

## Design prize for HOFFRICHTER

For the first time, the company HOFFRICHTER receives the Lilienthal Design Prize of the Land Mecklenburg-Vorpommern.

Together with a campaign on the taboo topic "Violence against women", Point@ managed to prevail over 71 competitors. Designer Gerald Hross accepted the prize on 24 January 2007.

Since 1992, Mecklenburg Vorpommern has been the only federal Land to continuously promote design development to the benefit of its economy. Every year, top results in the design sector achieved by regional companies and designers are publicly appreciated and distinguished.

From the jury's judgment: "The device for respiratory therapy at home advances the development series for these medical devices in an innovative manner. In terms of product design, device elements and colors pleasantly differ from the usual look of a medical device - a change the patients are certainly happy to see. The device convinces in particular by its modular-design technology. It is comfortable to handle and accommodated in a compact housing. This allows the patient to use the device efficiently whether at home or away. Thanks to structured design and many accessories, the device can be individually adapted to every patient's needs. It can easily be retrofitted for battery

operation or use of a humidifier or different filters. Protected in its special bag, patients have no problems to take the device with them."

## SOMNUS

The "SOMNUS -2006" prize of the periodical "das schlafmagazin" was awarded to the head designer and 'Entrepreneur of the Year', Helmut Hoffrichter. As an engineer, Mr Hoffrichter is adamant to ensure technical progress and quality even in seemingly minor details. Hard work, certainly - but the company HOFFRICHTER proves every single day that the effort is worth it in the end.



Lilienthal Design prize for HOFFRICHTER

Designer G.Hross



## Medica 2006

The MEDICA, the largest medical fair in the world, comprises the full range of exhibits for outpatient and inpatient treatment. The MEDICA presents a remarkable portfolio of products, topics and enterprises, from the innovative small firm over medium-sized companies to global players.



Business at the stand

The figures for 2006 illustrate the international significance of the MEDICA:

- 4.251 exhibiting companies from more than
- 62 countries;
- 98% successful exhibitors;
- 137,503 visitors from
- 104 countries;
- 95% of visitors are professionally competent.

Also in this year, the HOFFRICHTER exhibition stand at the MEDICA presented itself with a maritime theme. The ship was an allegory of the fresh breeze that the new respiratory therapy device series **VECTOR et** will bring into the CPAP world.

Our customers were very interested in the new product series. It

goes without saying that the demand for the other HOFFRICHTER products, for example the point@, was likewise remarkable.

We were able to win new customers and ensure the loyalty of the existing business contacts.



Our conclusion: the trade fair proved to be a full success. ■■■■■

## VECTOR ET

The new device series  
from CPAP to BiLEVEL ST



### Enhanced Technology

for more comfort in respiration therapy.

#### CPAP

Beside the conventional CPAP mode **VECTOR ET** provides the user in the FLEXLINE mode a dynamic pressure regulation which is proportional to the individual flow. That means pressure increase during inspiration and pressure decrease during expiration. This means a reduction of the breathing work and with this a natural, pleasant breathing.

Modi: CPAP, FLEXLINE

#### AUTO CPAP

The combined assessment of flow limitation, resistance and snoring, enables with an improved algorithm the safe differentiation of obstructive and central events. Within a specific pressure range the device provides the respectively optimal pressure.

Modi: APAP, CPAP, FLEXLINE

#### BiLEVEL BiLEVEL ST20

**VECTOR ET** possesses in addition to the excellent properties of the Monolevel devices two levels of pressure which are freely adjustable. For the easy change of pressure between in- and expiration a new, sensitive trigger algorithm was developed. The trigger algorithm can be set separately for inspiration and expiration to three different stages.

Modi BiLEVEL: CPAP,  
BiLEVEL S

Modi BiLEVEL ST: CPAP  
BiLEVEL S  
BiLEVEL T  
BiLEVEL ST

In a perfect relationship of  
comfort and functionality,  
breathing therapy meets  
design

In addition to the conventional CPAP mode, **VECTOR ET** offers in FLEXLINE mode a pressure increase during inspiration and pressure reduction during expiration which is proportional to the individual breath flow. This intelligent pressure adaptation process results in a significant reduction of

bency. When indoor air is dry in the heating period, the mucous membranes in mouth and nose may become particularly dry. This is unpleasant and may even cause infections in exceptional cases. For that reason, a CPAP therapy might require air humidification. To generate the necessary pressure,

The electronic system of the **VECTOR ET** is encased. This reliably prevents any mixing of the convection air required for the electronic system and the therapy air.

