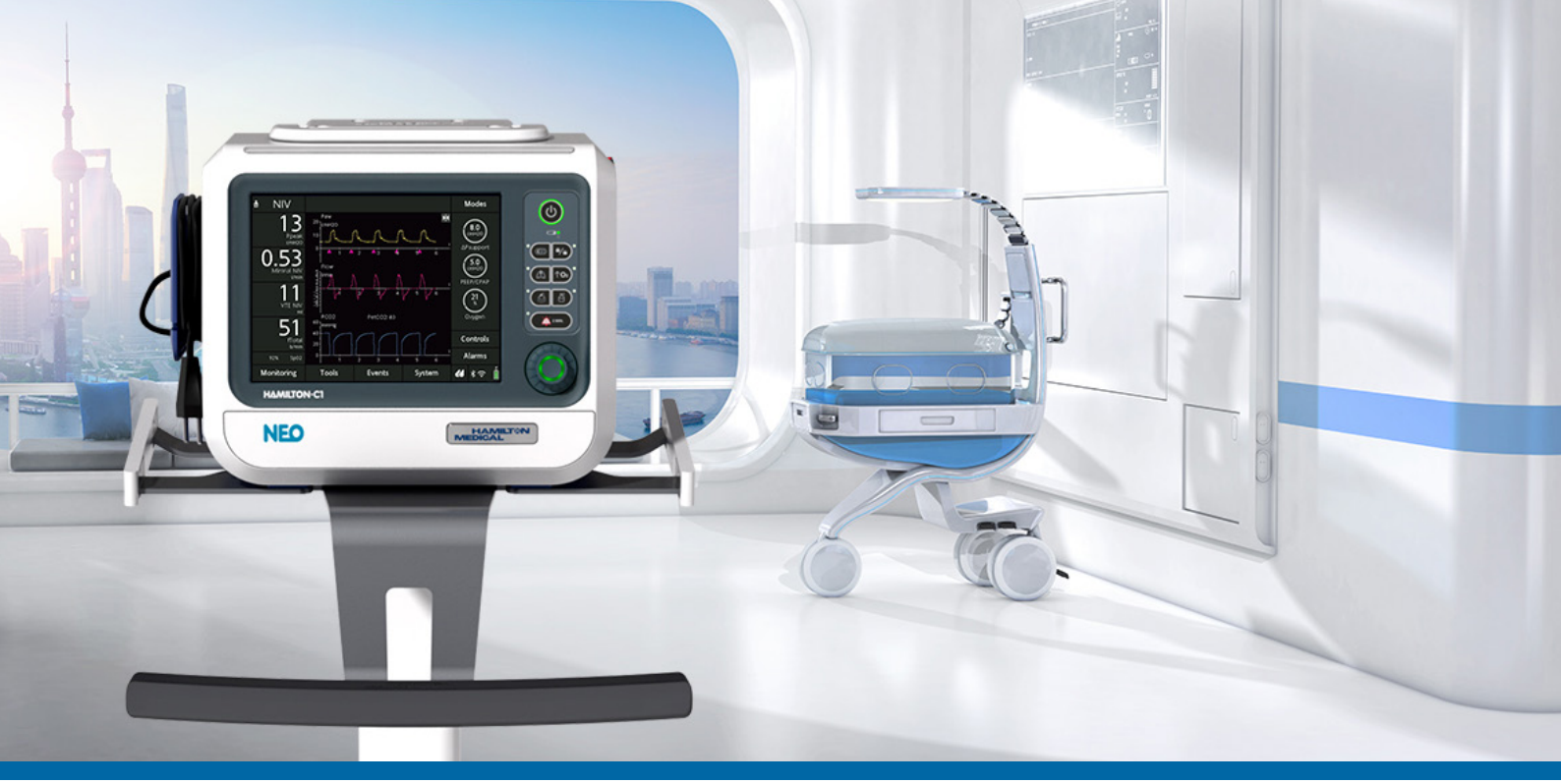


HAMILTON-C1 neo

Having their newborn baby start life in the NICU is not something any parent-to-be could ever imagine. The chances of survival often rest with the provision of adequate ventilatory support, however this in itself 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

Intelligent Ventilation since 1983

We live for ventilation technology

We live for ventilation technology that helps caregivers improve the lives of their critically ill patients. We believe that innovation is essential to meet the demands of critical care. To us, innovation is about realizing visionary new ideas and continuously improving existing products, always keeping patient safety and ease of use in focus.

