



Flow-i Anesthesia Machine

Advanced anesthesia for all situations



The power to care

If there's one thing you can be certain of in the OR, it's that a patient's situation can change in a matter of seconds. We live to assure that you can be prepared.

The Flow-i[®] is a product of the designers behind the well-known Servo[™] ventilator platform. The result is a next-generation anesthesia machine with better patient safety in an easy-to-use workstation.

The Flow-i lets you treat even your most challenging patients. From neonates to the morbidly obese – patients benefit from lung-protective and cost-efficient anesthetic care when they need it the most.

Experience the Flow.



Precise ventilation when you need it most

Ventilation performance is not only about modes. Most importantly, it's about ensuring the power and precision needed to ventilate any patient.

Next-generation technology at the core

The Flow-i was created by the engineers behind the world-class Servo ventilator platform. It is designed to deliver set tidal volumes regardless of compliance and resistance to handle the most complex cases – from neonates to morbidly obese.

The innovative technology inside Flow-i ensures excellent ventilation performance and outstanding agent efficiency – we call it the Flow core technology.

Servo gas modules

The Servo gas modules enable ICU-quality ventilation. They deliver up to 200 l/min inspiratory flow and are capable of adjusting pressure and flow constantly within every breath, according to each patient's needs.

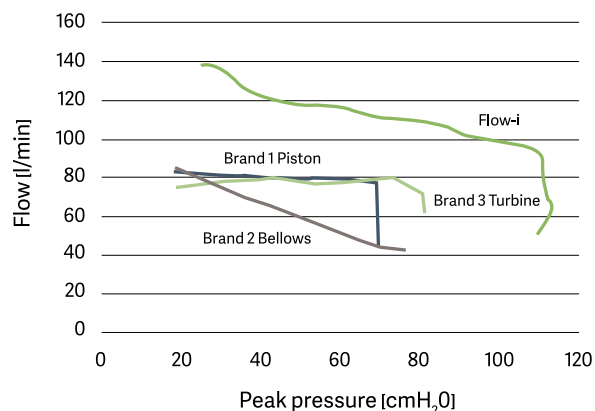


Figure 1: The Flow Anesthesia Machine can deliver the set tidal volumes even when there is high abdominal and thoracic pressure, thus avoiding hypoventilation.¹



Volume Reflector rebreathing system

Our patented Volume Reflector is a smart rebreathing system. In combination with Servo gas modules, it enables accurate tidal volumes down to 5 ml, providing better ventilation performance compared to bellows, turbine and piston-operated systems¹, see figure 1.

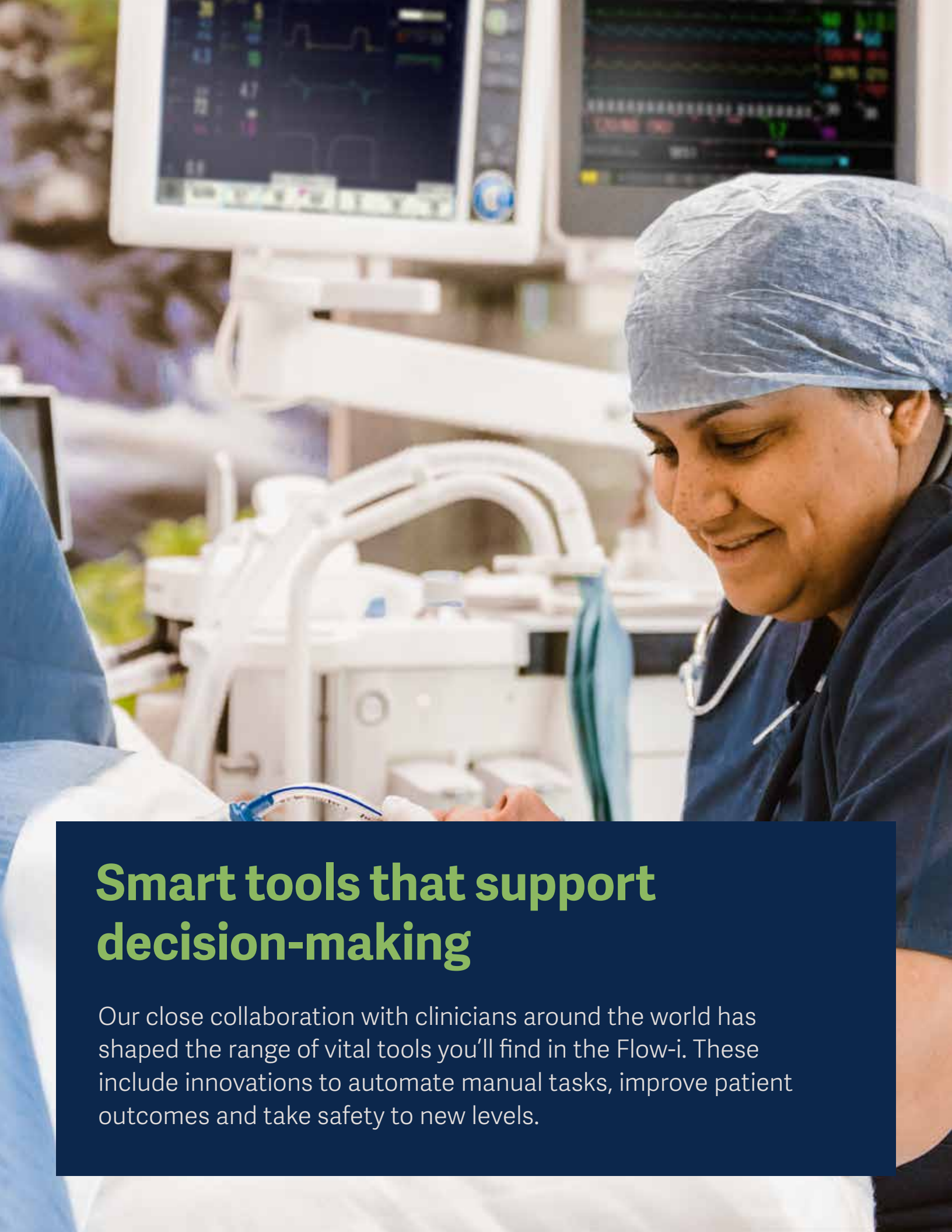
The rigid Volume Reflector is never empty, ensuring uninterrupted ventilation, and compensates effectively for any leakage.² And because it's oxygen driven, the risk of hypoxic mixtures becomes almost impossible. The Volume Reflector has a small system volume for fast wash-in and wash-out and a rebreathing fraction of 95%.

