



Dynamic Anesthesia Delivery

Every. Breath. Counts.



Complexity made easy. Advanced tools with an intuitive interface to facilitate true personalization.



Personalization breath by breath

Dynamic Anesthesia Delivery the Getinge way puts you in control. With our innovative technologies, the Flow Family anesthesia machines provide you with the tools to ensure the perfect flow and fine-tune personalized delivery even for challenging patients. The Flow Family machines are designed for ease of use and a streamlined workflow, with our innovative technology contributing to enhanced patient safety and a reduced carbon footprint. Every. Breath. Counts.



Safe and easy low flow

Automatic Gas Control (AGC) makes low-flow anesthesia delivery safe. With simple pre-settings, specifying the targeted inspired oxygen, end-tidal anesthetic agent levels and required speed, AGC solves the rest. Our innovation offers high precision combined with improved comfort, reduced anesthetic waste, and increased safety.^{1,2,3,4,5,6}

“Automatic Gas Control (AGC) is a sustainable and economic approach without compromising patient safety”^{1, 3, 4}



Informed anesthetic dosing

To facilitate decision-making when planning and dosing anesthesia agents, we created *MAC Brain*. Using mathematical models and data-driven algorithms, *MAC Brain* visualizes the difference in agent effect in the lungs and the brain - acting as a decision-support framework to help guide anesthetic dosing.⁷



Gentle steps against atelectasis

Lung recruitment maneuvers have become the tool of choice to counter atelectasis, to improve oxygenation and help prevent postoperative complications. What once was considered complex and time consuming is now seamlessly integrated into your workflow.⁹



Active hypoxia prevention

Our *O₂Guard* is the world's only system for active hypoxia prevention. Should the inspired oxygen level drop below 21%, the *O₂Guard* actively overrules the settings and increases the flow of oxygen. The risk of hypoxia is minimized.⁸



ICU-grade ventilation

Our innovative *Flow Core Technology* is designed to promote efficient agent usage, providing the power and precision to ventilate even challenging patients. This is due to the combination of our *Volume Reflector* with its re-breathing system and our proven *Servo gas modules*, adjusting pressure and flow constantly within every breath.^{10, 11}

Screen

Tilttable 15" screen with same intuitive and user-friendly interface for all Flow models.¹² Quick access presets for key functions such as agent, oxygen and FGF adjustments.

Innovative tools

Our proprietary technical solutions for true personalization and dynamic anesthesia delivery. *MAC Brain* and *O₂Guard* are standard features on all Flow Family machines. *AGC* and *Lung Recruitment Maneuver* are available as options.

Electronic vaporizers

Fast and precise delivery of anesthetic agents. Lightweight, easily refillable and exchangeable. Holds 300 ml. No heating time for Desflurane.

Customizable

Multipurpose rails for mounting auxiliary equipment. Drawers offer generous storage space and lockable compartment.

Ergonomic workspace

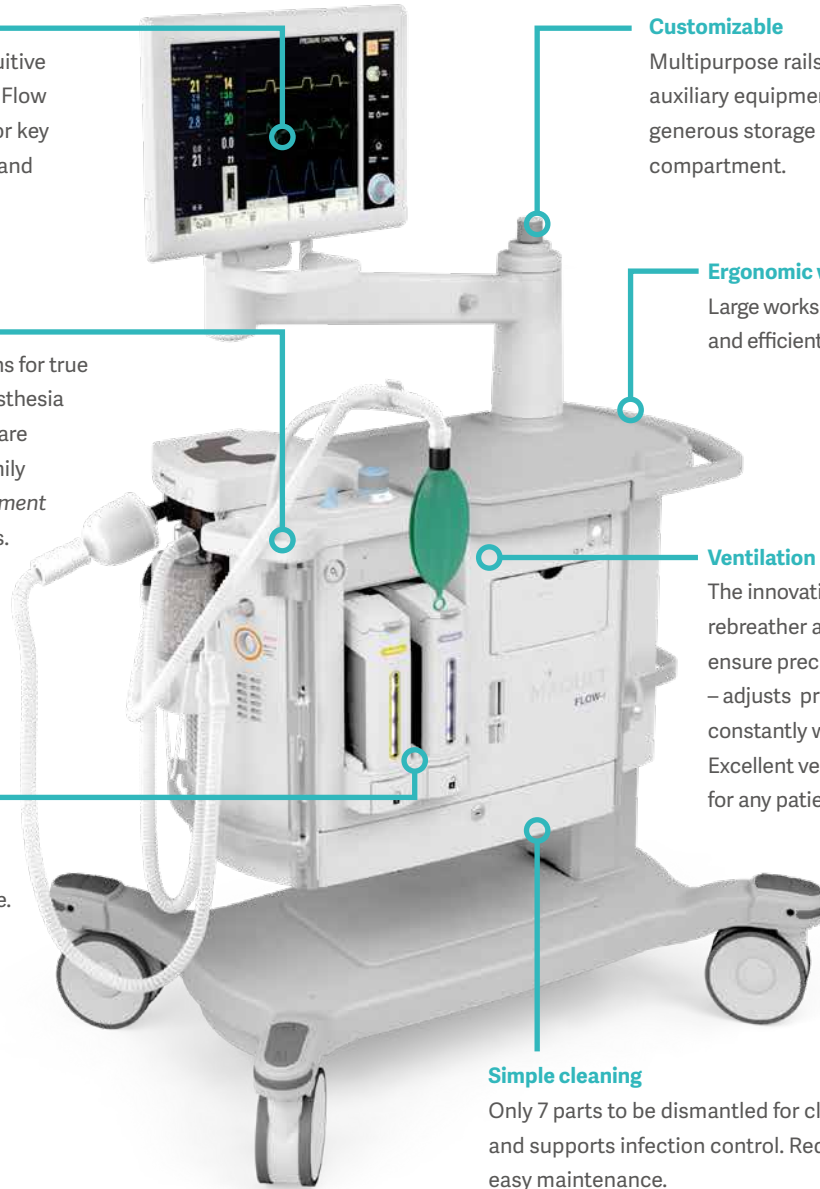
Large workspace for convenience and efficient workflow.

