

# How Do I Set Up The Astral Breathing Circuits?

Ventilator or breathing circuits are the tubing that connects the ventilator to your child. There are many different types and accessories. Your child may use more than one kind of circuit at different times. Your health team will advise you on which circuits to use and how to put them together. They are explained in the next few pages to remind you when you are at home and need to do them.

## Some basics

### Types:

There are lots of different types of circuits with different accessories. Your health team will tell you which breathing circuits are right for your child.

### Learn circuit:

The Resmed Stellar and Astral require you to perform a 'learn circuit' procedure. This is where the machine checks the circuit and makes sure it is working correctly. Your health team will show you how to do this.

### Humidification:

Humidification is important for all children with tracheostomies and most children using masks. This may include different kinds of powered heated humidifiers and/or portable heat moisture exchanger filters (HME).



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## Bacterial filters:

A bacterial filter is often recommended at the point the breathing circuit connects to the ventilator. It will reduce the already low risk of spreading infection from person to person if the ventilator has been used on another child before yours.



## Connectors/Interface:

For children with tracheostomies, a short flexible corrugated tube/pipe connects between the larger circuit and their tracheostomy.



## Leak/anti-asphyxia valve:


Single-limb (tube) circuits must have intentional leak to let out the exhaled air. This is provided by either small holes in a mask or a leak valve in the circuit (close to child). For safety, it's important to regularly check that the leak valve is there and working correctly.

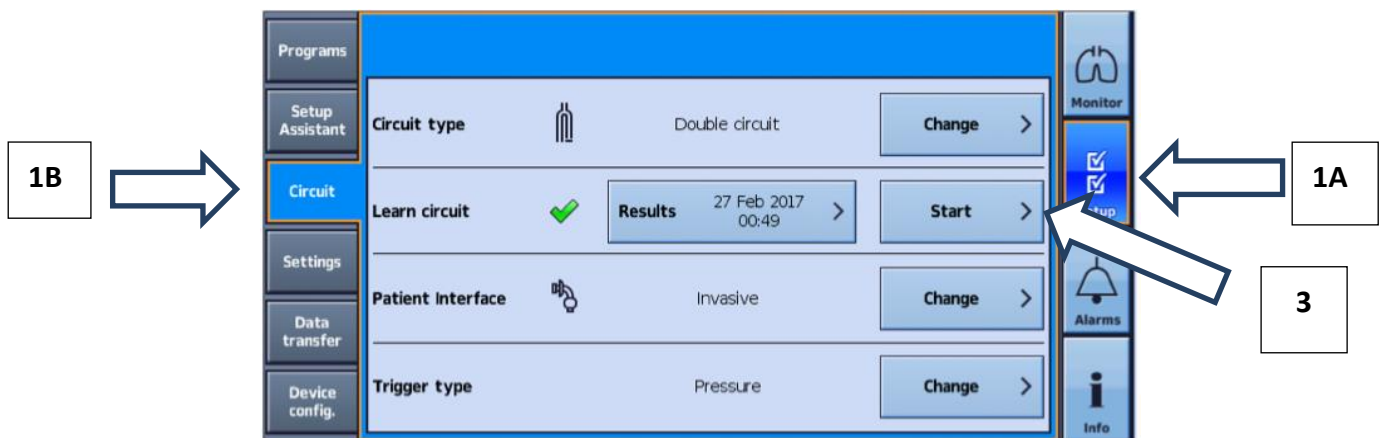


## Circuit ties and arms:

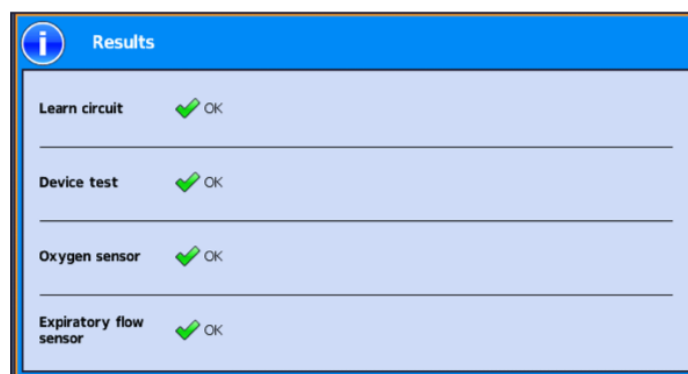
While it is fairly light, the circuit's weight may still pull on the tracheostomy or mask. Sometimes the circuit may keep popping off. There are lots of different ways to solve these issues, such as with circuit ties and clips, and circuit support arms. Your health team can advise you.

