



# HAMILTON-T1

Intelligent transport ventilation

**HAMILTON**  
**MEDICAL**



## We live for ventilation technology

We live for ventilation technology. 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 maintaining the focus on safe, individualized ventilation, as well as ease of use.

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.

A handwritten signature in blue ink that reads "Jens Hallek".

Jens Hallek  
CEO  
Hamilton Medical AG

A handwritten signature in blue ink that reads "Bob Hamilton".

Bob Hamilton  
CEO  
Hamilton Medical, Inc.

## Meet the HAMILTON-T1

The HAMILTON-T1 is the first transport ventilator that combines the functionality of a fully featured ICU ventilator with the compactness and ruggedness required for transport. This combination enables you to provide optimal ventilation therapy to all patient groups during transport.

- ✓ Approvals and certificates for use in ambulances, helicopters and airplanes
- ✓ Adult, pediatric, and neonatal ventilation
- ✓ Independence from compressed air
- ✓ Up to 9 hours of battery operating time
- ✓ Noninvasive ventilation and integrated high flow oxygen therapy\*
- ✓ Advanced ventilation modes, including ASV® and INTELLiVENT®-ASV
- ✓ CPR ventilation
- ✓ Digital solutions for respiratory care: Hamilton Connect Module and App

\*Always use active humidification during high flow oxygen therapy.



## Designed for mobility and convenient transport

### Approved for all types of transport

The HAMILTON-T1 meets the transport standards EN 794-3 and ISO 10651-3 for emergency and transport ventilators, EN 1789 for ambulances, EN 13718-1 and RTCA/DO-160G for aircraft, as well as IEC 60601-1-12 for basic safety and essential performance. It reliably accompanies your patients to any destination either within or outside of the hospital, on the ground, at sea, and in the air.

### Independent from compressed air

The integrated high-performance turbine enables the HAMILTON-T1 to be completely independent from compressed air, reducing weight and saving space. Even patients ventilated noninvasively can be transported successfully across greater distances.

### Up to 9 hours of battery operating time

A battery operating time of up to 9 hours is provided by one integrated and one hot-swappable battery. The battery operating time can be extended as required with additional hot-swappable batteries.

### Flexible mounting and system integration options

The wide range of system integration and mounting options allows you to tailor the HAMILTON-T1 to your needs and infrastructure. Various solutions are available for all the main types of helicopters and ambulances, as well as hospital beds, stretchers, surfaces, shelves, poles, rails, and ceilings.

### The most popular ventilator for intensive care transport helicopters

According to the HOVER survey (Handover of ventilated Helicopter Emergency Services [HEMS] patients in the emergency room) conducted online amongst air rescue organizations in Germany, Austria, Switzerland, Italy, and Luxemburg, 71% of those organizations chose the HAMILTON-T1 as their intensive care transport ventilator<sup>1</sup>.

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<sup>1</sup> Hilbert-Carius P. Notfall Rettungsmed 23, 106–112 (2020). <https://doi.org/10.1007/s10049-019-0579-z>



## Ease of use

In close cooperation with users and ventilation experts, our engineers have designed the user interface to be particularly intuitive. Switching between the HAMILTON-T1 and all other Hamilton Medical ventilators is easy, because they are all operated according to the same principles.

The Ventilation Cockpit on the HAMILTON-T1 consolidates the monitoring data and displays it as advanced graphics. These provide a quick overview of the patient's current ventilation status and provide a reliable basis for therapy decisions.

With the Hamilton Connect App on your smartphone, you can take advantage of the Live View to keep an eye on all essential parameters and ventilation data, and review them even when you are not in front of the ventilator screen.

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About 50% of our patients go onto ASV mode. It is specifically advantageous in trauma. You have so many other fires to put out, that it is nice to just set up the ventilator and allow ASV to manage the patient from a lung standpoint.

Kyle Driesse, Critical Care Flight Paramedic  
Life Link III  
Minneapolis, USA



## The Ventilation Cockpit

### 1 Main monitoring parameters

All of the main monitoring parameters at a glance. The large characters allow you to see them even from a distance.

### 2 Dynamic Lung

One quick look shows you tidal volume, lung compliance, patient triggering, and resistance in real-time. The lungs expand and contract in synchrony with the actual breaths.

### 3 Customizable user interface

You can configure the display layout with different waveforms, loops, trends, or intelligent panel graphics to suit your institution's needs and protocols. Nurses and clinicians can have their own preferred layout.

### 4 Direct access to main controls

Access and adjust the most important controls for the current mode directly on the main display.