In addition to the mask alarm, the **VECTOR ET** offers another safety function, the power failure alarm. It automatically restarts the motor after power restoration.



the mean therapy pressure, thus allowing for a gentle therapy.

The **VECTOR ET** contains a built-in microcontroller which controls all of its functions. Further comfort functions include a soft start ramp, the automatic start-stop function and the adjustable display brightness. While passing through the device, the air is heated a little, so that it has a higher water absor-

ption. The **VECTOR ET** is provided with an electronically controlled blower. In order to keep the stress for the patient as low as possible, the blower has been designed with a high reserve capacity and a quick control response. The pressure is measured directly in the mask and constantly controlled by the device. Consequently, the breathing work for the patient is as easy as possible.



A clip-on humidifier AquaDROP Et is available as an accessory for the **VECTOR ET**. If necessary, just click the humidifier onto the device. Remove it by pressing its locking key.

# HOFFRICHTER Worldwide

The company North Med, one of our sales partners, is located on the Peloponnesus.



Since 1998, North Med has been a reliable partner that is always open for new developments. The innovative company with its amicable management style excels by its hospitality.



Manager: Spyros Podas; Head of marketing: Norbert Küchemann



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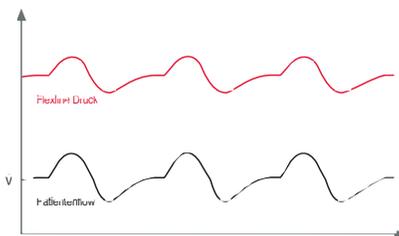




## The intelligent alternative: **FLEX**

### A new therapy mode makes gentle therapy possible

FLEXLINE is a comfort mode of CPAP therapy. It supports the dynamic conditions in the respiratory passages, thus increasing the patient's acceptance of the therapy. Proportional to the patient flow, the pressure is increased during inspiration and reduced during expiration. Here, other than in bilevel mode, the pressure follows the patient flow over the whole respiratory cycle and imitates the flow curve.



The pressure specification control consists of the following components:

#### Breath flow

Recording the flow is a central component of the FLEXLINE algorithm. It is measured via the motor control voltage which is proportional to the flow.

#### Leakage flow

As the pressure regulation in the mask causes the motor control voltage to increase during inspiration and to fall during expiration, the motor control voltage changes directly proportional to the flow. The total of positive inspiration and negative expiration flow is always zero. The leakage flow of CPAP dives is always greater zero because of the passive expiration valve. Thus, the mean value of the total flow equals the leakage flow. To allow for fast reaction to changes and to receive accurate

results, a special method is used which is based on a recursive self-adapting algorithm. In this method, the leakage flow is calculated continuously on the basis of the old leakage flow and edited with a correction value that is likewise calculated continuously.

#### Pressure specification

The pressure specification considers on the one hand the patient flow, the set therapy pressure and the set FLEX level, and on the other hand the correction factor which depends on the previously occurred voltage or flow change.

$$\Delta P = \dot{V}_{Pat} * p_{Therapie} * Level_{Flex} * k_{Korrekt}$$

This means that the pressure support during inspiration increases with rising therapy pressure, higher FLEX level and increasing patient flow, while greater pressure relief is realized during expiration.

At the start of inspiration and expiration, the set therapy pressure is present in the mask. This is guaranteed even with high respiratory rates. To this end, the respiratory rate is monitored and considered in the pressure specification control. As a result, an optimal and fast pressure increase and pressure release down to basic pressure is ensured also with an increased respiratory rate.

This process achieves the following effects:

- Breaths come more natural and agreeable thanks to reduced breathing work
- Reduction of the mean therapy pressure compared to CPAP
- Less leakages
- Increase of therapy constancy / long-term acceptance.

The value of pressure support depends on the value of the breath flow, the set FLEX levels and the set therapy pressure. There are 3 different FLEX levels that allow for adjustment to the patient's individual needs.

