

Servo-n[®] ventilator system

Personalized neonatal and pediatric ventilation



Personalized ventilation for better outcomes

Small patients may face big challenges. To help them, you'll want to personalize the ventilation. The Servo-n provides all the ventilation modes you need to optimize neonatal as well as pediatric care, including NAVA® – a unique technology designed to improve synchrony between the ventilator and the patient. In short, a comprehensive solution for neonatal and pediatric ventilatory needs.

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One advanced ventilator. Many flexible treatment options.

Servo-n's broad toolkit offers personalized ventilatory care for even the tiniest patients. It meets the latest international product standards for product safety, biocompatibility, electromagnetic compatibility, connectivity and cybersecurity.



50 years of Servo innovation

Based on more than 50 years of groundbreaking clinical innovation, Servo-n offers non-invasive and invasive modes as well as High Flow Therapy in the same device for personalized ventilation strategies. Through extensive collaboration with clinicians around the world, we continue to refine and advance our neonatal and pediatric ventilatory solutions.

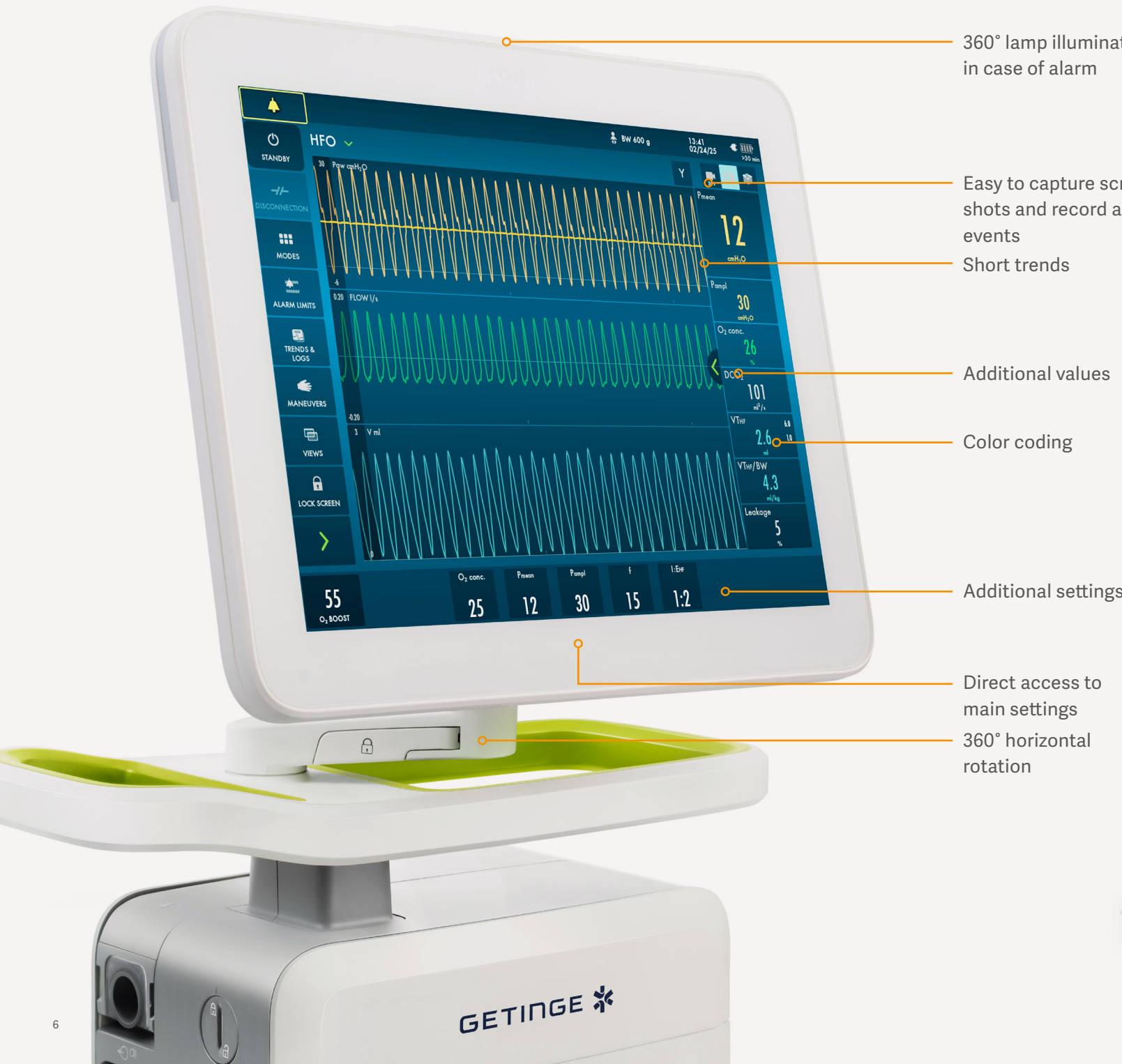
Less time on ventilation

Your ultimate goal is to encourage spontaneous breathing and gently ease the baby off ventilation entirely. Since each baby will be different, Servo-n helps you personalize this process to meet their individual weaning requirements, with a wide range of modes from, invasive to non-invasive ventilation, and also integrated High Flow therapy on the same ventilator.

The more you know, the better they do

Determining the optimal level of support for a neonatal baby can be challenging. Although there are many types of respiratory monitoring, Servo-n, with Edi monitoring, is the only ventilator that lets you measure the electrical activity of the diaphragm and display it on-screen. The Edi parameter, the vital sign of respiration, can help you identify the most appropriate level of support for your patient.¹⁻⁴





360° lamp illuminates in case of alarm

Easy to capture screen shots and record actual events

