## Servo-c® ventilator system

### Care with confidence





# Universal and customizable for personalized ventilation

Every patient comes with special challenges. Whether it's a 500-gram newborn or a 300-kg adult, someone suffering from acute respiratory failure or chronic pulmonary disease, the needs and complexities will differ. That is why we are committed to innovating personalized ventilation solutions that help protect the lungs and diaphragm, speed up weaning and support better outcomes. With its adaptability across all patient categories, the universal Servo-c ventilator is designed to meet these diverse needs, ensuring tailored support for every individual.

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## **Customizable for all patient categories**

Servo-c delivers outstanding clinical performance across all patient categories and meets the latest international product standards for product safety, biocompatibility, electromagnetic compatibility, connectivity and cybersecurity.



Servo-c is built on a modern platform, born from 50 years of refined and improved Servo performance. The result is a versatile ICU ventilator designed for ease and convenience, with a wide range of helpful monitoring and lung-protective therapeutic tools. You can use it for both invasive or non-invasive ventilation, including High Flow therapy.

» The birth of the Servo ventilator over 50 years ago is a testament to human curiosity, innovation, and a deep understanding of ICU challenges – paving the way for life-saving advancements.«

### Born from years of Servo performance

### An investment for the future

The Servo-c is designed with your evolving needs for safe, highquality ventilation in mind. With its universal capailities and great variety of options it's a smart investment for the future.



# **Key benefits of Servo-c**

### Designed for ease and convenience

- Wide intuitive 15" touchscreen
- Clear and easy-to-use interface
- On-screen context-based guidance
- Embedded therapeutic workflows
- Ergonomic design
- Compact patient unit and mobile cart
- Hot-swappable batteries
- Integrated Aerogen® nebulizer

### Personalized lung protection

Tailored lung-protective technologies with features like:

- Servo Compass<sup>®</sup> to monitor pre-defined targets
- Open Lung Tool<sup>®</sup> trends for lung recruitment and PEEP titration
- CO2 monitoring

### Gentle and effective personalized weaning

Tailored high-performance tools to ease patients off the ventilator:

- High Flow therapy for accurate flow of heated and humidified oxygen
- Automode for automatically switching patients from controlled to supported modes, depending on patient effort
- NIV PC and NIV PS/CPAP
- PRVC and SIMV (PRVC)+PS

### Cost-effective respiratory solution

- Universal capabilities (Neonatal, Pediatric, Adult)
- You decide the level of options configure as needed (high performance or more)
- Easy to upgrade
- Optimized uptime and efficiency
- Interchangeable hardware parts







## **Neonatal patients**

For neonatal patients, balancing gas exchange while minimizing work of breathing and discomfort in fragile premature infants is a critical challenge. Prioritizing lung and brain protection is essential to improving long-term neurodevelopmental outcomes.

### Preference for non-invasive modes

The increased usage of non-invasive ventilation modes is widely recognized as a preferred strategy to avoid potentially harmful intubation and its associated risks. Servo-c offers modes such as Nasal CPAP and High Flow therapy, promoting gentle and effective respiratory care.

### Volume-targeted modes

If a volume-targeted mode is preferred, PRVC adjusts inspiratory pressure automatically to accommodate changes in respiratory system mechanics. It also regulates controlled and assisted breaths separately, reducing tidal volume variation and driving pressure.







## **Pediatric patients**

Every child admitted to an intensive care unit deserves the best chance at a healthy future, where even the smallest details in care can make a big difference.

**We are passionate** about helping to improve the respiratory care of the most critically ill children, ensuring that both they and their families remain at the centre of attention as they await recovery from critical illness.

#### In the extended pediatric patient category, Servo-c now offers:

- A maximum inspiratory flow rate of 100 liters per minute to allow responsive and accurate ventilation with leak compensation for a wide pediatric patient range, from 2 to 50 kg.
- Invasive ventilation options to enhance gas exchange and reduce oxygen consumption.

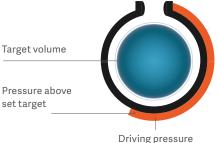


settarget

## Personalize your lung protection, breath by breath

Lung-protection challenges come in many shapes and sizes. That is why Servo-c offers a range of tools and clinical therapies for non-invasive and invasive ventilation that let you personalize your treatments and guard against ventilator-induced lung injuries. Tools like CO2 monitoring, Servo Compass to help you visualize your volume and pressure targets, and Open Lung Tool trends for recruitment. So you can care for your patients with confidence.





