



SMART

Compact ENT treatment unit

**otopront**<sup>®</sup>

# SMART

## **Reinterpretation of an icon**

The idea for the SMART arose from the groundbreaking form of the first ENT treatment unit, the **Otopront "Säule"** (pillar).

This design, which combines all functional elements in one place, has been reinterpreted with regard to today's requirements and technical developments. The result is a highly flexible, slim-designed and elegant treatment unit, which can be fully-equipped.

## **Full functionality despite small dimensions**

Thanks to a space-saving arrangement of all its components, the SMART can be fully equipped: vibration-free high performance surgical suction unit for 24-hour use, hot water for rinsing, compressed air unit, up to 3 automatically switching LED light sources, integration of RF or endoscopy systems and microscopes.

## **In accordance with today's demands for flexibility**

With its stable appropriately sized castors the SMART can be rolled smoothly to different locations. Optional equipment is also provided with castors, such as a microscope with a stand or the accompanying instrument tables and cabinets. The complete unit is therefore flexible for mobile use in outpatient surgery, at the bedside or in several treatment rooms.

## **Sophisticated ergonomics and design**

All elements can be easily operated both sitting and standing, because of the forwardly tilted top and its circular arrangement around the body. The perfect "assistant" for standing operation.

## Functional

Mobil treatment unit, expandable  
to a fully equipped workstation with  
microscope and instrument cabinet

## Mobile

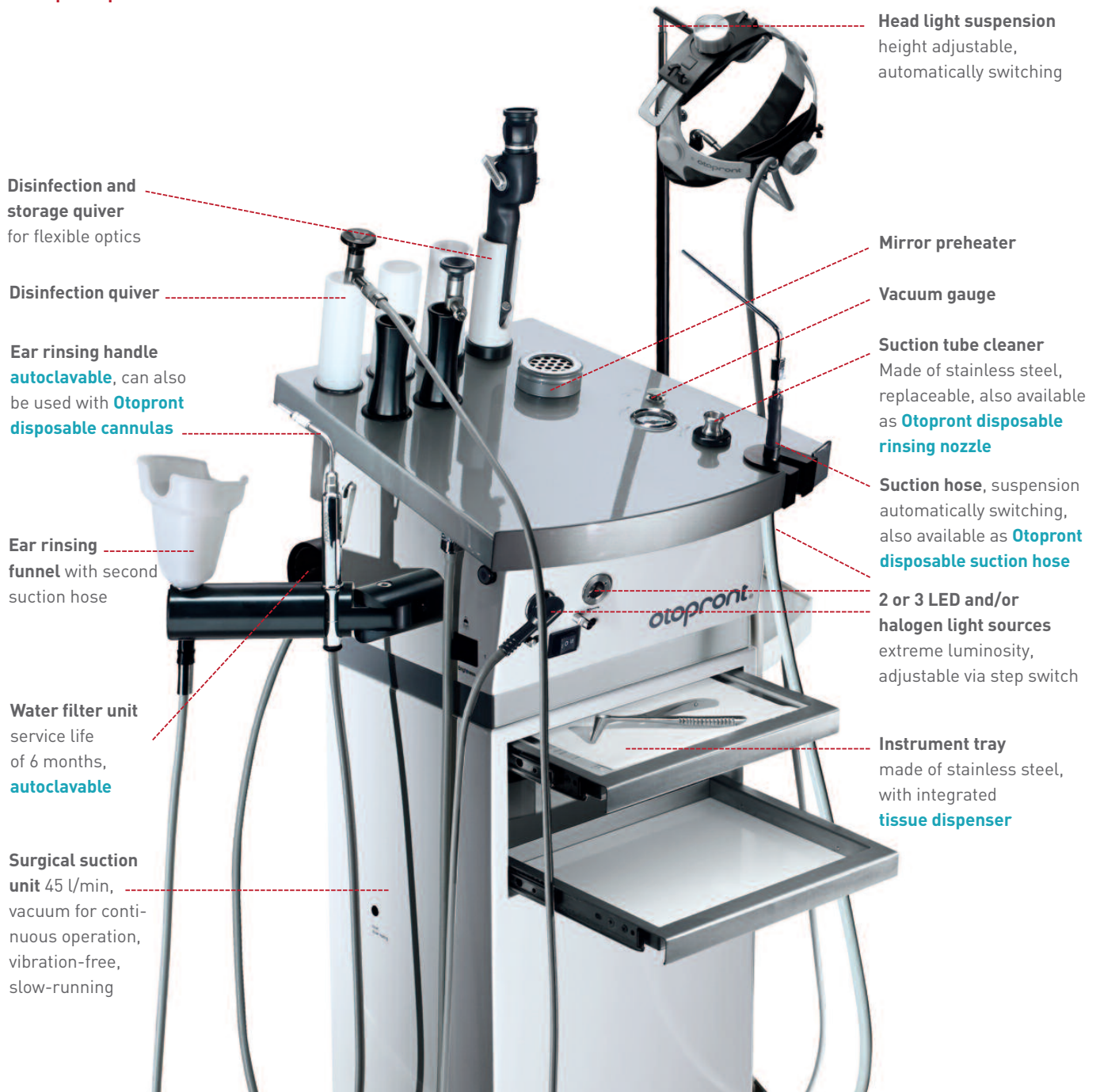
For mobile use in outpatient  
surgery, at the bedside or in  
multiple rooms