Short trends

Additional values

Color coding

Additional settings

Direct access to main settings

360° horizontal rotation



Simple to learn, safer to use

Neonatal ventilation can be complex. The Servo-n is designed to simplify this. This way, you spend less time operating the ventilator and more time caring for your patient.



Intuitive touchscreen

The intuitive touchscreen makes Servo-n a breeze to learn and use. Help menus, recommendations and prompts help staff to orientate quickly and receive guidance. The display options provide a range of alternatives, including loops and the unique Servo Compass® monitoring function. The display can also be configured in a friendly "family view" and a distance view to visualize away from the patient with minimal disturbance.

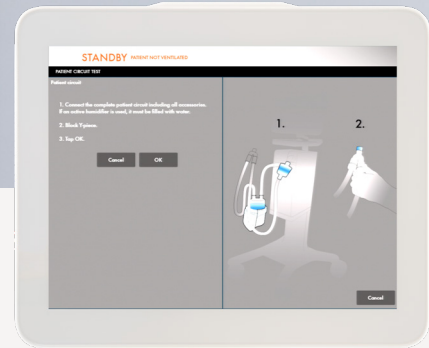


Ergonomic design

The screen can be rotated through 360°, which means you can place the ventilator anywhere around the bed, depending on clinical requirements. You can also mount Servo-n on a ceiling supply unit or shelf. The system is light and compact, with up to 180 minutes of battery time when using 6 hot-swappable batteries, making it highly suitable for intra-hospital transport.



All you need, at your fingertips



Pre-use check automation

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.



Context-based guidance

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



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.



View configuration

Seven views that can be configured by a tap on the screen are available: Basic, Advanced, Loops, Distance, Family, Servo Compass and Pes & PL.



Alarm management

The frame lights up when an alarm is triggered, and this visual signal is easy to see from any view point. On-screen checklists help you to manage each active alarm and avoid undesired alarms.



Direct access to alarms

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.



Workflow support

Smart workflows are available for special procedures, such as Disconnection, Recruitment maneuvers and Edi and Pes catheter placement and positioning.



Screenshots and recordings

You can collect trends (72hr), take screenshots and record high resolution wave-forms for 30 s.