We learn from our customers and from multi-disciplinary experts. And we invest in long-term research and development. We develop Intelligent Ventilation solutions: devices and consumables for the ventilation of all critically ill patients – from neonates to adults.

Jens Hallek
CEO
Hamilton Medical AG

Bob Hamilton
CEO
Hamilton Medical, Inc.

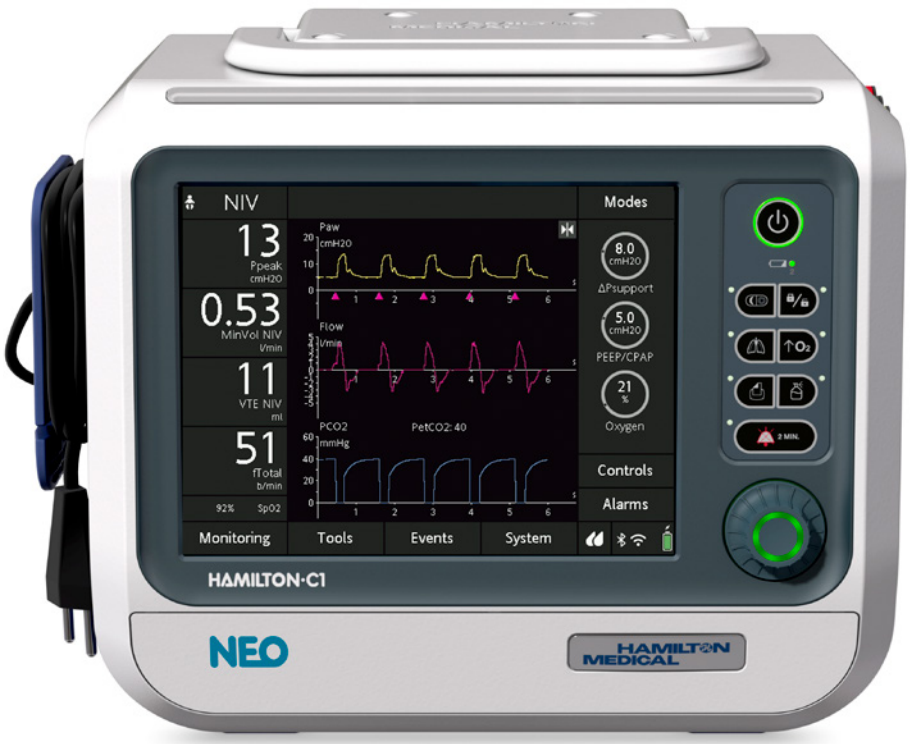
Comprehensive care for newborns in just one device

