

# Filtration and humidification

A range of breathing filters, HMEs and combined products for protection and humidification



Breathing filters

Heat and moisture  
exchangers

Heat and moisture  
exchanging filters



EDITION 1

## Contents

### Breathing filters

2 Why use a breathing filter?

3 Filta-Guard® range

3 Clear-Guard® range

4 Hydro-Guard® range

### Heat and Moisture Exchangers (HMEs)

5 Why use a HME?

5 Hydro-Therm® range

6 Hydro-Trach T® range

### Heat and Moisture Exchanging Filters (HMEFs)

7 Filta-Therm® range

8 Clear-Therm® range

### 1500 series range

10 Clear-Guard® 3 range

11 Clear-Therm® 3 range

12 Hydro-Therm® 3 range

12 Angled filter range

13 Air-Guard filter

13 Filter protocols

## Why use a breathing filter?

Breathing filters are designed to prevent microbial cross contamination via anaesthetic or ventilator breathing systems. Their use is now widely recognised as beneficial and is recommended by a number of anaesthetic associations<sup>(1)</sup>.

### The threat to patients

Patients undergoing anaesthesia may be threatened by cross contamination via the equipment or systems used earlier on an unsuspected but infective case. Documented areas of concern regarding infection from breathing systems include; *Hepatitis C*, *Mycobacterium tuberculosis*, blood in sputum and the SARS virus.

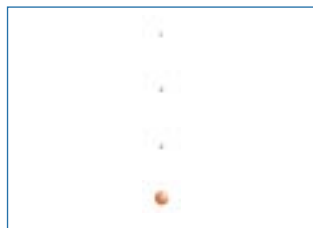
Long term ventilated patients in ICU may be at risk from pseudomonal growth in a water bath humidifier. Staff too

may be at risk from atmospheric pollutants via ventilator exhausts. The strategic use of an effective breathing filter protects bi-directionally, both the patient and equipment. The inclusion of a filter in a breathing system is often beneficial in financial terms since the ventilator is protected against potential cross contaminants generated by the patient.

### Proven efficiency

The Intersurgical range of breathing filters has been proven to be highly efficient in preventing the passage of bacteria and viruses including *MS-2 coliphage* [0.02µm diameter], *Hepatitis C* [0.02µm], *Bacillus subtilis* [1.0µm x 0.7µm], *Mycobacterium tuberculosis* [0.3µm x 1.0µm] and *Pseudomonas diminuta* [0.5µm].

### Potential infectious viruses (particle sizes µ microns)

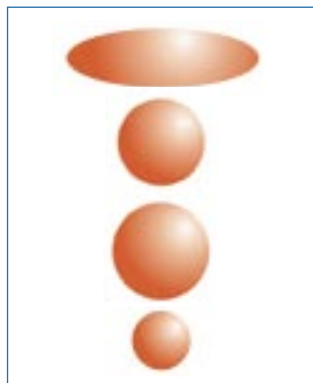


*Coliphage T1* [0.017µ]  
*MS-2 coliphage* [0.02µ]  
*Hepatitis virus* [0.02µ]  
*Adenovirus* [0.07µ]

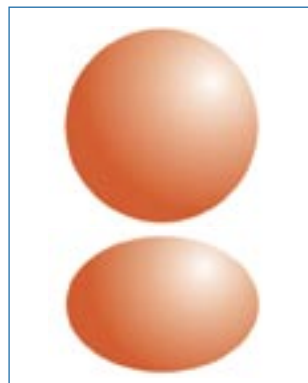


*HIV* [0.08µ]  
*Cytomegalovirus (CMV)* [0.1µ]  
*Orthomyxovirus* [0.1µ]

### Potential infectious bacteria (particle sizes µ microns)



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



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

### Features of Intersurgical breathing filters

The Intersurgical range of breathing filters offers a choice of pleated and flat filters with integral catheter mounts, providing the most appropriate product for the clinical situation. Filta-Guard® is ideal for use in intensive care and Clear-Guard® in anaesthesia.

- Validated filtration efficiency<sup>(2)</sup>
- Proven filtration against *Mycobacterium Tuberculosis* and *Hepatitis C*
- Proven efficiency not affected by anaesthetic agent
- The fail-safe feature with electrostatic filters will protect the patient in the event of occlusion of the filter with fluid.

- Safe inert material
- Option of patient connections - supplied packed and ready for use
- Lightweight - reducing patient trauma.
- Low volume - reducing re-breathing of CO<sub>2</sub>
- Low resistance to flow

#### References

- (1) Association of Anaesthetists of Great Britain and Ireland 1996.  
 Danish society of Anaesthetists 1998.  
 French society of Anaesthetists 1998.
- (2) Draft pr EN13328-1 (Bacterial/Viral version) CAMR, Porton Down, Wiltshire.

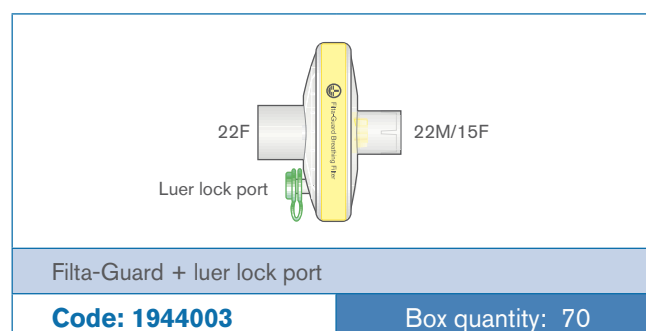
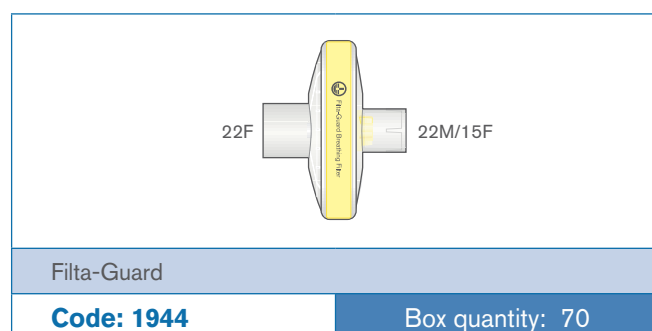
## Breathing filter Range

The Filta-Guard® and Clear-Guard® breathing filters have been designed for use with breathing and anaesthetic systems for the protection of the patient, hospital personnel and the equipment from potential microbial contamination. Both products have been validated against the passage of *Hepatitis C* and *Mycobacterium tuberculosis* in addition to standard test micro-organisms.