## Space saving

Slim shape, integration  
of all essential functions



# Equipment details



**Head light suspension**  
height adjustable,  
automatically switching

**Disinfection and storage quiver**  
for flexible optics

**Mirror preheater**

**Disinfection quiver**

**Vacuum gauge**

**Ear rinsing handle**  
**autoclavable**, can also  
be used with **Otopront  
disposable cannulas**

**Suction tube cleaner**  
Made of stainless steel,  
replaceable, also available  
as **Otopront disposable  
rinsing nozzle**

**Ear rinsing  
funnel** with second  
suction hose

**Suction hose**, suspension  
automatically switching,  
also available as **Otopront  
disposable suction hose**

**Water filter unit**  
service life  
of 6 months,  
**autoclavable**

**2 or 3 LED and/or  
halogen light sources**  
extreme luminosity,  
adjustable via step switch

**Surgical suction  
unit** 45 l/min,  
vacuum for conti-  
nuous operation,  
vibration-free,  
slow-running

**Instrument tray**  
made of stainless steel,  
with integrated  
**tissue dispenser**



A **compressed air unit**, including spray bottles with shatter protection and an easy snap connection, offers maximum safety and comfort. Can also be used with **Otopront disposable cannulas** for fine to strong dosage of medication.



**Swivel console**  
for storing further instruments or diagnostic devices, e.g. the compact PES PILOT HD<sub>pro</sub> video endoscopy system. To be mounted on the **left or right side**, **variable in height**.

# Instrument desk SMART S and instrument cabinet SMART L

With the mobile instrument desk SMART S or the instrument cabinet SMART L the SMART can be extended to a complete ENT workstation



## Plexiglass cover

A plexiglass cover, available with hermetically closing lid, protects the instruments from dust and other environmental influences. Easy cleaning thanks to smooth surfaces.

## Instrument storage

Removable, **antibacterial** coated instrument trays with freely divisible stainless steel slats, **autoclavable**.

## Writing panel

Optional made of stainless steel as an arrangement panel.

## Instrument storage space

Optionally open or closed, optionally as a storage drawer. The large storage areas allow easy access to instruments and accessories.

## Instrument disposal

Alternatively with 2 discard trays and stainless steel splash protection flaps, space for **wet wipes box**.

## Waste bin

With foot control and detent, easily removable and dimensioned for **standard disposal bags**.

Available in two versions:

Instrument desk SMART S and instrument cabinet SMART L

## Otopront Softclose system

The Softclose system allows an automatic, but damped closing of the cover. After the smooth opening of the cover, instruments can be taken out, to proceed directly with the treatment. Meanwhile the cover descends and closes automatically. Of course the cover can also be completely opened and adjusted. Optionally with hermetically closing framed lid.



# Suction

## Three suction pumps to choose from

The extraction system is automatically activated when the suction hose is pulled out. The encapsulated base pump ensures extremely quiet and vibration-free operation at an output of 58l/min. As an extremely powerful variant, a two-head diaphragm pump with 72l/min is available. Both units achieve a final vacuum of >91%. Double-piston surgery pump runs at 55l/min as well as vibration-free, quiet and, if required, also in continuous operation.



### Double-piston pump

55 l-runner from the operation room

## Suction glass

After each suction process, the suction glass is automatically emptied via a time-controlled discharge pump. But emptying by hand is also possible at any time thanks to a simple plug-in system. So you are always on the safe side. An autarkic pressure cleaning unit for effective rinsing of the suction glass is available as an option. Thanks to this separate flushing pump there is no infectious connection to the drinking water network or the ear irrigation system.

As an alternative to the plug-in suction glass, single-suction-bag systems (different manufacturers) can be used – without major retrofitting. The exhaust air filter protects against germs and aerosols and is easy to change.