Personalized lung protection, breath by breath

The sooner your babies can be stabilized, the faster they can be weaned and recover. Your ability to achieve this will depend as much on your expertise as a NICU professional as on having access to advanced tools. Servo-n, with NAVA, PRVC, Automode®, High Flow therapy and more, allows you to personalize the treatment.

Neurally Adjusted Ventilatory Assist (NAVA)

In neonates with poor lung compliance, NAVA support during spontaneous breathing may result in improved blood gases without the need for higher pressures often seen in other modes of ventilation.^{5,6} NAVA allows the neonates to regulate their own ventilation, limiting the risk of over- or under-assist. NAVA also lowers the work of breathing and increases comfort scores, which may reduce the need for sedation.⁵⁻⁷

Pressure Regulated Volume Control (PRVC)

PRVC is a volume-targeted mode that automatically adapts the inspiratory pressure to account for changes in lung mechanics. Separated regulation of controlled and assisted breaths reduces tidal volume swings and ensures low driving pressure, even when the patient starts to trigger the ventilator.

Automode

Automode supports smooth and safe patient transitions between controlled and supported ventilation. It seamlessly shifts between triggered and controlled breaths during irregular breathing – all without alarms and with an adjustable apnea time.



Assess

Diaphragm monitoring (Edi) helps you to determine and provide the appropriate support the babies' efforts and need,^{7,8} while managing sedation⁸⁻¹¹ and monitoring apnea of prematurity.¹⁻¹²

Prevent

If Nasal CPAP is not enough to support babies on non-invasive ventilation, NIV NAVA offers a viable alternative. Studies show that it may increase the chance of NIV success¹³ and reduce the need for intubation¹⁴ and sedation.

Protect

With NAVA, you have the opportunity to personalize the ventilatory support and protect the neonates lungs. And if the babies need controlled ventilation, PRVC is there for you.¹⁵

Rescue

Built-in HFOV allows you to quickly start the therapy without losing mean airway pressure or having to switch ventilators.

Wean

There are several modes to help you wean with Servo-n. Most interesting is NAVA, which will essentially allow the patients to wean themselves.^{13,16}

The right breath, just when they need it

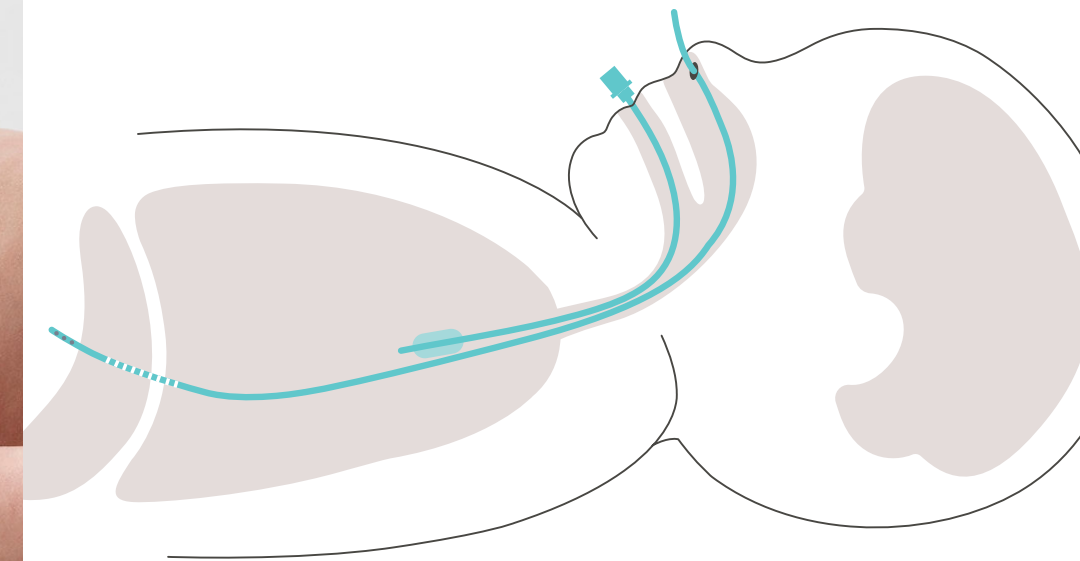
The more you know, the better they do. But determining the optimal level of support for a neonatal baby can be challenging. Although there are many types of respiratory monitoring, Servo-n, with neural monitoring technology, is the only ventilator that lets you measure the electrical activity of the diaphragm and display it on-screen. The Edi parameter, the vital sign of respiration, helps identify the most appropriate level of support for your patient – during invasive and non-invasive ventilation.¹⁻⁴