### Filta-Guard® range

High efficiency breathing filters ideal for use in the intensive care unit or in anaesthesia

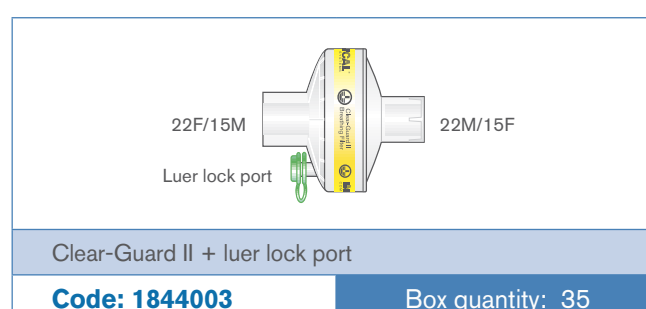
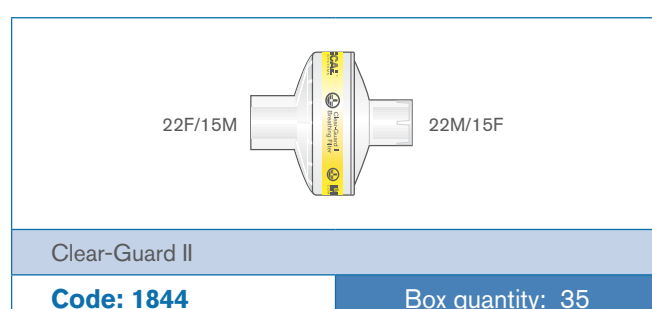
| Code    | Description                  | Filtration efficiency | Resistance at: 60L/min | Compressible volume | Weight | Minimum tidal volume |
|---------|------------------------------|-----------------------|------------------------|---------------------|--------|----------------------|
| 1944    | Filta-Guard                  | 99.999%               | 2.3cm H <sub>2</sub> O | 67ml                | 40.0g  | 200ml                |
| 1944003 | Filta-Guard + luer lock port | 99.999%               | 2.3cm H <sub>2</sub> O | 67ml                | 40.2g  | 200ml                |

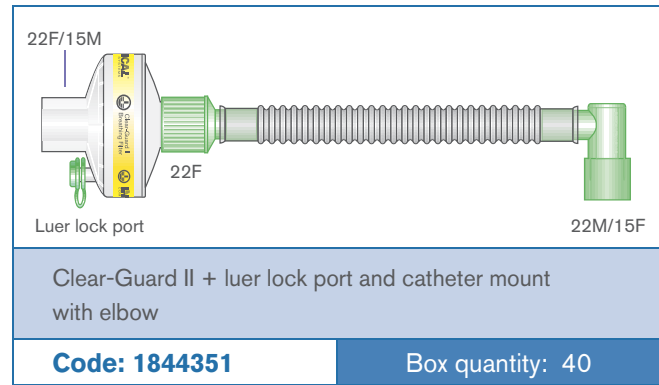
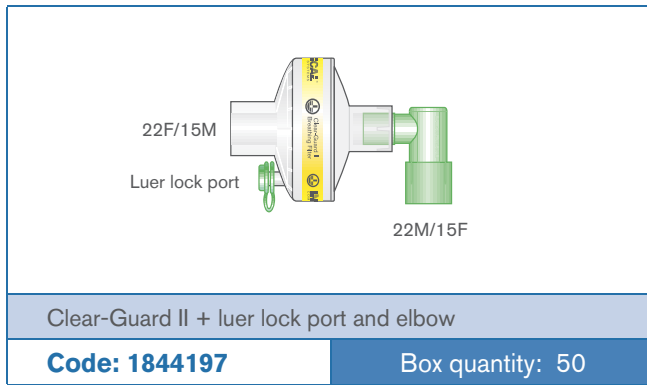


### Clear-Guard® II range

Breathing filters designed for use in anaesthesia and intensive care.

| Code    | Description   | Filtration efficiency | Resistance at: 60L/min | Compressible volume   | Weight | Minimum tidal volume |
|---------|---|-----------------------|------------------------|-----------------------|--------|----------------------|
| 1844    | Clear-Guard II  | 99.99%                | 2.3cm H <sub>2</sub> O | 50ml                  | 27.0g  | 200ml                |
| 1844003 | Clear-Guard II + luer lock port                               | 99.99%                | 2.3cm H <sub>2</sub> O | 62ml                  | 31.0g  | 200ml                |
| 1844197 | Clear-Guard II + luer lock port and elbow                     | 99.99%                | 3.9cm H <sub>2</sub> O | 62ml + Elbow          | 41.2g  | 200ml                |
| 1844351 | Clear-Guard II + luer lock port and catheter mount with elbow | 99.99%                | 4.7cm H <sub>2</sub> O | 62ml + Catheter mount | 52.4g  | 200ml                |

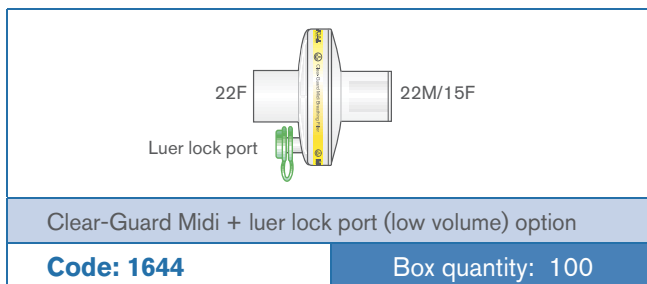




### Clear-Guard® Midi low volume

The Clear-Guard Midi is a low volume breathing filter that ensures deadspace is kept to a minimum and is ideal for use in the operating theatre.

