RHINO-SYS



Rhinomanometry
Rhinoresistometry
Acoustic Rhinometry
Long-term Rhinoflowmetry



For functional
rhinologic diagnostics

otopront®

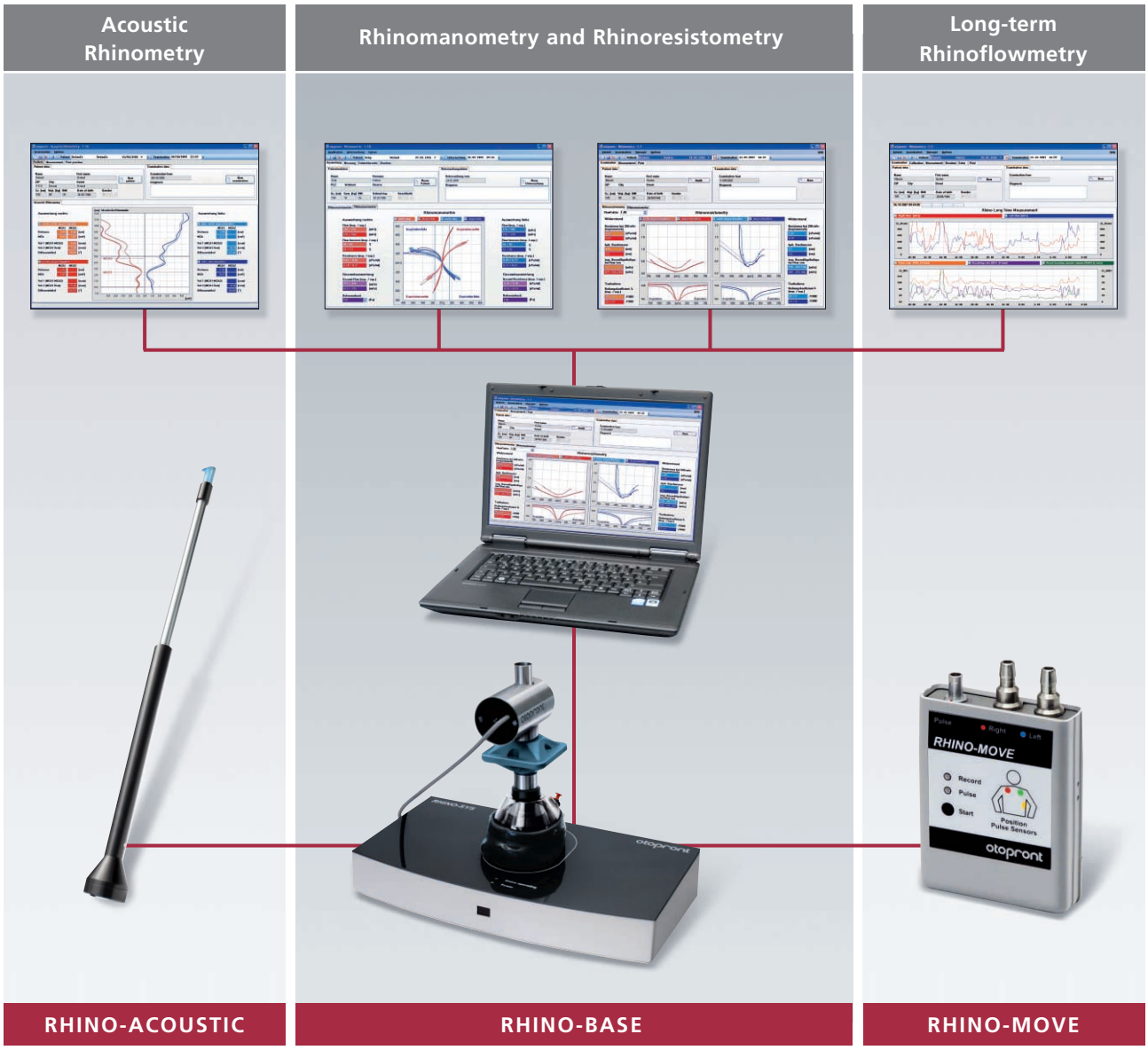
RHINO-SYS

The complete system for functional diagnosis of nasal breathing

- Rhinomanometry and Rhinoresistometry
- Acoustic Rhinometry
- Long-term Rhinoflowmetry

Hardware
The hardware consists of the RHINO-BASE central unit including laptop for performing Rhinomanometry and Rhinoresistometry, the RHINO-ACOUSTIC system for portraying the cross-sectional profile of the nasal cavities and the mobile RHINO-MOVE device for 24-hour recording of nasal breathing.

Software
The software provides various display options for precise diagnosis and for straightforward analysis of measurement data. Measurement results and recorded patient data can be stored in the internal data bank and swiftly called up as needed.



Overview RHINO-SYS with hardware and software

Rhinomanometry and Rhinoresistometry

The RHINO-BASE offers as a key element the **Rhino-resistometry**, a further development of active anterior **Rhinomanometry**.

