

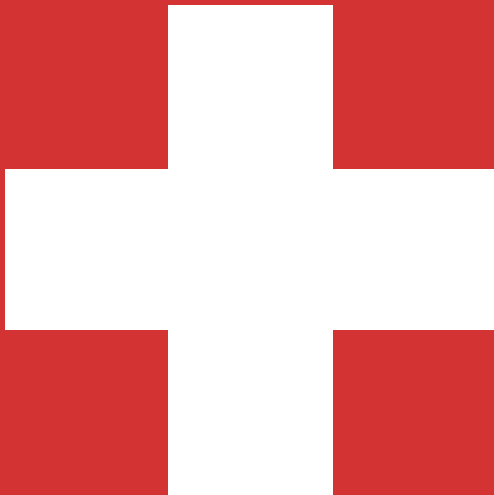
# Suction Technology – strong and silent



As reliable as a Swiss watch ...



## ... Suction pumps from Ardo ...



A Swiss watch and an Ardo product: quality and reliability you can touch. What more can you say. Both demand admiration and respect. Both are masterpieces of design and engineering.

Swiss family firm Ardo has stood for excellence for more than 20 years. Every wearer of a quality Swiss watch is proud. We are just as proud of our products. They are backed up by the latest knowledge, by the highly qualified and experienced design, development and production teams and by the input of eminent professionals.

Not only quality. Also commitment and passion. Our products have been successfully introduced and established in such sectors of the medical technology field as Suction Technology, Neonatal Care and Mother & Child breastfeeding products.

Get to know these Ardo products – find out what they can do for you.

Turn the page and learn more about our high performance vacuum pumps.

Your Ardo Team

# Suction Technology

Suction pumps to meet every need: our pumps can be used in clinics, hospitals, doctors’ practices, retirement homes, nursing homes, ambulances, home-care and in veterinary practice.

Some of the primary applications are listed below, but the pumps are so versatile that they can also be used in other procedures.

Master



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Senator



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Surgery	●	
Orthopaedics	●	
Liposuction	●	
Neurosurgery		
Dental and maxillary surgery	●	
Obstetrics		●
Veterinary Medicine	●	
Endoscopy		●
Various applications in secretions suction	●	●
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Senator  
low vacuum



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Primus



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Primus cell



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# Master

The most powerful – accept nothing less. Want more? Here you go. Faster vacuum build-up and easy operation for maximum safety. Plus virtually silent operation. The Master: because when you are diving you have to know that your watch will not let you down.

## Characteristics

- Powerful – 50 litres per minute – the real master among suction pumps
- Fast – vacuum build-up to 90 kPa, 675 mmHg
- Safe – incorporates "3guard" protective technology
- Whisper quiet – 43 dBA at maximum vacuum
- Low maintenance – incorporates "LowFriction" Piston/Cylinder-technology
- Durable – 5 year guarantee
- Cost effective – low operating costs
- Hygienic – easy-clean surface and design
- Low vibration – completely steady when in use
- Versatile – for a wide range of applications

## Applications include

- Surgery
- Orthopaedics
- Liposuction
- Dental and maxillary surgery
- Veterinary medicine
- Various applications in secretion suction





***„In tricky situations, the appliances in the Operating Theatre must be as reliable and accurate as possible. The Master suction pump completely meets our very high standards and needs.“***

Thomas Greshacke, Head of Medical Technology  
Herz-Jesu Hospital, Münster-Hiltrup

# Senator

Sometimes less is more. You don't need as much suction but you require the same uncompromising quality? Then the Senator is for you: 30 litres per minute for a reliable and silent partner in a broad range of applications.

## Characteristics

- Efficient and powerful – 30 litres per minute – the most precise among suction pumps
- Fast – vacuum build-up to 90 kPa, 675 mmHg
- Safe – incorporates "3guard" protective technology
- Quiet as a whisper – 42dBA at maximum vacuum
- Low maintenance – incorporates "LowFriction" Piston/Cylinder-technology
- Durable – 5 year guarantee
- Cost effective – low operating costs
- Hygienic – easy-clean surface and design
- Low vibration – completely steady when in use
- Versatile – for a wide range of applications

## Applications include

- Obstetrics
- Endoscopy
- Various applications in secretion suction







***„In my practice, even in hectic situations, safety and easy operation must be guaranteed at all times. For this reason I have chosen the Senator.“***

Dr. med. Andrea-Carlo Pesarini,  
Gastroenterology Munich

# Senator low vacuum

Need a reliable partner for performing demanding procedures involving low vacuum and reduced suction? Try the Senator low vacuum.

## Characteristics

- Sensitive – 15 litres per minute – the most delicate among suction pumps
- Fast – vacuum build-up to 100 mbar
- Safe – incorporates "3guard" protective technology
- Whisper quiet – 37 dBA even at maximum vacuum
- Low maintenance – incorporates "LowFriction" Piston/Cylinder-technology
- Hygienic – easy-clean surface and design
- Low vibration – completely steady when in use

## Applications include

- Neurosurgery
- Various applications in secretion suction





*In delicate situations you must be able to depend on a reliable device such as the Senator low vacuum.*

# Quality and safety

A precision Swiss watch stands for "quality" – from generation to generation. We don't just talk about premium quality, we deliver. We support this claim with a 5-year guarantee. Heard about "3guard" protective technology? "LowFriction" Piston/Cylinder-technology? Safety? You can count on it.