10 CO<sub>2</sub> conc. (%)



#### Servo Compass intuitive monitoring

Servo Compass is an intuitive monitoring tool that makes it easy to see when plateau/driving pressure or tidal volume per predicted body weight (VT/PBW) are off pre-defined targets and interventions are needed.<sup>1</sup> Precisely calculated Dynamic compliance (Cdyn) and Stress index (SI) complete the picture, helping you detect changes in lung volume and verify over-distension.<sup>2-4</sup>

#### **Open Lung Tool trends for lung recruitment**

Open Lung Tool trends helps you assess lung mechanics and gas exchange - breath by breath, in real time and retrospectively. It provides flexibility and guidance when personalizing PEEP and driving pressure during lung recruitment maneuvers, prone positioning and extracorporeal life support. Stress index and carbon dioxide elimination are also incorporated

#### Accurate mainstream CO<sub>2</sub> monitoring

To measure carbon dioxide levels in real time during expiration (capnography), Servo-c comes with an integrated CO2 monitoring option. It may help you to improve the ventilation quality and efficiency for your patients. In other words, yet another tool on Servo-c to help you personalize your treatments.

## Simple to learn, easy to use

Our Servo ventilator development has always built on close collaboration with intensive care clinicians around the world. The result is continuous innovation, higher levels of patient safety and a superior user experience.<sup>5</sup>



#### Intuitive touchscreen

The new all-touch panel gives Servo-c a sleek, modern appearance. Its intuitive user interface ensures ease of learning and seamless operation. Built-in help menus, recommendations, and prompts assist staff in quickly adapting and receiving guidance. Additionally, the interface enhances knowledge sharing by enabling easy access to screenshots and recordings or connecting to a larger screen.



### Ergonomic design

Servo-c is designed with ergonomics in mind. The adjustable screen accommodates different heights, while the ambient light sensor adapts to varying lighting conditions. Convenient handles make it easy to lift onto a cart or shelf. Lightweight and compact, with a high battery capacity, Servo-c is suitable for intra-hospital transport.

360° lamp provides clear —		and the second second second		
illumination during alarms	× 1:11	Expiratory minute volume la	w <b>k</b> o ~	□
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Open Lung Tool trends —— and Stress Index	• 31 How (//mia)		amity.0 amit RR <sup>15</sup> <sup>1.E</sup> 20 O <sub>2</sub> conc.	
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Ergonomic handles, cart, wheels			<b>2.2</b> <i>Unin 25</i> <i>a</i> , <i>112</i> <i>vta</i> <i>a</i> , <i>112</i> <i>vta</i>	Total pressure Band
	100 % 0, e00st	0; conc. PEEP RR 30 8.0 20	PC above PEEP 8 8 8 8	H O Disconnection Stendby



CO2 monitoring

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Aerogen nebulizer

GET SERVO-

# Human-centric design

Providing your patients with just the right level of respiratory support can be complex. The Servo-c is designed to simplify this. From the new 15" touchscreen and intuitive user interface to the sleek ergonomic design, every detail is tailored to support your needs for safety and ease of use.





#### Intuitive user interface

Servo-c provides helpful guidance for everything from pre-use check to initial parameter settings and key information throughout the treatment The 15" wide screen, with its intuitive user interface, makes Servo-c easy to learn and use.<sup>1</sup> Contextual help, dynamic images, Servo Compass, recommendations and prompts help staff to orientate guickly and follow guidelines. The interface also simplifies knowledge sharing, making it easy to retrieve screenshots and recordings or connect to a larger screen. You can easily switch between multiple screen views to tailor your needs, from Basic or Family View to Advanced View, Distance View and Loops.

#### Alarm management

When an alarm is activated, the alarm lamp lights up and can easily be seen from any viewing point. Highlights, shortcuts and on-screen checklists help you to manage each active alarm and avoid undesired notifications. Autoset of alarms is also possible.

#### Designed to fit you

On the Servo-c, form follows function: Ergonomic handles, a slimmed down patient unit, and cart with small footprint, and long-lasting, hotswappable batteries that are easy to change, even during ventilation. When setting ventilation parameters, the Safety Scale® tool allows you to tailor your settings quickly and intuitively.



### Award-winning human-centric design

The Servo-c screen received the iF Design Award, a prestigious global design competition. Its Scandinavian-inspired, user-friendly interface features clean lines and intuitive controls, enhancing safety and usability in busy clinical settings. Large buttons and clear displays minimize distractions, allowing clinicians to focus on patient care.