## Suction hoses

**Otopront disposable suction hoses** fit seamlessly into the suction hose suspensions of all Otopront treatment units and are therefore fully compatible. As well as with the Otopront standard suction hose, the suction is automatically switched on or off when the Otopront disposable suction hose is removed.



**Standard suction hose**  
autoclavable



**Otopront disposable suction hose**  
1.5 or 2.0 m length

## Suction hose rinsing system

With the aid of the suction hose rinsing system, even the smallest suction cannulas can be flushed besides the suction hose itself. By controlled rinsing of the suction hose with disinfecting solution (for example, Aspi-Jet from Otopront), clogging of the suction hose is effectively prevented. Particularly advantageous is the possibility of flushing the suction cannula during the treatment. For this purpose, especially **autoclavable rinsing inserts** as well as **Otopront disposable rinsing inserts** are available.



# Ear irrigation

## 38°C warm water rinsing system

The system delivers exactly tempered water for the performance of ear irrigation. The water can be dispensed finely with the hand-piece made entirely of metal. The heating of the water in a stainless steel boiler guarantees the economical handling of energy and water. Calcifications of the heating elements are eliminated by design due to the external heating sleeve. The completely autoclavable water filter system, including the irrigation handpiece, ensures hygienic safety. A long-term study conducted at a leading German university clinic demonstrates the efficacy of the facility to ensure a permanently impeccable quality of water. The water filter unit, which is only to be changed every six months, is several times more cost-effective than terminal water filter units.



## Spray bottles

Three light protected spray bottles with different spray cannulas for oily or aqueous solutions are embedded in the device surface and provide optimum protection for light-sensitive drugs. All spray bottles have a protective sleeve and on request medicament labeling rings. Each spray head can be used with both stainless steel and Otopront disposable cannulas (see adapter below). Simple click connections offer maximum safety and comfort.

# Compressed air

## Compressed air unit

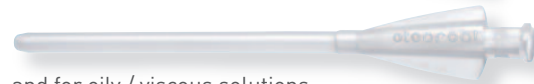
An oil-free running compressor supplies the stain-less steel air tank with multiple filtered air. Compressed air is immediately available thanks to an air tank without starting an aggregate. A variably adjustable pressure limitation in the Politzer gauge ensures additional safety. Like all Otopront hand-pieces, the fine-dose spray and the Politzer handpiece are made of metal and are autoclavable. Various Politzer attachments and medication bottles complete the range. On request, the device is available for connection to a central supply unit.

## Otopront disposable cannulas for spray units and ear irrigation

Two cannula types available:



for aqueous solutions



and for oily / viscous solutions



Disposable cannula for ear irrigation



## Disposable spray cannulas

Can be retrofitted with adapter for all Otopront spray heads

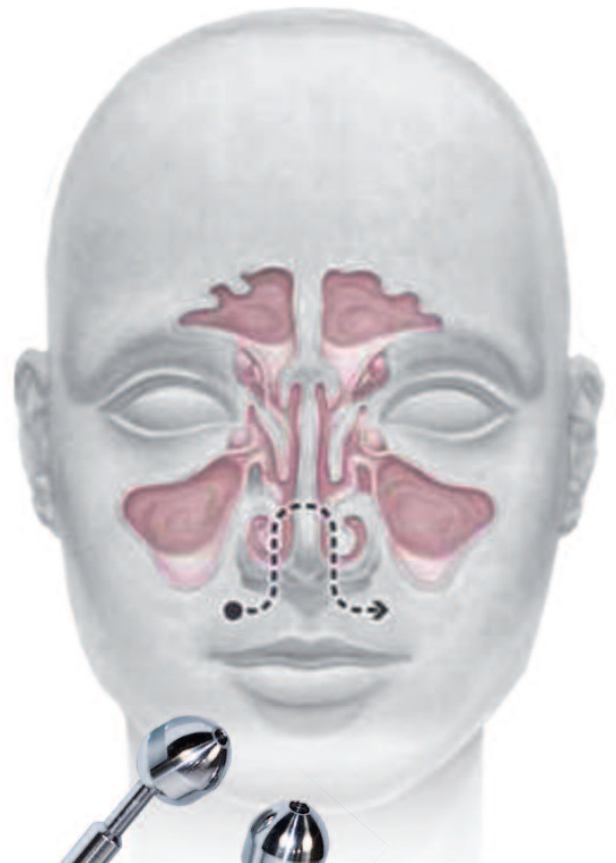
# Automatic Sinus Rinsing and Irrigation System

There are numerous methods to remove inflammation and improve nasal breathing. Among the most effective treatment methods is the nose rinsing and irrigation according to Proetz.