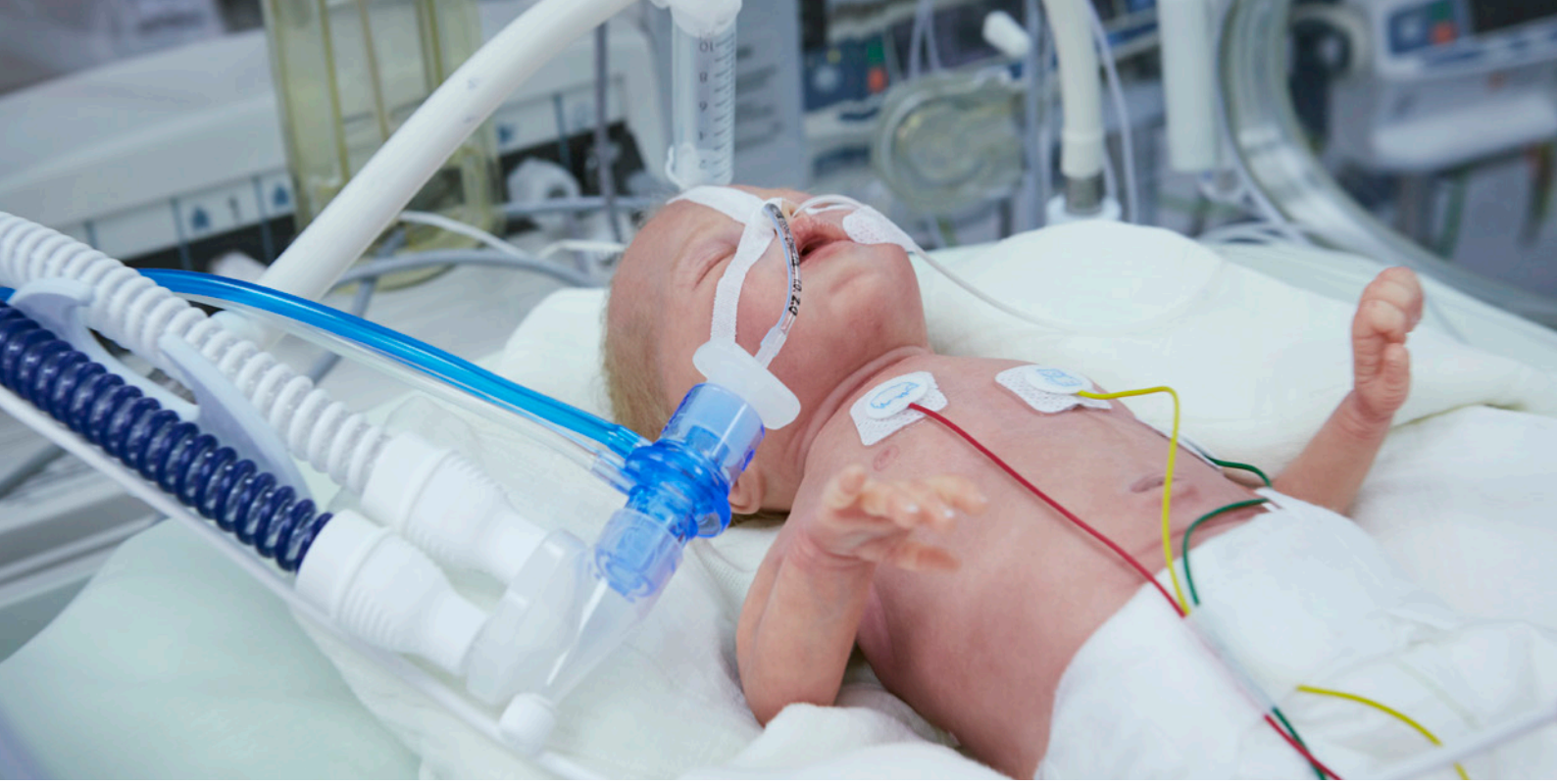
The HAMILTON-C1 neo* ventilator combines invasive and noninvasive modes** with the options of nCPAP and high flow oxygen therapy in a single, compact device. Both the small footprint and the integrated high-performance turbine, which enables the HAMILTON-C1 neo to be operated independently of a compressed air supply, ensure mobility. This makes it an ideal companion for your smallest patients in the intensive care unit, emergency ward, recovery or delivery room, as well as during intrahospital transport.

- ✓ State-of-the-art invasive ventilation modes
- ✓ Synchronized noninvasive ventilation**
- ✓ Demand-flow nCPAP modes**
- ✓ High flow oxygen therapy**
- ✓ Leak compensation in every mode

- ✓ Remote access to HAMILTON-H900 controls and status
- ✓ Wireless connectivity with Hamilton Connect Module
- ✓ SpO2 measurement with OSI (oxygen saturation index), monitoring of SpO2/FiO2 ratio
- ✓ CO2 measurement – volumetric capnography with low dead space
- ✓ Independent of compressed air supply
- ✓ Up to 4 hours of battery operating time and less than 5 kg in weight

* The HAMILTON-C1 neo is a HAMILTON-C1 ventilator on which the neo option is enabled. The HAMILTON-C1 with the neo option is dedicated exclusively to neonatal ventilation; only modes and features applicable to neonatal ventilation are supported.
** Optional – not available in all markets





Lung protective ventilaton

The HAMILTON-C1 neo provides tidal volumes as low as 2 ml for effective, safe, and lung-protective ventilation even for the smallest patients.[1] Both the proximal flow sensor, designed to minimize dead space, and the neonatal expiratory valve were developed specifically for neonates. The precise measurement of pressure, volume, and flow directly at the airway opening ensures the required sensitivity and a quick response time. Your most fragile patients should benefit from better synchronization and less work of breathing as a result.