### All you need, at your fingertips



#### Pre-use check automation

Connect for complete potion direct including all accessories. If an active humbline is used, it must be filled with water.
Block Typices.
Stop OK

Const. OK

The Pre-use check and Patient circuit test are there to ensure optimal system performance. Upon completion of a set of automated calibrations and tests, the results including any identified recommendations, are presented to you.

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#### Safety Scale parameters

The system's Safety Scale tool makes parameter changes quick and intuitive, while dynamic images illustrate how those changes may affect ventilation.

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	8			4.6
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#### **Direct access to alarm limits**

Tap the related numerical value field to quickly adjust a specific alarm setting, regardless of its status. Where applicable, this also allows permanent silencing or deactivation.



#### **Context-based guidance**

Servo-c provides informative guidance for everything from Pre-use check to initial parameter setting and throughout the entire treatment.



#### View configuration

Several views are available to tailor the information displayed to the Advanced, Loops, Distance and Family.



user and the clinical situation: Basic,

### Alarm management

The 360° lamp and active alarm parameter light up when an alarm is triggered to make it visually recognizable from any viewpoint. On-screen checklists help you to manage each active alarm and avoid undesired alarms.

#### Workflow support

Smart workflows are available for procedures, such as Disconnection and transition to and from High Flow therapy.

### Screenshots and recordings

You can take screenshots and record high-resolution waveforms for 30s. Recruitment maneuvers are manually or automatically recorded and also saved in the Library.

## Avoid interruptions with safe and seamless transitions

Minimizing interruptions along your patient's journey toward spontaneous breathing is always a priority. From invasive to non-invasive ventilation and High Flow therapy to weaning, you want a smooth workflow to get the best outcomes. Servo-c lets you do just that – in a single ventilator.



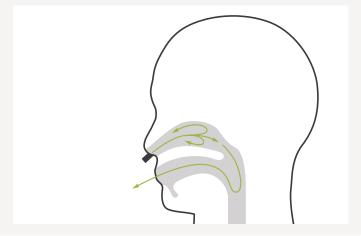
#### Smooth therapy transition

Designed for invasive and non-invasive ventilation as well as having integrated High Flow therapy, Servo-c provides you with uninterrupted respiratory support, without having to switch ventilators. You don't even have to go to Standby, going from invasive ventilation to High Flow therapy.



### **High Flow therapy**

High Flow therapy is beneficial for patients who are spontaneously breathing but experiencing increased work of breathing. It reduces the patient's work-of-breathing by providing an accurate flow of humidified oxygen, improving comfort and tolerance.<sup>6</sup> High Flow therapy is integrated, so there is no need to switch to stand alone systems and it can be selected in both invasive and non-invasive ventilation as well as in Standby. Nebulization is also possible during High Flow therapy.



#### Long-lasting power

Power outages can be challenging for hospitals, but Servo-c helps mitigate the risk with two hot-swappable batteries, providing up to three hours of power. The batteries charge automatically when the ventilator is plugged in and display the exact remaining battery time.





# Easing transitions and nebulization for personalized weaning

Servo-c offers a range of tailored tools to help stabilize your patient and gently ease them off the ventilator. Throughout the patient journey, Automode<sup>®</sup> can help the patients transition between controlled and supported modes depending on patient effort. And with High Flow therapy, integrated nebulization and other tools you can ease them off the ventilator at just the right pace.

### Automode eases transitions

Automode helps your patients transition to spontaneous breathing, potentially reducing the need for manual interaction. Starting with controlled ventilation, it switches to supported ventilation, depending on patient effort.

#### Built-in Aerogen® nebulizer

Servo-c comes with an integrated Aerogen® nebulizer. Convenient and easy to use, it can be applied in both invasive and non-invasive modes of ventilation as well as during High Flow therapy.



## **Service and support** with Getinge Care

With almost 250 service centers globally, we are always close at hand. To maximize uptime, ask us about local service agreements.

Our Getinge Care package comes in four different levels of support depending on your needs. Whatever your specific situation, our skilled service technicians and staff, many of whom are clinicians, are always there to support you.

Getinge Care service plans are built with a variety of different components, designed with your hospital's success in mind. Whether you have a full biomedical department on-site, or limited in-house personnel, we have a service plan that suits your needs. With predictive analytics and a variety of preventive service plans, we make sure your equipment delivers optimal performance over its entire lifetime.