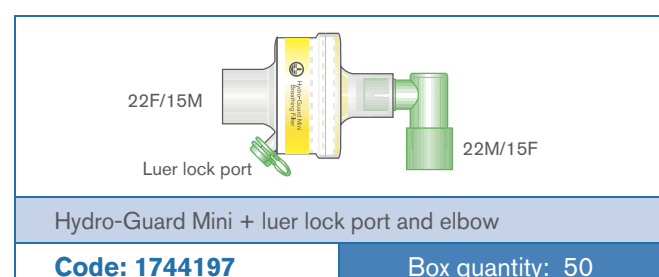
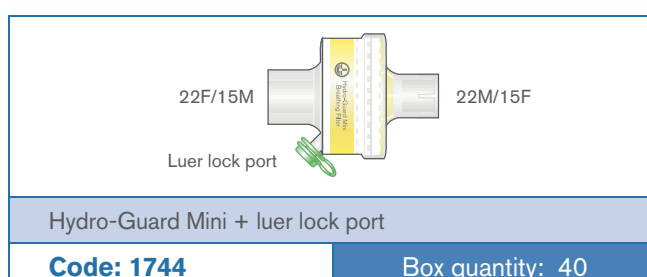
| Code        | Description   | Filtration efficiency | Resistance at: 60L/min | Compressible volume | Weight | Minimum tidal volume |
|-------------|---|-----------------------|------------------------|---------------------|--------|----------------------|
| <b>1644</b> | Clear-Guard Midi + luer lock port (low volume) option | 99.9%                 | 2.1cm H <sub>2</sub> O | <b>34ml</b>         | 18.6g  | 100ml                |



### Hydro-Guard™ Mini

A versatile low volume pleated membrane breathing filter for use in anaesthesia as an HMEF, **moisture return 23mg H<sub>2</sub>O/L @ VT500ml**, or in ITU as a filter only.

| Code           | Description   | Filtration efficiency | Resistance at: 60L/min | Compressible volume   | Weight | Minimum tidal volume |
|----------------|---|-----------------------|------------------------|-----------------------|--------|----------------------|
| <b>1744</b>    | Hydro-Guard Mini + luer lock port                               | ≥99.999%              | 3.6cm H <sub>2</sub> O | 62ml                  | 35.0g  | 200ml                |
| <b>1744197</b> | Hydro-Guard Mini + luer lock port and elbow                     | ≥99.999%              | 5.2cm H <sub>2</sub> O | 62ml + Elbow          | 45.2g  | 200ml                |
| <b>1744012</b> | Hydro-Guard Mini + luer lock port and catheter mount with elbow | ≥99.999%              | 6.0cm H <sub>2</sub> O | 62ml + Catheter mount | 56.4g  | 200ml                |



Why use a HME?

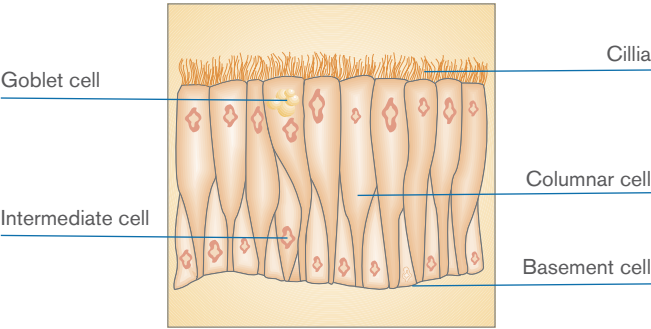
In normal respiration the upper airway helps to warm and humidify inspired air, and to retain the warmth and moisture contained in expired air. During inspiration even cold or dry air is typically heated to 37°C and fully saturated, containing 44mg H<sub>2</sub>O per litre. In mechanical ventilation or anaesthesia the patient's upper airway may be bypassed by the introduction of a tracheal tube. As a result the patient's lungs may be confronted with dry inspired gas. In order to protect the patient's respiratory passages from dehydration, additional humidification is recommended in the form of a heat and moisture exchanger which helps maintain homeostasis in the respiratory system.

The drying and cooling effect is exacerbated by the presence of the tracheal tube, the normal process of reabsorption of heat and moisture by the upper airway during expiration is lost. Other contributory factors to heat and moisture loss in anaesthesia are the lowering of the patient's metabolic rate, evaporation and the surgical procedure itself.

