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
- Evone Airway Adapter
- Humid-Vent Filter Pedi straight (HME Filter)
- Evone Breathing Tubing OR Conventional Tube Adapter (CTA)
- Tritube OR a conventional adult endotracheal tube (single lumen or double-lumen; at least 5 mm ID)
- 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
Fig. 1  Assembly of the Evone Breathing System and Tritube

Numbers refer to parts on page 2.
Fig 2. Assembly of the Evone Breathing System and conventional adult endotracheal tube

Numbers refer to parts on page 2.
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:
- $\text{FiO}_2$ 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® mode when anesthesia is deepened. A triangular pressure curve appears on the screen (Fig 3).

4. If needed adapt ventilation settings:
   - $\text{FiO}_2$ as preferred
   - EEP as preferred
   - Peak to adjust Tidal Volume
   - Inspiratory Flow to adjust Minute Volume.

Fig 3. FCV mode active
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® mode. A triangular pressure curve appears on the screen (Fig. 3).
6 If needed adapt ventilation settings:
   - $\text{FiO}_2$ 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.
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.
1 Set FiO₂ 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.
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