Indications for sinus irrigation: coryza; chronic and allergic rhinitis; polyps; various infections of nasal passages; mild forms of sinusitis (polisinusit, sinusitis, etmoiditis, frontalitis, sphenoiditis); tonsillitis and adenoiditis.

With the Otopront Sinus Rinsing and Irrigation System no preliminary preparation for the procedure is required.

The required medicine is filled into the internal reservoir. The system has a special handle with a built-in medicine supply for one channel and the possibility of simultaneous aspiration through the second channel. The mutual arrangement of the handle channels can be adjusted depending on the patient's nose structure, and the optimal olive sizes can be selected.



The handle comes with a convenient flow regulator for adjusting the medicine flow. The replaceable stainless-steel olives and the handle are suitable for autoclaving.

Otopront nose rinsing system maximises the efficiency and speeds up nose rinsing and irrigation procedures according to Proetz, both for the patient and the doctor. Since the handle can be easily operated one-handed the assistance of a nurse is no longer required.



# Tonsil washing device

## The treatment system for the infected tonsil with squeezing and cleaning function

A treatment method that has been existent till the sixties! An increasing number of tonsillectomies replaced the reputed device. However, a huge amount of patients with chronically infected tonsils is hesitant to agree to the final procedure of tonsillectomy for various reasons.

Nowadays surgeons go back to conservative techniques s. a. peeling the tonsils, cutting the tonsils half the way, radio surgery... No matter which procedure is being used, the tonsils and the field of surgery have to be properly cleaned before.

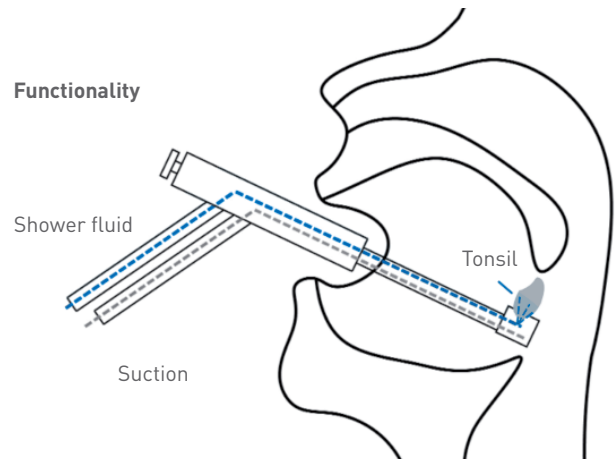


Even without an indication for surgical procedures, the patient suffering from infected tonsils is looking for immediate support and pain reduction. Cleaning the tonsils with a technique using pressurized water in combination with a tonsil shaped suction pipe offers immediate relief for the patient by removing the infected "carpet" from the tonsils. Medication can be applied on tonsils much easier and there is a new chance of bypassing a tonsillectomy.



Otopront now offers an all in one unit that converts the method into a daily routine procedure.

A stainless steel handle connected to a NaCl or water reservoir within the ENT unit provides a tonsil shower through a perforated canula, while a tonsil shaped glass pipe connected to an adjustable vacuum removes the carpet. The complete handle with glass pipe is autoclavable!