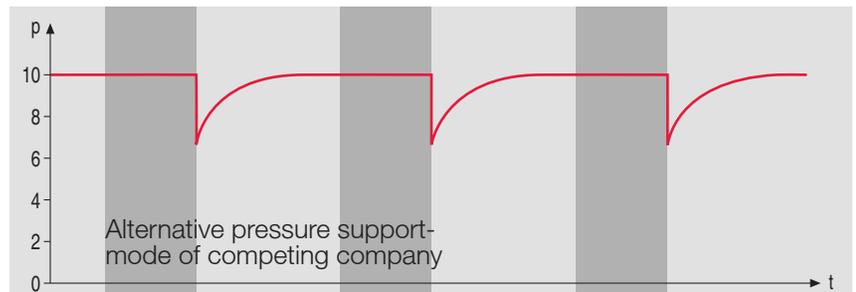
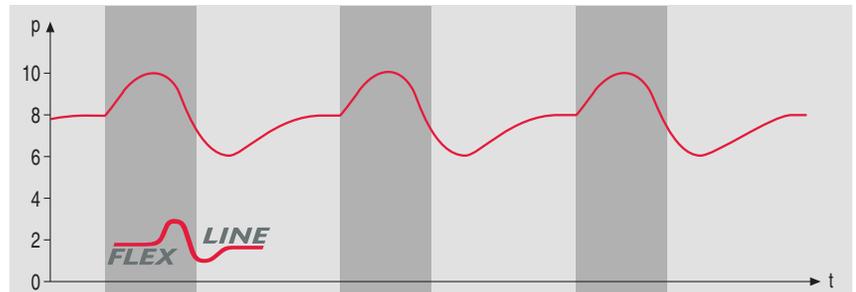
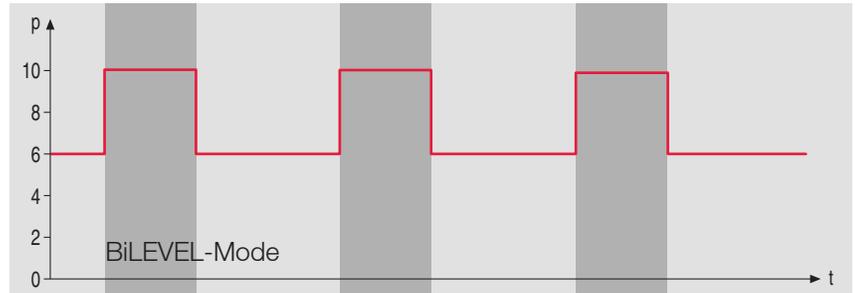
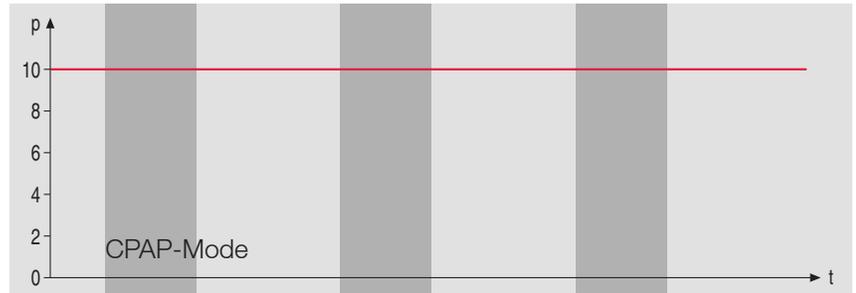
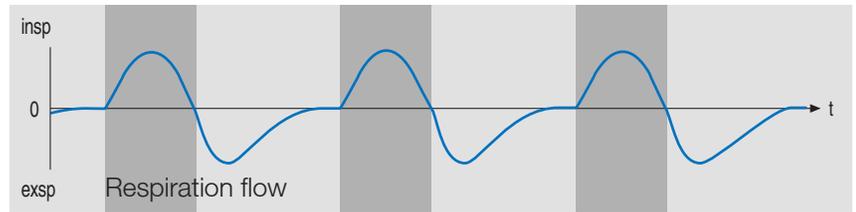
### Leakage and safety functions

The FLEXLINE mode guarantees correct and agreeable pressure support. This is possible only if current flow and leakage flow are in a proper ratio to each other.

