

**LÖWENSTEIN**  
medical



# Anesthesia



Everything for surgery, induction, recovery room and MRI

# Leon / Leon plus

Safety. Today. And tomorrow.

The advances in anesthesia treatment have resulted in rising demands for modern anesthesia workstations. Löwenstein Medical has developed the anesthesia machines Leon and Leon plus to meet these new demands. The devices offer top technical performance for optimal support in day-to-day work.

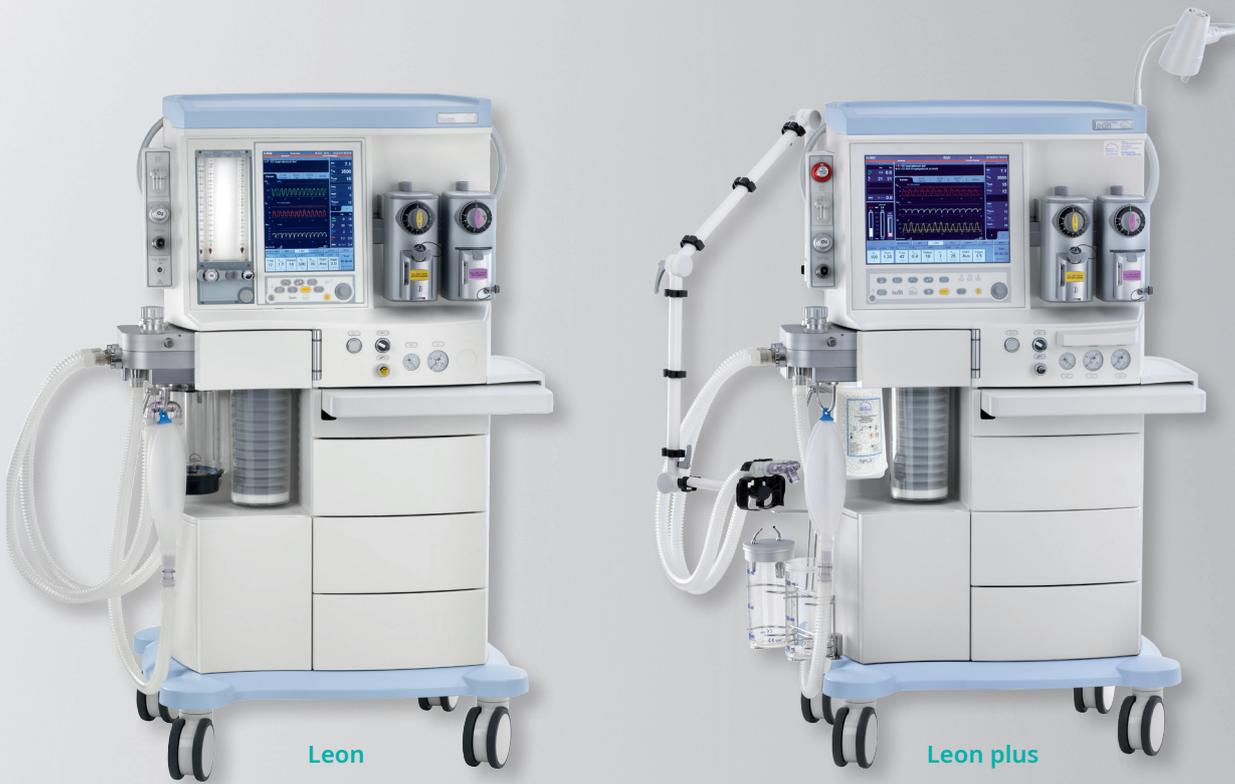
**Leon** and **Leon plus** combine a proven hygiene concept and ergonomic design with cutting-edge technology and sophisticated expansion options.

Thanks to their true platform design with modular components, these modern anesthesia machines can be fully integrated into your specific working environment to precisely match your personal workflows. The individual configuration options guarantee maximum comfort and provide optimal support during induction, in the OR, during therapy, and in any hospital system.