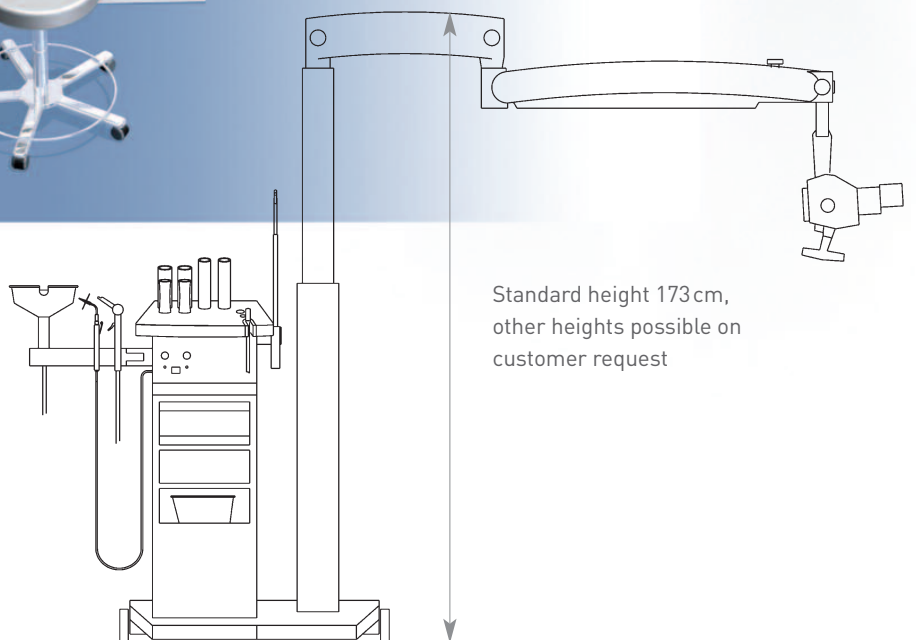


# Microscopy optimally positioned

The SMART is offered optionally with **Carl Zeiss** or **Kaps** microscopes. Both microscopes can derive their light from a separate Otopront LED light source integrated in the device, with the advantage of varying brightness and color temperature. Thanks to the daylight temperature (CRI > 95%) and high brightness (> 1800 lumens, dimmable) of the Otopront LED, an optimal true-color and contrast-rich image is produced.



SMART with microscope  
and instrument cabinet BASIC



# LED light for endoscopy, video endoscopy and high performance LED stroboscopy

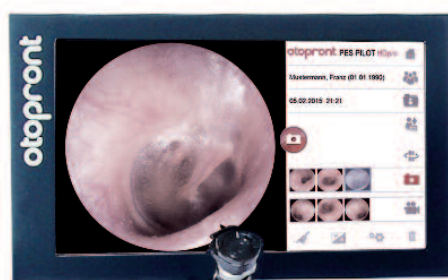
With its maximum brightness and especially its high CRI value (1800–2600 lm, 95%) with extended color spectrum (thanks to 5-chip technology) the **Otopront LED light** provides the best conditions for direct endoscopy and especially for videoendoscopy.

For those who are accustomed with **halogen light** and prefer it for a good reason, it is available with almost the same brightness thanks to the latest light technology.



For workplace videoendoscopy the SMART is optimally expandable with our endoscopy system **PES Pilot HDpro** mounted on a swivel arm. Due to the swivel arm's radius of movement and the frontal mounted **touchscreen**, the PES Pilot HDpro is always easy to operate in the working area.

In addition, a **Otopront video nasopharyngoscope (chip-on-the-tip)** and the **Otopront Superbright LED** light source are available for stroboscopy with an additional brightness gain of more than 40%.



PES Pilot HDpro on swivel mount with touchscreen



# General hygiene as Otopront standard

**A few examples** from the Otopront hygiene range (see also supplementary leaflet “Hygiene”):

## Otopront double quiver disinfection system

The double quiver disinfection system aids the correct immersion of optical devices. Precisely vertically guided by the inner quiver (submersion quiver), contact of the optical device with the outer quiver (rinsing quiver) is avoided. The inner quiver itself fully immerses in the disinfecting solution and is thereby also disinfected.

- Recontamination protection of the optics
- For fully virucidal disinfectants
- Quiver for flexible optics



**Diving quiver**  
for the safety of a perfect disinfecting process

## Otopront disposable cannulas for spray units and ear irrigation

Two cannula types available:



For aqueous solutions



and oily/viscous solutions



Disposable cannula  
for ear irrigation

The in recent years more tightened interpretation of requirements on hygienic preparation of medical instruments sees the cleaning of suction hoses and cannulas due to the small lumens at some point critical or not to be feasible. Otopront solved that issue by the development of **disposable cannulas**.

- **Fast replacement** of the cannulas with quick fastener
- Additional safety during treatment of **high risk patients**, bleeding noses or change of dressing
- Support of compliance with **hygiene standards**
- **Two cannula types** available: For aqueous solutions or oily/viscous solutions

## Otopront disposable suction hoses

fit **without modification** for all Otopront suction hose suspensions. The hygiene solution for the daily routine in practice and clinic or as an occasional replacement for the conventional standard Otopront suction hose in case of obstruction or for infectious/critical patients.



### Adapter for all pharmacy bottles

Due to new hygienic standards, it is now considered critical in some hospitals to decant medical solutions/preparations at the treatment site – e.g. into existing spray bottles. The requirements demand the filling of medicinal containers under aseptic conditions.

Therefore, Otopront has developed a simple and safe system that allows the **use of all standard pharmacy bottles on the treatment unit.**

By means of an adapter it is possible to connect the pharmacy bottle directly to the spray system.