# How Do I Do A 'Learn Circuit' On The Astral?

1. (A) Select the 'Setup'  from the Main Menu (right) and (1B) 'Circuit' from the Submenu (left).









2. The current programme's circuit type, last learn circuit, and patient interface will be shown.
3. To begin a new learn circuit, select 'Start' on right (3).
4. Follow the on-screen prompts. If oxygen is connected, make sure it is turned off throughout.
  - a. With no circuit/filters connected.
  - b. With the circuit connected up until the Leak Valve/HME/Connector (red line on circuit pictures) and end of circuit open. With an intentional leak circuit, the learn circuit is done without the leak valve. This is different to the Stellar where the leak valve is included.
  - c. With the circuit connected up until the Leak Valve/ HME/ Connector (red line on circuit pictures – look two pages ahead) and end of the circuit closed with a cap or gloved hand.
5. After the learn circuit is complete you should get a message with all green ticks, as below. If the learn circuit fails, check all connections and repeat, paying careful attention to the steps a-b-c above. If you keep getting error codes, note down the exact details (or take a screenshot with a smartphone) and contact your technical/clinical support.



## How Do I Check The Circuit Adaptor On The Astral 150?

The Astral 150 can use several different circuit types by changing the adaptor. Check the Astral has the correct circuit adaptor for the circuit to be used:

Circuit	Symbol	Adaptor
Single Limb Intentional Leak		
Double Limb		
Single Limb with exhalation valve		

### To fit, change or check the adaptor:

1. Turn over the device and place it on a soft surface (to protect the LCD screen).
2. Press and hold the eject button. Pull the cover out towards you.
3. Lift the adaptor out of the socket. If you are checking the adaptor, look for excessive moisture or contaminants. Replace if appropriate.
4. Replace with the appropriate adaptor, making sure it sits firmly in the socket.
5. Place the cover over the enclosure, making sure the runners on the device and the cover are aligned. Slide the cover back into place until the latch clicks.

Circuit (SLIL-NH-M) . . . . .



Child’s Name . . . . . When . . . . .

Astral 100/150	Single Limb Intentional Leak Circuit		No Humidifier	Mask
	Antibacterial filter: Ecofilter Resmed 24969	Circuit: Resmed 21948 or equivalent Adaptor: Resmed 27942	n/a	Vented (various)

