket 1

Introduction to Heated Wire Breathing Systems

Flexicare's low compliance ventilator breathing systems are a key component in the treatment of patients requiring mechanical respiratory support in both hospital and home environments. The full range of Single and Dual Heated Wire Circuits, in adult and paediatric configurations, addresses the needs of each individual patient.



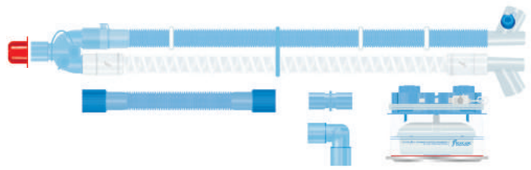


Heated Wire

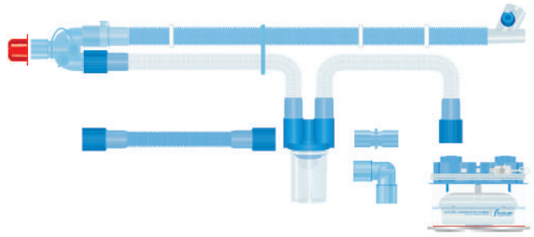
To deliver respiratory gas at optimal temperature and humidity to the patient, Flexicare offers a range of single and dual heated wire circuits. All heated limbs feature a double coiled heated wire configuration to provide consistent warming of the gas flow and limb wall to minimise possible rain-out.

The use of a Smoothbore expiratory limb has been demonstrated to reduce resistance and result in lower rain-out, whilst maintaining the required humidity and temperature.

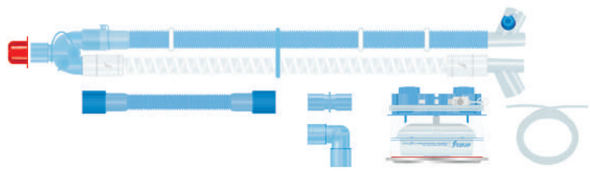
Heated Wire Ventilator Breathing Systems - Sterile



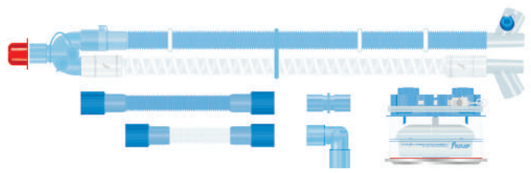
038-31-201	Adult 22mm Dual Heated Wire Breathing System 1.6m, Y-Piece with MDI Port and Pressure Port, Smoothbore Expiratory Limb, 0.5m Limb, Spare 22M/22M,15F Connector, 22F/22M Elbow and Auto-Fill Chamber - KIT 1	10
038-31-203	As above with Corrugated Expiratory Limb - KIT 3	10
038-32-201	Paediatric 15mm Dual Heated Wire Breathing System 1.6m, Y-Piece with MDI Port and Pressure Port, Smoothbore Expiratory Limb, 0.5m Limb, Spare 22M/22M,15F Connector, 22F/22M Elbow and Auto-Fill Chamber - KIT 1	10



038-31-101	Adult 22mm Single Heated Wire Breathing System 1.6m, Y-Piece with MDI Port and Pressure Port, Water Trap, 0.5M Limb, Spare 22M/22M,15F Connector, 22F/22M Elbow and Auto-Fill Chamber - KIT 1	10
038-32-101	Paediatric 15mm Single Heated Wire Breathing System 1.6m, Y-Piece with MDI Port and Pressure Port, Water Trap, 0.5m Limb, Spare 22M/22M,15F Connector, 22F/22M Elbow and Auto-Fill Chamber - KIT 1	10



038-31-202	Adult 22mm Dual Heated Wire Breathing System 1.6m, Y-Piece with MDI Port and Pressure Port, Smoothbore Expiratory Limb, Pressure Line, 0.5m Limb, Spare 22M/22M,15F Connector, 22F/22M Elbow and Auto-Fill Chamber - KIT 2	10



038-31-301	Adult 22mm Dual Heated Wire Convertible Breathing System 1.6m, Y-Piece with MDI Port and Pressure Port, Smoothbore Expiratory Limb, 0.5m Limb, 0.3m Limb, Spare 22M/22M,15F Connector, 22F/22M Elbow and Auto-Fill Chamber - KIT 1	10

Standard Non-Heated Wire Ventilator Breathing Systems



038-01-130	Adult Standard 22mm Breathing System (1.6m) Corrugated Tube with Y-Piece, 22mm F Connectors and Spare 22mm M/M Connector	20
038-01-132	As above with 2.4m Corrugated Tube	20

