



# HAMILTON-MR1

Intelligent Ventilation from the ICU to the MRI suite



**HAMILTON**  
**MEDICAL**  
Intelligent Ventilation since 1983



## 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-MR1

This fully featured ICU ventilator is the first ventilator able to be used at a magnetic field strength of up to 50 mT. The HAMILTON-MR1 combines reliability and high performance with patient-adaptive modes that support advanced lung-protective strategies, making it the ideal choice for any critical care department that needs to transport ventilated patients to the MRI department.

- ✓ MR-Conditional (up to 50 mT) with the use of 1.5 Tesla and 3.0 Tesla static magnetic field scanners
- ✓ Integrated TeslaSpy magnetic field navigator
- ✓ Adult, pediatric, and neonatal ventilation
- ✓ Up to 9 hours of battery operating time
- ✓ Independence from gas cylinders or compressors
- ✓ Noninvasive ventilation and integrated high flow oxygen therapy
- ✓ Advanced ventilation modes including ASV® - Adaptive Support Ventilation





## Slender, flexible, convenient

### For intrahospital transport

The small and compact design of the HAMILTON-MR1 makes it easy to handle and ideal for clinical transport. The trolley's auto-lock brake locks the wheels as soon as you release the handle to prevent it from rolling accidentally towards the MRI scanner. Hooks on each side of the trolley enable convenient storage of the breathing circuit and oxygen hose. The optional kit with quick-lock function and specially designed handle allows you to remove the device at the press of a button and attach it directly to the bed.





## Ease of use

In close cooperation with users and ventilation experts, our engineers have designed a user interface that is particularly intuitive. Switching between the HAMILTON-MR1 and all other Hamilton Medical ventilators is easy because they are all operated according to the same principles.

The Ventilation Cockpit on the HAMILTON-MR1 consolidates the monitoring data and displays it as intuitive graphics. These provide a quick overview of the patient's current ventilation status and provide a reliable basis for therapy decisions.

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You can take your patients from the ICU down to the MRI suite and not have to change a thing about the ventilation, even when they are on an advanced mode. That is a true advantage because you are not risking lung derecruitment and a patient setback, which would keep him in the hospital longer and make it more uncomfortable for him.

Thomas Berlin, Director of Respiratory Care  
Florida Hospital Orlando, Orlando (FL), 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 Vent Status

The Vent Status panel displays six parameters related to the patient's dependence on the ventilator. When all values are in the weaning zone, the panel is framed in green, indicating that spontaneous breathing trials or extubation can be considered.

## 4 Direct access to main controls

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



## Adapted to the MR environment

The HAMILTON-MR1 guarantees uncompromised continuous ventilation care from the ICU to the MRI scanner and back.

### MR-Conditional

- ✓ MR-Conditional up to 50 mT
- ✓ Ventilator can remain close to the patient even during MRI scans

### Integrated TeslaSpy for more safety

- ✓ Onboard magnetic field navigator
- ✓ Continuously measures the background magnetic levels

### Gas source switch

- ✓ Automatically switches between the gas cylinder and central gas supply
- ✓ Reacts immediately ensuring continuous ventilation





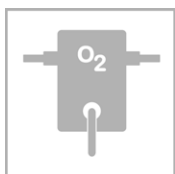
#### MR-Conditional technology

enables the HAMILTON-MR1 mechanical ventilator to accompany your patient from the ICU to the scanner, for the duration of the test, then back to the ICU again, increasing the safety of care. The HAMILTON-MR1 is specially designed and shielded to ventilate your patient in the vicinity of an MRI scanner, and can be used at a magnetic field strength of 50 mT without creating any MR image artifacts.



#### The integrated TeslaSpy gaussmeter for more safety

continuously monitors the magnetic field and gives you an audible and visual signal if you are getting too close. Positioning a medical device too close to the MRI scanner can have fatal consequences. For maximum safety, TeslaSpy continues monitoring even when the ventilator is switched off.



#### Gas source switch

enables the ventilator to switch automatically between oxygen supplies. As soon as the central supply is connected, oxygen is drawn from this source instead of the cylinder. The immediate changeover ensures continuous ventilation. The gas source switch only changes from the central supply to the oxygen cylinder when the pressure at the central supply drops below a preset minimum pressure level.

## Features and options



State-of-the-art ventilation modes



Adaptive Support Ventilation (ASV)  
for lung-protective ventilation



Integrated high flow oxygen therapy



High-performance turbine



Integrated pneumatic and optional  
Aerogen<sup>S</sup> nebulizer



Compatible with conventional  
speaking valves



High-performance noninvasive  
ventilation (NIV)



IntelliTrig leak compensation for NIV  
and invasive ventilation



Adult, pediatric, and neonatal  
ventilation

## From the ventilation specialist

### E-learning

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

Join at: [college.hamilton-medical.com](https://college.hamilton-medical.com).

### 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 and free simulation software:  
[www.hamilton-mr1.com](http://www.hamilton-mr1.com)



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