**Simple design:** The cap of the pharmacy bottle is replaced by the adapter. In this way, it can be connected directly to the spray unit of the treatment unit. An easy-to-clean, autoclavable stainless steel casing provides **protection from glass breakage** and a molded part enables safe placing.

### Identity tag

Otopront also offers well-thought-out solutions for the increasingly demanded documentation of use and processing in hospitals. On request, all Otopront suction hoses are provided with a serial number and/or identification tag. In this way it is possible to clearly identify and document when and in which patient the suction hose was used. The preparation can also be recorded, so that it is documented when and by whom the suction hose was autoclaved. Everything without additional time.



# Instrument management

Despite its compact size all well-established Otopront standards are part of the SMART unit – such as to be pulled out stainless steel instrument trays with integrated **tissue dispenser**.

This provides a fresh instrument storage area for the subsequent patient within seconds.



## Instrument storage

Removable instrument trays with antibacterial coating and freely divisible stainless steel slats. All parts can be mechanically reprocessed or are optionally autoclavable. The instrument cover can optionally be hermetically sealed and equipped with the self-locking **Otopront Softclose system**.



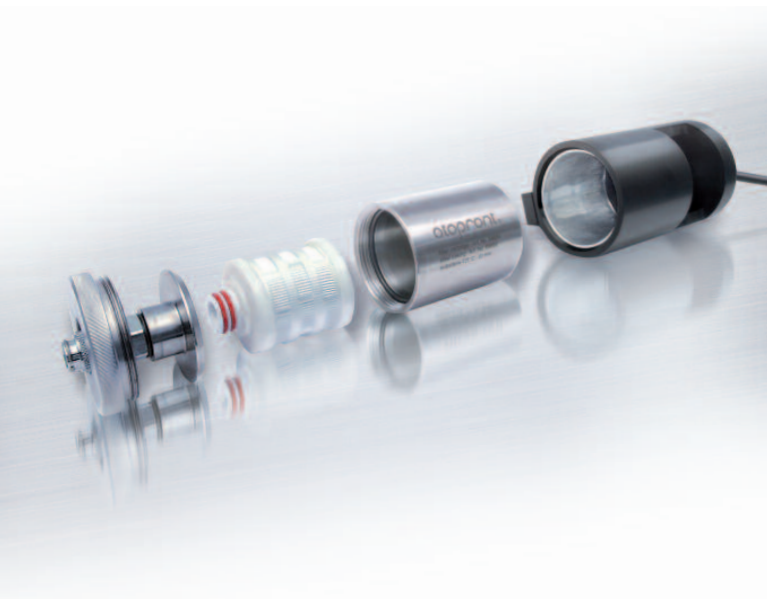
# Maintenance

Besides coherent hygiene solutions easy and efficient cleaning and maintenance are elementary components of each Otopront treatment unit.

## Validated water filter unit

The microbial pollution of water-bearing medical products is valued increasingly critical. Already years ago Otopront has taken this threat very seriously and developed a solution for all water-bearing devices. The water filter unit has been specifically tailored to the user's requirements:

- With a pore size of <math><0.2</math> micrometers for containment of pseudomonas and legionella
- Easy to use, economical, high level of hygiene safety
- Autoclavable



Easy access to all suction glasses and container for suction hose rinsing

## Hoses and handpieces

All hoses and handpieces as well as all application parts (spray bottles, cannula adaptors etc.) can be removed by snap system. Work surfaces can be easily cleaned and partly autoclaved as well.

## Filter and suction bag exchange

Easy access and quick exchange of secretion glasses and filters without any tools. Disposable suction bottles such as ABBOT, BAXTER, SERRES etc. with volumes of 1 to 3 litres are compatible with the SMART unit. No modifications are required.

## Easy cleaning and maintenance

Removable hoses, external suction unit and suction hose rinsing allow easy and complete cleaning of the system. Quick couplers on all hoses ensure easy cleaning and assembly.



# Equipment

## SMART

### Basic configuration

- Suction unit with non-vibrating, smooth-running vacuum pump, 58 l/min, 91% vacuum
- Suction hose rinsing unit
- Mirror reheating unit
- Pull-out arrangement panel with integrated paper roll
- Small instrument drawer
- Double or triple light source, 150 W halogen and/or LED (CRI >95%) warm white
- Suspension for headlamp height-adjustable