For this reason, patient flow, leakage flow, inspiration and expiration volume as well as duration of inspiration and expiration are continuously monitored. If one of the following criteria is present, the pressure is reduced to basic pressure and maintained until none of the criteria applies:

- Inspiration duration greater 3 s
- Expiration duration greater 10 s
- Inspiration volume greater 3 l
- Expiration volume greater 3 l
- Ratio of inspiration volume does not comply with ratio of expiration volume (1:4 or 4:1)
- Respiration rate greater 40 bpm for at least 3 breaths = hyperventilation

Leakages are registered if a leakage flow jump of 300 ml/s occurs, or if the leakage flow exceeds 2 l/s. In these cases, the FLEXLINE algorithm adjusts and continues to support the patient during inspiration and expiration.



## New from the IT Electronic Archive

IT stands for information technology, and in this context covers all systems for information and data processing.

“How does the IT topic concern Hoffrichter GmbH?“, you may ask.

It concerns us deeply, as you can see from this and the next editions of our company magazine.

“I won’t understand all that technical jargon anyway.”

Not to worry: this recurrent column does not primarily address expert users and is not intended to teach specialist know-how.

Instead, I want to inform you about current topics and trends in the IT world in a generally understandable manner, and explain how new products are used in the company.

The first part of the column concerns our electronic archive.

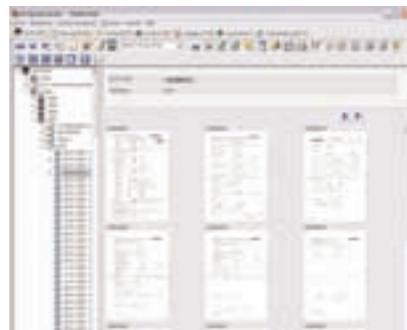
In accordance with internal quality assurance strategies and normative specifications, we have to keep production-relevant documentation for at least 10 years. This goes for example for checklists for the final inspection of our respirators, sometimes even of individual electrical and mechanical assemblies. Before the introduction of the electronic archive, all these documents used to be archived as hardcopies, classified according to device types.



In January 2006, following a three-months test phase, our electronic archive took up operation. Since that day, the documents generated on any single day are scanned and stored to an archive server in folder-like structure. The savings in respect of archiving area is only one of the advantages of this method.

It may be an even greater benefit that we now just need to enter the serial number of a unit from our production to have all relevant documents in hand in a matter of seconds - which makes life a lot easier, for example for the service team. In a next step, we are attempting to do completely without paper copies in the production process. All production orders will be sent electronically to the responsible employees’ P.O. boxes and returned to the production control after completion of the job. Then, the required documents

are directly transferred to the electronic archive - without the detour over scanning the paper document.



When this system is ready for productions, you will certainly read about it here.

R. Rothbart  
Systemadministrator  
Hoffrichter GmbH

## The art of noise Acoustic Laboratory

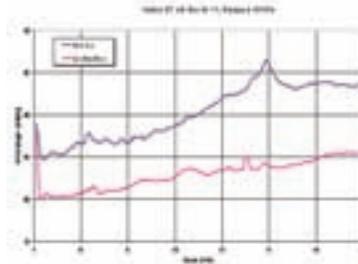
In many sectors of industry, companies invest huge sums of money to make sure their products have the optimum sound. In the world of film, stereo is long gone. Today, movies are broadcast in Dolby-Digital or DTS sound. Closing car doors must make the right sort of sound, and the sound quality of today's cell phones has come a long way from the good old telephone. Also HOFFRICHTER is putting a lot of effort into the sound of their therapy devices. But our objective is to make the devices as silent as possible. The MDS requirements specify how much noise a therapy device may make during operation. We want the HOFFRICHTER devices to make less noise so that the patient will have an especially agreeable therapy. After all, a device which provides good therapy but is so loud that the noise keeps the patient awake will not be of much advantage.

In our in-house acoustic lab, we are constantly looking for new ways to reduce the noise emission of our devices. Thanks to state-of-the-art technology and a soundproofed room, our R&D department is coming closer to achieve this ambitious goal.

In the acoustic measurement room, tests are made to find out whether a cable in the device should be run this way or that way, and whether the housing should receive more padding to cushion vibrations which cause disagreeable operation noises.