## The most important properties at a glance:

- Ventilation performance in the rebreathing system at the level of an intensive care ventilator.
- Absorber replacement is possible during operation.
- Different platform variants are available for ceiling light and wall mounting.
- Forms of ventilation
  - Volume-controlled intermittent mandatory ventilation (IMV),
  - Pressure-controlled ventilation (PCV),
  - Synchronized intermittent mandatory ventilation (S-IMV),
  - Synchronized pressure-controlled ventilation (S-PCV),
  - Pressure-supported ventilation (PSV),
  - Ventilation mode when using a heart-lung machine (HLM),
  - Manual ventilation (MAN), spontaneous breathing (SPONT)
  - Patient monitoring during regional anesthesia (MON)





- 12" color TFT screen with touchscreen (Leon)
- 15" color TFT screen with touchscreen (Leon plus)
- Classic gas mixture via flow tubes (Leon)
- Pneumatic ventilator drive
- Patient system designed for efficient processing and easy assembly
- Ventilation technology to care for patients of all ages
- Anesthetic gas monitoring with gas identification in various configurations, display integrated in the system screen.
- Paramagnetic O<sub>2</sub> measurement
- Integrated vacuum source for bronchial suction with vacuum display
- Battery life up to 100 minutes
- Thanks to their network capability, Leon and Leon plus offer the option of connecting directly to standard PDMS systems

#### In addition, Leon plus offers

- Precise electronic gas mixing in a flow range from 200 ml/min to 18 l/min
- Selection to display four real-time curves simultaneously
- Three loops can be displayed simultaneously to monitor lung function: Flow versus volume, volume versus pressure, flow versus pressure
- Complete data management with trend display
- Fresh gas econometer
- Upgrade option: Neonatal mode VTG/tidal volume guarantee
- Upgrade option: HL-7 interface



Anesthetic vaporizer



Circulation system

## Leon Wall and Leon plus Wall

The two anesthesia machines Leon and Leon plus are also available in configurations for wall/ceiling mounting. Different platform variants are available for ceiling light and wall mounting.

Wall devices and mobile variants are based on the same software and the same user interface. A combination of the devices, for example during induction and in the operating room, thus offers maximum ease of use and operating safety.



Leon plus ceiling configuration



Leon Wall



Leon plus Wall

# Leon mri

## Specially for use in the heart catheter laboratory or MRI.

Leon mri was specifically developed for use in MRI environments with magnetic field strengths of up to 40 millitesla. It is guaranteed to function with 1.5 Tesla and 3.0 Tesla MRI systems. An LED light that is visible from all sides, including outside of the MR field, clearly displays alarms and notifications in various colors depending on priority.

- The Leon mri model is equipped with a central brake to keep it in position. All four wheels can be locked simultaneously with a single foot lever
- Upgrade option: Neonatal mode VTG - 3 ml VTG
- Upgrade option: RS232 data interface via fiber-optic cable

### The most important properties at a glance

- The only device in its class that can be equipped with an integrated CO<sub>2</sub> and anesthesia gas gauge
- Optionally, the device can be connected to a second screen, outside of the MRI range, via a fiber-optic cable
- MRI-compatible touchscreen technology
- Both the performance range and the operation of the Leon mri device match the proven Leon model precisely, without limitations
- The mutual compatibility of the compact circuit systems in the Leon plus, Leon and Leon mri models are another major logistical advantage
- An integrated magnetic field strength monitor verifies the position in relation to the MRI



Leon mri



# Sinus / Sinus TR

Functional design for clinics and practices.



**The anesthesia system for adults and children enables both manual ventilation and spontaneous breathing.**

Sinus can be used with the ISO circulation system or with a semi-open anesthetic system. The gas supply with O<sub>2</sub>, N<sub>2</sub>O and or AIR comes from wall tapping points, a central gas supply system or via 10 liter bottles that can be placed on the optional mobile stand.

#### **The most important properties at a glance**

- Integrated wall mount
- Retractable handle
- Extendable circulation system holder
- Cover to close the device
- Three measuring tubes, which, with their special arrangement, enable fine dosing in low-flow operation.
- A minimum oxygen dosage ORS (Oxygen Ratio System) ensures maximum patient safety.
- The suitably designed mobile stand provides options when using Sinus with a shelf for patient monitoring and bottle holders.
- The Sinus anesthesia system can be easily hung on a standard rail with a holder integrated on the rear, Sinus TR on a mobile stand.