Nasal flow rate is measured using a breathing mask. The filter between measuring nozzle and face mask is replaceable. Choanal pressure is measured using an adhesive nasal adapter. An additional benefit is that the micro pressure sensors can be connected directly to the breathing mask, thus minimizes measurement errors.

Nasal flow resistance can be objectified reproducibly using Prof. G. Mlynski's (University Greifswald, Germany) highly complex analytical software which has been developed and improved over many years. This is the basis for differential diagnosis of possible causes of nasal obstruction like constriction, inspiratory nasal wing collapse or pathological turbulence.

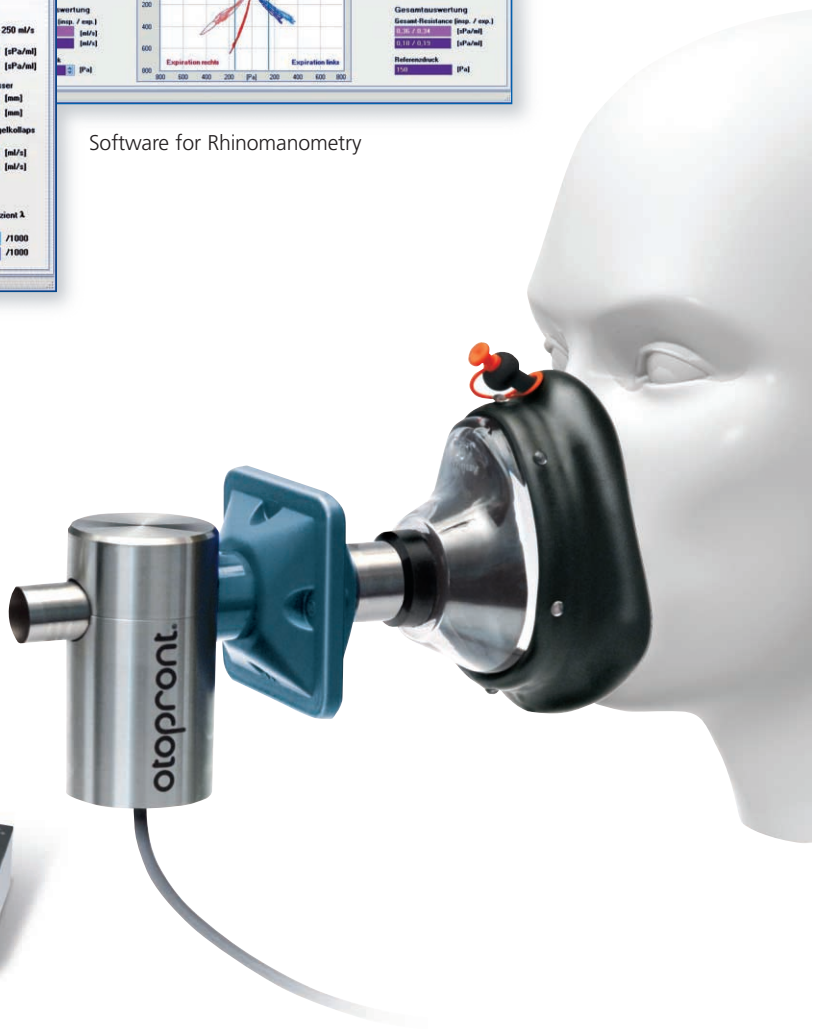


Software for Rhinomanometry

Software for Rhinoresistometry



RHINO-BASE with accessory box



Measuring nozzle with filter and face mask

Acoustic Rhinometry

The RHINO-ACOUSTIC is a powerful instrument for measuring the nose airways. It uses an acoustic impulse to measure the cross-sectional areas over the distance from the outer nostril. These cross-sectional areas let an examiner know weather or not there are narrow points in the airways which can be a problem for a patient's respiration. It is easily applied, reliable, non-invasive and well accepted by patients. Even assessment of children is performed without problems.

The RHINO-ACOUSTIC measurement system consists of the measuring software and the RHINO-BASE central which contains the data acquisition hardware for the measuring purposes. Additional items are the acoustic measuring probe, a long calibration pipe and the nose adapters.



Software for Acoustic Rhinometry

RHINO-ACOUSTIC measuring probe with nose adapter

otopront®

Long-term Rhinoflowmetry

Rhinomanometry, Rhinoresistometry and Acoustic Rhinometry are limited to assess the nasal airway only in a short period of time in which the measurement is performed. Many patients report about functional complaints at various time periods. In consequence, a diagnostic tool to gain more insight into the respiratory function during conditions of normal life is necessary.

