Oxygen

- If your child requires oxygen this is entrained through the back of the machine. The LTV team will show you how to attach this.

Cleaning and Maintenance

Dry Circuits

- Circuits (including bacterial filters) and catheter mounts should be inspected regularly and replaced weekly.
- Heat moisture exchanges (HME's) should be changed daily—these are used on **dry circuits only**.

Wet (Humidified) circuits

- Speak to LTV team for specific cleaning and maintenance details as circuits can vary.

Air Filters / Servicing

- The air filter at the back of the machine should be checked regularly and replaced 3 monthly. Do not run the machine without the filter in place.
- The ventilator should be serviced yearly. Contact the LTV team if you notice it is due a service.

If you have any problems with your device or any questions please contact the Children's Long Term Ventilation team on;
0115 924 9924 ext.: 82207.
Out of hours please contact the Critical Care unit on;
0115 9249924 ext 62207

Feedback

We appreciate and encourage feedback. If you need advice or are concerned about any aspect of care or treatment please speak to a member of staff or contact the Patient Advice and Liaison Service (PALS):

Freephone: 0800 183 0204
From a mobile or abroad: 0115 924 9924 ext 65412 or 62301
E-mail: pals@nuh.nhs.uk
Letter: NUH NHS Trust, c/o PALS, Freepost NEA 14614,
Nottingham NG7 1BR
www.nuh.nhs.uk

WellChild the national charity for sick children

Nottingham University Hospitals NHS Trust

Children's Long Term Ventilation Team
Nottinghamshire, Lincolnshire, Derbyshire

Trilogy 100 Ventilator
Invasive Ventilation

This document can be provided in different languages and formats. For more information please contact:

Children's Long Term Ventilation Team
E11 Curie Court, QMC Campus
Derby Road, Nottingham
NG7 2UH
Tel: 0115 924 9924 ext.: 82207
LTVteam@nuh.nhs.uk

Nottingham Children's Hospital

We Listen We Care

What is the TRILOGY 100 ventilator?

The Trilogy ventilator is a simple device that acts like a pair of bellows to help support breathing. The ventilator delivers pressure through the circuit and tracheostomy which helps the lungs to expand. This helps to keep the oxygen and carbon dioxide levels in the blood at the right values.

Who is the TRILOGY 100 Ventilator for?

The most common reasons that children require ventilation are:

Airway difficulty – there is a partial blockage to airflow into the lungs. The ventilator holds the airway open by pushing open the walls of the airway. This makes it a lot easier for the child to take a breath.

Muscle weakness – the muscles of breathing are poorly effective. As well as holding the airways open the machine also supports the breath in to make it more effective.

Lung Disease— the lungs themselves are damaged and need some extra support from a ventilator to make breathing more effective.

Central Control— the brain sends signals to the lungs to control breathing. If this is not working correctly the lungs may need a ventilator to help control breathing.

Invasive ventilation means the child is ventilated via a tracheostomy. Some children will need to use the ventilator at all times. Others will use it just at night or for parts of the day and at night.

Settings on the ventilator

The settings on the ventilator will have been set by the Long Term Ventilation (LTV) team. These settings will have been locked in so you will not be able to change these settings. You can change things such as the brightness of the screen, loudness of the alarms— the LTV team will show you how to do this if required.

The most common settings you may come across;

CPAP (Continuous Positive Airway Pressure); This setting delivers a continuous pressure that helps maintain the airways open during breathing. This is used mainly with children who struggle to keep their airway open.

Spontaneous Timed (S/T); Both the breath in and out are supported. This is either triggered by the child's own inspiratory effort (breath in) or they can have a set breathing rate (or both). Used with children with a respiratory muscle weakness to help make each breath more effective but also with children who have a poor drive to breath / pauses in their breathing.

Pressure Control (PC); As for pressure support but inspiratory time (Ti) is also set. Used for those children with a poor drive to breathe or that need more support than pressure support will give.

With both **Pressure Support** and **Pressure Control** two levels of pressure are set. This is sometimes called **Bi-Level.**

Circuits

The Trilogy device has a single limb circuit. Air flows continuously from the machine, through a bacterial filter, along the tubing (red arrow) to the child where it is attached to the tracheostomy. Circuits can be dry, using room air only, or wet, where the air is humidified and warmed. Children who are ventilated via a tracheostomy usually use a humidified circuit at night and have a dry circuit during the day.

Expiratory Ports

On breathing in, air flows from the circuit into the lungs. On breathing out the gases disappear from the child and the circuit into the room through an expiratory port (holes) in the circuit.

It is important that the holes of the expiratory port of the circuit are never blocked as this is where the child breathes out. There are different types of expiratory ports available. Your LTV team will show you which type your child has.

Alarms

If an alarm sounds first check on your child is all right., tracheostomy tube is not dislodged.

There are various alarms that may be set dependent on the condition of your child. Your LTV team will explain any alarms set for your child.

The most common alarms are;

Low pressure / Circuit disconnection alarm; usually caused by disconnection / misconnection of some part of the breathing circuit – reconnect tubing / tracheostomy. Check for holes in tubing. Leak of air around the tracheostomy can also cause this. Let the LTV team know if there are ongoing problems with leaks around the tracheostomy as this will make the ventilator less effective.

High Vte alarm; will be triggered if the ventilator detects too big a breath is being given. Please contact the LTV team if this alarm is persistently triggering.

High / Low Respiratory rate alarm; will be triggered if your child is either breathing too fast or not enough. This may occur at times when your child is unwell. Please contact the LTV team if this alarm is persistently triggering.

Other Issues

- **Power failure** —the ventilator has internal and external batteries that each last for 4-6 hours and are charged whenever the machine is plugged in.