Prolonged exposure to dry ventilatory gases can lead to:

- Localised inflammation of the trachea.
- A reduction in ciliary function
- Retention and thickening of secretions
- Lowering of patient temperature
- Reduction in cardio/pulmonary function
- Increased risk of tracheostomy tube occlusion

Respiratory epithelium adversely affected by heat and moisture loss




Heat and moisture exchangers

Hydro-Therm® range

A dedicated range of heat and moisture exchangers designed for use in the intensive care unit and anaesthesia.


| Code | Description                        | Moisture return:<br>@VT 500ml | Resistance<br>at: 60L/min | Compressible<br>volume | Weight | Minimum<br>tidal volume |
|------|------------------------------------|-------------------------------|---------------------------|------------------------|--------|-------------------------|
| 1850 | Hydro-Therm                        | 30mg H <sub>2</sub> O/L       | 3.0cm H <sub>2</sub> O    | 16ml                   | 11.5g  | 50ml                    |
| 1855 | Hydro-Therm + luer<br>lock port    | 30mg H <sub>2</sub> O/L       | 3.0cm H <sub>2</sub> O    | 17ml                   | 12.0g  | 50ml                    |
| 1860 | Hydro-Therm II + luer lock<br>port | 33mg H <sub>2</sub> O/L       | 0.8cm H <sub>2</sub> O    | 60ml                   | 36.0g  | 200ml                   |



Hydro-Therm

Code: 1850

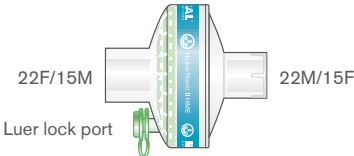
Box quantity: 20



Hydro-Therm + luer lock port

Code: 1855

Box quantity: 20



Hydro-Therm II + luer lock port

Code: 1860

Box quantity: 35

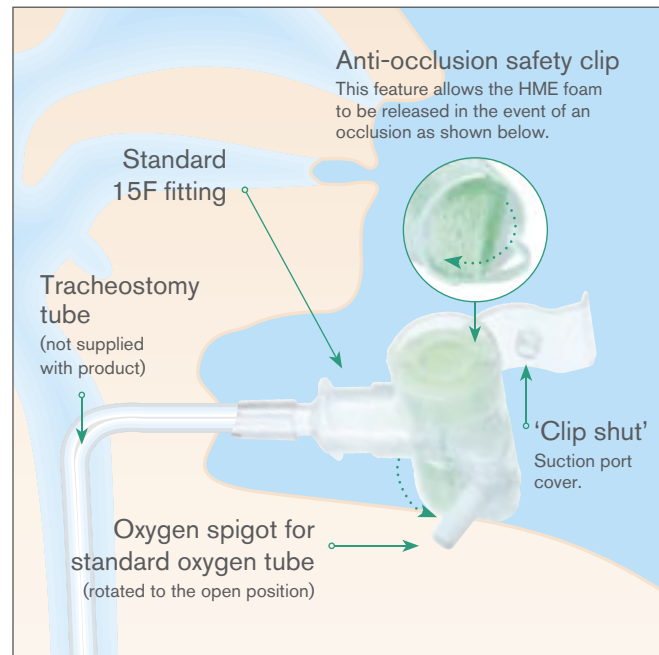


## The Hydro-Trach® T Mk.II For use on tracheostomy patients

The Hydro-Trach T Mk.II is a heat and moisture exchange device designed for use with spontaneously breathing patients in order to reduce loss of heat and moisture during respiration.

When a patient is intubated the normal system of temperature and moisture maintenance is bypassed by the insertion of the tracheal tube. The possible loss of heat and moisture can lead to serious complications, notably damage to cilia and the mucous glands. This in turn may result in retention of sputum, atelectasis, production of mucous plugs and potential tube occlusion.

The Hydro-Trach T Mk.II has a number of unique features which make it an ideal product for prolonged use with spontaneously breathing patients.



## Hydro-Trach® T range

Heat and moisture exchanger for use on tracheostomised patients.

| Code | Description                               | Moisture return:<br>@VT 500ml | Resistance<br>at: 60L/min | Compressible<br>volume | Weight | Minimum<br>tidal volume |
|------|---|-------------------------------|---------------------------|------------------------|--------|-------------------------|
| 1873 | Hydro-Trach T Mk.II                       | 26.0mg H <sub>2</sub> O/L     | 1.3cm H <sub>2</sub> O    | 19ml                   | 8.0g   | N/A                     |
| 1874 | Hydro-Trach T Mk.II + O <sub>2</sub> Tube | 26.0mg H <sub>2</sub> O/L     | 1.3cm H <sub>2</sub> O    | 19ml                   | 8.0g   | N/A                     |

15F

Hydro-Trach T Mk.II

**Code: 1873**
Box quantity: 25



15F

Hydro-Trach T Mk.II + O<sub>2</sub> tube

**Code: 1874**
Box quantity: 40

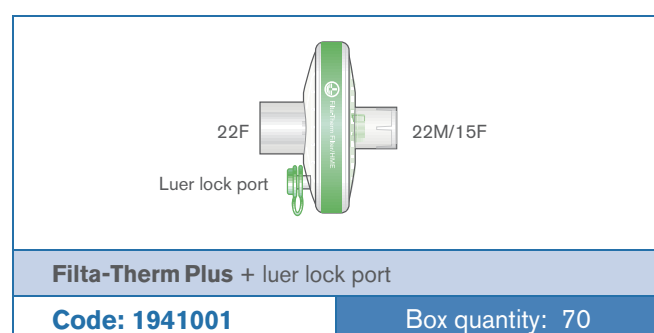
## Heat and moisture exchanging filters

The range of Heat and Moisture Exchanging Filters (HMEFs) combine the filtration efficiency of dedicated breathing filters with optimum moisture return. **Note:** The 1744 on page 50 may also act as a HMEF when used in anaesthesia.

