



## Clinical bulletin

### Use of Stellar 100/150 with Endotracheal Tubes

<b>Clinical Bulletin Number:</b>	CB#009
<b>Month/Year:</b>	March 2020
<b>Distribution:</b>	Global
<b>Date of implementation:</b>	Immediately
<b>Release version:</b>	1.0



This clinical bulletin provides clinicians treating patients in the COVID-19 public health emergency, with factors to consider when using the Stellar 100/150 with an endotracheal tube, as opposed to a tracheotomy tube. This is not the intended use for the Stellar 100/150, but emerging clinical practice in treating patients with COVID-19 shows that it is a likely need, in the context of addressing a shortage of dedicated ICU ventilators during the COVID-19 pandemic.

Patient and device instructions in the Stellar Clinical Guide should continue to be followed in addition to the information provided within this bulletin.

### Use of Stellar 100/150 with endotracheal tube

ResMed has reviewed the risks associated with the use of a Stellar 100/150 invasively with an endotracheal tube (oral or nasal intubation) in the context of addressing the shortage of ventilators during the COVID-19 global pandemic crisis. If the Stellar 100/150 is used with an endotracheal tube, it should be subject to the addition of the following warnings:

- an appropriate external monitoring system with all of the functionality and alarms that are required for monitoring critically ill and mechanically ventilated patients, shall be used for patients ventilated with a Stellar ventilator, via an endotracheal tube.
- use of a Stellar ventilator, with an endotracheal tube for invasive ventilation, shall be limited to hospital use only.

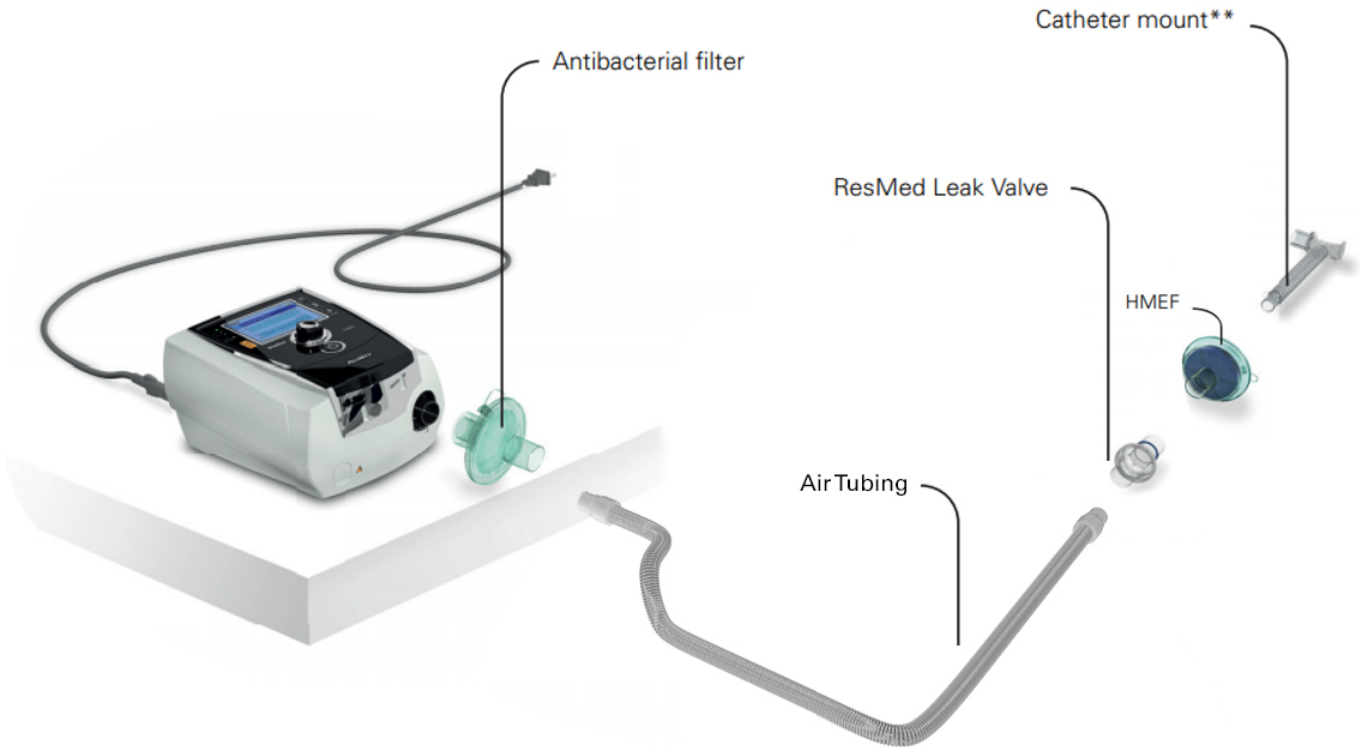
### Circuit setup

The circuit setup for the Stellar 100/150 with a tracheotomy tube or endotracheal tube is exactly the same up to the point where the patient interface is connected (see Figure 1 for a circuit setup schematic).

To minimise aerosolisation of patient exhalation, connect the Heat Moisture Exchanger Filter (HMEF) to the patient side of the ResMed Leak Valve. The HMEF can be connected to standardized tracheostomy or endotracheal tube interfaces including connector pieces like catheter mounts.

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**Figure 1: Stellar 100/150 circuit setup.**

\*\*The catheter mount is not part of the ResMed component.

### Adding supplemental oxygen

The procedure for adding supplemental oxygen is unchanged whether a tracheostomy or endotracheal tube is used and up to 30 L/min of supplemental oxygen can be added.

ResMed strongly recommends adding oxygen into Stellar's oxygen inlet at the rear of the device. Entraining oxygen elsewhere, ie into the breathing system via a side port or at the mask, has potential to impair triggering and accuracy of therapy/monitoring and alarms (eg, High Leak alarm, Non-vented mask alarm). If used in this way, therapy and alarm operation must be verified each time oxygen flow is adjusted. See the Stellar Clinical guide for full details.

### Ventilation modes

Given that many patients ventilated with an endotracheal tube do not maintain spontaneous breathing, Assist/Controlled modes are recommended, i.e. PAC and T modes.



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### Therapy performance and monitoring

Pressure control accuracy, pressure range, inspiratory trigger performance, use of oxygen, and ventilator performance while using oxygen are unchanged whether a tracheostomy or endotracheal tube is used.

Accuracy of pressure and flow/volume monitoring are also not affected by the choice of tracheostomy versus endotracheal tube.

The Stellar 100/150 can operate up to 40 cmH<sub>2</sub>O in both setups (tracheostomy or endotracheal tube).

### 'Learn circuit' configuration

The purpose of the 'Learn Circuit' procedure is to calculate the correct impedance of **the circuit from the ventilator outlet up to, and including, the leak valve only**. This procedure is unchanged whether a tracheostomy or endotracheal tube is used. See the Stellar Clinical guide for full details.

### Functional test

A functional test that includes the use of alarms should be performed prior to initial use or in between patients. See the Stellar Clinical guide for full details.

### Multipatient use

See the Stellar Clinical guide for Multipatient use details.

For further information, please contact your nearest ResMed office. See [ResMed.com](https://www.resmed.com) for details.

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