## Uncompromising safety for you and your patients

- Reliable "3guard" protective technology – the system comprises a float attached to the container lid and a hydrophobic bacteria filter.

## The difference? Innovative technology

- Low maintenance – "LowFriction" Piston/Cylinder-technology delivers maximum reliability and durability. Keep operating costs to a minimum.

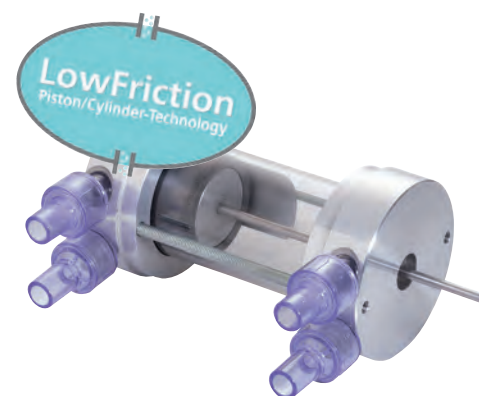
## Easy to operate

- Continuous suction control and a large easy-to-read pressure gauge combined with an easy-to-clean outer surface; they all ensure our suction pumps are particularly user friendly.



The "3guard" protective technology is always on active duty. Maximum protection and safety whenever you need it. A highly sensitive float attached to the container lid reduces the risk of overflow to a minimum. The dual-action, hydrophobic bacterial filter closes in the event of overflow or frothing to minimise the possibility of contamination of the pump interior. At the same time the hydrophobic bacterial filter is an extremely efficient protection against pathogens.



The premium quality graphite piston and the precision engineered Pyrex glass cylinder are the core of the unique "LowFriction" Piston/Cylinder-technology. The system requires low maintenance. It promises a silent and vibration-free performance – just what is needed for maximum concentration in the operating theatre. Premium quality components in the hands of Swiss precision engineers make for excellence in action. The fast vacuum build-up and the high-performance suction profile (Master 50 litres per minute and Senator 30 litres per minute) mean optimal performance in every application and procedure.



The vacuum regulator is highly sensitive, with a continuously variable control that adjusts without any perceptible "stepping". The suction level can be regulated so that the required level is met exactly. The pressure gauge has a 63 mm easy-to-read display so that information is immediately available (kPa and mmHg). The housing is robust – the large, easily accessible surfaces, the soft curves and the fine surface structure make cleaning easy and efficient. The design is ergonomic – with the integrated hand grips and the easy-to-grasp vacuum regulator knob. The functionality is practical – both the pump and the optional trolley feature a long accessory rail for reusable containers, disposable systems of varying capacities or for other accessories, which can be easily and safely attached. The change-over system hooks up simply and fast. The pumps themselves are portable or can be mounted on the Ardo trolley.

# Technical data

These are the facts – let the figures speak for themselves.  
Check out the specifications.

Technical Data	Master	Senator
Specifications		
Suction capacity Vacuum	50 litres per minute up to 90 kPa, up to 675 mmHg	30 litres per minute up to 90 kPa, up to 675 mmHg
General		
Voltage/Frequency Power consumption Protection class / Degree of protection Noise level	230 Volt, 50/60 Hz; 115 Volt, 60 Hz 140 Watt / 0.60A (230 Volt); 140 Watt / 1.2A (115 Volt) Class I with protective earth ground / BF 43 dBA	230 Volt, 50/60 Hz; 115 Volt, 60 Hz 115 Watt / 0.45A (230 Volt); 115 Watt / 1A (115 Volt) Class I with protective earth ground / BF 42 dBA
Dimensions/Weight		
Dimensions without trolley (WxDxH) Dimensions with trolley (WxDxH) Weight without trolley Weight with trolley	250 x 285 x 325 mm 555 x 460 x 990 mm 7.4 kg 18.4 kg	250 x 285 x 325 mm 555 x 460 x 990 mm 7.4 kg 18.4 kg
Inspections/Certifications	MDD 93/42/EEC, EN 60601-1, EN 60601-1-2, EN 10079-1	MDD 93/42/EEC, EN 60601-1, EN 60601-1-2, EN 10079-1
Guarantee	5 years	5 years
Compliance	 0123 UL certified	 0123 UL certified



## Senator low vacuum

15 litres per minute  
100 mbar / 75 mmHg

230 Volt, 50/60 Hz; 115 Volt, 60 Hz  
110 Watt / 0.45A (230 Volt); 110 Watt / 1A (115 Volt)  
Class I with protective earth ground / BF  
37 dBA

245 x 270 x 345 mm  
440 x 530 x 1000 mm  
7.4 kg  
21.0 kg

MDD 93/42/EEC, EN 60601-1, EN 60601-1-2,  
EN 10079-1

2 years



# Primus

Who said small? With its 24 litres per minute, this pump is perfect and it measures only 290 mm x 140 mm x 315 mm.