Adaptive synchronization, even with uncuffed tubes

Leaks are one of the issues encountered in the ventilation of neonates as a result of using uncuffed tubes. Using the leakage compensation function, the ventilator identifies the leak by measuring the flow at the airway opening and uses this data to automatically adjust the gas delivery, while still remaining responsive to the set inspiratory and expiratory trigger sensitivity (ETS). This ensures adaptive synchronization with the neonate's breathing pattern in both invasive and noninvasive modes.

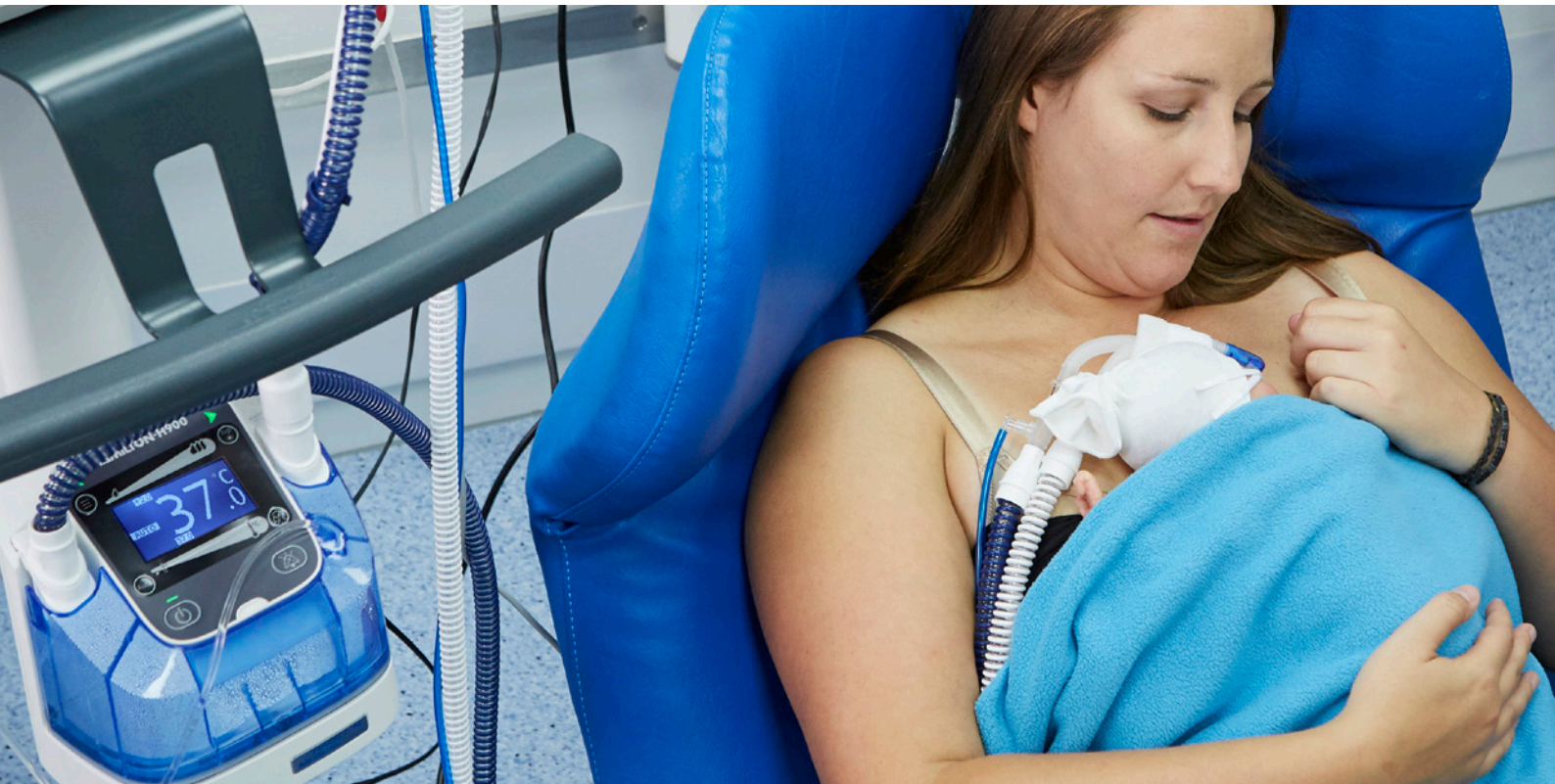
Automatic adjustment, efficient leak compensation

The nCPAP modes of the HAMILTON-C1 neo are engineered in such a way that you only need to set the desired CPAP/PEEP. The flow is subsequently adjusted automatically based on the patient condition and variation in leakage, which prevents unintended peak pressures and guarantees highly efficient leak compensation.

