DESIGN & MANUFACTURE
of veterinary equipment

LONG LASTING RELATIONSHIPS,
A LOCAL CONTACT
In all simplicity…
ANAESTHESIA
- Masks & stands
- Compact anaesthesia units
- Gas anaesthesia trolleys
- URT/TCMT Temperature regulation units

RESPIRATORS
- Small, medium & large species

ANAESTHESIA MONITORING
- GE Healthcare monitors
- Portable VM monitors

IMAGING
- Technical imaging units
- Physioguard II monitoring
- Cell controller

POST-TREATMENT
- Racks systems
- CO2 Chambers
- Easy-Box
ABOUT US...

Our company was established under the name MINERVE Medical in 1953, and since then it has stuck to its original vocation of designing, manufacturing and distributing medical equipment.

At the time it focused on both human and veterinary medicine. With a growing need for specialisation, MINERVE broadly focused on veterinary science. As a reorganised company, it joined the animal health department of the SANOFI group in 1980.

In 1993 its veterinary medical equipment branch was sold to a group employee.

The company EQUIPEMENT VETERINAIRE MINERVE was then established in its present form.

The company continues to focus on the design and manufacture of medical equipment for veterinary use.

Its anaesthesia-resuscitation unit, which targets the medical research sector, is experiencing increased demand leading to the introduction of high value-added innovative products.
As part of our drive to continuously adapt to the changing field of bio-medical research, our design office integrates the most advanced technological solutions in full compliance with safety standards...

Rigorously selected components satisfy to research needs and guarantee maximum durability...

Reliability and ease of use are our watchwords and the key to our success...

Our relationships with all those involved in research provide endless opportunities for exchanges and cooperation...

This is how we are able to put our experience to work on behalf of the scientific community...

Do not hesitate to call on us!

THEY TRUST US...

BMS, CERB, PFIZER, PIERRE FABRE, SANOFI-AVENTIS, CNRS, VETERINARY COLLEGES, INRA, INSERM...
Safety, simplicity and versatility were the main criteria that we focused on when developing this equipment. This very low consumption anaesthesia unit has dedicated outputs for each type of accessory and the flows and concentrations can be adjusted independently.

ACCESSORIES

SURGICAL MASKS
Their design ensures very low flow and prevents any risk of the user being exposed. Its coaxial extraction system captures emanations at their source. Detection of the animal’s presence takes place before any gas is released.

SAFE INDUCTION CHAMBER
A specific system for rodents such as rats and mice. The laminar flow extraction system guarantees that there are no emissions of gas while optimising consumption. The opening sensor helps to regulate the flows of anaesthetic and extraction. Temperature control is ensured by a thermoregulation device.

MASKS FOR STEREOTAXIC SURGERY
These enable the safe use of gaseous anaesthetic on stereotactic frames. They meet requirements by blocking the end of the animal’s nose and operate at a low flow. All waste gases are collected thanks to the coaxial suction system.
ACCESSORIES
A wide range of low consumption accessories is available, helping to ensure that all animals are kept under anaesthesia in ideal conditions and guaranteeing the researcher remains safe at all times. The flows used by the system reduce consumption of the halogenated agent by a factor of 4 during the mask phases and by 6 during the induction phases. (Different versions of this unit are available to satisfy the needs of specific experimental conditions).

PORTABLE OPTION
There is a range of trolleys to transport the equipment. These enable the optimal integration of the accessories and peripherals of your anaesthesia unit.
The working area can be equipped with several interchangeable panels. The supervision of extraction flows is managed by a microprocessor.

**MODULARITY...**

**WORKING AREA**
Different configurations are available depending on the operating conditions.

**SAFE INDUCTION CHAMBER**
A safe and automated system that controls the flows of gases and guarantees optimal working conditions.

**ULTRA EFFICIENT ANTI-POLLUTION SYSTEM**
The system captures and neutralises all the fumes of halogenated vapours and particles. It can be cleaned and is compatible with disinfection by hydrogen peroxide.
SELECTATEC COMPATIBLE

The TAG has a SELECTATEC standard vaporiser manifold, so the vaporiser can be rapidly installed and removed. It is supplied with a safe fill DRÄGER VAPOR 2000 Isoflurane vaporiser, known for its efficiency and durability. It can be replaced by any SELECTATEC compatible TEC7 or TEC3 type vaporiser with any anaesthetic agents (Isoflurane, Sevoflurane, Desflurane...).

TOUCHSCREEN

- Adjustment of the carrier gas mixture.
- Display of the level of saturation of the activated carbon and the clogging of the HEPA filters.
- Control of each flow and level of anaesthetic agent.
- Temperature control.
  (animals + accessories)
- Monitoring of the animals.