Avoid asynchrony and disruptions

By comparing the Edi signal with the pressure curve, you can identify patient-ventilator asynchrony, such as missed efforts and delayed triggering.^{5,6} In addition, the Edi minimum can indicate if the diaphragm relaxes between breaths and helps to prevent derecruitment of alveoli during expiration.³ The Edi signal allows you to trend and monitor the respiratory pattern and apneic episodes. This may also help you to identify severe apnea that could otherwise lead to bradycardia or desaturation.¹⁷

Monitor Edi – the vital sign of respiration, from day zero

Monitoring the diaphragm can also help you tailor your treatment of apnea of prematurity¹² sedation¹⁸, kangaroo care¹⁹ and identify ideal resting positions.²⁰ It may even be valuable in discovering disruptions in the respiratory drive^{1,12,21} and may help to determine extubation readiness.²²



A complete set of configurable NIV modes

You want to avoid intubation of the baby. But how do you personalize non-invasive ventilation? With Servo-n, you get a full suite of safe and gentle non-invasive ventilation modes, from Nasal CPAP to our unique NIV NAVA, to conventional NIV modes – all of which can be used without switching ventilators.



Nasal CPAP

Early application of Nasal CPAP may help reduce the number of intubations and overall ventilation days.^{23, 24} The CPAP on Servo-n delivers constant distending pressure with varying flow to support spontaneous breathing, which may decrease the work of breathing.

NIV NAVA

For approximately 45% of neonates, Nasal CPAP alone is insufficient.²⁵ This is where NIV NAVA can make a difference. By utilizing the patient's own diaphragm activity to drive ventilation, this mode is leakage-independent and enhances patient-ventilator synchrony.^{3, 13, 26} It helps normalize airway pressures, reduces the work of breathing, and increases the likelihood of successful nasal NIV, potentially shortening the duration of ventilatory support.^{23, 27, 28}

NIV Control

NIV PC

NIV Support

NIV PS*

NIV
NAVA

NIV
NPS

Nasal
CPAP

Breathing therapy

High
Flow

*Pediatric patient category

Personalized weaning on the path to better outcomes

Since each baby will be different, Servo-n helps you personalize the weaning process based on each baby's individual requirements, from invasive to non-invasive ventilation, including integrated High Flow therapy.

Weaning from the start of ventilation

Servo-n supports weaning from every step of ventilatory treatment. PRVC automatically adjusts the peak pressure, achieving the set tidal volume based on compliance.

Assessing the readiness of weaning with Edi

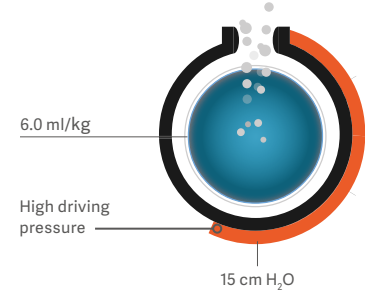
The Edi signal can be an invaluable tool for you to follow the patient's progress and assess when support may be weaned or discontinued completely. Even after all support has been removed, the patient's respiratory recovery can still be evaluated with the Edi signal.

Applying NAVA in weaning

Spontaneous breathing with NAVA and NIV NAVA allows the diaphragm to work unhindered at the appropriate level. As the baby's condition improves you may evaluate the need to provide a lower level of support from NAVA: this can be observed by the decrease in amplitude of the Edi signal and a maintained tidal volume. You can further reduce the risk of re-intubation thanks to the leakage independence of NIV NAVA.^{23,28} This mode also allows for many types of interfaces that can be applied more comfortably.