Ventilation performance

The innovative Volume Reflector rebreather and Servo gas modules ensure precise gas delivery – adjusts pressure and flow constantly within every breath. Excellent ventilation performance for any patient category.^{10, 11}

Simple cleaning

Only 7 parts to be dismantled for cleaning – saves cost and supports infection control. Reduced complexity for easy maintenance.



Staying in control

User-friendly workstations for Dynamic Anesthesia Delivery

The Flow family is our line-up of anesthesia machines. They cover the needs of operating and emergency rooms. Developed together with clinicians, they are designed to facilitate a great scope for personalization and patient safety. With an intuitive interface and emphasis on ease of use¹², they ensure a streamlined workflow and efficiency that offers enhanced cost control and resource management.

With smart design and a high level of automation, the Flow Family brings smooth workflows to a stressful OR situation, making the clinician confident, responsive and proactive. The ergonomics, connectivity advantages, and simplified routines and settings allow the clinician to focus full attention to the patient. This translates into higher efficiency, a better work environment and improved care outcomes.



Flow-i

Flow-i is the *innovative* workstation, a highly advanced anesthesia machine offering superior ventilation performance, decision support features, and a wider range of settings of flows and pressures. Flow-i is suitable for highly specialized procedures such as pediatric and robotic surgery.^{2,5} Available in three versions – including a height-adjustable model, and a pendant model suspended from the ceiling.



Flow-e

Flow-e is the *extended*, flexible workstation for dynamic anesthesia delivery. With a larger worktop, more storage space, and generous mounting possibilities for auxiliary equipment, Flow-e can be customized to match your needs and preferences. Featuring Getinge's proprietary innovations, the machine ensures personalized anesthesia suitable for a wide range of patients – complex cases as well as general procedures.



Flow-c

Flow-c is the *compact*, easy-to-use workstation for safe and cost-efficient treatment. Despite its small size, it features all Flow Family innovations, to accommodate true personalized anesthesia, and the intuitive user interface supports an efficient workflow. Its compact design is an advantage in the crowded OR in a hospital as well as in Ambulatory Surgery Centers, all with busy schedules.

	Flow-i	Flow-e	Flow-c
Volume Reflector (+ Indicator)	x	x	x
Tidal volume (*20–2000 ml as option)	20–2000 ml	50–1600 ml*	50–1600 ml*
Pressure (*0–120 cm H ₂ O as option)	0–120 cm H ₂ O	0–80 cm H ₂ O*	0–80 cm H ₂ O*
FleetView	x	x	x
Gas backup (option)	2+1	1+1+1	1+1
MAC Brain	x	x	x
O ₂ Guard	x	x	x
AGC	Option	Option	Option
Lung recruitment	Option	Option	Option
Active vaporizer slots	2	2	1
Workspace (no of 250 ml Sev bottles fitted)	44	80	45
Drawers	1–3	1 + 3	1
Passive agent capture (option)	x	x	x
Active agent capture	x	x	x



Excess consumption of anesthetic agent drives cost. Hospital funds are lost unnecessarily – and the negative environmental impact is considerable. Our Automatic Gas Control addresses both problems. It enables safe low-flow anesthesia with reduced agent consumption by up to 58% – saving cost and reducing the climate footprint.^{1,4} Flow family anesthesia machines are compatible (option) with passive agent capture systems.



One coherent offer

At Getinge, you will find the capabilities of a supplier who can look at the whole picture and be the single source of all equipment, services and expertise you need to provide state-of-the-art treatment – dynamic anesthesia delivery.