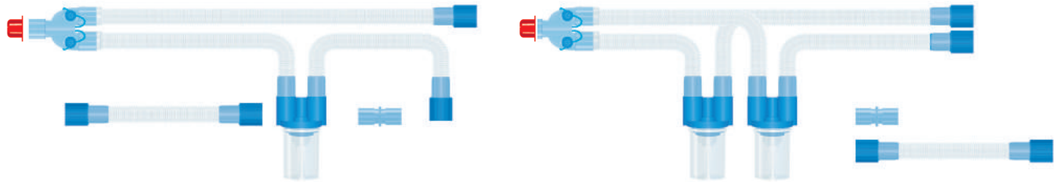


038-01-135	Adult Standard 22mm Breathing System (1.6m) Corrugated Tube with Y- Piece, 22mm F Connectors, Spare 22mm M/M Connector and 0.8m Limb	20

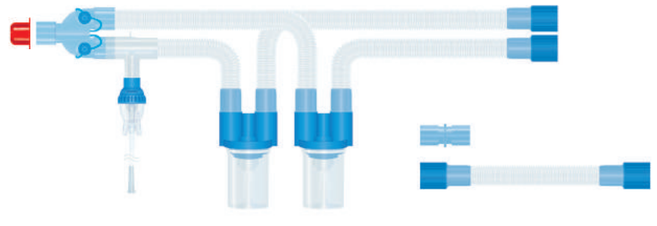


038-01-140	Adult Standard 22mm Breathing System (1.6m) Corrugated Tube with Ported Y-Piece, 22mm F Connectors, Spare 22mm M/M Connector and 0.8m Limb	20

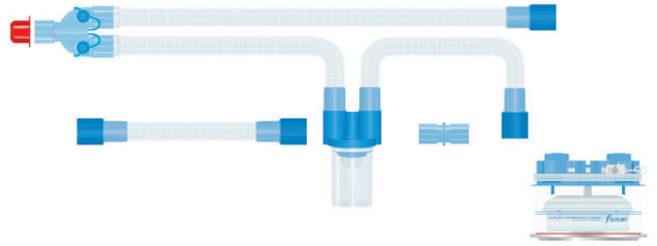
Standard Non-Heated Wire Ventilator Breathing Systems



038-01-150	Adult Standard 22mm Breathing System (1.6m) Corrugated Tube with Ported Y-Piece, Self-Sealing Water Trap on Expiratory Limb, 22mm F Connectors, Spare 22mm M/M Connector and 0.8m Limb	20
038-01-155	As above with 2 Self-Sealing Water Traps	20

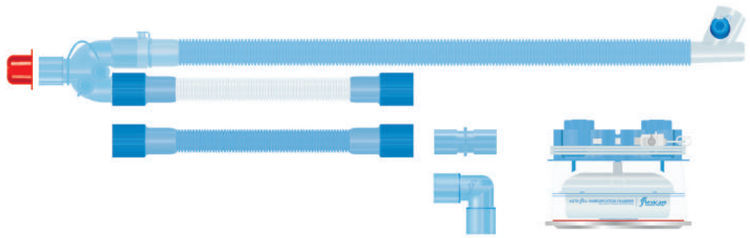


038-01-155F	Adult Standard 22mm Breathing System (1.6m) Corrugated Tube with In-Line T-Piece Valve and MaxiNeb Nebuliser, Ported Y-Piece, 2 Self-Sealing Water Traps, 22mm F Connectors, Spare 22mm M/M Connector and 0.8m Limb	20



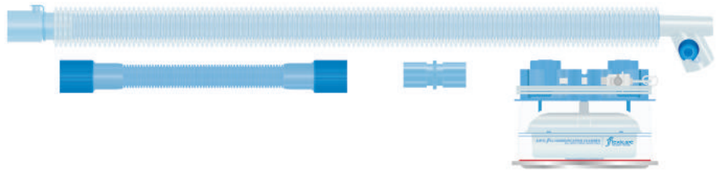
038-31-756	Adult Standard 22mm Sterile Breathing System (1.6m) Corrugated Tube with Auto-Fill Chamber, Ported Y-Piece, Self-Sealing Water Trap on Expiratory Limb, 22mm F Connectors, Spare 22mm M/M Connector and 0.8m Limb	10
038-31-761	As above with 2 Self-Sealing Water Traps	10