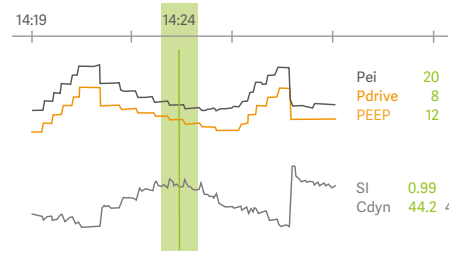


Tools for lung protection



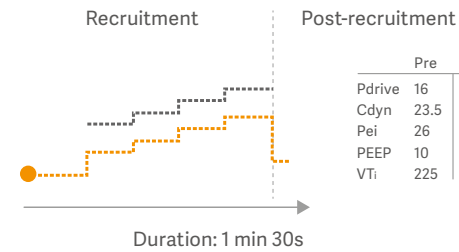
Servo Compass® monitoring

Servo Compass® 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.



Open Lung Tool® Trends

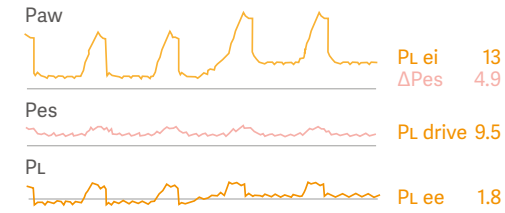
Open Lung Tool trends helps you assess lung mechanics and gas exchange breath-by-breath, in real-time and retrospectively. It provides flexibility and guidance when personalizing PEEP and driving pressure during recruitment maneuvers and extra-corporeal life support. Carbon dioxide elimination and transpulmonary pressure are also fully integrated.



Auto RM

Auto Recruitment Maneuver* allows quick recruitment after patient disconnection and suctioning.

Post-recruitment summary is provided, with color coded results and a shortcut to OLT trends, in the event that additional titration of settings based on breath-by-breath data is desired.



Esophageal and Transpulmonary pressure

Servo-n also offers a Pes and PL diagnostics view, where esophageal pressure (Pes)* enables separation of the mechanical properties between the lungs and the chest-wall complex, as a basis for determination of the transpulmonary pressure (PL).* Configurable Pes and PL waveforms with key parameters for assessment of controlled and spontaneous ventilation are continuously displayed.



Improve cost-effectiveness with effective integrated therapies

Integrated therapies expand the use of the Servo-n while limiting the need for stand-alone therapy devices. High Flow therapy, nebulization that does not affect breath delivery or Heliox therapy can be used by themselves or in combinations to provide a personalized and cost-effective respiratory therapy.



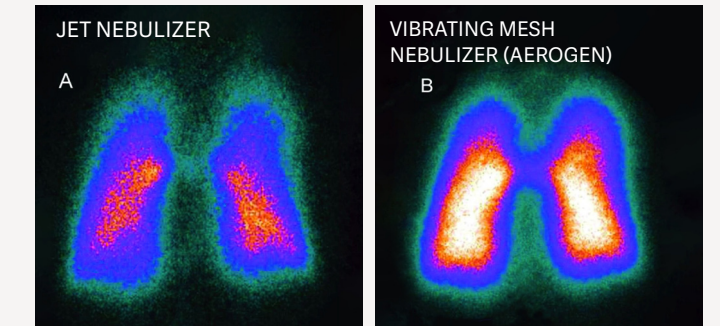
High Flow therapy

High Flow therapy is integrated, so there is no need to switch to stand-alone systems. It reduces the patient's work-of-breathing by providing an accurate flow of humidified oxygen, improving comfort and tolerance.²⁹