The touchscreen also has a user workstation management feature, allowing the monitoring of usage time and the consumption of anaesthetic agent.
Any surgery with prolonged anaesthesia causes hypothermia and affects metabolism (reduced respiratory and cardiac rates...). We have therefore developed a complete range of temperature regulation units and heated plates.

HEATED PLATES FOR STEREOTACTIC FRAMES
Adapted to various types of existing frames (Stoelting, Kopf, Narishige...).

MULTIPLE-MASK HEATED PLATES
Allows up to 8 masks to be positioned simultaneously, as well as individual height adjustment.

HEATED PLATES FOR MICROSCOPE STAGES
Example of heated plate used on a two-photon microscope. The system ensures the positioning and the maintenance of the body temperature of mice under anaesthesia. Various specific adjustments allow ideal positioning of the animal in the acquisition window.
URT

The multi-station regulation unit allows you to manage the body temperature of 1 to 4 animals under anaesthesia at the same time. This device has 4 analogue outputs (100mV/°C 5V full-scale) allowing you to record specific temperature curves for each animal.

EXAMPLE USE OF TCMT:
1 Compact anaesthesia unit
2 Complete surgery stand
3 Temperature regulated plate for mice
4 Stainless steel mask for mice
5 TCMT

The temperature regulated plate is connected to the TCMT socket in order to control the animal’s temperature.

This allows you to measure and maintain the body temperature of an animal under anaesthetic which weighs between 20 g and 5 kg. Paired with an additional monitoring box linked by optical fiber, it displays temperature parameters on a computer as well as measurements of additional parameters (ECG, respiratory and cardiac rates).
RESPIRATORS FOR SMALL, MEDIUM & LARGE SPECIES

Our range of respirators provides ventilation for animals between 20 g and 1200 kg receiving volatile or standard anaesthetics. These devices are «user-friendly» with no need to manage any accessories (syringe, plunger...).

**ALPHALAB**
ALPHALAB controls the **respiratory cycles**, ventilation and anaesthesia of **small laboratory animals**. Essential parameters (volume, cycles per minute, instantaneous pressure) appear on **specially dedicated** screens and are constantly displayed regardless of the selected mode. **Adjustment of the safety pressure** helps to avoid any barotrauma of the ventilated animal.

**ALPHA 100**
A volumetric respirator with **barometric control** (open or closed circuit), used to resuscitate and anaesthetise animals weighing between **2 and 150 kg**.
Its integrated respiratory monitoring helps with the animal’s spontaneous respiration and **detects apnea**.

**ALPHA 400**
A volumetric respirator with **barometric control** (open or closed circuit), used to resuscitate and anaesthetise animals weighing between **100 and 1200 kg**.
Its integrated respiratory monitoring helps with the animal’s spontaneous respiration and **detects apnea**.
In addition to anaesthesia / resuscitation equipment, we offer a comprehensive range of portable monitoring devices, from simple pulse oximeters to the most sophisticated devices able to measure and record all vital signs, as well as respiratory gases.

**RANGE OF VM2500 MONITORS**
The VM2500 monitors are portable and independent. If paired with a computer, live data can be displayed on a larger screen. A data log is saved in the device and can be exported to a PC.
The internal surveillance procedure used to calibrate the different sensors removes the need for the tedious annual calibration stage.

**B40 GE HEALTHCARE PATIENT MONITOR**
- A high precision 12 inches monitor able to display up to 6 traces at the same time.
- Dedicated keys to access the most common functions.
- An easy-to-use menu to reduce the user training time.
- Trends displayed over 72 hours with graphic and numerical data.
- Advanced alarm system with predefined limits.

**Sensors for ETCO2 measurement**
**Available SPO2 sensors**
The specific requirements for multi-modal imaging led us to develop a range of imaging cells compatible with most platforms on the market.

**PHYSIOGUARD II**
Physioguard is a surveillance and recording system... It also helps to perfectly synchronise acquisitions with the animals’ cardiac and respiratory cycles...

**MINIATURE MONITORING UNIT**
The miniature acquisition unit, powered by a long-life lithium battery is equipped with electronics that provide near immunity to electromagnetic interference. The transmission by computer of (patient) data is done in real time using a high speed optical fiber link. This system can also be used to monitor prolonged periods of anaesthesia.