### Filta-Therm® Plus

The Filta-Therm Plus provides the optimum solution for intensive care with its improved HME performance and its high filtration efficiency.

| Code    | Description                       | Filtration efficiency | Moisture return:<br>@VT 500ml | Resistance at: 60L/min | Compressible volume | Weight | Minimum tidal volume |
|---------|-----------------------------------|-----------------------|-------------------------------|------------------------|---------------------|--------|----------------------|
| 1941001 | Filta-Therm Plus + luer lock port | 99.999%               | 31.5mg H <sub>2</sub> O/L     | 3.0cm H <sub>2</sub> O | 66ml                | 42.0g  | 200ml                |



### Filta-Therm® range

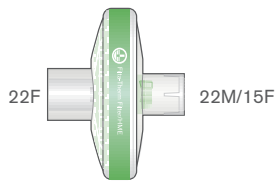
High efficiency range of HMEFs designed for use in the intensive care unit and anaesthesia.

| Code    | Description   | Filtration efficiency | Moisture return:<br>@VT 500ml | Resistance at: 60L/min | Compressible volume   | Weight | Minimum tidal volume |
|---------|---|-----------------------|-------------------------------|------------------------|-----------------------|--------|----------------------|
| 1942    | Filta-Therm   | 99.999%               | 29.1mg H <sub>2</sub> O/L     | 2.5cm H <sub>2</sub> O | 66ml                  | 42.0g  | 200ml                |
| 1941    | Filta-Therm+ luer lock port                                 | 99.999%               | 29.1mg H <sub>2</sub> O/L     | 2.5cm H <sub>2</sub> O | 66ml                  | 42.6g  | 200ml                |
| 1941197 | Filta-Therm + luer lock port and elbow                      | 99.999%               | 29.1mg H <sub>2</sub> O/L     | 4.8cm H <sub>2</sub> O | 66ml + Elbow          | 52.6g  | 200ml                |
| 1941351 | Filta-Therm + luer lock port and catheter mount with elbow  | 99.999%               | 29.1mg H <sub>2</sub> O/L     | 5.7cm H <sub>2</sub> O | 66ml + Catheter mount | 63.7g  | 200ml                |
| 1906    | Filta-Therm Y + luer lock port                              | 99.999%               | 29.1mg H <sub>2</sub> O/L     | 2.5cm H <sub>2</sub> O | *70ml                 | *45.0g | 200ml                |
| 2015    | Filta-Therm Y breathing system 1.6m length + luer lock port | 99.999%               | 29.1mg H <sub>2</sub> O/L     | 2.5cm H <sub>2</sub> O | *70ml + 1.6m limbs    | *45.0g | 200ml                |

\* y-piece only



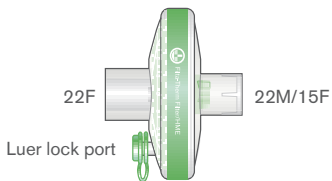
Filta-Therm® range continued



Filta-Therm

Code: 1942

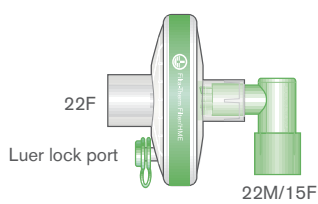
Box quantity: 70



Filta-Therm + luer lock port

Code: 1941

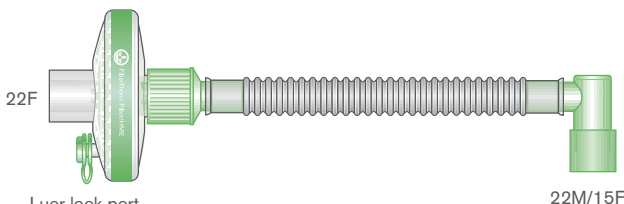
Box quantity: 70



Filta-Therm + luer lock port and elbow

Code: 1941197

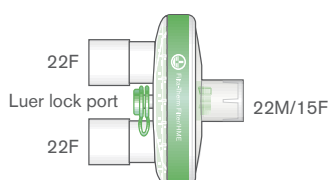
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Filta-Therm + luer lock port and catheter mount with elbow

Code: 1941351

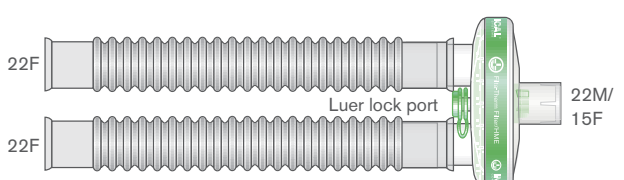
Box quantity: 20



Filta-Therm Y + luer lock port

Code: 1906

Box quantity: 70



Filta-Therm breathing system 1.6m length + luer lock port

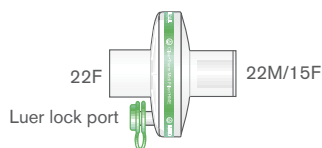
Code: 2015

Box quantity: 20

Clear-Therm® Midi low volume

The Clear-Therm Midi is a low volume option for minimising dead space in anaesthesia.

| Code | Description   | Filtration efficiency | Moisture return:<br>@VT 500ml | Resistance at: 60L/min | Compressible volume | Weight | Minimum tidal volume |
|------|---|-----------------------|-------------------------------|------------------------|---------------------|--------|----------------------|
| 1641 | Clear-Therm Midi + luer lock port - (low volume) option | 99.9%                 | 23.0mg H <sub>2</sub> O/L     | 2.2cm H <sub>2</sub> O | 34ml                | 20.0g  | 100ml                |



Clear-Therm Midi + luer lock port (low volume) option

Code: 1641

Box quantity: 100



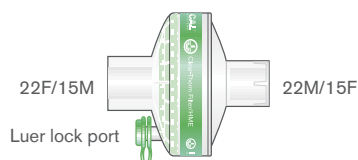
1641

# Heat and moisture exchanging filters

## Clear-Therm® range

A range of HMEFs for use in anaesthesia and intensive care. Paediatric and neonatal options available.