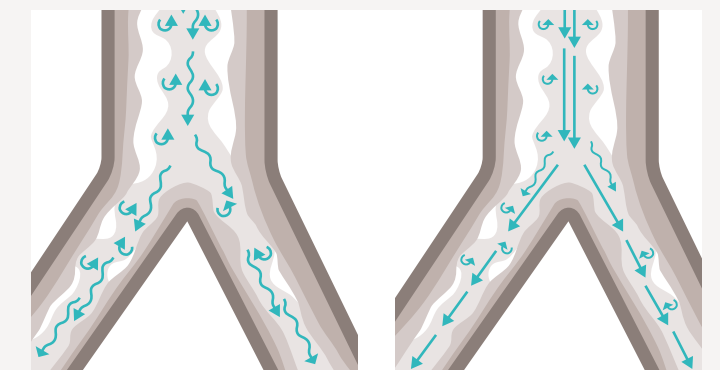
Aerogen® nebulizer

This fully integrated vibrating mesh device does not affect breath delivery and offers significantly higher lung deposition compared to jet nebulizers. It is compatible with a wide range of pharmaceuticals, and its closed-circuit medication filling design helps reduce the transmission of patient-generated infectious aerosols.³⁰ Additionally, its virtually silent drug delivery maintains a calm environment for your patients.



Heliox therapy

Heliox is a low-density mix of helium and oxygen that helps reduce the work of breathing (WoB), as well as plateau and driving pressure in patients with obstructed airways, e.g. children with bronchiolitis or asthma.³¹ It has also been shown to reduce extubation time and the length of hospital stay in neonates with with meconium aspiration syndrome.³² Heliox improves aerosol deposition by up to 50% thanks to reduced gas turbulence and less aerosol particle-impaction loss in the tubing and patient airways.³³



Edi real-time respiratory drive monitoring will precisely quantify the effect of the above therapies.



A virtual twin of the physical ventilator

Servo TwinView provides medical staff with remote near real-time data from Servo-n and Servo-u® ventilators. This can help facilitate streamlining work in the ICU, enhancing day-to-day workflows for clinicians and provide a better environment for patients.

Training and onboarding

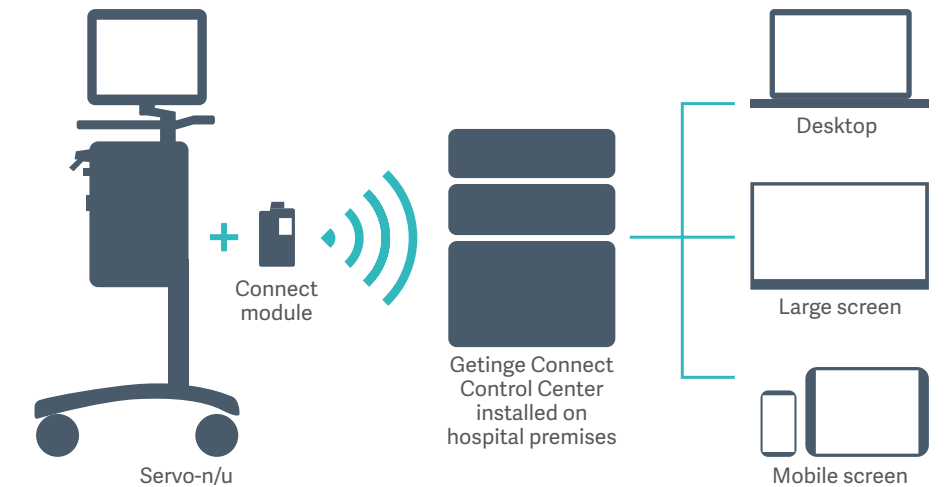
Students and supervisors can follow procedures in real time without disturbing patients. Real patient data contributes to a deeper understanding, and large groups can participate in discussions while familiarizing themselves with the ventilator user interface.

Rounding and handover

During the daily handover, Servo TwinView provides the ICU team with an extensive overview of the patients. Ventilator data is continuously updated, and clinicians can discuss information and plan treatments of critically ill patients without needing to enter the ICU rooms.

Planning and management

Using the List View, ICU coordinators get an overview of current ventilator availability, location and status, as well as patients soon to be released - supporting them in the overall planning of ICU procedures.



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 maintenance 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.