A single-supplier approach is reliable; everything is consistent, compatible, and complete to the last detail. You will know at all times where to turn for ever better tools, support whenever it is needed and continuous knowledge transfer. We are committed to the efficiency of the anesthesia team, truly personalized treatment, and smooth workflows to ensure maximum patient safety and optimized care outcomes.

Every breath counts. And no detail is insignificant.



Our unique technology makes the difference

The solutions developed by Getinge enable personalized treatment even for challenging patients. Anesthesia machines based on our technologies put the anesthesiologist in control – empowered and proactive. You get a more streamlined workflow, better cost control and resource management. And the results are enhanced patient safety and reliable care outcomes. This is the essence of dynamic anesthesia the Getinge way.



Comprehensive service & support

The prerequisite for dynamic anesthesia delivery is 100% reliability and flexibility. *Getinge 360° Services* will maximize uptime and the long-term value of your investment. We provide a service plan that includes proactive maintenance, easy troubleshooting and prompt service by our certified field reps – ensuring your equipment is operating to its full potential, all the time.

Protect your investment

Whether you have a full-service department on site, or limited in-house personnel, we can meet your needs. Our Getinge-certified field service representatives and Getinge original parts are a good investment to help maximize the life span of your equipment. All to boost productivity and reduce costs. Your Getinge products will be monitored and maintained to ensure that they deliver effective performance whenever and wherever they are needed. By following a routine preventive maintenance schedule, *Getinge Care* keeps things running smoothly, with minimal interruption.

Connect and take control

Our connectivity solution *FleetView* offers digital access to equipment data, enabling you, your team, and hospital to gain insights and maximize uptime. All to improve efficiency in the operating room. Connect your Flow Family anesthesia machines to be proactive, save valuable time, and focus on the tasks that matter most.

Logging in to *FleetView* makes it easier for service teams to quickly troubleshoot issues with access to remote expert support. It also gives you the possibility to reach data on how your units are used, i.e. viewing and analyzing fresh gas flow and monitoring the anesthetic agent usage to help you reduce the environmental footprint. Everything presented on a role-based dashboard.

Expect seamless connectivity

It is easy to connect the Flow machine to patient monitor, HIS and patient data management system with no need for third party system. Patient data is transferred via the FCI protocol or HL7.

Quality consumables and accessories

The genuine Getinge consumables portfolio is specially developed for compatibility and ease of use within the Flow Family anesthesia delivery system.

Skills and knowledge

At Getinge we are happy to share our expertise. We offer tailored training programs, e-learning courses, and webinars. We publish and distribute whitepapers and case studies. You also have ready access to our representatives in the field and our clinical experts for assistance or information regarding our products and their performance. Contact us for your special requests.

References

1. Carette R, De Wolf AM, Hendrickx JF. Automated gas control with the Maquet Flow-i. *J Clin Monit Comput.* 2016 Jun;30(3):341-6.
2. Moran P, Barr, D, Holmes, C, Saving sevoflurane: Automatic gas control can reduce consumption of anesthetic vapor by one-third in pediatric anesthesia. *Paediatric Anaesthesia.* 2019 Apr; 29(4):310-314
3. Yusuf Z. Colak & Hüseyin I. Toprak. Feasibility, safety, and economic consequences of using minimal flow anaesthesia by Maquet FLOW-i equipped with automated gas control. *Scientific Reports (2021) 11:20074*
4. Kalmar A. et al. Minimizing sevoflurane wastage by sensible use of automated gas control technology in the flow-i workstation: an economic and ecological assessment. *J Clin Monit Comput.* 2022 Jan 3. doi: 10.1007/s10877-021-00803-z
5. D. Mostad, P Klepstad, T Follestad & H Pleyrn, Desflurane consumption with automated vapour control systems in two different anaesthesia machines. A randomized controlled study. *Acta Anaesthesiol Scandinavica.* 2021 Aug;65 (7):895-901
6. De Medts R, Carette R, De Wolf A, Hendrickx J. Desflurane usage during anesthesia with and without N2O using FLOW-i Automatic Gas Control with three different wash-in speeds. *J Clin Monit Comput (2018) 32:763–769*
7. ECRI. The MAC Brain feature on Getinge anesthesia units: ECRI's view. *Device Evaluation* 2022 Jan5
8. Hendrickx J, De Cooman S, Carette R, et al. Performance of an active inspired hypoxic guard. *J Clin Monit Comput.* 2016 Feb;30(1):63-8t
9. Yassen et al. Respiratory and Hemodynamic Effects of Prophylactic Alveolar Recruitment During Liver Transplant. *Experimental and Clinical Transplantation (2021) DOI: 10.6002/ect.2020.0412*
10. Internal test reports comparing Flow-i with vendor machines
11. Case study MX-5768, contributed by Dr. Waltraud Bruchelt and Dr. Günter Baumann, Dept. of Anaesthesiology and Intensive Care Medicine, University Hospital Graz, Austria
12. Internal report - NPS Summary Anesthesia 2019



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