Datasheet

Servo-u MR
System version 4.1

This document is intended to provide information to an international audience outside of the US.

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Contents

Servo-u MR

Technical specifications

General

Intended use	The Servo-u MR Ventilator System is: • intended for respiratory support, monitoring and treatment of neonatal, pediatric and adult patients • to be used only by healthcare providers • to be used only in professional healthcare facilities and for transport within these facilities • to be used in MR environment according to specified conditions of use, listed here: - with 1.5 T or 3 T MR scanners - outside magnetic fields >20 mT (200 Gauss)
Clinical benefits	Clinical benefits for Edi monitoring and NAVA: • to provide monitoring of the patient's breathing drive • to improve synchrony between the ventilator system and patient when the electrical signal from the brain to the diaphragm is active • The Edi, CO_2 and Y sensor modules are not approved for use in the MR room.
Instructions for use	Please carefully read the user's manual
Legal manufacturer	Maquet Critical Care AB
Other products	See separate datasheets. Contact your local Getinge supplier for more information.

The ventilator – general

Servo-u MR system weight	Approximately 39 kg (86 lbs)
Dimensions of base (W x D), see dimesional drawings	647 x 547 mm (25.5" x 21.5") incl. wheels
Height (incl. user interface and magnetic field indicator)	1399 mm (55.1")
Wheels	Four wheels with automatic locking functionality
A-weighted sound pressure level (L_{pA})	<40 dB, measured at a distance of 1 m (3.3 ft)
A-weighted sound power level (L_{WA})	<51 dB

Ventilation – general

Patient range	• Standard configuration: 3–250 kg (6.6–551.2 lbs) • Neonatal option: 0.3–8 kg (0.7–17.6 lbs)
Bias flow	• Adult: 2 l/min • Pediatric and neonatal: 0.5 l/min
Internal compressible factor	Max. 0.1 ml/cmH_2O
Gas delivery system	Microprocessor controlled valves
Maximum airway pressure	125 cmH_2O
Method of triggering	Flow, pressure and Edi (with Edi module and Edi catheter)
Inspiratory flow range	• Adult: 0 to 200 l/min • Pediatric and neonatal: 0 to 33 l/min
Pressure drop	• Max. 6 cmH_2O at a flow of 60 l/min (insp. channel) • Max. 3 cmH_2O at a flow of 60 l/min (exp. channel)
PEEP regulation	Microprocessor controlled valve
Expiratory flow range	0 to 192 l/min

User interface

Type	TFT-LCD touchscreen
Size	366 x 300 x 50 mm (14.4" x 11.8" x 2.0")
Viewing area	15" XGA, 1024 x 768 pixels with a 24-bit color palette
Weight	Approximately 4 kg (8.8 lbs)

Magnetic field indicator

Power supply

Batteries	Three (3) D/LR20 1.5 V batteries

Indications

Green	≤20 mT (200 Gauss)
Yellow	>20 to 40 mT (200 to 400 Gauss)
Red	>40 mT (400 Gauss)

Power supply

Power supply, automatic range selection	• 100–120 V AC, 2 A, 50–60 Hz • 220–240 V AC, 1 A, 50–60 Hz
Plug-in battery module: • Battery backup (nickel-metal hydride, NiMH) • Battery capacity • Battery backup time • Recharge time	 • Six battery module slots. Two batteries are delivered with the ventilator. • Rechargeable, 12 V, 3.5 Ah each • Ranging from 60 minutes (2 batteries) to 180 minutes (6 batteries) • Approximately 3 h/battery
External 12 V DC	12.0 V–15.0 V DC, 10 A
Typical min. power consumption (no optional modules, no ongoing battery charging, normal panel backlight)	100 VA, 40 W at 230 V
Typical max. power consumption (with CO_2, Edi and Y sensor modules, ongoing battery charging, max. panel backlight)	200 VA, 80 W at 230 V

Gas supply

Inlet gas pressure air/ O_2	200–600 kPa / 2.0–6.0 bar / 29–87 PSI
Connection standards available air/ O_2	AGA, DISS, NIST, or French standard
Inlet gas pressure HeO_2 (option)	340–600 kPa / 3.4–6.0 bar / 49–87 PSI
Connection standards available HeO_2 (option)	AGA, DISS, NIST
Unavailable gas/loss of gas pressure	The flow from an unavailable gas (air or O_2) is automatically compensated for so that the patient gets the preset volume and pressure.
Patient system gas connectors	Male 22 mm / female 15 mm. In accordance with ISO 5356-1
Gas exhaust port	Male 30 mm cone