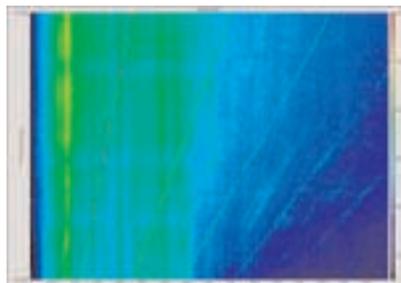


Before a device leaves our house, it is checked in the acoustic measurement room. It runs through all therapy pressures while sensors measure



Comparison from free box and finished device

the sound level. But not only the sound level meters but also the inspector's subjective noise perception decide whether a device passes the test. If there is the



Three-dimensionales spectrum of a blower box

smallest deviation, the device will not go to the customer.



Measuring in the acoustic measurement room



Measureings are evaluated

Just one example for the high quality standard of HOFFRICHTER GmbH.

# Visit of the prime minister of Mecklenburg-Vorpommern, Dr Harald Ringstorff, with a Polish delegation.

The voivodship [major Polish territorial unit] of West Pomerania and the region of Mecklenburg-Vorpommern have been linked by a cross-border partnership and collaboration scheme since June 2000. The voivodship of West Pomerania was created in 1999 from a merger of the voivodships Stettin and Köslin in the course of Polish administrative reforms. The inhabitants of the voivodships are represented in the regional councils which, in their capacity as executive body of the autonomous government, elect the regional governments. At the head of the regional governments are the Landeshauptmänner [chief administrative officers], also known as marshals. The current marshal of the voivodship of West Pomerania is Mr. Norbert Obrycki.

In the course of a meeting between representatives of the voivodship of West Pomerania and the regional government of Mecklenburg-Vorpommern on 3rd April 2007, Ministerpräsident [prime minister] Dr. Harald Ringstorff and Marshal Norbert Obrycki visited a number of companies in Schwerin.

The first signs of the guests' visit were a bomb-sniffing dog from the Landeskriminalamt [regional bureau of investigation] and a few

security men checking the entire building.

The guests' visit to HOFFRICHTER began with a brief presentation on the company, given by Mr. Hoffrichter. An explanation of the company's background and an overview of its range of products formed the basis for the subsequent tour of the firm. In the various departments, the Ministerpräsident [prime minister] and the marshal familiarised themselves with the products and the manufacturing of the devices.

The guests, visibly impressed, took their leave at the end of the tour with best wishes for the future for Mr. Hoffrichter.



During the tour: Mr. Hoffrichter explains how production processes are linked



Ms Riedel shows the guests how a CPAP device works



Left: Ministerpräsident [first minister] Dr. Harald Ringstorff  
Right: Marshal Norbert Obrycki

## The Essen Sleep and Snoring Forum



The Essen Sleep and Snoring Forum, organized by Schlafapnoe e.V., took place on 5th May 2007. The event offered help and advice to many people affected by the condition. At the same time, manufacturers had the opportunity to present products connected with combating sleep apnea.

Mr. Udo Bertram, chairman of Schlafapnoe e.V. and forum organizer, understands what visitors to the forum have to deal with. 14 years ago, he himself suffered from breathing disturbance during sleep. When his wife pointed out his snoring he went to several different doctors who, however, did not discover the cause, for Mr. Bertram was not overweight. It was in the sleep laboratory that it was finally discovered that, at night, his breathing was often interrupted. Since then, he has worn a breathing mask in combination with a

therapy device in bed. The success of this therapy gave him in one sense no rest: he is one of the most active organizers of such events.

Various doctors, including amongst others Professor Helmut Teschler, head of the Ruhrlandklinik [special hospital for the treatment of breathing disorders], gave interesting talks on the topics of respiratory therapy, masks, dental appliances and the possibilities of surgery. Sufferers from the condition also spoke and there was thus a comprehensive range of information for the listeners.

In between talks, visitors had the chance to look round the manufacturers' stalls for information on the latest products available. The HOFFRICHTER GmbH stand was constantly busy and showed the breathing therapy series TREND.

Around 75 people took part in the event. Mr. Bertram would have liked to have welcomed even more participants at this event, but he and his team will continue to work tirelessly on raising awareness of sleep apnea.