Sinus



Sinus TR



Sinus TR mobile stand cover



Sinus TR mobile stand extendable handle and circulation system holder



Sinus / Sinus TR optional monitor bracket



Sinus / Sinus TR mobile stand bottle holder



Sinus / Sinus TR mobile stand drawer

# charisma

The high-flow CPAP solution.



Functions:



Helmet CPAP



CPAP



High-flow CPAP



HFOT

charisma stands for a new generation of clinical respiratory therapy devices that was developed particularly for modern challenges and enables all kinds of CPAP and high-flow therapy. Thanks to its easy operation, versatile respiratory therapy modes, integrated consumption-free oxygen gauge and adjustable alarm limits, the device can be used in acute care units such as recovery rooms, monitoring wards, physiotherapy and general wards. charisma is also suitable for use with helmet ventilation, nasal CPAP and high-flow CPAP.

charisma's benefits for CPAP and high-flow therapy:

- Integrated drug nebulizer
- Modes for helmet CPAP, mask use and nasal application
- Consumption-free oxygen sensor for FiO<sub>2</sub> monitoring
- Leakage compensation up to 200 l/min.
- High pressure stability
- Intelligent alarm system

## Product options

O<sub>2</sub>

1. Paramagnetic oxygen sensor



2. Expanded safety package



3. Cart



4. Circuit set 1



5. Drug nebulizer



6. High-flow nasal cannula



7. AIRcon respiratory gas humidifier

# LM Blend

The most compact in its class.



The special construction makes the **LM Blend** the first blender on the market tested for ground transportation. Additional accessories, such as a flowmeter, are not required, making the LM Blend very quiet and compact.

The LM Blend has a wireless oxygen measuring cell, so the administered oxygen concentration can be continuously monitored with an optionally available oxygen monitor.

#### The most important properties at a glance

- The most compact in its class
- Integrated flow setting
- Optional oxygen monitoring
- Individual mounting options



# Accessories

## LMFlo<sub>2</sub>

### For successful high-flow therapy.

The **high-flow nasal cannula LMFlo<sub>2</sub>** was developed by Löwenstein in close cooperation with medical professionals. It offers a high level of safety and comfort. LMFlo<sub>2</sub> is available in 3 sizes. It is suitable for adult and pediatric patients and can also be used in the MRI area.

#### The most important properties at a glance

- The flexible and supple smooth-fit prongs are kink-proof. With their soft fit, they prevent skin irritation making an important contribution to decubitus management.
- The adjustable headband clip and the quick clip provide additional support.
- The anatomically curved nose piece and the light and elastic headband ensure a high level of comfort while wearing.



## Leonsorb Plus + Leonsorb Premium Disposable absorber with high CO<sub>2</sub> absorption

**Leonsorb plus** shows highly efficient absorption capacity in low-flow and minimal-flow anesthesia. Test results have confirmed that the product, with a volume of 1.15 kg, absorbs over 150 liters of CO<sub>2</sub> before a 0.5% CO<sub>2</sub> breakthrough occurs. This property ultimately results in cost savings benefits associated with higher absorption.

The chemical composition of the soda lime used in Leonsorb plus guarantees a high level of CO<sub>2</sub> absorption. A moisture content of approx. 15.5% prevents the soda lime from drying out during operation.

### Leonsorb Plus

- Unique geometry: effective shape for CO<sub>2</sub> absorption
- Reduced response time generates high absorption rates
- Optimum soda lime utilization
- Minimal dust
- Cost savings due to high absorption capacity and large absorber volume



### Leonsorb Premium

- Compatible with low and minimal flow
- Does not generate Compound A
- Unique geometry: effective shape for CO<sub>2</sub> absorption
- Optimum soda lime utilization
- Minimal dust
- Cost savings due to high absorption capacity and large absorber volume
- Longer lasting color change than with conventional soda lime





# LÖWENSTEIN medical

## Sales + Service

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