Operating conditions

Operating temperature	+10 to +40°C (+50 to +104°F)
Relative humidity	15 to 95% non-condensing
Atmospheric pressure	660 to 1060 hPa
Lowest pressure in patient circuit	-400 cmH_2O

Non operating conditions

Temperature	-25 to +60°C (-13 to +140°F)
Relative humidity	<95% condensing
Atmospheric pressure	470 to 1060 hPa
Lowest pressure in patient circuit	N/A

Standards – safety and functionality

CE 0123	The device complies with requirements and classification IIb of Medical Device Directive 93/42/EEC. CE Mark Notified Body number: 0123.
Classification	IEC 60601-1: 2005 + A1:2012, Class I, continuous operation
Standards	• ISO 80601-2-12:2011, ISO 80601-2-55:2018, EN 13544-1:2007+A1:2009 • IEC 60601-1, Type B (equipment making physical contact with the patient and the gas pathways). • IEC 60601-1, Type BF (CO_2 analyzer, Y sensor, nebulizer patient unit and cable) • IEC 60601-1, Type CF-defibrillation proof (Edi catheter and cable)
Ingress protection	IP 21
Electromagnetic compatibility (EMC)	According to limits specified in IEC 60601-1-2:2014

The '**Electromagnetic Compatibility Servo-u/Servo-n Ventilator System'** is available from the manufacturer.

Communication / Interface

Serial ports	Two RS-232C ports. For data communication via the Servo Communication Interface (SCI).
Servo Communication Interface (SCI)	A protocol for data communication with external devices
Alarm output connection (option)	4-pin modular connector for communication of all active alarms Switching capability: Max. 40 V DC, max. 500 mA, max. 20 W
Data transfer via USB port	For transfer of trends, logs, screenshots and recordings to a USB memory stick
Ethernet port	The network connection (LAN) port is for service use, and should only be used by personnel trained and authorized by the manufacturer
MSync, HL7 converter (optional)	See separate datasheet

Ventilation modes – invasive ventilation

Controlled ventilation	• PC (Pressure Control) • VC (Volume Control) • PRVC (Pressure Regulated Volume Control)
Supported ventilation:	• PS/CPAP (Pressure Support / Continuous Positive Airway Pressure) • VS (Volume Support)
Automode (option)	• Control mode: VC <–> Support mode: VS • Control mode: PC <–> Support mode: PS • Control mode: PRVC <–> Support mode: VS
Combined ventilation	• SIMV (VC) + PS (Synchronized Intermittent Mandatory Ventilation) • SIMV (PC) + PS • SIMV (PRVC) + PS • Bi-Vent/APRV (Airway Pressure Release Ventilation)
NAVA	• Neurally Adjusted Ventilatory Assist via endotracheal tube or tracheostomy

VC and SIMV (VC) + PS and Automode VC <–> VS are not available in the neonatal patient category.

Invasive ventilation

Max. leakage compensation level	• Neonatal: - 25 l/min

Ventilation modes – non invasive ventilation

Controlled ventilation	• NIV PC (option)
Supported ventilation	• NIV PS (option) • Nasal CPAP (option)
NIV NAVA	• Neurally Adjusted Ventilatory Assist via non-invasive patient interfaces (option)

NIV PS is not available in the neonatal patient category

Non invasive ventilation

Max. leakage compensation level	• Adult: - Inspiratory: up to 200 l/min - Expiratory: up to 65 l/min • Pediatric and neonatal: - Inspiratory: up to 33 l/min - Expiratory: up to 25 l/min - Nasal CPAP: up to 20 l/min
Disconnection flow (configurable)	• Low: - 7.5 l/min • High: - 40 l/min (Adult) - 15 l/min (Neonatal/pediatric) • Disabled: - Deactivates disconnection detection
Connection detection	Manual or automatic via bias flow

High flow therapy (option)