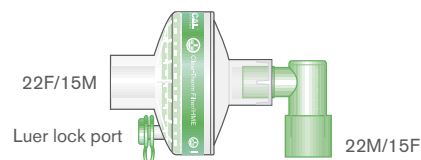
| Code    | Description  | Filtration efficiency | Moisture return:<br>@VT 500ml            | Resistance<br>at: 60L/min            | Compressible<br>volume      | Weight | Minimum<br>tidal<br>volume |
|---------|--|-----------------------|--|--------------------------------------|-----------------------------|--------|----------------------------|
| 1841    | Clear-Therm +<br>luer lock port                                  | 99.99%                | 32.0mg H <sub>2</sub> O/L                | 2.4cm H <sub>2</sub> O               | 61ml                        | 34.0g  | 200ml                      |
| 1841197 | Clear-Therm + luer<br>lock port and elbow                        | 99.99%                | 32.0mg H <sub>2</sub> O/L                | 4.1cm H <sub>2</sub> O               | 61ml +<br>Elbow             | 42.4g  | 200ml                      |
| 1841351 | Clear-Therm + luer<br>lock port and catheter<br>mount with elbow | 99.99%                | 32.0mg H <sub>2</sub> O/L                | 4.7cm H <sub>2</sub> O               | 61ml +<br>Catheter<br>mount | 53.6g  | 200ml                      |
| 1831    | Clear-Therm Mini<br><b>paediatric</b> HMEF<br>+ luer lock port   | 99.9%                 | (@VT 250ml)<br>32.0mg H <sub>2</sub> O/L | (@20L/min)<br>1.2cm H <sub>2</sub> O | 28ml                        | 21.4g  | 75ml                       |
| 1441    | Clear-Therm Micro<br><b>neonatal</b> HMEF<br>+ luer lock port    | 99.99%                | (@VT 25ml)<br>27.0mg H <sub>2</sub> O/L  | (@7L/min)<br>0.9cm H <sub>2</sub> O  | 11ml                        | 12.7g  | 20ml                       |



Clear-Therm + luer lock port

**Code: 1841**

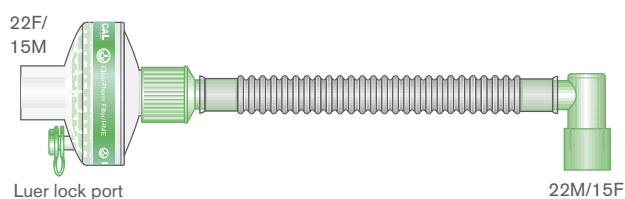
Box quantity: 35



Clear-Therm + luer lock port and elbow

**Code: 1841197**

Box quantity: 50



Clear-Therm + luer lock port and catheter  
mount with elbow

**Code: 1841351**

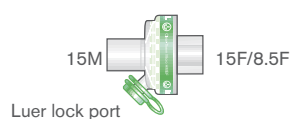
Box quantity: 40



Clear-Therm Mini **paediatric** HMEF + luer lock port

**Code: 1831**

Box quantity: 40



Clear-Therm Micro **neonatal** HMEF + luer lock port

**Code: 1441**

Box quantity: 20



1831

## 1500 series filter range

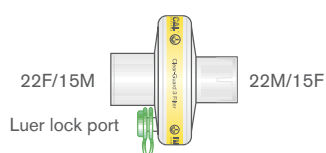


The 1500 Series Filter range is for use in anaesthesia and intensive care units. Each product has been designed with a rounded, ergonomic housing. Flexible and Superset catheter mount options are available.

### Clear-Guard® 3 range

| Code           | Description  | Filtration efficiency* | Resistance at: 60L/min | Compressible volume            | Weight | Minimum tidal volume |
|----------------|--|------------------------|------------------------|--------------------------------|--------|----------------------|
| <b>1544</b>    | Clear-Guard 3 filter + luer lock port  | 99.99%                 | 2.2cm H <sub>2</sub> O | 60ml                           | 28.0g  | 200ml                |
| <b>1544011</b> | Clear-Guard 3 filter + luer lock port and Superset catheter mount            | 99.99%                 | 2.4cm H <sub>2</sub> O | 60ml + Superset catheter mount | 36.0g  | 200ml                |
| <b>1544351</b> | Clear-Guard 3 filter + luer lock port and catheter mount with elbow          | 99.99%                 | 3.4cm H <sub>2</sub> O | 60ml + catheter mount          | 45.8g  | 200ml                |
| <b>1544012</b> | Clear-Guard 3 filter + luer lock port and Superset catheter mount with elbow | 99.99%                 | 3.2cm H <sub>2</sub> O | 60ml + Superset catheter mount | 44.4g  | 200ml                |

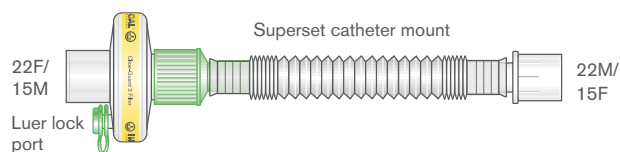
\* Fresh



Clear-Guard 3 filter + luer lock port.

**Code: 1544**

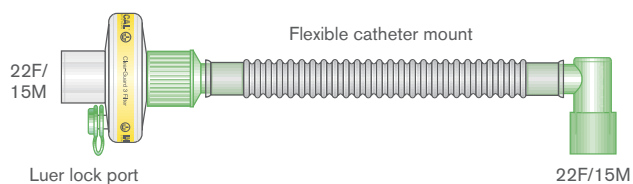
Box quantity: 150



Clear-Guard 3 filter + luer lock port and Superset catheter mount.

**Code: 1544011**

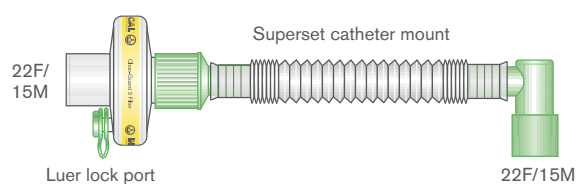
Box quantity: 75



Clear-Guard 3 Filter + luer lock port and flexible catheter mount with elbow.

