Neonatal ventilation

Our heart beats for premature infants and newborns

Having their newborn baby start life in the NICU is something no parent-to-be could ever imagine. The chances of survival often rests on the availability of adequate ventilaton support. However this can place significant strain not only on the tiny patient, but also on you as the caregiver.

For more than 30 years we have been developing intelligent ventilation solutions to provide safer care for all ICU patients, even the tiniest of them. Our aim is to support you as much as we can in offering those newborns the best possible care with our whole ventilator portfolio.

At Hamilton Medical, we live for ventilation technology.

HAMILTON MEDICAL

Our passion: Intelligent Ventilation solutions

Ever since we were founded in 1983, our focus has been on supporting the frontline heroes of critical care - with ventilation technologies that are safe, effective, and lung-protective. And we want to lessen the load for those who make extraordinary efforts every day, helping seriously ill patients fight their way back to health.

That is why we are committed to helping medical teams deliver the best respiratory care - to anyone, anywhere. That commitment is present in everything we do.

Bob Hamilton
CEO

Modes and features for neonatal ventilation*

Modes	HAMILTON-C6	HAMILTON-C3	HAMILTON-C1	HAMILTON-T1	HAMILTON-MR1
Pressure-controlled modes (including biphasic modes)	✓	✓	✓	✓	✓
Volume-controlled modes (adaptive)	✓	✓	✓	✓	✓
Pressure-support modes	✓	✓	✓	✓	✓
Volume-support modes	x	x	✓	✓	✓
High-performance NIV	✓	✓	✓	✓	✓
nCPAP modes ([1]with pressure support)	✓[1]	✓[1]	✓	✓	✓
High flow oxygen therapy	✓	✓	✓	✓	✓
Feature/option					
CPR ventilation	x	x	✓	✓	✓
Proximal flow sensor measurement	✓	✓	✓	✓	✓
Configurable loops and trends	✓	✓	✓	✓	✓
Hamilton Connect Modul	x	x	✓	✓	x
Pulse oximetry	✓	✓	✓	✓	x
Volumetric capnography	✓	✓	✓	✓	x
Sidestream capnography	✓	✓	✓	✓	x
Aerogen§ nebulizer ([2] integrated)	✓	✓	✓	✓	x
Remote access to HAMILTON-H900	✓	x	✓	✓	x
IntelliCuff ([3] integrated)	✓[3]	✓	✓	✓	x
IntelliTrig	✓	✓	✓	✓	✓
High-performance turbine	✓	✓	✓	✓	✓
Battery backup	✓	✓	✓	✓	✓
MR-Compatibility	x	x	x	x	✓
Transport (interhospital)	x	x	x	✓	x

Available: ✓ Not available: x

* not available in all markets

Neonatal ventilation with Hamilton Medical

All our ventilators – from high-end to transport devices – offer the option of noninvasive and invasive ventilation, with conventional and advanced ventilation modes for even the smallest patients.

- ✓ Adjustment of trigger sensitivity for inspiration and expiration
- ✓ IntelliTrig: Automatic adjustment of trigger sensitivity to airway leaks in all modes
- ✓ Integrated high flow oxygen therapy**
- ✓ Tidal volumes as low as 2 ml
- ✓ Patient synchronization with precise measurements from the proximal flow sensor
- ✓ Cross-platform user interface
- ✓ Top-mounted 360°-visible alarm lamp
- ✓ Configurable loops and trends
- ✓ SpO2 and CO2 measurement**

** optional and not available in all markets

Proximal flow sensor for precise measurements

The proximal flow sensor and expiratory valve enable the precise measurement of pressure and flow directly at the airway opening, ensuring the required sensitivity and a quick response time.

IntelliTrig leak compensation

The IntelliTrig function automatically adjusts the inspiratory and expiratory trigger sensitivity to airway leaks and ensures adaptive synchronization with the patient's breathing pattern. This is achieved both with invasively and noninvasively ventilated patients.

nCPAP modes

The nCPAP modes are designed in such a way that you only need to set the desired CPAP/PEEP. The flow is subsequently adjusted automatically based on the patient need (demand flow) and variation in leakage, which prevents unintended peak pressures or loss of CPAP/PEEP, and guarantees highly efficient leak compensation.

HAMILTON-H900 – active humidification

As the respiratory system of neonatal patients is very sensitive, active humidification that ensures physiological conditioning of the airways is essential for protective ventilation. Together with the HAMILTON-H900 humidifier, our ventilators provide heated and humidified medical gases at controlled temperatures.

The HAMILTON-H900 humidifier offers predefined settings and allows for manual adjustment of temperature and humidity settings. You can adapt the humidification settings to suit the special needs of your small patients and the environmental conditions.

The preassembled breathing circuit set can be used up to 28 days per patient and includes a temperature probe, water refill tube, Y-piece, and water chamber. The detachable, nonheated extension allows the use in incubators.

HAMILTON-C1 and HAMILTON-T1/MR1

Our compact devices combine the performance of a NICU ventilator with high mobility: They operate independently of a gas supply, can run on batteries, and may be used in special areas like the MR room (HAMILTON-MR1) or for interhospital transport (HAMILTON-T1).

With the full range of modes, these compact ventilators are very flexible. In addition, their turbine promotes optimal leak compensation, which is especially beneficial for noninvasive ventilation.[5,6]

HAMILTON-C3 and HAMILTON-C6

The HAMILTON-C3 and HAMILTON-C6 offer a high level of flexibility for the ventilation of neonatal patients. As well as the full range of relevant modes and therapy options, they are also equipped with a high-performance turbine. This offers very quick, effective leak compensation and thus even better noninvasive ventilation[5,6], which is often applied in neonates.

5 Demirakça S., Intensivmedizin up2date 2017; 13: 443–459; 6 Carteaux G, Lyazidi A, Cordoba-Izquierdo A et al., Chest 2012; 142: 367–376

More information:
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