Flow setting range	• Adult: 5–60 l/min • Pediatric: 0.5–30 l/min • Neonatal: 0.5–20 l/min

VT/PBW

Predicted Body Weight (PBW)	Automatically calculated for adult patients based on gender and height (130–200 cm)
Body Weight (BW)	Entered for neonatal and pediatric patients, as well as adult patients shorter than 130 cm or taller than 200 cm
VT/PBW (VT/BW) in ml/kg	Automatically calculated, displayed and trended

Stress Index

Patient category	Adult
Modes	VC, SIMV (VC)+PS, Automode VC <–>VS
Values	0.5 – 1.5 (A Stress Index above 1.05 suggest that the lungs are over-distended)

Display

Views	• Basic • Advanced • Loops • Servo Compass (option) • Pes & P_L (option) • Distance • Family Each of the screen layout views offers a specific combination of displayed waveforms, loops and presented values.
Real time waveforms	• Airway pressure • Flow • Volume • Edi (option) • CO_2 (option) • Transpulmonary pressure (option) • Esophageal pressure (option)
Loops	• Pressure – Volume • Pressure – Flow • Volume – Flow A reference loop and three overlaying loops can be displayed.
Servo Compass	Visualizes volume (VT/PBW) and pressure (total or driving) in relation to set targets in invasive modes.
Short trends	• During ventilation in all ventilation modes, short trends of the numerical values in the first column can be displayed. • Trend time 15 minutes to 72 hours.
Trends	• Trending of measured and calculated values. • Trend time 1 to 72 hours. • Order of trended values can be set by the user.

Open Lung Tool trends (option)

OLT trends (option)

Graphical trend areas	1: - Pei (end-inspiratory pressure) - Pdrive * - PEEP 2: - $VTCO_2$ (when applicable) - SI * (Stress Index, adult patient category only) - Cdyn 3 (standard): - VTi - VTe 3 (option): - P_L ei - P_L ee - P_L drive *
* Pdrive, P_L drive and SI only shown as values – not graphical trends	
Modes	All invasive modes
Trend time	5, 10, 15, 30, or 60 minutes
Recruitment recording	Recording of recruitments for retrospective review of recruitments

Auto RM (option)

Automatic recruitment maneuver with two phases for adult and pediatric patients	Available in PC, PRVC and VC invasive ventilation modes
Maneuver phases	1. Recruitment made in PC mode with I:E set to 1:1. PEEP and inspiratory pressure increase according to a preset pattern. 2. Post-recruitment, where the system returns to the mode set prior to recruitment and sets a user-selected post-recruitment PEEP.
Recruitment parameters	• PEEPmax • RR • Pmax • Δ PEEP/step • Breaths/step • Breaths at Pmax • Post-RM PEEP
Recruitment analysis	Pre- and Post-recruitment measurements during 5 breaths each
Recruitment recording	Automatic recording of recruitments with retrospective review of recruitments possible in OLT trends or as recruitment recordings

Auto SRM (option)

Automatic stepwise recruitment maneuver including decremental PEEP titration to set a personalized PEEP for adult patients	Available in PC, PRVC and VC invasive ventilation modes
Maneuver phases	1. Recruitment made in PC mode with I:E set to 1:1. PEEP and inspiratory pressure increase according to a preset pattern. 2. PEEP titration: The system searches for the PEEP level with the highest Cdyn. If such an optimal Cdyn is found this marks closing PEEP. 3. Re-recruitment repeats phase 1 with half the numbers of breaths at each step. 4. Post-recruitment, where the system returns to the mode set prior to recruitment and suggests a new PEEP setting 2 cmH_2O above closing PEEP and a tidal volume setting or pressure level above PEEP setting to achieve the pre-set post recruitment VT/PBW.
Recruitment parameters	• PEEPmax • RR • Pmax • Δ PEEP/step • Breaths/step (Recruitment) • Breaths at Pmax • PEEPstart • VT/PBW • Breaths/step (PEEP titration)
Recruitment analysis	Display of Pre- and Post-recruitment Pdrive, Cdyn, PEEP, VTi and VT/PBW
Recruitment recording	Automatic recording of recruitments with retrospective review of recruitments possible in OLT trends or as recruitment recordings

Transpulmonary pressure measurement (option)