Non-Invasive Ventilation (NIV) Breathing Systems - Sterile



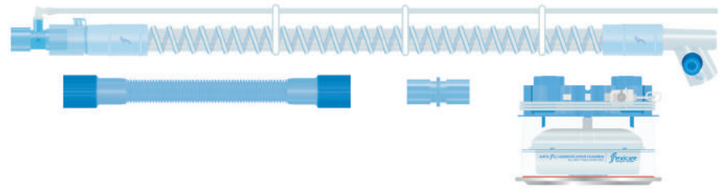
038-31-102	Adult 22mm Single Limb Heated Wire Breathing System 1.6m, Y-Piece with MDI Port and Pressure Port, 0.5M Limb Expiratory Limb, 0.5m Limb, Spare 22M/22M,15F Connector, 22F/22M Elbow and Auto-Fill Chamber for CPAP - KIT 2	10

038-31-402	Adult 22mm Single Limb Heated Wire Breathing System 1.6m, 0.5m Limb, Spare 22M/22M,15F Connector and Auto-Fill Chamber for CPAP / High Flow - KIT 2	10
038-31-403	As above with Air Entrainment - KIT 3	10
038-31-401	Adult 22mm Single Limb Heated Wire Breathing System 1.6m, Spare 22M/22M,15F Connector and Auto-Fill Chamber for CPAP / High Flow - KIT 1	10



038-31-501	Adult 22mm Shielded Single Limb Heated Wire Breathing System 1.6m, 0.5m Limb, Spare 22M/22M,15F Connector and Auto-Fill Chamber For CPAP / High Flow - KIT 1	10

Non-Invasive Ventilation (NIV) Breathing Systems



038-31-601	Adult 22mm Smoothbore Single Limb Heated Wire Breathing System 1.6m, Exhalation Valve with 2m Pressure Line, 0.5m Limb, Spare 22M/22M,15F Connector and Auto-Fill Chamber for Bi-PAP / CPAP / High Flow - KIT 1	10



038-35-946	Adult 22mm Single Limb Corrugated Breathing System (1.6m) with Bacterial / Viral Filter and T-Piece for CPAP	10



038-35-950	Adult 22mm Single Limb Breathing System (2.0m) with T-Piece for CPAP	10
038-35-951	Adult 22mm Single Limb Smoothbore Breathing System (2.0m) with T-Piece for CPAP	10





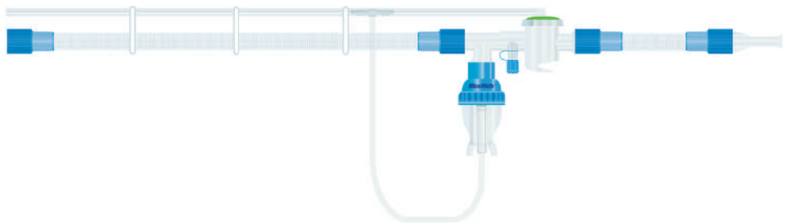
Exhalation Port

038-35-292	Adult 22mm Single Limb Smoothbore Breathing System (1.6m) with Exhalation Port for Bi-PAP	10
038-35-295	As above with Corrugated Tube	10

BiPAP is a registered trademark of Resperonics

Intermittent Positive Pressure Breathing (IPPB) Systems

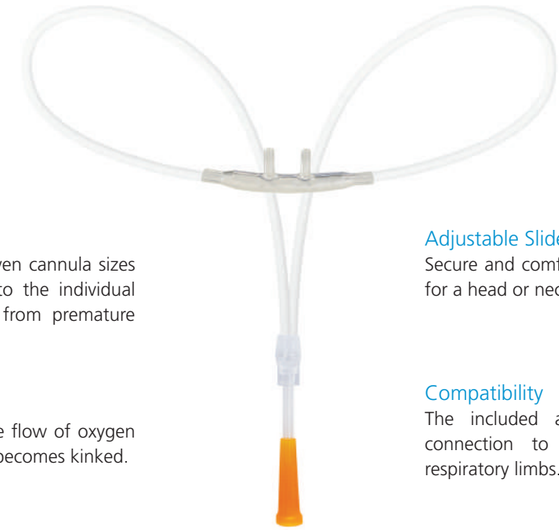
038-35-310	Adult 22mm IPPB Single Limb SmoothBore (1.6m) with Exhalation Valve and Pressure Line	10



038-35-323	Adult 22mm Nebulising IPPB Single Limb (1.6m) with Exhalation Valve, Pressure Line, Nebuliser and Mouthpiece	10

High Flow Oxygen Therapy (HFOT)

High Flow Oxygen Therapy (HFOT) delivers humidified O_2 concentrations between 24% and 60% at flow rates up to 60 L/min to patients with mild to moderate respiratory distress syndrome or those being weaned off ventilator support. HFOT can be administered by either wide bore High Flow Nasal Cannulas (HFNC) or Ventimask. Flexicare's comprehensive range of High Flow Nasal Cannulas (HFNC) offers many advantages when used in conjunction with humidification, including accurate delivery of high FiO_2 and optimised mucociliary clearance, while increasing alveoli recruitment in a technique that offers improved patient comfort and compliance.