Electronic injection vaporizers

Electronic injection technology enables precise delivery of agents, primarily during the inspiratory phase, with minimal waste. The lightweight and maintenance-free vaporizers can be refilled and exchanged while the machine is running, and do not require annual calibration.

A tiny miracle

Read the story of how a premature infant weighing only 393 g (13.9 oz) was successfully anesthetized and ventilated using a Flow-i during major abdominal surgery. Today, she is a healthy little girl.³



Smart tools that support decision-making

Our close collaboration with clinicians around the world has shaped the range of vital tools you'll find in the Flow-i. These include innovations to automate manual tasks, improve patient outcomes and take safety to new levels.

Low-flow anesthesia the safest⁴ way

– improved care that saves time,
costs and the environment

Active inspired O₂ Guard protects your patients

Low-flow anesthesia greatly reduces the use of the expensive and hazardous anesthetic agents⁵ and is now a standard practice in many ORs. Increased rebreathing also improves patient comfort. However, low flows can increase the risk of hypoxia.

Our O₂Guard is designed to prevent hypoxia.⁶ This unique safety mechanism overrules the clinician's settings if necessary and increases the flow of fresh gas and oxygen should the O₂ level drop below 21%. Conventional guards will only trigger an alarm. The O₂Guard is a standard feature on all Flow models.



Watch video explaining O₂ Guard

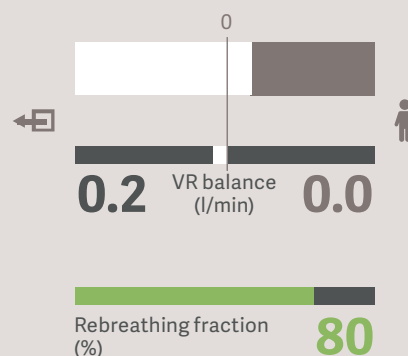
How does the O₂Guard work, and why is there a risk for hypoxia during low flow?
www.getinge.com/o2guard

»O₂Guard is the
only commercially
active inspired
hypoxic guard
available.«⁴

Dr. Jan Hendrickx, Aalst, Belgium

Visual guidance when lowering the flows

The VRI (Volume Reflector Indicator) is a useful visual guide that enables you to optimize the rebreathing fraction and thus save anesthetic agent. This tool makes it simple to set the optimal Fresh Gas Flow (FGF) and minute volume ratio. Agent consumption can be easily monitored via the interface.



Easy to capture screen shots and record events. Tiltable and rotatable screen for optimal positioning.



Designed to make every day flow

More than just a machine, your anesthesia system is the key to your workflow. Smart design features give you the best possible user experience.