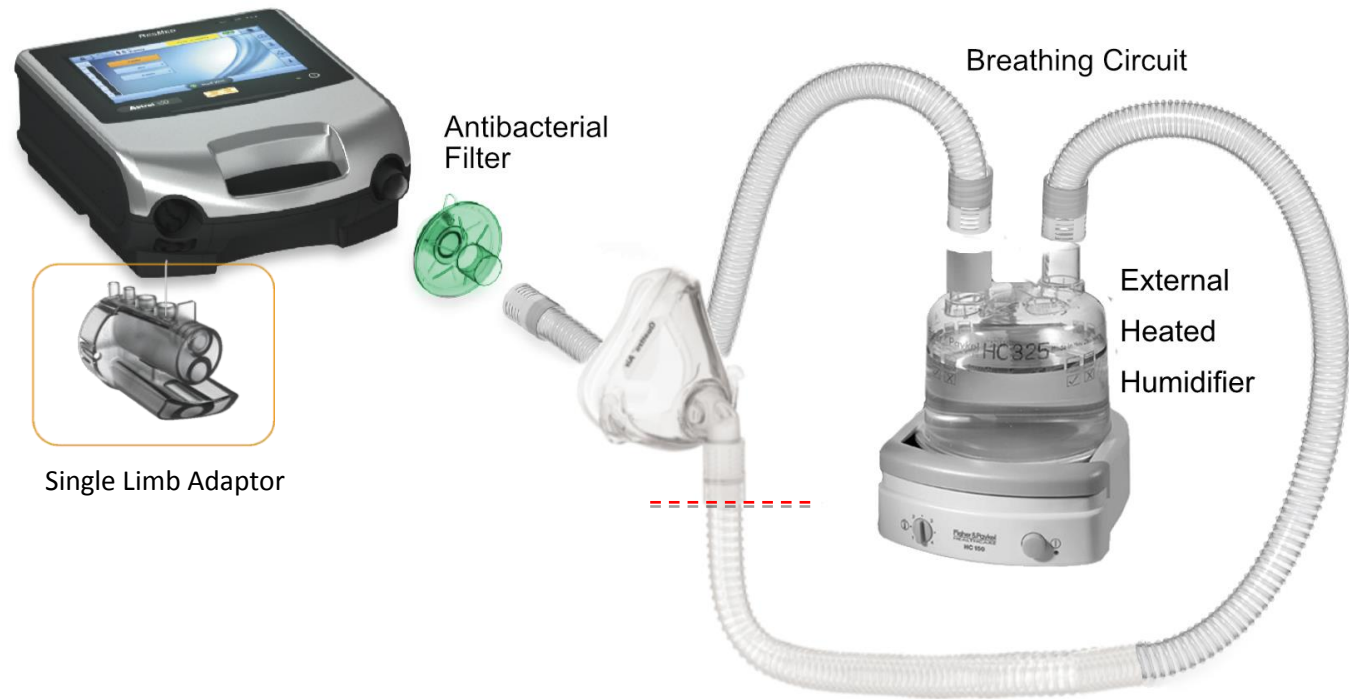


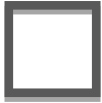


Circuit (SLIL-HH-M) . . . . .

Child’s Name . . . . . When . . . . .

Astral 100/150	Single Limb Intentional Leak Circuit		External Humidifier	Mask
	Antibacterial filter: Ecofilter Resmed 24969	Circuit: F&P HC008 + HC221 or equivalent Adaptor: Resmed 27942	F&P HC150	Vented (various)





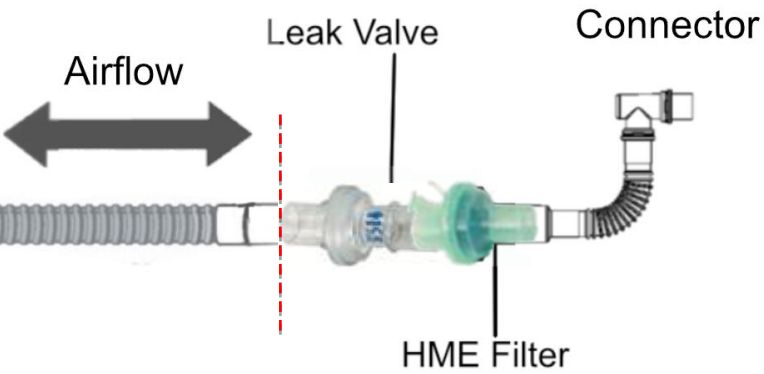
Circuit (SLIL-HME-T) . . . . .

Child's Name . . . . . When . . . . .

Astral 100/150	Single Limb Intentional Leak Circuit		HME humidifier	With tracheostomy
	Leak valve: Resmed 24988	Circuit: Resmed 21948 or equivalent Adaptor: Resmed 27942	HMEF: Resmed Eco 24966	Connector: (may vary) Intersurgical 3535000 (smaller) Intersurgical 3531000 (larger)



The leak valve is very important. Check it is present, that the arrows point towards your child and that air is flowing freely. Adjust it so the leak ports face away from the child's neck/chest and are not obstructed by blankets or clothing.