### With Getinge Care you will receive:

**Preventive maintenance** with maintenances kits as an important foundation of uptime assurance helping keep your equipment up and running throughout the product's lifetime.

**Original spare parts** that are designed, manufactured, and validated to ensure performance, uptime and provide for patient safety.

Our certified and experienced technicians which are the backbone of our service offering. These highly-trained Getinge professionals are ready to promptly support you whenever needed.



# **Connectivity and cybersecurity**

In today's connected healthcare environment, selecting a medical device involves considering factors like safety, reliability, and trust.

security in mind.

The Servo-c is designed to work in today's connected healthcare environment. It provides for cable connections to a wide range of PDMS systems and patient monitors, all while ensuring safeguards for the ventilator systems and transmitted data. Built to align with industry standards such as IEC 81001-5-1 and relevant regulatory frameworks, our devices are developed with long-term value and

Guided by continuous feedback from healthcare professionals, the Servo-c combines user-friendly operation with advanced privacy and security features. Our commitment to being your trusted partner means delivering quality that safeguards patients, protects vital information, and enhances efficiency. With Servo ventilators, you choose peace of mind—where security and performance come together for you and those who rely on your care.





# A sustainable solution based on efficiency and responsibility

Servo-c is a sustainable solution built with durable, responsibly sourced, high-quality components to ensure maximum uptime. Its modular design evolves with your clinical and technical needs, supported by expert knowledge. The result? Increased productivity, reduced waste, and a healthier environment.

### Sustainability through efficiency

Optimized use of a ventilator system can improve patient outcomes and decrease healthcare costs. This makes it essential to prioritize the total life cycle costs required to maintain state-of-the-art clinical performance.

### Lasting, high-performance operation

Servo-c shares parts and platforms with other Servo models, featuring hot-swappable batteries and a reusable expiratory cassette with a one-of-a-kind ultrasonic flow sensor for reliable measurements. All original parts and accessories are designed for durable, highperformance operation.

#### Biocompatibility

All Servo ventilators have been constructed with high-quality materials meeting stringent biocompatibility standards, carefully selected to support patient safety by minimizing the potential release of any sensitizing and allergenic chemicals.

#### Circular thinking in reprocessing

Servo ventilator parts are designed for reprocessing, promoting a circular approach and reducing waste. This thoughtful design supports sustainability by enabling reuse, and extending the lifecycle of the whole ventilator system.



## **Customize your Servo-c**

Servo-c offers a wide range of high-quality accessories and consumables to enhance patient care and simplify workflows for you and your ICU staff.



Gas cylinder kit mounts securely on Servo-c mobile cart.



### Accessories – tailored for ergonomic and streamlined care



Height adjustable storage bin, fits conveniently onto the mobile cart providing a handy storage option.



Y-piece holder and hook, mounts to the handle of the Servo-c mobile cart.



Cable holder, mounts to the handle of the Servo-c mobile cart.



Compressor Mini is a quiet, compact air compressor suitable for bedside use and easy placement on the ventilator cart.

Support arm for patient circuit helps alleviate the weight of the tubing for the patient, with preadjusted, factory-set arm joints.



Hot-swappable battery modules offer 3 hours of battery time when used together.



Fisher & Paykel 950<sup>™</sup> is a premium performance humidification system that delivers benefits to patients and healthcare providers.

Servo Duo Guard filter is a highefficiency, single-use bacterial and viral filter designed to reduce cross contamination between patient and equipment.



Aerogen Solo Nebulizer facilitates effective aerosolized medication delivery into the lungs, where its unique vibrating mesh technology creates an ideal particle size spectrum.