Mr. Udo Bertram

## Customer visits to Pakistan and India

In June, our product trainer and service manager embarked on a journey to visit and provide training for our customers VERTEX Enterprise in Pakistan and Medicare MHS in India.

The head office of VERTEX Enterprise is in Lahore. Here, the respiratory therapy systems point and VECTOR et were presented. Lahore has been the spiritual home of Islam on the Indian sub-continent since the 11th century and boasts several mosques dating from the Mogul era.



Badshahi-Moschee (Lahore)

New Delhi was the second port of call. Here, the visitors called key contacts of our customer MHS Medicare and presented both our company and range of products. A service and product training session for MHS Medicare rounded off this visit.



Jantar Mantar (New Dheii)

# point

## The point of respiratory therapy

Holiday time – time to travel. Once a year it's time to enjoy life in all its fullness, no matter whether you discover the world by plane, travel the ocean on a dream ship or simply take the caravan to visit your own country's beauty spots. Who hasn't dreamed of doing just that? For some CPAP patients, however, it is far from easy. Long journeys by plane can only be undertaken under certain conditions. Most large, unwieldy therapeutic devices are unsuited to long-haul flights. Long sea journeys can also be problematic for patients using CPAP. The line voltages are often incompatible with the device. And then there's the camping holiday. In this situation, an electricity supply outwith the campsite tends to be a question of luck. This combination of factors has led HOFFRICHTER GmbH to develop a device which does not need an outside electricity supply, is small, lightweight and compact and can be fitted with the equipment the patient needs.

The solution to this range of problems was found: the point. This small, cordless device lacks nothing which the "giants" have. Once more, the latest technology and years of experience in CPAP design were utilized to produce a device suited for travelling.



A travel pouch was designed especially for transporting the device, with room for all its component parts. Whether it's a humidifier, a filter system or a battery charger: each part can be transported in an optimal manner.



If it is possible to do without all extra parts and take only the therapeutic device and power supply unit on trips with you, the device adds only 1.35kg to your luggage. This lightness is not, however, achieved at the cost of the device's effectiveness. An extremely silent and powerful turbine ensures a true HOFFRICHTER device therapy result. Its particular ease of use is another feature of the point. A few buttons control all the device's functions. A clear display ensures functions and uses are always easily viewed.

**aquapoint**

The newly developed humidifier aquapoint is easy to work and can be relied upon to ensure optimal humidity. The 5 levels of heating are set by the electronic controls and displayed on the device by LEDs.



The integrated memory guarantees that the last heating level set for the patient remains programmed in after the therapeutic device has been switched off or the humidifier has been unplugged.

The large volume – 260ml – allows the patient to have a long therapy session pro top-up.

When the humidifier is cleaned, the three parts can be dismantled and reassembled quickly and easily.



**filtersystempoint**

In a dusty environment or if there is a high pollen count, it is advisable to use the filtersystempoint. This ultrafilter, which is considerably larger, is simply plugged in to the back of the system. The ultrafilter is more efficient than the standard filter because it is bigger and filters the respiratory therapy air twice. This filter may give relief to patients suffering from allergic reactions.



The filter consists of a coarse filter, which in itself is able to filter a large portion of the dust particles out of the respiratory therapy air, and a two-layered fine filter, which effectively filters out even the smallest of particles.

The filters can be changed or cleaned with the minimum of effort. The filter is thus practically always ready for use.

**powerpackpoint**

The most innovative feature of the system is without doubt the **powerpackpoint**.

With this battery pack, you are not at all dependent on the power supply network. Modern lithium-ion technology guarantees up to 8 hours of operation with from one re-charging session. The batteries must then be re-charged - whether this is done from the power supply network or from a cigarette lighter in the car or caravan is immaterial. The batteries are charged in the therapeutic device without the need for a supplementary battery charger. A symbol in the display shows the batteries' current state of charge. An integrated electronic system prevents the batteries becoming overcharged.

The batteries fit the shape of the point perfectly, so, in spite of carrying batteries, the device does not increase in size or bulk.



# HOFFRICHTER Worldwide

MEDIGAS ITALIA, a company of the PRAXAIR - Group is one of our most successful partners in the European market. Our cooperation started in 2001.



MEDIGAS sells our complete product line of respiration therapy devices as well as our ventilators all over Italy.