Esophageal pressure measurement via Auxiliary pressure (Paux) port on Y sensor module		
Pes Catheter Positioning		Automatic maneuver to validate Esophageal balloon positioning and filling
Waveforms	Pes	Esophageal pressure
	P_L	Transpulmonary pressure = Paw – Pes
Numerical values	P_L ei	End inspiratory P_L = Paw ei – Pes ei
	P_L ee	End expiratory P_L = PEEP – Pes ee
	P_L drive	P_L ei – P_L ee (passive ventilation) P_L max (inspiration) – P_L ee (active breathing)
	ΔPes	Pes max (inspiration) – Pes ee (positive Pes deflection) Pes min (inspiration) – Pes ee (negative Pes deflection)

Parameter settings

Parameter	Neonatal range	Pediatric range	Adult range
Tidal volume (ml)	2–50	10–350	100–4000
Minute volume (l/min)	0.1–7.5	0.3–20	0.5–60
Apnea, time to alarm (s)	1–45	2–45	15–45
Max. apnea time in Auto-mode (s)	3–15	3–15	7–12
Pressure level above PEEP (cmH_2O)	0–79	0–79	0–119
Pressure level above PEEP in NIV (cmH_2O)	0–60	0–60	0–60
PEEP (cmH_2O)	0–50	0–50	0–50
PEEP in NIV (cmH_2O)	2–20	2–20	2–20
CPAP pressure (cmH_2O)	2–20	2–20	–
Respiratory rate (breaths/min)	4–150	4–150	4–100
SIMV rate (breaths/min)	1–60	1–60	1–60
Breath cycle time, SIMV (s)	0.5–15	0.5–15	1–15
P_{High} (cmH_2O)	2–50	2–50	2–50
T_{High} (s)	0.2–30	0.2–30	0.2–30
T_{PEEP} (s)	0.1–10	0.1–10	0.1–10
PS above P_{High} (cmH_2O)	0–78	0–78	0–118
O_2 concentration (%)	21–100	21–100	21–100
I:E ratio	1:10–4:1	1:10–4:1	1:10–4:1
Ti (s)	0.1–5	0.1–5	0.1–5
NAVA level (cmH_2O/μV)	0–15	0–15	0–15
Edi trigger (μV)	0.1–2.0	0.1–2.0	0.1–2.0
T_{Pause} (s)	–	0–1.5	0–1.5
T_{Pause} (% of breath cycle time)	–	0–30	0–30
Flow trigger (l/min)	0–0.5	0–0.5	0–2.0
Pressure trigger (cmH_2O)	-1 to -20	-1 to -20	-1 to -20
Insp. rise time (% of breath cycle time)	0–20	0–20	0–20
Insp. rise time (s)	0–0.2	0–0.2	0–0.4
End inspiration (% of peak flow)	1–70	1–70	1–70
End inspiration (% of peak flow) in NIV	10–70	10–70	10–70
Decelerating flow pattern in VC (%)	--	0–100	0–100
Flow adaptation in VC	--	on/off	on/off

Backup parameter settings

Parameter	Neonatal range	Pediatric range	Adult range
Inspiratory tidal volume (ml)	2–50	10–350	100–4000
Pressure level above PEEP in backup (cmH_2O)	5–79	5–79	5–119
Pressure level above PEEP in NIV backup (cmH_2O)	5–60	5–60	5–60
Respiratory rate in backup (breaths/min)	4–150	4–150	4–100
I:E ratio	1:10–4:1	1:10–4:1	1:10–4:1
Ti (s)	0.1–5	0.1–5	0.1–5

Special functions

Special function	Setting range
Manual breath	Initiation of 1 breath (In SIMV mode initiation of 1 mandatory breath)
Static measurements	Insp. or exp. hold (0–30 seconds)
O_2 boost level	Off, 1–79 %
O_2 boost function	Activate O_2 boost up to 1 minute
Leakage compensation	On/Off
Circuit compensation	On/Off
Edi monitoring	In all ventilation modes and in Standby (with Edi module and Edi catheter)
Previous mode	Activates previously used mode
Backup ventilation	Backup On/Off
Apnea management	Several parameters