**Code: 1544351**

Box quantity: 70



Clear-Guard 3 filter + luer lock port and Superset catheter mount with elbow.

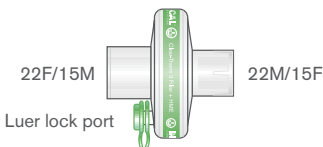
**Code: 1544012**

Box quantity: 75

## Clear-Therm® 3 range

| Code           | Description  | Filtration efficiency* | Moisture return:<br>@VT 500ml | Resistance<br>at: 60L/min | Compressible<br>volume         | Weight | Minimum<br>tidal<br>volume |
|----------------|--|------------------------|-------------------------------|---------------------------|--------------------------------|--------|----------------------------|
| <b>1541</b>    | Clear-Therm 3 HMEF + luer lock port  | 99.99%                 | 30.6mg H <sub>2</sub> O/L     | 2.6cm H <sub>2</sub> O    | 59ml                           | 31.0g  | 200ml                      |
| <b>1541011</b> | Clear-Therm 3 HMEF + luer lock port and Superset catheter mount            | 99.99%                 | 30.6mg H <sub>2</sub> O/L     | 2.8cm H <sub>2</sub> O    | 59ml + Superset catheter mount | 36.0g  | 200ml                      |
| <b>1541351</b> | Clear-Therm 3 HMEF + luer lock port and catheter mount with elbow          | 99.99%                 | 30.6mg H <sub>2</sub> O/L     | 3.4cm H <sub>2</sub> O    | 59ml + catheter mount          | 48.3g  | 200ml                      |
| <b>1541012</b> | Clear-Therm 3 HMEF + luer lock port and Superset catheter mount with elbow | 99.99%                 | 30.6mg H <sub>2</sub> O/L     | 3.3cm H <sub>2</sub> O    | 59ml + Superset catheter mount | 46.2g  | 200ml                      |

\* Fresh

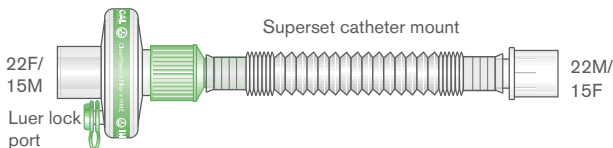


22F/15M 22M/15F

Luer lock port

Clear-Therm 3 HMEF + luer lock port.

**Code: 1541** Box quantity: 150



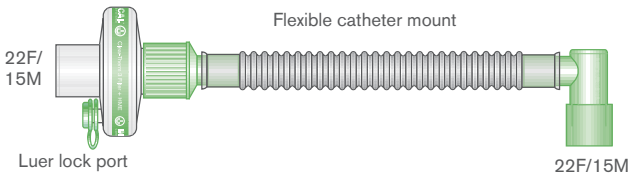
22F/15M 22M/15F

Luer lock port

Superset catheter mount

Clear-Therm 3 HMEF + luer lock port and Superset catheter mount.

**Code: 1541011** Box quantity: 75



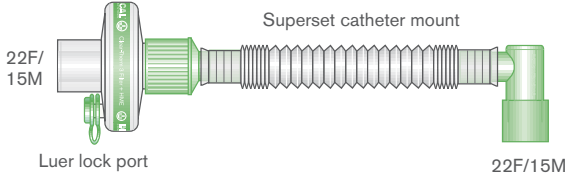
22F/15M 22F/15M

Luer lock port

Flexible catheter mount

Clear-Therm 3 HMEF + luer lock port and flexible catheter mount with elbow.

**Code: 1541351** Box quantity: 70



22F/15M 22F/15M

Luer lock port

Superset catheter mount

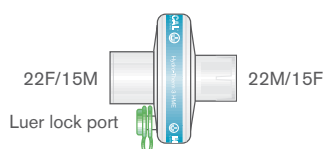
Clear-Therm 3 HMEF + luer lock port and Superset catheter mount with elbow.

**Code: 1541012** Box quantity: 75



**Hydro-Therm® 3 range**

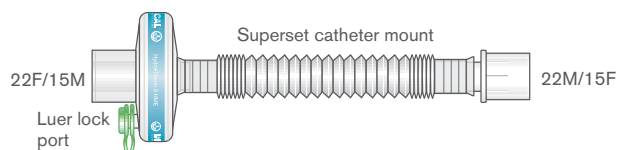
| Code           | Description   | Moisture return:<br>@VT 500ml | Resistance<br>at: 60L/min | Compressible<br>volume               | Weight | Minimum<br>tidal volume |
|----------------|---|-------------------------------|---------------------------|--------------------------------------|--------|-------------------------|
| <b>1560</b>    | Hydro-Therm 3 HME +<br>luer lock port                                   | 31.6mg H <sub>2</sub> O/L     | 1.2cm H <sub>2</sub> O    | 58ml                                 | 31.0g  | 200ml                   |
| <b>1560411</b> | Hydro-Therm 3 HME +<br>luer lock port and<br>Superset catheter<br>mount | 31.6mg H <sub>2</sub> O/L     | 2.9cm H <sub>2</sub> O    | 58ml +<br>Superset<br>catheter mount | 36.0g  | 200ml                   |



Hydro-Therm 3 HME + luer lock port.

**Code: 1560**

Box quantity: 150



Hydro-Therm 3 HME + luer lock port and Superset catheter mount.

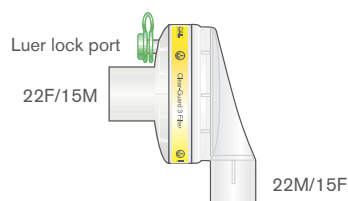
**Code: 1560411**

Box quantity: 100

**1500 series angled filter range**

Two angled breathing filters are now available; these are designed for use in anaesthesia and intensive care units. The filters provide an easy to use option with an integral 90° elbow; this reduces the need for an additional catheter mount or separate patient elbow.