The headquarters is located in Assago close to Milano.



## MEDIGAS

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## TRENDset

### Software that convinces



What is the little socket at the back of the respiratory therapy devices actually for? This is most certainly a question which many have already asked themselves. This socket allows the therapeutic device to be connected with a PC. TRENDset is the software which connects the device to the computer.



Medical staff are able to control the functions of the therapeutic device via the PC. This function is often used in sleep laboratories in order to effect parameter changes without working directly on the device. This, however, is only a small part of what this software can do.

The software is divided into six screen views.

- Patient data
- System Settings
- Therapy calendar
- Data and events
- Statistics
- Times and counters

The screen view "Patient Data" includes a function allowing the patient's personal data and data relevant to his therapy to be recorded and programmed into the device. Brief findings or comments can also be added in here.



The next area shows the System Settings. In this section the user of the therapeutic device determines at what level the pressure therapy should be set, whether or not he would like a soft start time, the language, mode and whether the automatic function should be activated or not. The chosen pressure level can be shown in a window and, should they be available, the ramps may also be selected via charts on screen. Depending on the type of device, this menu page is always adapted to the device to

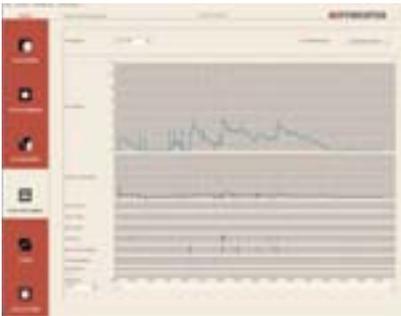
which it is connected. Thus the user only ever sees the parameters which are actually relevant to the device which is plugged in.



The third screen view is devoted to the Therapy Calendar. In this section, the user can see the total period in which the therapeutic device has been used. The table is arranged by day and can display data gathered from the preceding 365 days. The various pressures are displayed in different colours so that the user can obtain a quick overview. It is also possible to have the therapy calendar records displayed.

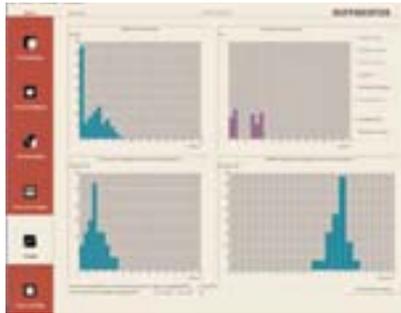


With the screen view “Data and events”, it is possible to view in detail the course of therapy for a particular day. In this screen view, all events such as, for example, apnea, snoring periods and constriction of the airways are displayed, exact to the second. Another available function is real-time monitoring. This function is particularly valuable in the sleep laboratory as it is then possible immediately to react to events during therapy.



The screen view “Statistics” is only activated with auto-CPAP devices. In this screen view, the results of the therapy are shown in four different tables. The first table shows the temporal pressure distribution (time [%] / p [hPa]). The next table shows the effects of the therapy pressure (excluding periods of snoring) (events [%] / p [hPa]). The third table shows the temporal distribution of events (excluding periods of snoring) (events [%] / time [h]). The last table shows the frequency of events. Here, the user can choose the type of event and then sees the appropriate chart. In addition to this, the user

can also choose whether the total number of events should be shown, or the number of events per hour. It is also possible to have a statistical analysis displayed.



In the last screen view, the “Times and counters” are listed. In this section, the user is given an overview of the device’s running times and can also clear them. The date and system time are two further parameters which can be set in this section. Finally, the therapeutic device’s “wake” function can be activated or deactivated.



In the print menu, a choice of documents to be printed can be individually put together for patient records or other uses. The user thus receives the print-outs which are really relevant and is not drowned in a mass of paper. The software can be displayed in 7 different languages.



TRENDset offers service technicians a special, protected section. It is only possible to change or work on this section with a password. Also part of the software is an ADC test (analogue digital conversion test) which runs automatically. This test allows the user to establish whether the given favourable pressure matches the actual pressure produced.