Disconnection

Pre-oxygenation time	Max. 2 min
Post-oxygenation time	Max. 1 min
Patient disconnected	High priority alarm activated after 1 min
Adjustable oxygen level	21 – 100 %

Monitoring and trends

Peak airway pressure	Ppeak
Pause airway pressure	Pplat
Mean airway pressure	Pmean
Driving airway pressure	Pdrive
Positive end expiratory pressure	PEEP
Continuous positive airway pressure	CPAP
Spontaneous breaths per minute	RR sp
Respiratory rate	RR
Spontaneous expiratory minute volume	MVe sp
Inspired minute volume	MVi
Expired minute volume	MVe
Leakage fraction (%)	Leakage
Inspired tidal volume	VTi
Expired tidal volume	VTe
End expiratory flow	Flowee
Measured oxygen concentration	O_2 conc
CO_2 end tidal concentration	etCO_2
CO_2 minute elimination	VCO_2
CO_2 tidal elimination	VTCO_2
Dynamic compliance	Cdyn
Static compliance	Cstatic
Inspiratory resistance	Ri
Expiratory resistance	Re
Work of breathing, ventilator	WOBvent
Work of breathing, patient	WOBpat
Elastance	E
P 0.1	P 0.1
Shallow Breathing Index	SBI
Peak Edi value	Edipeak
Average Edipeak	Edipeak average (monitoring only)
Average Edimin	Edimin average (monitoring only)
Minimum Edi value	Edimin
Ratio of expired tidal volume to predicted body weight	VT/PBW
Ratio of expired tidal volume to body weight	VT/BW
Switches to backup per minute	Backup ∑ (trended value only)
Time in backup in percent per minute	Backup % (trended value only)
Stress Index	SI
Heliox gas consumption	HeO_2 (trended value only)

Alarms

Alarm	Neonatal range	Pediatric range	Adult range
Airway pressure (upper alarm limit)	16–90 cmH_2O	16–90 cmH_2O	16–120 cmH_2O
Airway pressure NIV (upper alarm limit)	16–70 cmH_2O	16–70 cmH_2O	16–70 cmH_2O
Respiratory rate (upper and lower alarm limits)	1–160 breaths/min	1–160 breaths/min	1–160 breaths/min
Expired minute volume (upper alarm limit)	0.02–30 l/min	0.02–30 l/min	1–60 l/min
Expired minute volume (lower alarm limit)	0.01 – 20 l/min	0.01 – 20 l/min	0.05–40 l/min
End expiratory pressure (upper alarm limit)	1–55 cmH_2O	1–55 cmH_2O	1–55 cmH_2O
End expiratory pressure (lower alarm limit)	Off, 1–47 cmH_2O	Off, 1–47 cmH_2O	Off, 1–47 cmH_2O
No patient effort (Apnea) alarm	1–45 s	2–45 s	15–45 s
	Automatic return to support mode on patient triggering		
No consistent patient effort	Yes, described in User's manual		
High continuous pressure	Yes, described in User's manual		
O_2 concentration	Set value ±5 vol% or ≤18 vol%		
Gas supply	Below 200 kPa (2.0 bar/29 PSI), above 600 kPa (6.0 bar/87 PSI)		
Battery	• Limited battery capacity: 10 min. • No battery capacity: less than 3 min • Low battery voltage.		
End tidal CO_2 (upper and lower limit)	0.5–20 %, 4–100 mmHg, 0.5–14 kPa		
Leakage too high	Yes, described in User's manual		
Technical	Yes, described in User's manual		

Autoset (alarm limits) specification

Autoset (alarm limits) specification	Invasive ventilation, controlled modes only
High airway pressure	Mean peak pressure +10 cmH_2O or at least 35 cmH_2O
Inspiratory tidal volume too high	The greater of VTi + 30 % or VTi +2 ml
Expiratory minute volume (upper alarm limit)	Mean expiratory minute volume +50 %
Expiratory minute volume (lower alarm limit)	Mean expiratory minute volume -50 %
Respiratory rate (upper alarm limit)	Mean respiratory rate +40 %
Respiratory rate (lower alarm limit)	Mean respiratory rate -40 %
End expiratory pressure (upper alarm limit)	Mean end expiratory pressure +5 cmH_2O
End expiratory pressure (lower alarm limit)	Mean end expiratory pressure -3 cmH_2O
End tidal CO_2 concentration (upper alarm limit)	Mean end tidal CO_2 concentration +25 %
End tidal CO_2 concentration (lower alarm limit)	Mean end tidal CO_2 concentration -25 %

