

## QUICK REFERENCE CARD EVONE®

This Quick Reference Card does not replace the Instructions for Use of Evone or Tritube®.

### **Introduction on Evone**

Mechanical ventilator Evone can be used in combination with Tritube, or a conventional adult endotracheal tube (single lumen or double-lumen). Evone has two ventilation modes:

### **FCV® MODE: to be used with all tubes**

FCV® is a ventilation method where flow is continuously controlled in both inspiratory and expiratory phase. This is implemented with a constant inspiratory flow and a controlled expiratory flow (by suction) between a set minimum airway pressure (EEP) and a maximum airway pressure (Peak). FCV® is used for patient ventilation in elective situations with a cuffed airway.

### **JET MODE: to be used with Tritube only**

High frequency jet ventilation 60 to 150 Breaths Per Minute. This mode is used for breathing support (not triggered by patient) with an open airway.





## MATERIALS

- Evone Control Unit
- Evone Cartridge ①
- Evone Airway Adapter ②
- Humid-Vent Filter Pedi straight (HME Filter) ③
- Evone Breathing Tubing ④ OR  
Conventional Tube Adapter (CTA) ⑥
- Tritube ⑤ OR a conventional adult endotracheal tube  
(single lumen or double-lumen; at least 5 mm ID) ⑦
- Empty syringe (20mL) to check cuff
- Syringe with 2-5 mL saline and  
~15 mL air to purge lumens
- Cuff manometer

### Materials for alternative ventilation

#### Tritube:

- Ventrain® and manometer

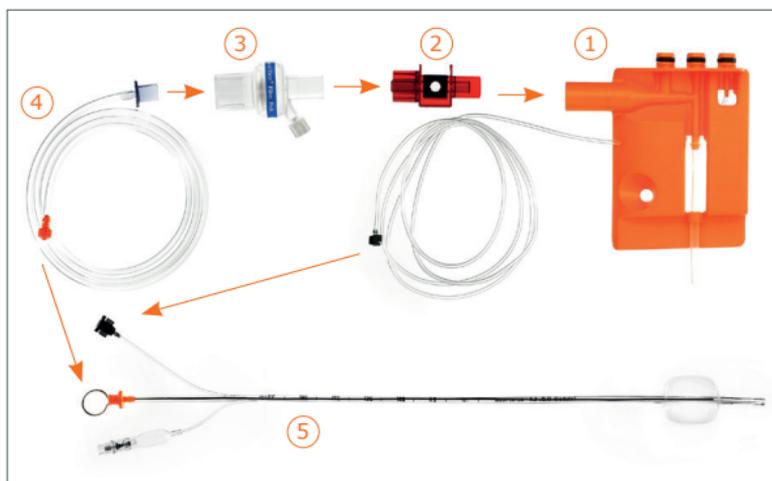
OR

#### All tubes:

- Conventional tube/(laryngeal) mask  
(in parallel with Tritube)
- Conventional (balloon) ventilation equipment



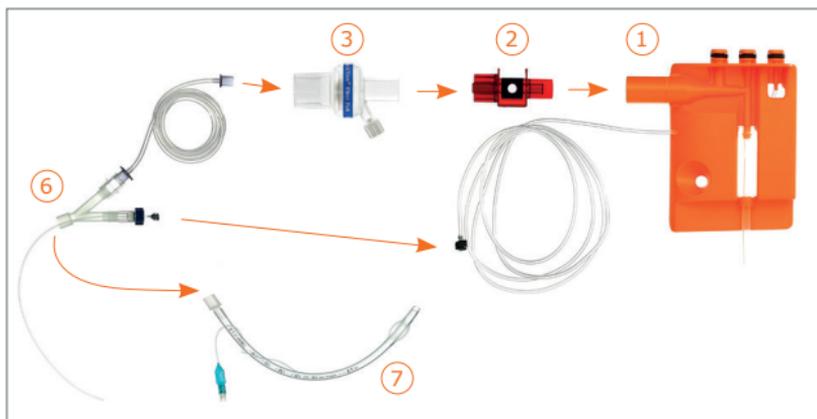
## » ASSEMBLY WITH TRITUBE



*Fig. 1 Assembly of the Evone Breathing System and Tritube*

Numbers refer to parts on page 2.

## » ASSEMBLY WITH CONVENTIONAL TUBES



*Fig 2. Assembly of the Evone Breathing System and conventional adult endotracheal tube*

Numbers refer to parts on page 2.