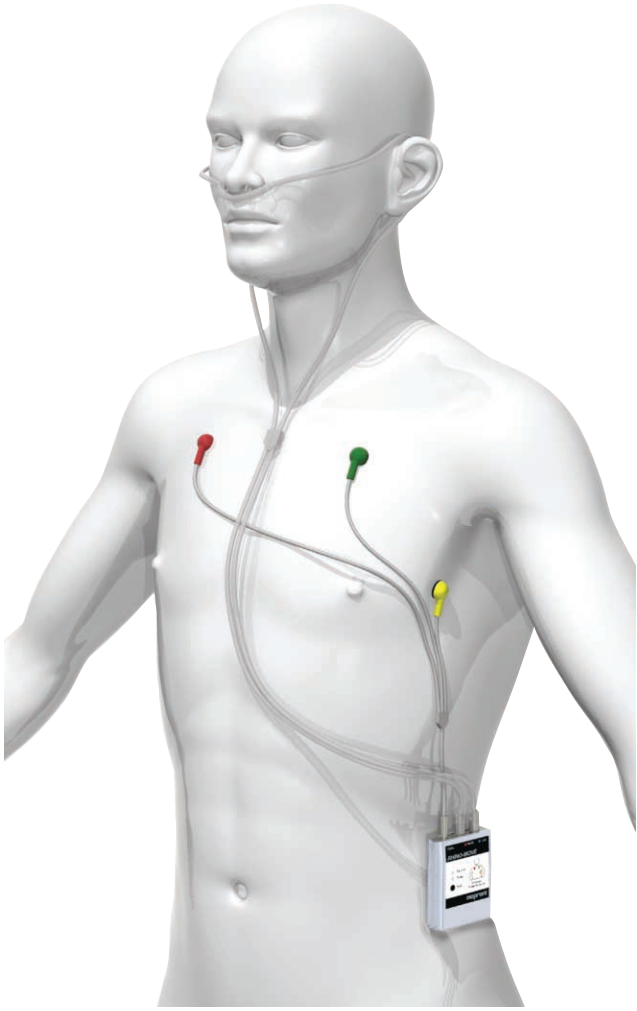
The RHINO-MOVE, a portable measuring system, enables breathing to be registered over a 24-hour period, with separate records for each side of the nose. The synchrone registration of the heart rate enables an evaluation of the physical strain. Once measuring is complete, the saved data are transferred to a laptop and analysed with the RHINO-SYS software. Thus, for the first time, the nasal cycle and its disturbance can be recorded under a patient's daily life condition.



RHINO-BASE docking station
for RHINO-MOVE



Software for Long-term Rhinoflowmetry





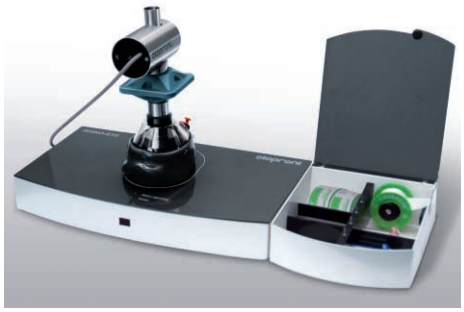
RHINO-MOVE Long-term Rhinoflowmetry unit with clothes clip

otopront®

RHINO-SYS

Accessory box

The RHINO-BASE accessory box contains all materials to prepare the RHINO-SYS for rhinologic measurements. The box also contains compartments for hoses and nose adapters. This functional box is a part of the RHINO-SYS.



RHINO-BASE
with accessory box



Compartments
inside the box

Technical Data

Measuring concept	nasal air flow, transnasal pressure, pneumotachograph, Fleisch nozzle
Measuring nozzle	preheated, temperature compensated
Long-term Rhinoflowmetry	24 h breathing signal and heart rate
Acoustic Rhinometry	reflex measuring, digitally filtered
Signal form	broadband impulse signal
Acoustical pipe	handpiece acoustically decoupled
Applied parts	type BF accord. to EN 60601-1
Type of protection	IPX0
Interfaces RHINO-BASE	electrically isolated accord. to EN 60601-1
Dimensions RHINO-BASE	70 x 370 x 200 mm (H x W x D)
Weight RHINO-BASE	4 kg
Power supply	110–240 V~, 50/60 Hz
Power consumption	15 VA
Protection class	class I equipment
CE mark	accord. to MDD 93/42/EEC

All designs and specifications subject to change without notice.

Trolley

The optional RHINO-CART is the ideal supplement to the RHINO-SYS. It contains a laptop tray with mouse-pad pullout, a mouse holder, trays for the RHINO-BASE with accessory box, a big drawer for filters, face masks and hoses, a holder for the RHINO-ACOUSTIC, a tray for a printer and an integrated cable channel. The RHINO-CART is mobile on castors.



RHINO-CART with RHINO-BASE
and RHINO-ACOUSTIC

Happersberger otopront GmbH
Medical Equipment Manufacturer
D-65329 Hohenstein · P. O. Box · Germany
Tel. +49-6120-9217-0 · Fax +49-6120-921760
www.otopront.com · info@otopront.com

12/L/E

otopront®