Y sensor (option)

Y sensor (option)	Size	Weight
Y sensor module	W 154 x L 90 x H 21 mm (W 6.1" x L 3.5" x H 0.8")	280 g (0.6 lbs)
Y sensor	W 18 x L 50 x H 27 mm (W 0.7" x L 2.0" x H 1.1")	11 g
Connectors and cables	• 15 mm male and female conical connector on flow sensor according to ISO 5356-1 • Pressure port on module, pressure line, 2.0 m (6.6 ft), phthalate free PVC • Flow sensor cable, 2.0 m (6.6 ft)	
Sensor material	• Single use: PC, Polycarbonate	
Power source	Powered by the ventilator system, 4.5 W during normal operation	
Measuring method	Hot Wire Anemometer (HWA)	
Parameters	• Airway pressure • Airway flow • Inspiratory and expiratory volumes • Trigger and End inspiration	
Measuring range	• Flow: 0.12 to 32 l/min • Pressure: -40 to 120 cmH_2O	
Y sensor resistance	10 cmH_2O/l/s at 30 l/min	
Dead space	≤1 ml	
Pressure line connector	Gable mounted bulk head connector to fit tubing with an inner diameter of 3-4 mm (0.12–0.16")	

CO_2 analyzer (option)

CO_2 analyzer (option)	Size	Weight
CO_2 analyzer module	W 154 x L 90 x H 21 mm (W 6.1" x L 3.5" x H 0.8")	265 g (0.58 lbs)
Sensor (Capnostat 5)	32.0 x 47.0 x 21.6 mm (1.3" x 1.9" x 0.8")	20 g
Operating temperature	10 to 33 °C (50 to 91 °F)	
Airway adapter		10 g
Power source	Powered by the ventilator	
Connectors and cables	Sensor	2.8 m (9.2 ft) cable
Measuring method	Mainstream, dual-wavelength, non-dispersive infrared	
Parameters	• CO_2 end tidal concentration ($etCO_2$) • CO_2 minute elimination (VCO_2) • CO_2 tidal elimination ($VTCO_2$)	
Measuring range	• 0 to 100 mmHg CO_2 partial pressure • 0 to 13.3 kPa CO_2 partial pressure • 0 to 13.2 % CO_2 volume (at a barometric pressure of 1013 hPa)	
System response time CO_2	The total system response time of the CO_2 monitor when exposed first to air and then to a gas mix with 5.0 % CO_2 is <250 ms	
Warm-up time	15 s to initial CO_2 indication maximum 2 minutes to full specification	
Oxygen concentration compensation	Automatic. Values supplied from the ventilator system	
Barometric pressure compensation	Automatic. Values supplied from the ventilator system	
Digitizing rate	100 Hz	
Airway adapter dead space	• Neonatal/pediatric: <1 cm^3 • Adult: <6 cm^3	

Edi module (option)

Edi module (option)	Size	Weight
Edi module	W 154 x L 90 x H 21 mm (W 6.1" x L 3.5" x H 0.8")	0.25 kg (0.6 lbs)
Edi catheter cable	2.0 m (6.6 ft)	-
Power source	Powered by the ventilator	
Power consumption	<3 W during normal operation	
Parameters	• Edi waveform • ECG leads waveforms • NAVA estimated pressure waveform (Pedi)	

Log function

Event log	• Alarms • Ventilator settings • Apnea periods • Immediate functions
Service log	• Technical alarms • Test results • Service records • Software installation • Configuration information

Saving of data

Recording of current waveform and parameter values	30 seconds of data will be recorded (15 seconds before and 15 seconds after activation). Up to 40 recordings can be stored.
Saving screenshots	Up to 40 screenshots can be stored.
Saving recruitments	Up to 12 manual and/or automatic recruitment recordings can be stored (option).
Export files	Recordings, screenshots, recruitments, trends and event log can be saved and exported to a USB memory stick.