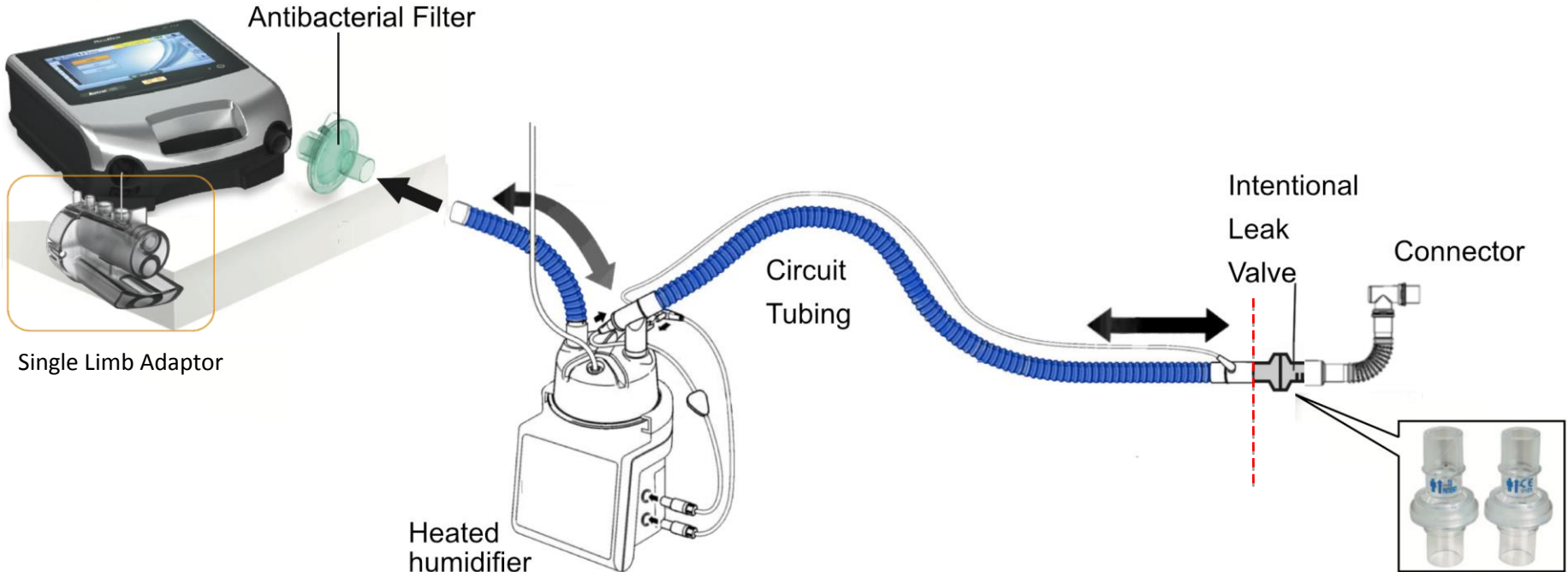




Circuit (SLIL-HH-T) . . . . .

Child's Name . . . . . When . . . . .

Astral 100/150	Single Limb Intentional Leak Circuit		External humidifier	Tracheostomy
	Antibacterial filter: Resmed Ecofilter 24969	Circuit: F&P RT202 (all)	F&P: MR850, MR950	Connector: (may vary)
	Leak valve: Resmed 24988	Adaptor: Resmed 27942		Intersurgical 3535000 (smaller) Intersurgical 3531000 (larger)



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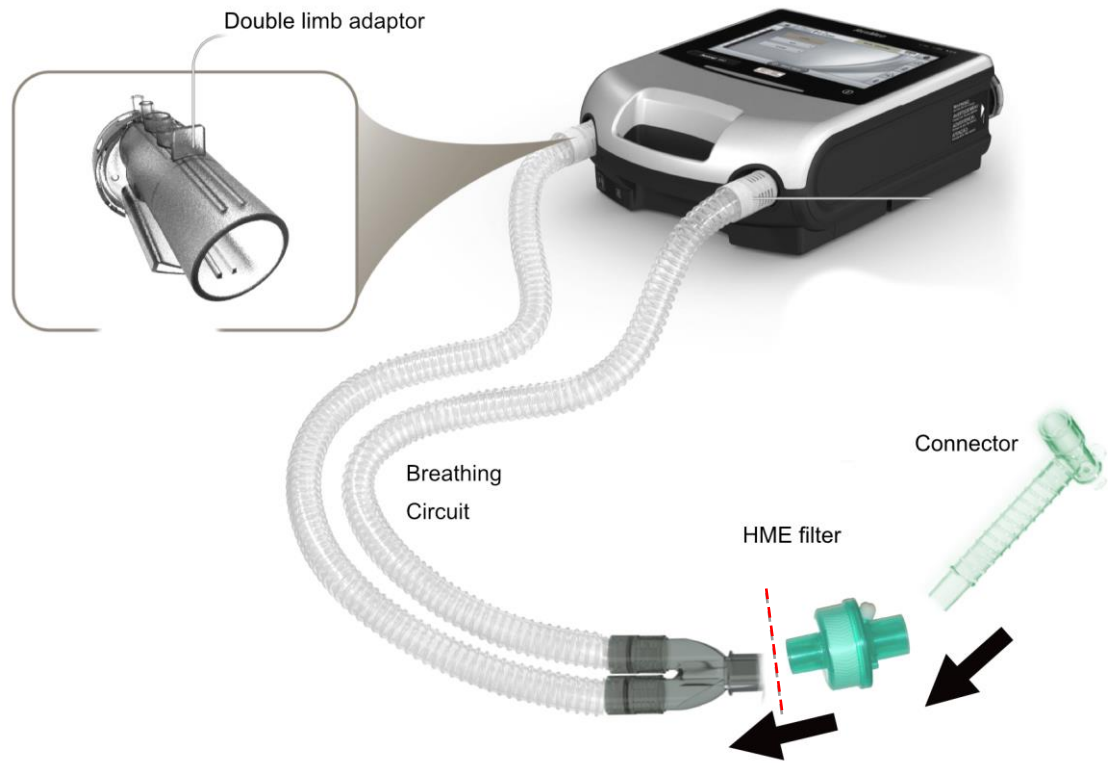