The proximal pressure measurement is designed to minimize delay between a change in condition and the corresponding flow adjustment. Further benefits of this nCPAP technology may be quieter operation and thus less disturbance for neonatal patients, as well as a lower oxygen consumption.

Free breathing in each ventilation phase

In addition to the standard nCPAP mode, the HAMILTON-C1 neo also features the biphasic nCPAP-PC (pressure controlled) mode. This mode allows you to set two pressure levels as well as the rate and inspiratory time. The flow is also adjusted as needed in this mode. The pneumatic concept of the HAMILTON-C1 neo enables the neonate to breathe freely at any time on both pressure levels.

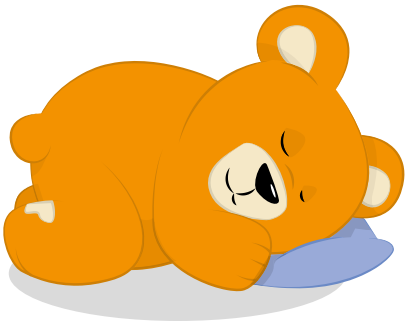


Improved ventilation and oxygenation

The HAMILTON-C1 neo offers the option of integrated high flow oxygen therapy. With this enhancement, the device gives you a variety of therapy options. In just a few steps, you can swap the interface and use the same device and breathing circuit to accommodate the changing needs of your neonatal patients.

High flow oxygen therapy has similar rates of efficacy to other forms of non-invasive respiratory support (nCPAP, NIPPV) for preventing treatment failure, reintubation, chronic lung disease, and death. When compared to nCPAP, high flow oxygen therapy after extubation has been shown to reduce nasal trauma and lower the incidence of pneumothorax.[2]

Improved respiratory mechanics and lower metabolic cost



The active heated humidification during high flow oxygen therapy may benefit pulmonary compliance and conductance[3], as well as lowering the metabolic cost of gas conditioning[4]. Heated humidification also improves mucociliary function, facilitates secretion clearance, and reduces atelectasis formation, with a better ventilation-perfusion ratio and improved oxygenation as a result.[5, 6]

Together with the HAMILTON-H900 humidifier, the HAMILTON-C1 neo provides heated and humidified oxygen/air mixtures with flow rates from 2-15 l/min. This combination is designed to deliver completely saturated gas at precisely controlled temperatures for neonatal patients.

2 Wilkinson D, Cochrane Database Syst Rev. 2016 Feb 22;2:CD006405 | 3 Greenspan JS, J Pediatr 1991;118(3):443e5 | 4 Dysart K, Respir Med. 2009;103(10):1400-5 | 5 Kilgour E, Intensive Care Med. 2004;30(7):1491–4 | 6 Chidekel A, Pulm Med. 2012;2012:380686

Accessories and consumables

Active humidification

Hamilton Medical has developed a breathing circuit set specially designed for even your smallest patients. The pre-mounted set can be used up to 28 days per patient and includes wall-heated circuits, temperature probe, water refill tube, Y-piece, and water chamber. The detachable, nonheated extension allows the use in incubators.

nCPAP

The nCPAP generator is designed to offer maximum comfort for neonates receiving nCPAP or noninvasive ventilation therapy. The system features a flexible connection and adapter with an adjustable angle for an optimal fit. Soft materials and low noise levels promote the gentlest possible care for neonatal patients.

Nasal cannulas for high flow oxygen therapy

The Nuflow cannulas are designed for sensitive skin, with a focus on high patient comfort. For an individual fit, the cannulas are available in four different sizes.

Prongs and masks are available in different sizes to provide an optimal fit.
www.hamilton-medical.com/e-catalog

More information:
www.hamilton-medical.com/hamilton-c1-neo

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