Optional equipment

Optional equipment	Weight	Dimensions	Maximum load
Humidifier holder	0.6 kg (1.3 lbs)	W 243 x L 38 x H 185 mm (W 9.6" x L 1.5" x H 7.3")	5 kg (11.0 lbs)
Support arm 178	2.2 kg (4.8 lbs)	L 900 mm (35.4")	1–3 kg (2.2–6.6 lbs) *

* depending on angle

Cable holder for handle	0.1 kg (0.2 lbs)	W 138 x L 92 x H 155 mm (W 5.4" x L 3.6" x H 6.1")	5 kg (11.0 lbs)
Waterbag/IV pole	0.4 kg (0.9 lbs)	W 148 x L 26 x H 1007 mm (W 5.8" x L 1.0" x H 39.6")	1.5 kg (3.3 lbs)
Gas cylinder restrainer kit	1.0 kg (2.2 lbs)	Upper: W 104 x L 65 x H 48 mm (W 4.1" x L 2.5" x H 1.9") Lower: W 106 x L 162 x H 76 mm (W 4.1" x L 6.4" x H 3.0")	Two 4.5 liter bottles
Y piece holder		W 26 x L 52 x H 46 mm (W 1.0" x L 2.0" x H 1.8")	

Battery charger/calibrator (option)

See sepate datasheet

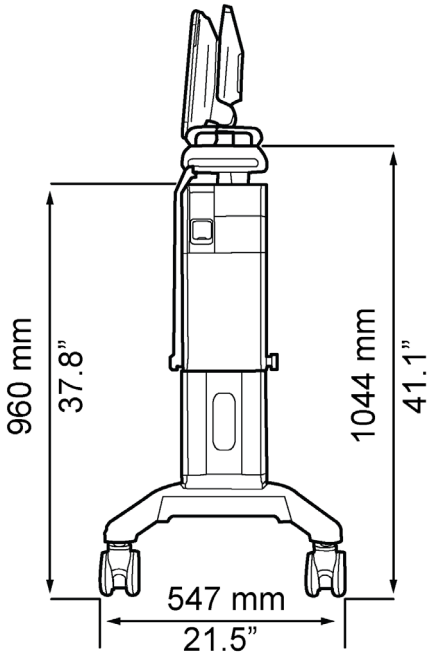
Service

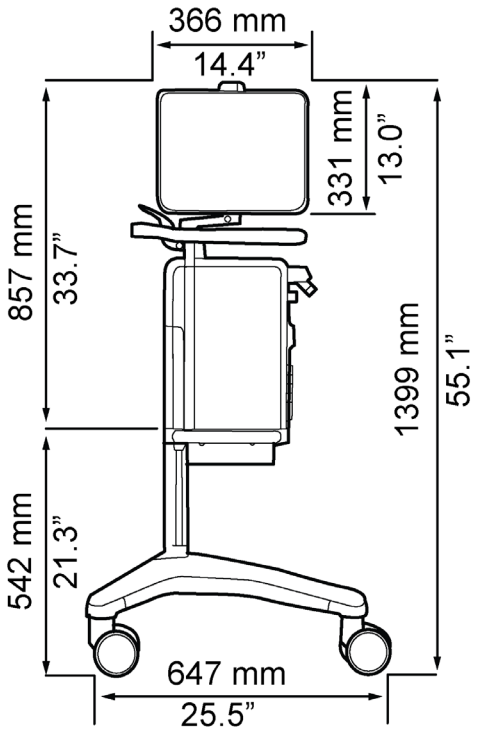
Regular maintenance	Preventive maintenance must be performed by authorized personnel at least once every 5000 hours of operation or once every 12 months, whichever comes first.

Ordering information

Servo-u MR, ventilator system and accessories:
See separate information in “System flowchart, Servo-u MR”

Dimensional drawings





Notes

GETINGE

Getinge is a global provider of innovative solutions for operating rooms, intensive care units, sterilization departments and for life science companies and institutions. Based on our firsthand experience and close partnerships with clinical experts, healthcare professionals and medtech specialists, we are improving the everyday life for people, today and tomorrow.

Servo-u MR may be pending regulatory approvals to be marketed in your country. Contact your Getinge representative for more information. This document is intended to provide information to an international audience outside of the US.

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www.getinge.com

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