Fleetview

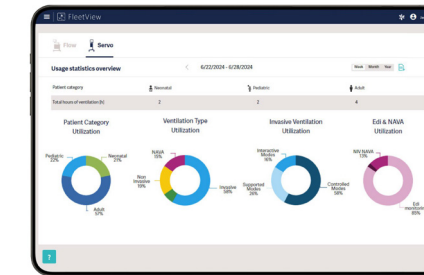
Imagine having a seamless, remote overview and a unified maintenance plan for all Getinge devices across your entire organization.

Connect devices, users, and operations

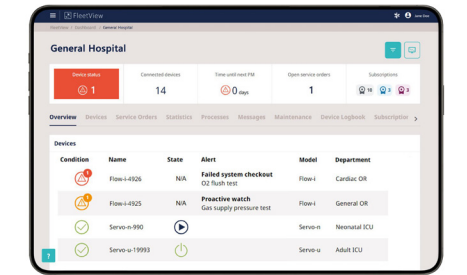
With FleetView, you can make that vision a reality. Most of our innovative products spanning all categories are primed for connection. Additionally, your installed base of Getinge devices can easily be integrated, enabling a comprehensive device data network, improving operational efficiency and staff satisfaction.

Maximize capacity and enable better care

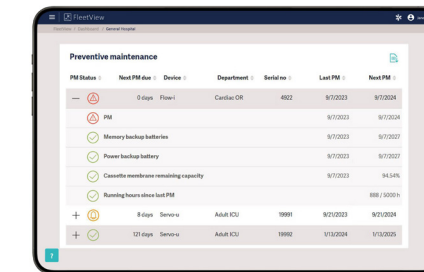
In the ICU, FleetView provides a bird's-eye view of life-saving equipment performance and usage. By guaranteeing uptime and offering invaluable usage insights, it enables you to optimize capacity and facilitates increased focus on patient care.



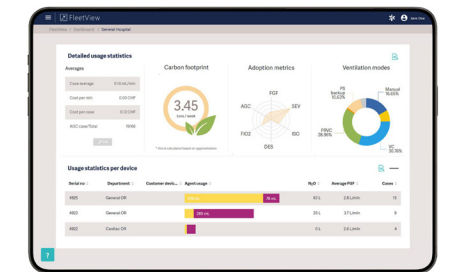
Usage statistics overview



Installed base overview



Preventive maintenance overview



Insights to support climate-friendly decisions



A sustainable solution based on efficiency and responsibility

Servo-n 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 for everyone.

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-n 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, high-performance 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.

Design for reprocessing

Servo ventilator parts are designed for reprocessing and long-lasting operation. This is a legacy we continue to honor, that started already with the original Servo ventilator.



Connectivity and cybersecurity



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

The Servo-n 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 as well as wireless connectivity to hospital networks and Getinge servers, 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 security in mind.

Guided by continuous feedback from healthcare professionals, the Servo-n 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.



Overview of Servo-n technical specifications

Patient categories	 Neonatal	 Pediatric
Patient weight (kg)	0.3–8	2–50
Tidal volume (ml)	2–50	10–400
Max inspiratory flow (l/min)	33	100
PEEP (cmH ₂ O)	0–50	0–50
Pressure above PEEP (cmH ₂ O)	0–80	0–80
Respiratory rate (breaths/min)	4–150	4–150

Max leakage compensation	Neonatal	Pediatric
Inspiratory (l/min)	33	100
Expiratory (l/min)	25	48



Ventilation modes	
Invasive ventilation	PC
	PRVC
	VC*
	HFO**
	HFO (V TGT)**
	Bi-Vent/APRV
	PS/CPAP
	VS
	NPS
	NAVA
Automode – PC - PS – PRVC - PS – VC - PS*	
Non-invasive ventilation	SIMV – (PC) + PS – (PRVC) + PS – (VC) + PS
	NIV PC
	NIV PS*
	NIV NPS
	NIV NAVA
	Nasal CPAP

Breathing therapies	
	High Flow
	Heliox
	Nebulization (Aerogen®)