All Patient Groups
The colour coded range of seven cannula sizes provides an excellent match to the individual needs of all patient groups, from premature babies through to adults.

Secured Oxygen Delivery
Star Lumen Tubing ensures the flow of oxygen is maintained even if the tube becomes kinked.

Adjustable Slider
Secure and comfortable fitting without the need for a head or neck strap.

Compatibility
The included adaptor provides a secure connection to both 22mm and 15mm respiratory limbs.

HFNC can deliver a broad range of oxygen concentrations and flow rates, providing versatility to adapt to a patient's changing condition. Studies have shown that High Flow Nasal Therapy is able to deliver a modest amount of positive airway pressure and may provide a bridge from NIV to conventional O_2 delivery devices[1].



Soft Touch Tubing
Flexicare's Soft Touch nasal cannula tubing is flexible and gentle on the ears and face, minimising friction and pressure on delicate tissues.

At 35%, ears are the most common site for Medical Device Related Hospital Acquired Pressure Ulcers (MDR HAPU)[2].

Any reduction in the incidence of pressure ulcers not only improves patient experience and outcome, but also avoids additional treatment costs.

032-13-150	High Flow Nasal Cannula	Premature	8 LPM		25
032-13-151	High Flow Nasal Cannula	Neonate	8 LPM		25
032-13-152	High Flow Nasal Cannula	Infant	8 LPM		25
032-13-153	High Flow Nasal Cannula	Intermediate Infant	8 LPM		25
032-12-150	High Flow Nasal Cannula	Paediatric	20 LPM		25
032-12-151	High Flow Nasal Cannula	Paediatric / Small Adult	40 LPM		25
032-10-150	High Flow Nasal Cannula	Adult	40 LPM		25

[1] High Flow Nasal Oxygen Generates Positive Airway Pressure in Adult Volunteers. Groves N, Tobin A, Aust Crit Care. 2007 Nov;20(4):126-31.

[2] Medical Device Related Pressure Ulcers in Hospitalized Patients. Black JM, et al. Int Wound J 2010; 7:358-365

VentiMask and Humidity Adaptor

Ventimask®

Ventimask is an alternative for patients who are unsuitable for a High Flow Nasal Cannula (HFNC), such as those with blocked nasal passages or following trauma/surgery to the nasopharanyx. Attaching Ventimask to a humidified Single Limb Heated Wire Breathing System, and either an oxygen blender or Flexicare's Humidity Adaptor and Venturi barrel, humidified HFOT using a face mask can easily be set up to meet the patient's needs.

Clinically proven that "only the Ventimask is able to provide a fixed and predictable oxygen concentration under conditions of the changing ventilatory patterns found in clinical practice."[1] Ventimask is the accepted standard for controlled oxygen therapy for exact oxygen concentration delivery, optimum clinical performance and greater patient acceptability.





Ventimask

037-10-007	Ventimask without Venturi Barrel	50

Ventimask with Venturi Barrel

037-10-004	Ventimask with 40% Red Venturi Barrel (10 litres/minute)	50
037-10-005	Ventimask with 60% Green Venturi Barrel (15 litres/minute)	50
037-10-009	Ventimask High O_2 Concentration Set with 40% & 60% Venturi Barrels	50



Humidity Adaptor

The Humidity Adaptor is connected to a humidified Single Limb Heated Wire Breathing System. Humidified air is then entrained by the Venturi barrel to deliver the fixed concentration oxygen to the patient. Use of a humidity adaptor is the most accurate method of giving fixed concentration humidified oxygen to the patient.

5506	Humidity Adaptor 22mm	10

[1] Fixed performance oxygen masks. Hypoxic hazard of low-capacity designs. D Cox & C Gillbe. Anaesthesia, 1981, Volume 36, pages 958-964

BREATHING FILTERS

The range includes Adult and Mini Electrostatic Breathing Filters and HMEF's, plus Adult and Paediatric Pleated Paper Hydrophobic Bacterial / Viral Filters.

Breathing Filters
Introduction 70

LuerSafe 71

VentiShield Bacterial / Viral Filters
Adult VentiShield Filters 73
Mini VentiShield Filters 73

ThermoShield HMEF's
Adult ThermoShield HMEF's 75
Mini ThermoShield HMEF's 75

HepaShield
HepaShield Mechanical Filters 76

Neonatal HME & HMEF
Neonatal HME & HMEF 77

ThermoTrach
ThermoTrach Heat & Moisture Exchanger 77

Pulmonary Function Test Filter 78

Sterile Filters 78