### Supplementary equipment

- Suction diaphragm pump: 72 l/min, 91% vacuum, vibration-free suspension, vibration-free, slow and silent-running
- Suction piston pump: 55 l/min, 91% vacuum, for 24 h continuous use, vibration-free suspension vibration-free, slow and silent-running
- Compressed air unit complete with fine regulation handpiece, 3 spray bottles, shatter protection (optional for disposable spray cannulas)
- 38° C warm water rinsing device with autoclavable water filter unit, optional autarkic 38° C water unit
- Automatic suction bottle emptying
- Rinsing bowl on swivel arm with second suction hose
- Completely external suction hose system
- Otopront SuperBright LED for flexible endoscopes
- Microscope holder with electrical supply and its own LED light source
- Swivel support for additional equipment
- Two rinsing containers
- Two quivers for flexible optics
- Two preheating quivers
- Top and base made of stainless steel
- Free choice of color according to RAL alternatively also 2-layer metallic paint

## Instrument cabinet SMART S, L

### Basic configuration

- Instrument tray with plexiglass cover
- 4 trays with variable division
- Pull-out arrangement panel, optional as writing panel (L)
- Instrument drawer, optional storage drawer (L)
- Instrument discard tray on stainless steel pull-out
- Waste container with rocker (S) or hinged (L)

### Supplementary equipment

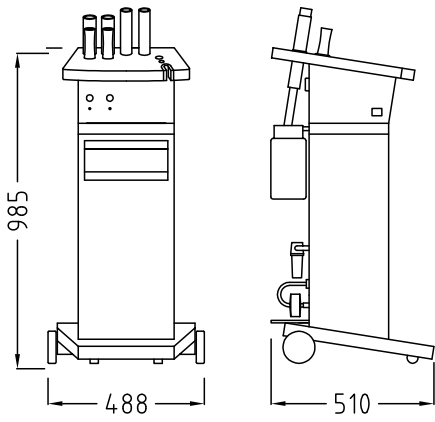
- Instrument tray with Otopront Softclose system and hermetic dust seal
- Mirror preheater for more than 50 examination mirrors
- Heated instrument surface for body warm instruments
- Built-in tray for infectious waste, cannulas etc (L)
- Free choice of color according to RAL alternatively also 2-layer metallic paint



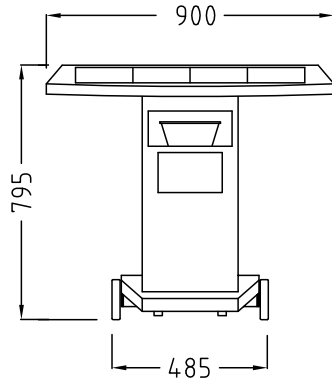


# Dimensions

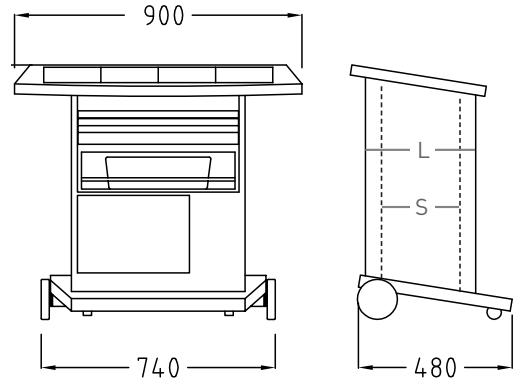
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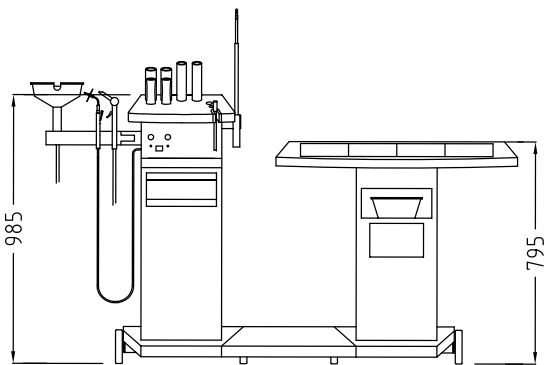
**Instrument cabinet SMART S**