Easy to learn. Simple to use.

A user-friendly interface helps to reduce training demands and minimize the risk of errors. The clear and colorful touch display gives you one point of control for all functions. Tools are right where you want them, so you can work in an ergonomic and comfortable position. There are configurable quick access buttons for key functions such as agent, oxygen and FGF adjustments.

Automated system check

The routine system check is made easier by an automated workflow that requires minimal manual interactions. The vaporizers are also included in the system check.

Optimizing uptime and efficiency

– ownership with less stress and easier flow

Minimizing your long-term costs

The purchase price is just a one part of the total cost of owning an anesthesia machine. So we have designed Flow-i to minimize cost of ownership. From an intuitive interface that optimizes workflows and minimizes staff training time, to innovations that reduce consumption of anesthetic agents.

Getinge Care: protecting your investment

Optimizing uptime is an excellent way to boost productivity and reduce costs. A Getinge Care service plan ensures your equipment always performs to its full potential, allowing you to focus on saving lives.

Smart fleet management reduces risks

We make it easy to manage a large fleet. The Getinge Care portal gives you a complete fleet status overview and can be accessed from wherever you are, even on a mobile device.

Extensive training programs

Keeping skills updated improves patient outcomes, reduces risks and boosts productivity. We tailor training to meet your needs including a hands-on training course. We constantly strive to bring new innovative training options including e-learning to support your goals.



Connected services save time – for what's really important

Remote access

To improve uptime, the service technician can remotely access detailed information from your Flow-i. This makes it possible to resolve most issues immediately, saving time and costs.

Flow-i at a glance

Advanced anesthesia
for all situations



reddot design award
honourable mention 2011

15" tiltable touch screen
Flexible and intuitive to use

Open architecture
Customize to match your needs

Rotatable arm
With integrated LED light

Electronic vaporizers in double slots
Fast and precise delivery of anesthetic agents. Lightweight and possible to fill during use. Holds 300 ml. No heating time for Desflurane.

Multipurpose rails
Extensive mounting options



Next-generation Flow core technology

Reduces the need for an ICU ventilator in the OR:

- Servo gas modules deliver up to 200 l/min inspiratory flow and adjusts pressure and flow continuously within every breath.
- Innovative Volume Reflector rebreather ensures accurate and precise gas delivery.
- Small system volume (2.9 l) allows fast wash-in and wash-out, saving time and agent.

Low-flow anesthesia

- Fresh Gas Flow (FGF) limit minimum: 0.3 l/min
- VRI (Volume Reflector Indicator) displays FGF and minute volume ratio to optimize rebreathing fraction

Active hypoxic guard

- O2Guard actively intervenes when there is risk of hypoxia, providing added safety at low FGF.

Battery backup and size

- 90 minutes for added safety in case of power failure.
- Footprint: 99 x 69 cm / 39 x 27 in

Easy cleaning and service

- Just 7 parts need to be dismantled for cleaning, saving costs and supporting infection control.
- Preventive maintenance is optimized to reduce complexity with few and easily accessible parts, only changed every two years.

Low cost of ownership

- Modern, easily upgradable platform.
- Maintenance free components, the oxygen and flow sensors are non-consumptive.
- Lower anesthetic agent consumption.
- Reduced training requirements.

Designed around your needs



Flow-i C20
2-3 drawers



Flow-i C30
1 drawer
Height adjustable



Flow-i C40
1-2 drawers
Ceiling mounted

References

1. Data from benchmarking test, data on file.
2. Lucangelo U, et al. Flow-i ventilator performance in the presence of a circle system leak. J Clin Monit Comput. 2017 Apr;31(2):273-280
3. Patient Case Report, contributed by Dr. Waltraud Bruchelt and Dr. Günter Baumann, Department for Anaesthesiology and Intensive Care Medicine, University Hospital Graz, Austria.
4. Hendrickx JF, De Wolf AM, De Hert S. O₂, anybody? Eur J Anaesth 2015, 32:371–373. Hypoxic guard systems – how safe are they? and interview with Dr Jan Hendrickx, Aalst Belgium, MX-6295, Rev03
5. Brattwall, M. et al. Brief review: Theory and practice of minimal fresh gas flow anesthesia. Can J Anaesth. 2012 Aug;59(8):785-97
6. De Cooman, S. et al. Hypoxic guard systems do not prevent rapid hypoxic inspired mixture formation. J Clin Monit Comput 2014, 10.1007/s10877-014-9626-y

The views, opinions and assertions stated by the physician are strictly those of the physician and their practice and do not necessarily reflect the views of Getinge.



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