**CELL CONTROLLER UNIT**
This unit regulates the temperature of the imaging cell. It can be controlled using the Physioguard platform and is also used to send monitoring parameters and generate synchronisation signals for the imaging platform.
Our range of Technical Imaging Cells is compatible with most scanners on the market. These cells help to maintain the animal in a state of monitored and regular anaesthesia, ensuring good acquisition through a very precise positioning and containment system (graduated marks). Regulation of the animal’s body temperature is also ensured, as is insulation from the external environment. You can monitor respiratory rate, ECG and temperature if paired with our Physioguard II monitoring system.

The Technical Imaging Cells are designed to allow for successive medical examinations on the same anaesthetised animal using several distinct platforms (MRI, X-ray scanner, gamma camera...) in order to merge and analyse all the acquisitions obtained. The equipment is adapted to the size of different animal species and provides stable and reproducible physiological conditions whilst ensuring that the animal’s initial sanitary status is maintained.

The Different Imaging Cells have an instant connection system allowing all circuits, sensors and accessories to be connected. Our cells are universal and our holders are compatible with devices from all major imaging manufacturers (Siemens, Trifoil, Sedecal, MI Labs, Bruker, MR Solutions, GE, Philips...). Temperature is regulated by forcing air through narrow channels integrated into the cell. The shape of the bed associated with the temperature regulation technique allows use of an open cell (if access to animal is required) or closed cell (SPF application).
POST-TREATMENT

System for euthanising animals after experimentation in full compliance with legislation and ethical standards.

OPERATION DETAILS
The processes of all our systems are automated, safe and strictly reproducible. They consist of a filling, a maintenance and a gas extraction phase.

TACTILE CONTROL PANEL
The control panel can be used to select the most appropriate cycle for the species to be treated. It allows the process to be monitored in real time. Safety alarms interrupt the cycle if an anomaly is detected.

CONTROL AND VERIFICATION
For all our systems, the concentrations of CO2 are measured and calibrated in the factory. A specific verification report is provided at the delivery time and after every on-site maintenance operation.
RACK
This modular CO2 chamber system offers an adaptable treatment volume. Each chamber is independent and has its own cycle controller. Large indicators allow you to see the availability of each chamber at a glance. These units can be placed on a bench or mounted onto a mobile three-place stand.

MC2003 CO2 CHAMBERS
Designed to be fully hermetic, these chambers come in several sizes, respectively 38, 120 and 180 litres. These independent chambers are designed to accept different cages in standard Type II or Type III formats. They are also available in a mobile version on a specially equipped trolley.

EASY-BOX
This new system helps simplify euthanasia procedures by limiting the stress experienced by the animal. The process takes place without moving the animals from their cage. The CO2 enrichment system operates very silently. The system is very simple to use: simply place the cage on the table, remove the grill, position the Easy-Box over the cage and start the cycle.
OUR DESIGN OFFICE
The ongoing changes in new technologies as well as different experimental constraints require researchers to work with reactive partners who are capable of adapting to their needs. Our design office, involved in numerous projects in France and abroad, uses its wide range of skills to provide you with the very best solutions.

All of our equipment has been developed and designed in close collaboration with our clients.

MINERVE & ENVIRONMENT
We take pride in our development strategy which is to reduce factors linked to environmental pollution as much as possible and to operate in full compliance with current safety standards.

OUR TAILORED SERVICES
In order to ensure that your equipment works correctly, we offer:
- A technical department dedicated to maintenance.
- Maintenance contracts with guaranteed reaction times.
- Spare parts stock with over 4,000 items.
- A 2 year warranty.
- Made-to-measure training programmes adapted to your organisation.

We always provide user training for every installation.
A SALES TEAM AT YOUR SERVICE...

Sébastien SANNIÉ CEO
+33 (0)6 33 84 94 46
s.sannie@minerve.eu

(Export)

INTERNATIONAL SALES & ADMINISTRATION
Aurélie BOERINGER
+33 (0)3 26 42 50 15
a.boeringer@minerve.eu

Western Sales Region
sales@minerve.eu

TECHNICAL DEPARTMENT
Luc MACAIRE
+33 (0)6 77 58 13 92
l.macaire@minerve.eu

ADMINISTRATION DEPARTMENT
Francis DEDIER
+33 (0)3 26 42 59 41
f.dedier@minerve.eu

Yohan MARIN
Southern Sales Region
+33 (0)6 72 89 80 55
y.marin@minerve.eu

DESIGN OFFICE
Fabien CASTERS
+33 (0)3 26 42 59 37
f.casters@minerve.eu

Tél. +33 (0)3 26 42 50 15
email : contact@minerve.eu
SIMPLE & LONG LASTING SOLUTIONS

A collaborative approach to help with your projects...as simple as that!