Circuit (DL-HME-T) . . . . .

Child's Name . . . . . When . . . . .

Astral 150	Double Limb Circuit		HME humidifier	Tracheostomy
	Adaptor: Resmed 27940	Circuit: Resmed 21303 or F&P RT109 or equivalent	HMEF: Resmed Eco 24966	Connector: (may vary) Intersurgical 3535000 (smaller) Intersurgical 3531000 (larger)

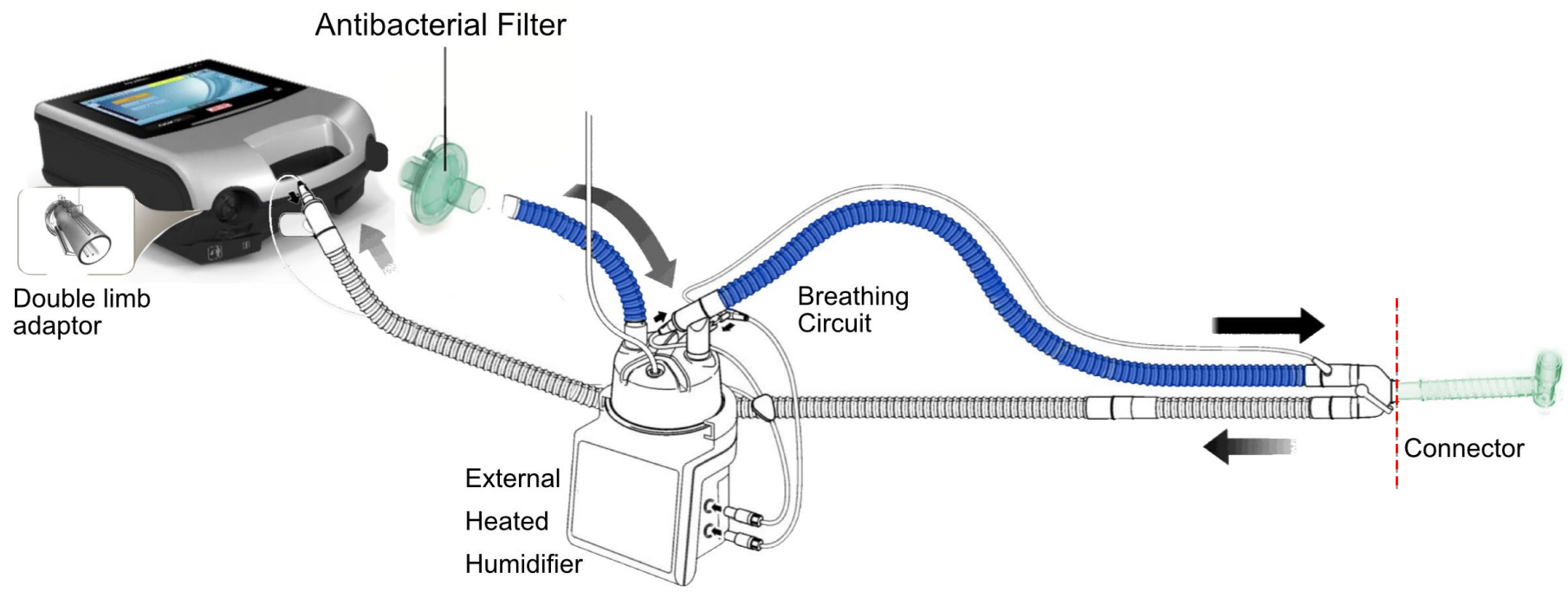




Circuit (DL-HH-T) . . . . .