## INSTALLATION AND SET UP

- 1** Switch on Evone.
- 2** Perform Startup checks successfully.
- 3** Patient set up menu: select patient gender and fill out characteristics. Accept default settings or start with last used.
- 4** Check and if required adapt alarm limits.

Note that default settings are:

- FiO<sub>2</sub> 50%
- Inspiratory Flow 12 L/min
- I:E ratio 1:1.0
- Peak 15 mbar
- EEP 5 mbar



## » INTUBATION WITH TRITUBE

- 1** Inflate cuff of Tritube® - check for leakage - deflate and wrap cuff around Tritube.
- 2** Patient with increased risk on secretions: ask to clear the throat by coughing and swallowing any secretions.
- 3** Induce anesthesia (TIVA).
- 4** Visually assess larynx and remove secretions if present.
- 5** Bend Tritube in curve required for intubation.
- 6** Remove stylet after the tip has passed the vocal cords.
- 7** Advance Tritube while turning to facilitate insertion.
- 8** Pull back to the position aimed for to avoid tracheal contact with the tip.
- 9** Flush both lumen with air by syringe.
- 10** Fixate Tritube.



## » VENTILATION WITH TRITUBE

- 1 Connect Tritube to Evone (ventilation lumen and pressure lumen).
- 2 Optional: start ventilation with the cuff deflated to allow deepening of anesthesia (Jet mode).  
**Note that the airway is open (risk on aspiration).**
- 3 Start ventilation with the cuff inflated (25-30 mbar) in FCV<sup>®</sup> mode when anesthesia is deepened. A triangular pressure curve appears on the screen (Fig 3).



Fig 3. FCV mode active

- 4 If needed adapt ventilation settings:
  - FiO<sub>2</sub> as preferred
  - EEP as preferred
  - Peak to adjust Tidal Volume
  - Inspiratory Flow to adjust Minute Volume.

## » VENTILATION WITH CONVENTIONAL TUBES

- 1** Induce anesthesia (TIVA).
- 2** Intubate patient as usual with tube of choice.
- 3** Oxygenate patient as preferred to allow deepening of anesthesia.
- 4** Connect tube to CTA of Evone when anesthesia is deepened.
- 5** Start ventilation in FCV<sup>®</sup> mode. A triangular pressure curve appears on the screen (Fig. 3).
- 6** If needed adapt ventilation settings:
  - FiO<sub>2</sub> as preferred
  - EEP as preferred
  - Peak to adjust Tidal Volume
  - Inspiratory Flow to adjust Minute Volume.



## »» HANDLING OBSTRUCTIONS

- 1** Stop ventilation.
- 2** Fiercely flush the pressure lumen and/or ventilation lumen with 2-5 mL saline followed by ~15 mL air.
- 3** In case secretions are still present in ventilation lumen, remove secretions using a suction catheter.  
**Note that the airway needs to be open.**
- 4** Purge lumen again with 2 mL saline followed by air.
- 5 In case of Tritube:** slightly turn Tritube to avoid any tracheal wall contact and inflate cuff.
- 6** Re-start ventilation.





## SEDATION AND RELAXATION

Because of the small lumen (high resistance) of the breathing circuit, coughing may result in tube dislocation and **spontaneous breathing is not possible**.

In case of light anesthesia (indicated by e.g. irregular pressure curves, increased/decreased compliance, coughing, BIS>60, TOF>90%):

### **Tritube**

- Deflate cuff of Tritube to reduce trachea stimuli.
- Deepen anesthesia.
- Inflate cuff when anesthesia is deepened.

**Note that the airway is open (risk on aspiration).**

### **Conventional tubes**

- Disconnect CTA.
- Use alternative means of oxygenation if preferred.
- Deepen anesthesia.
- Reconnect CTA when anesthesia is deepened.



## » WEANING THE PATIENT

- 1 Set FiO<sub>2</sub> as preferred.

### **Tritube**

Wake patient using one of the two ventilation options:

- 2 With inflated cuff (e.g. in case of aspiration risk) in FCV® mode.
- 3 Gently wake patient (no shaking).  
Deflate cuff and extubate when patient awakes.

OR

- 2 With deflated cuff in Jet mode (risk on aspiration).
- 3 Open airway required.
- 4 Adapt settings if required (e.g. lower driving pressure with higher frequency may reduce tracheal stimuli).

### **Conventional tubes**

Wake the patient:

- 2 Disconnect CTA from tube allow waking up using preferred method of oxygenation.

Note that spontaneous breathing is not possible when the CTA is connected to the conventional adult endotracheal tube.

» ADRESSES

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