## For transporting all patients, even the smallest

### State-of-the-art ventilation therapy for newborns

- ✓ Noninvasive ventilation modes and therapies developed especially for neonatal patients (synchronized noninvasive ventilation, demand-flow nCPAP modes, Volume Support mode, and high flow oxygen therapy)
- ✓ Invasive ventilation modes developed for neonatal patients, including volume-targeted ventilation
- ✓ Leak compensation in every mode

### Continuity of care for newborns from the delivery room to the NICU, as well as for transport

- ✓ In combination with a transport incubator, it represents an advanced solution for intra- and interhospital transport
- ✓ Monitoring parameters specific to neonates (SpO2 measurement with Oxygen Saturation Index, SpO2/FiO2-ratio, and CO2 measurement)

### Dedicated interfaces and consumables for neonates

- ✓ Interfaces for noninvasive ventilation specifically for neonates
- ✓ Robust proximal sensor for accurate flow measurement with low dead space
- ✓ Single-use consumables that may help in controlling infections

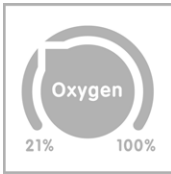
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The HAMILTON-T1 transport ventilator is very small and compact, but still has all the features of a conventional ICU ventilator.

Thomas Burren, Chief Nurse Rega Jet  
Rega - Swiss Air Rescue  
Zurich, Switzerland







### Oxygen adjustable from 21% to 100%

allows you to replicate the bedside settings one-to-one during transport. The adjustment to 21% even makes it possible to ventilate your patient with ambient air only.



### High-performance noninvasive ventilation (NIV)

is enabled by the ventilator's integrated high-performance turbine and peak flow rate of up to 260 l/min. Optimal flow delivery is ensured even in the event of large leaks.



### INTELLiVENT-ASV, your bedside assistant

is an advanced ventilation mode based on ASV. The clinician defines the clinical goal for PetCO<sub>2</sub> and SpO<sub>2</sub>. INTELLiVENT-ASV then adjusts CO<sub>2</sub> elimination and oxygenation, and keeps the patient within the predefined ranges. Quick Wean supports the clinician in weaning patients from mechanical ventilation.



### CPR ventilation

adapts ventilation settings to situations where CPR is being performed. It supports the CPR workflow with quick access to preconfigurable settings, adequate alarm and trigger adjustment, CPR-timer display, and display of the relevant main monitoring parameters and curves.



### Hamilton Connect Module

provides wireless and wired connectivity protected by state-of-the-art security. It also enables connection with the Hamilton Connect App.



### Integrated high flow oxygen therapy

can be applied using the same device and breathing circuit, simply by changing the patient interface. With the optional integrated high flow oxygen therapy, the ventilator offers you a range of ventilation and therapy options in one device.

## Features and options



Adult, pediatric, and neonatal ventilation



Configurable loops and trends



High-performance turbine



Dynamic Lung



Hot-swappable battery backup



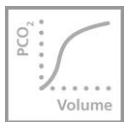
Compatible with conventional speaking valves



Serial interface for connection to PDMS or patient monitors



Hamilton Connect App



Mainstream (volumetric) and sidestream capnography



Night vision goggles (NVG)



Pulse oximetry (SpO<sub>2</sub> and pulse measurement)



Approval for all types of transport



nCPAP modes



Quick startup

## From the ventilation specialist

### E-learning

Hamilton Medical College provides free and open e-learning on mechanical ventilation and ventilators.

Join at: [www.hamilton-medical.com/elearning](http://www.hamilton-medical.com/elearning).

### Universal ventilator consumables

Our accessories and consumables are specially developed for the highest possible patient safety and ease of use. Choose between reusable and disposable parts according to your institutional policies.

### Peripheral devices

Our ventilation portfolio includes an active humidifier, the HAMILTON-H900, as well as the automatic cuff pressure controller, IntelliCuff. Both devices may be used with all kinds of mechanical ventilators.





More information:  
[www.hamilton-t1.com](http://www.hamilton-t1.com)



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The Hamilton Connect App is not intended to replace the real-time display of data on the ventilator. DO NOT USE the app to supplement or replace any part of the hospital's device monitoring. Specifications are subject to change without notice. Some features are options. Not all features/products are available in all markets. INTELLIVENT-ASV is not available in the US. For all proprietary trademarks (®) and third-party trademarks (®) used by Hamilton Medical AG see [www.hamilton-medical.com/trademarks](http://www.hamilton-medical.com/trademarks). © 2021 Hamilton Medical AG. All rights reserved.

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