Child's Name . . . . . When . . . . .

Astral 150	Double Limb Circuit		External Humidifier	Tracheostomy
	Antibacterial filter: Resmed Ecofilter 24969 Adaptor: Resmed 27940	Circuit: F&P RT380 (>23kg) F&P RT265 (<23kg)	F&P MR850, MR950	Connector: Intersurgical 3535000 (smaller) Intersurgical 3531000 (larger)



**Note:** Put some blue tape above the inspiratory port on the ventilator to remind you that the blue circuit goes here.



Circuit (SLEV-HME-T) . . . . .

Child's Name . . . . . When . . . . .

Astral 150	Single Limb with expiratory valve		HME humidifier	With tracheostomy
	Circuit: Resmed 21321	Adaptor: Resmed 27941	HMEF: Resmed Eco 24966	Connector: Intersurgical 3535000 (smaller) Intersurgical 3531000 (larger)

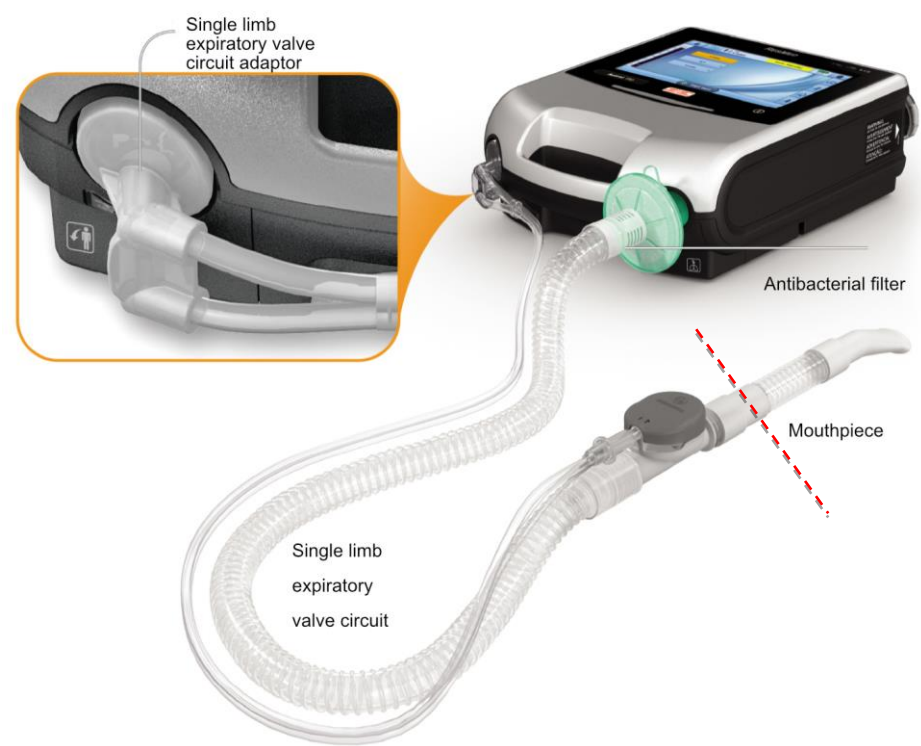


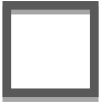


Circuit (SLEV-NH-MP) . . . . .

Child's Name . . . . . When . . . . .

Astral 150	Single Limb with expiratory valve		No humidifier	Mouthpiece
	Antibacterial filter: Resmed Ecofilter 24969	Circuit: Resmed 21321 Adaptor: 27941	n/a	Resmed:





Circuit (SLIL-NH-MP) . . . . .

Child's Name . . . . . When . . . . .

Astral 150	Single Limb with intentional leak (or double limb)		No humidifier	Mouthpiece
	Antibacterial filter: Resmed Ecofilter 24969	Circuit: Resmed 21948 or equivalent Adaptor: Resmed 27942	n/a	Resmed:

Single Limb Intentional Leak Adaptor