## Primus – Characteristics

- Gentle – 24 litres per minute – the little one
- Safe – incorporates "3guard" protective technology
- Low maintenance – 4-piston cylinder system
- Durable – 2 year guarantee
- Low vibration and noise – absolutely quiet

## Applications include

- Obstetrics
- Endoscopy
- Various applications in secretion suction



# Primus cell

Who says patients have to stay put? They can go anywhere with the Primus cell, without sacrificing safety or function.

## Primus cell – Characteristics

- Mobile – rechargeable battery, power cable and car power adapter. Minimum 60 minutes battery operating time. Integrated carrying handle for safe and easy transport.
- Gentle – 22 litres per minute suction capacity
- Safe – incorporates "3guard" protective technology
- Low maintenance – 2-piston cylinder system
- Durable – 2 year guarantee
- Suitable for both disposable and reusable systems



## Applications include

- Various applications in secretion suction
- Emergency medicine



# Technical data

Small – yes, but perfect in performance! It is lighter than you would think. Convinced yet? Check out the specifications. The numbers explain it all.

Technical Data	Primus	Primus cell
Specifications		
Suction capacity Vacuum	24 litres per minute up to 80 kPa, up 600 mmHg	22 litres per minute up to 70 kPa, up to 525 mmHg
General		
Voltage/Frequency	230 Volt, 50 Hz	Mains adapter: Voltage-range 100 – 240 Volt storable plug
Power consumption	73 Watt / 0.37A	12 Volt DC / 70 Watt
Battery, Battery use		60 min operating time
Protection class / Degree of protection	Class II / BF	Class II / BF
Dimensions/Weight		
Dimensions without trolley (WxDxH)	290 x 140 x 315 mm	270 x 140 x 315 mm
Dimensions with trolley (WxDxH)	530 x 445 x 990 mm	
Weight without trolley	5.5 kg	5.2 kg
Weight with trolley	19.1 kg	
Inspections/certifications	MDD 93/42/EEC, EN 60601-1, EN 60601-1-2, EN 10079-1	MDD 93/42/EEC, EN 60601-1, EN 60601-1-2, EN 10079-1
Guarantee	2 years	2 years
Compliance	 0123	 0123
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# Custom application sets

Looking for a solution? We've got it. Take a look at our application sets. Each solution is also available as a single accessory – "the right watch for the right occasion!"



Name

Surgery Set

Liposuction Set

Contains

Suction jar 5 litre polysulphone  
lid with handle  
patient tubing  
instrument tray

Suction jar 2 litre polysulfone  
lid with handle  
patient tubing  
foot operated vacuum regulator

Device

Master

Master





	Secretion Set 1 I	Secretion Set 2 I	Vacuum Extractor Set
	Suction jar 1 litre polysulfone lid with handle patient tubing	Suction jar 2 litres polysulfone lid with handle patient tubing	Suction jar 1 litre polysulfone lid with handle silicone suction cup 60 mm patient tubing foot operated vacuum regulator
	Senator Senator low vacuum Primus Primus cell	Senator Senator low vacuum Primus Primus cell 21	Senator

# Accessories

What do you need? The compatible accessory? Here you go.

## Trolleys



Trolley for Master and Senator

Trolley for Primus and Primus cell

- Space-saving
- Stable
- Robust construction
- Anti-static casters
- Generous accessory rail

## Reusable suction jars



5 litres

2 litres

1 litres

- Robust polysulfone reusable containers
- Can be coupled
- Fracture-resistant, stable polysulphone

## Container lids



With Patient Port  
Nominal dia.: 7 mm

With Patient Port  
Nominal dia.: 10 mm

- With handle and quick attachment to trolley
- With mechanical overflow safeguard

## Change-over valve



- Change-over valve for changing containers during a procedure

## Silicon Cups



50 mm

60 mm

- Material: silicone
- Soft suction cups for vacuum extraction
- Available in 2 sizes (50 and 60 mm)

## Bird Vacuum-Extractor Cups



40 mm

50 mm

60 mm

- Material: stainless steel
- Suction cups for vacuum extraction
- Sizes 40/50/60 mm

### Patient Tubing



Ø 7/13 mm

Ø 10/18 mm

- Material: silicone, transparent
- Autoclavable up to 134°C
- Available in various lengths

### Hydrophobic Bacterial Filter



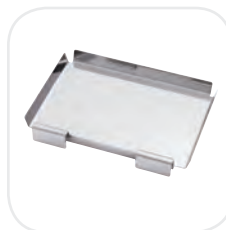
- Protects the pump from overflow and foam build-up
- Functions as a bacterial filter
- Mounted outside the pump, easy to see and check

### Foot operated vacuum regulator with holder



- A foot operated vacuum regulator for safer adjustment of the vacuum

### Instrument Tray



- Size (W x L): 240 x 170 mm



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