Lung protection tools	
Invasive ventilation	CO ₂ analyzer
	Servo Compass
	Open Lung Tool (OLT) – OLT trends – Auto RM*
	Transpulmonary pressure*

Weaning tools	
Invasive ventilation	Automode
	Edi monitoring
	Esophageal pressure
	P0.1

Connectivity specifications	
External device interfaces	2 x RS-232C ports, VGA, USB, Remote alarm, Remote services
HL7	Contact your local Getinge representative
Wi-Fi	Getinge Connect module P10 provides wireless connectivity to hospital networks as well as Getinge servers

Miscellaneous information	
Screen	15" TFT LCD touchscreen
Dimensions patient unit	W 300 x D 205 x H420 mm H incl. user interface 826 mm
Weight	~ 23 kg (patient unit 15 kg, user interface 4 kg) ~ 35 kg with mobile cart
Batteries, hot swappable	6 (2 included)
Battery back-up time	At least 3 h (with 6 batteries)
Respiratory vital sign	Edi plug-in module
O ₂ measurement	O ₂ cell or permanent O ₂ sensor
Respiratory vital sign	Edi plug-in module
Esophageal pressure	Paux plug-in module
Y sensor	Hot-Wire Anemometer plug-in module
CO ₂ analyzer	Capnostat 5 plug-in module
External device interfaces	2 x RS-232C ports, VGA, USB, Remote alarm, Remote services
Wireless	Connect module P10

*Only available for the pediatric patient category. **Only available for the neonatal patient category.
Note: Not all modes/options are available in the standard configuration. Please contact your local Getinge representative for further information. Refer to the Servo-n datasheet for additional technical specifications.

Customize your Servo-n

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

Accessories – tailored for ergonomic and effective care



Storage drawer fits conveniently in the ventilator cart, providing a handy storage option.



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



Gas cylinder holders attach easily to the ventilator, accommodating up to two 4-5-liter cylinders of oxygen, helium or other medical gases with restrainer kits.



Clip-on accessory holders lighten the load of ICU staff by offering convenient attachment points for various medical devices and accessories.



Compressor Mini is a medical air compressor equipped with a Standby function for mounting on the ventilator mobile cart.



Edi monitoring is enabled through a plug-in module and Edi catheter kit, with the catheter requiring replacement after each use.



CO2 monitoring is available as an option, featuring an analyzer module powered by the ventilator and a Capnostat 5 sensor for real-time monitoring of air/gas mixture.



Y sensor module offers precise flow and tidal volume monitoring with less than 1 ml of deadspace, ensuring continuous and accurate breath delivery, even during sensor changes.



Y sensor module also offers esophageal and transpulmonary pressure monitoring with a Pes catheter connected to its auxiliary pressure port.



Connect module P10 is used for wireless transfer of data through Wi-Fi to the hospital network and Getinge connectivity server.

Consumables – approved and optimized for Servo-n



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



Aerogen Solo Nebulizer delivers precise aerosol medication directly to the lungs, enhancing respiratory therapy. It is a single-patient, disposable option for efficient drug delivery.



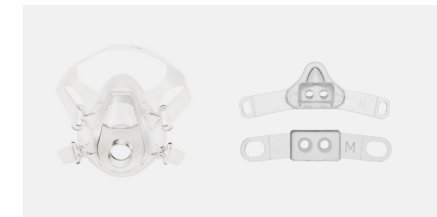
CO2 airway adapters are used with the Capnostat 5 sensor and allows the sensor to pass an IR beam through the airway adapter during ventilation without pathway disruption.



Y sensor neonatal is a hot-wire anemometer, with minimal dead space for the smallest patients.



Edi catheter ENFit is a nasogastric feeding tube that detects electrical activity of the diaphragm (Edi), available in sizes for neonatal, pediatric, and adult patients.



Masks and prongs designed to fit snugly, ensuring high comfort and minimal leakage during non-invasive ventilation in neonates and infants.



Servo-n neonatal test lung for single-use testing and calibration purposes.



Tubing sets designed for optimal performance with Getinge mechanical ventilators, ensuring reliable airflow and patient safety.

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