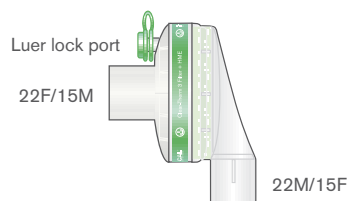
| Code        | Description  | Filtration<br>efficiency | Moisture<br>return:<br>@VT 500ml | Resistance<br>at: 60L/min | Compressible<br>volume | Weight | Minimum<br>tidal<br>volume |
|-------------|--|--------------------------|----------------------------------|---------------------------|------------------------|--------|----------------------------|
| <b>1545</b> | Clear-Guard 3<br>angled filter +<br>luer lock port | 99.9%                    | N/A                              | 2.6cm H <sub>2</sub> O    | 75ml                   | 34.0g  | 200ml                      |
| <b>1542</b> | Clear-Therm 3<br>angled HMEF +<br>luer lock port   | 99.9%                    | 29.4mg H <sub>2</sub> O/L        | 2.9cm H <sub>2</sub> O    | 72ml                   | 34.0g  | 200ml                      |

**Clear-Guard® 3 angled filter**

Clear-Guard 3 angled filter + luer lock port

**Code: 1545**

Box quantity: 75

**Clear-Therm® 3 angled filter**

Clear-Therm 3 angled HMEF + luer lock port

**Code: 1542**

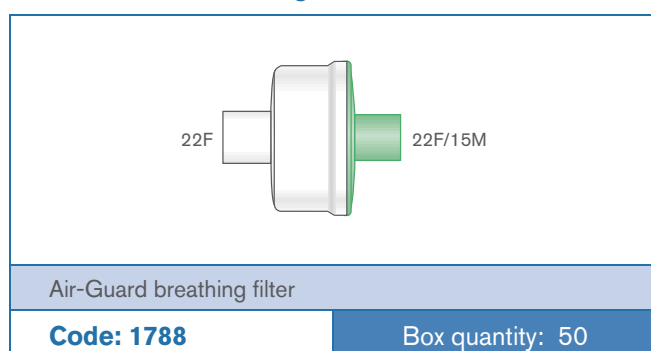
Box quantity: 75

## Air-Guard™ breathing filter

The Air-Guard breathing filter is a hydrophobic pleated membrane filter, designed for the protection of oxygen concentrator machines and other respiratory equipment.

| Code | Description                | Viral filtration efficiency | Bacterial filtration efficiency | Resistance at: 60L/min | Compressible volume | Weight | Minimum tidal volume |
|------|----------------------------|-----------------------------|---------------------------------|------------------------|---------------------|--------|----------------------|
| 1788 | Air-Guard breathing filter | 99.9999%                    | 99.99999%                       | 1.7cm H <sub>2</sub> O | 90ml                | 53.0g  | 200ml                |

### Air-Guard® breathing filter



## Filter Protocols available on request

### A 24 hour test protocol and evaluation of Intersurgical's Filta-Therm and Filta-Guard as bacterial filters.

*J.E.Benbough PhD., A. Bennett BSc., biosafety testing section, biologics division, centre for applied microbiology and research, Porton Down, Salisbury, Wiltshire.*

### A test protocol and evaluation of the Intersurgical Filta-Guard as a filter preventing the transmission of Hepatitis C.

*SE Speight MPhil, G Hatch BSc, S Parks, centre for applied microbiology and research, Porton Down, Salisbury, Wiltshire.*

### A test protocol and evaluation of the Intersurgical Clear-Guard II as a filter preventing the transmission of Hepatitis C.

*SE Speight MPhil, G Hatch BSc, S Parks, centre for applied microbiology and research, Porton Down, Salisbury, Wiltshire.*

### An evaluation of Intersurgical's Filta-Therm, Clear-Therm and Hydro-Therm as heat and moisture exchangers.

*ISO 9360 'Anaesthetic and respiratory equipment - heat and moisture exchangers for use in humidified inspired gases in humans'.*

### Test protocols and evaluations of Intersurgical's Filta-Therm, Clear-Guard and Filta-Guard as filters against Mycobacterium tuberculosis.

*S E Speight M Phil., A. M. Bennett MSc, J E Benbough PhD, CAMR, Porton Down, Salisbury, Wiltshire.*

### A 24 hour test protocol and evaluation of Intersurgical's Clear-Therm Mini as a bacterial filter.

*J.E.Benbough PhD., A. Bennett BSc., biosafety testing section, biologics division, centre for applied microbiology and research, Porton Down, Salisbury, Wiltshire.*

### Test protocol and evaluation of Intersurgical's Clear-Guard Midi as a bacterial filter for 6 hours.

*J.E.Benbough PhD., A. Bennett BSc., biosafety testing section, biologics division, centre for applied microbiology and research, Porton Down, Salisbury, Wiltshire.*

### Test protocol designed to evaluate Intersurgical Clear-Guard II as a Viral Filter over prolonged periods.

*J.E.Benbough PhD., A. Bennett BSc., PHLS centre for applied microbiology and research, division of biologics (biosafety testing unit), porton down, Salisbury, Wiltshire.*

### Evaluation of Intersurgical Hydro-Guard Mini as a bacterial filter before and after simulated use for 24 hours.

*J.E.Benbough PhD., A. Bennett BSc., biosafety investigation unit, centre for applied microbiology and research, Porton Down, Salisbury, Wiltshire.*

### Pleated membrane fibre release test protocol and results

*Author Lynne Palmer, development scientist.*





For further information on the Intersurgical product range please visit  
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