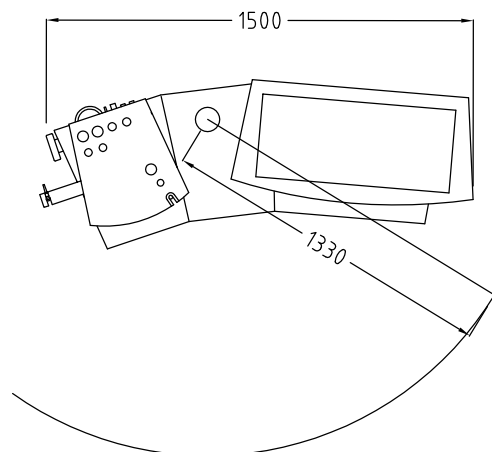
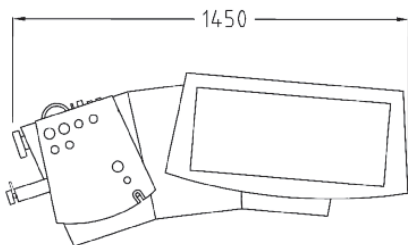
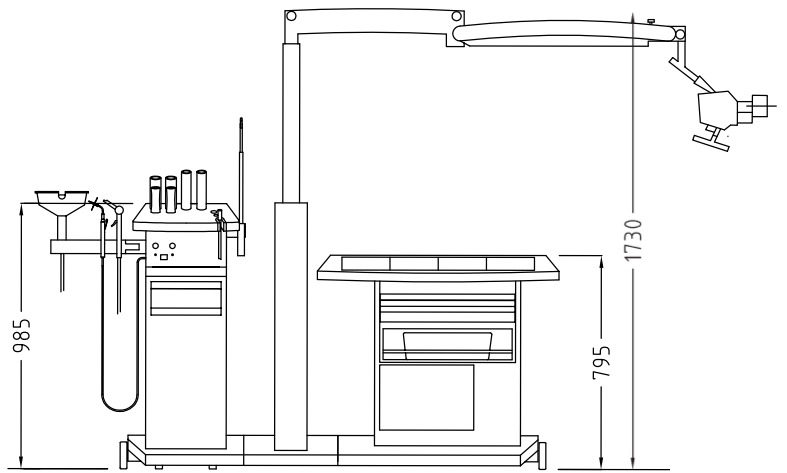
**Instrument cabinet SMART L**



**SMART with Instrument cabinet SMART S**



**SMART mit Instrument cabinet SMART L with microscope**



# Technical data

## Suction unit

- Basic pump: 58 l/min, 91% vacuum  
Alternatively:
- Diaphragm pump: 72 l/min, 91% vacuum
- Double-piston pump: 55 l/min, 93% vacuum, designed for continuous operation
- all pumps are vibration-free and extremely quiet running
- Easily accessible water filter unit
- Vacuum gauge
- Double overflow protection
- Automatic activation, optionally by foot switch
- Plug-in suction glass
- Automatic suction glass emptying
- Use of disposable suction bags and suction hoses, no modifications required

## Suction hose cleaning

- Integrated rinsing of hose and cannulas with disinfectant solution

## LED/halogen light sources

- 2 or 3 halogen light sources 150W
- Alternatively with 2 or 3 LED light sources (CRI > 95%, > 1800 lumens, dimmable, warm white)
- Otopront Superbright LED (> 2600 lumens)

## Endoscope quivers

- 2 removable preheating quivers, thermostat controlled
- 2 rinsing quivers
- 2 quivers for flexible optics suspension
- Swimming quiver for all standard optics as contamination protection

## Spray unit

- 0–4 bar, adjustable, with gauge
- Fine dosing
- Spray handpiece, [autoclavable](#)
- 3 spray bottles with replaceable cannulas
- [Otopront disposable cannulas](#)

## Ear irrigation unit

- Handpiece, fine-dosing
- Calcification-free boiler system

## Ear irrigation cup

- Disposal via separate suction hose
- On swivel arm

## Hygiene

- All application parts with patient contact are [autoclavable](#)
- Quick fasteners on all hoses
- [Otopront disposable suction hoses](#)
- [Otopront disposable cannulas](#)
- [Otopront disposable rinsing nozzles](#)
- [Otopront disposable suction bag](#)

## Smoke evacuation system, switchable

- In case of laser and HF surgical optional connection of a multistage [activated carbon filter system](#) for targeted extraction of aerosols from the ENT body cavities on the suction hose
- ULPA filter for protection against bacteria, viruses and aerosols

## Head light suspension

- Height-adjustable and automatic switching
- Laterally mounted

## OP-Normschiene

- Stainless steel profile type DRÄGER 25x10 mm or 35x10 mm
- Laterally mounted

## Construction

- Steel body, multi-layer lacquered
- Colour selection acc. to RAL colour range
- Top and base made of stainless steel or steel coated

## Driveability

- Antistatic rollers
- 2 castors on the front

## Weight

- 55–85 kg

## Power supply

- 110–230 V~, 50/60 Hz

## Power consumption

- 1300 W max.

## CE marking

- in accordance with MDD 93/42/EEC

Basic configuration and optional supplementary equipment as per price list. See also page 14.

All designs and specifications subject to change without notice.

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