## **Overview of Servo-c** technical specifications

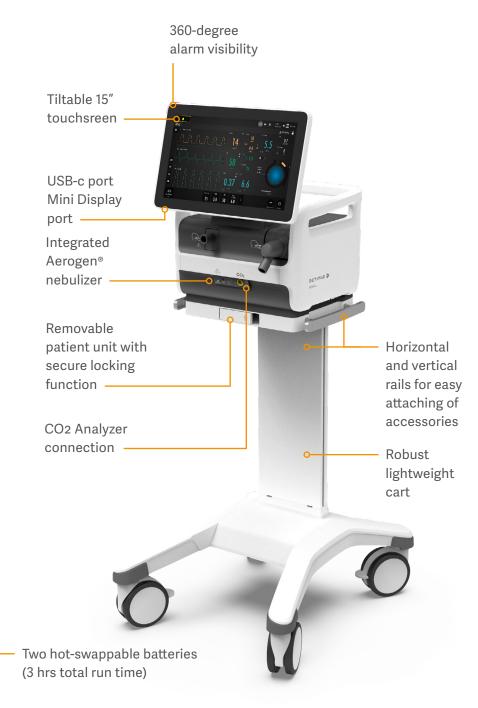
Patient categories	Neonatal	Pediatric	Adult
Patient weight (kg)	0.5–8	2–50	15 and above
Tidal volume (ml)	2–50	10-400	100-4000
Max inpiratory flow (l/min)	33	100	200
PEEP (cmH2O)	0–50	0-50	0–50
Pressure above PEEP (cmH2O)	0-80	0-80	0–120
Respiratory rate (breaths/min)	4–150	4–150	4–100

#### Max leakage compensation

Invasive (I/min)	25	48	-
NIV, expiratory (l/min)	25	48	65
NIV, inspiratory (l/min)	33	100	200

Two RS232 ports

Remote alarm



#### Therapies and tools

#### Ventilation modes

Invasive ver

Non-invasiv

	High Flow therapy
	Open Lung Tool trends
	Stress Index
	Servo Compass
	CO <sub>2</sub> monitoring

ntilation	PC	Peo
	PRVC	
	VC	Non
	Bi-Vent/APRV	PEI
	PS/CPAP	Pre
	VS	Lea
	Automode – PC - PS – PRVC - VS	Ad
	- VC - VS SIMV PC ≓ PS PRVC ≓ VS	Pe
	VC ≓ VS - (PC) + PS - (PRVC) + PS - (VC) + VS	
ve ventilation	Nasal CPAP	
	NIV PC	
	NIV PS	

#### Invasive ventilation

Inspiratory tidal volume	
Adult	100-4000 ml
Pediatric	10-400 ml
Inspiratory flow	0-200 l/min
PEEP	$0-50 \text{ cmH}_2\text{O}$
Pressure above PEEP	
Adult	0-120 cmH <sub>2</sub> O
Pediatric	0-80 cmH <sub>2</sub> O

#### Non-invasive ventilation

PEEP	2-20 cmH₂O
Pressure above PEEP	0-60 cmH₂O
Leakage compensation	
Adult	Inspiratory up to 200 l/min
	Expiratory up to 65 l/min
Pediatric	Inspiratory up to 33 l/min
	Expiratory up to 55 l/min
	Nasal CPAP up to 20 l/min

#### **Miscellaneous information**

Screen	
Screen type	TFT LCD touchscreen
Viewing area	15,6" Full HD, 24 bit color extra wide angle
Touch glass coating	Anti reflective, Anti finger print
Dimensions patient unit	W 375 x D 339 x H277 mm Height including user interface
Weight	18 kg, 33 kg with cart
Battery	Lithium-ion, 1.5h standard, 3h optional. Hot swappable
Nebulization	Aerogen, integrated
CO2 Analyzer	Capnostat V
O2 measurement	Chose between O2 sensor (permanent) or O2 cell (consumable)
External device interfaces	2 x RS232, Remote alarm, USB-c and mini display port
Trends	Are updated every 60 sec- onds, logged and stored in a library for up to 72 hours

#### References

- 1. Data on file Maquet Critical Care AB.
- Terragni PP et al. Tidal hyperinflation during low tidal vol ume ventilation in acute respiratory distress syndrome. Am J Respir Crit Care Med. 2007 Jan 15;175(2):160-6.
- Grasso S et al. ARDSnet ventilatory protocol and alveolar hyperinflation: role of positive end-expiratory pressure. Am J Respir Crit Care Med. 2007 Oct 15;176(8):761-7.
- 4. Ferrando C et al. Adjusting tidal volume to stress index in an open lung condition optimizes ventilation and prevents overdistension in an experimental model of lung injury and reduced chest wall compliance. Crit Care. 2015 Jan 13;19:9. doi: 10.1186/ s13054-014-0726-3.
- 5. Morita P.P. et al The usability of ventilators: a comparative evaluation of use safety and user experience. Critical Care 2016 20:263.
- 6. Mauri T. et al.: Physiologic Effects of High-Flow Nasal Cannula. Am J Respir Crit Care Med Vol 195, Iss 9, pp 1207–1215.

### GETINGE 🛠

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Servo-c may be pending regulatory approvals to be marketed in your country. Contact your Getinge representative for more information.

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