# News from the IT Spam

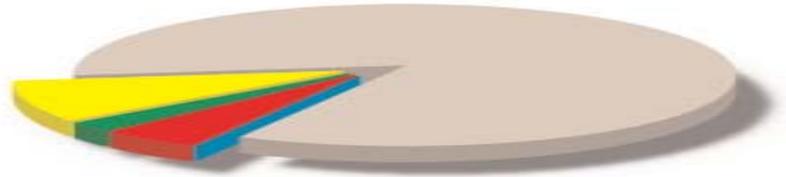
## A tiresome nuisance

Anyone who reads and writes e-mails on a regular basis is most certainly familiar with the following scenario: The virtual letter box is full, but only a few of the e-mails therein are actually of any importance. The rest are advertisements for questionable services and spam. E-mails such as these advertise blue pills with tremendous effects, the services of the oldest business in the world, new on-line casinos and illegal software.

A new trend at the moment is "stock spam": share recommendations for small, cheap firms which will supposedly make the buyer's fortune. The only one who seems to make real money is, however, the one who started off the mass e-mail campaign. Before the spam campaign starts, this person buys considerable shares in at low prices in order to be able to re-sell them during the period of price increase sparked off by the mass stock spam.

Spam filter statistics on our mail server for a week:

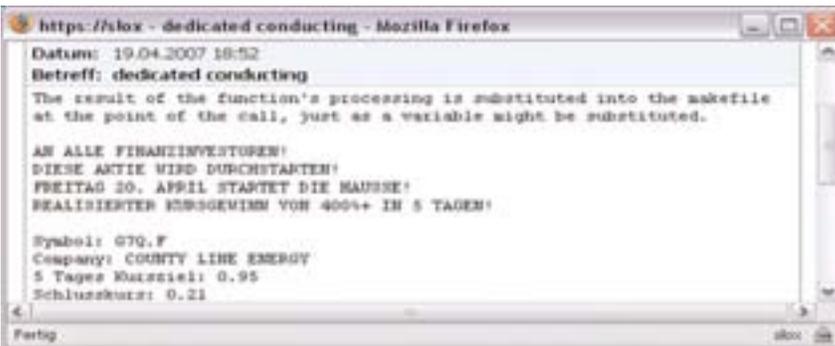
Messages checked	3643
83% normal messages	3037
5% detected spam messages (marked)	179
detected spam messages (rejected)	83
9% messages marked as spam by user	343
0% messages marked as non-spam by user	1



The gullible investors' money does not disappear; it merely changes hands. In this country, in spite of all laws and regulations, the number of incoming e-mails which are spam has for years been steadily increasing. In my capacity as the administrator of a mail server I am therefore faced with a dilemma: In the attempt to filter out as much spam as possible, it is not impossible that e-mails important to the recipient be deleted. On the other hand, if the anti-spam rules are applied too loosely to the server, a large amount of spam will continue to find its way into the user's inbox.

A technological solution to the spam dilemma would appear to be in sight in the form of improved authentication mechanisms for mail servers. These mechanisms are designed in such a way that the sender must prove to the mail server receiving the message that he is a bona fide sender before the e-mail is delivered. To date, all attempts to create a uniform standard for all producers/providers have failed because of profit-mongering on the part of the large internet providers, mail hosts and suppliers of mail server software who all wanted to establish their own method as the standard.

Nevertheless, I still look to the future with optimism. The problem of spam is such an expensive one for all those involved that, sooner or later, an agreement should be reached.



R. Rothbart  
Systemadministrator  
**HOFFRICHTER GmbH**

## The fight against germs

### KEREDUSY



At the entrance, a warning notice informs people of possible biological dangers. Another notice makes it clear that only particularly skilled personnel are allowed access to this area. Behind these closed doors you have the impression of being in an extremely unusual room. The smell is pleasant and the room is extremely clean and tidy.

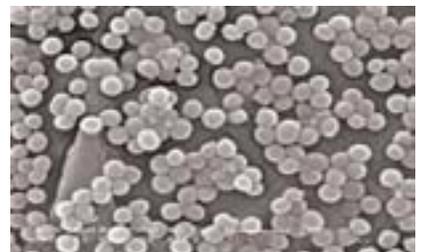
In accordance with the Medizinproduktegesetz [German medical devices law] devices are processed here under strict hygiene regulations, as recommended by the Robert Koch Institute on the occasion of a change in patients or after the expiry of a set length of use.

The demands to be fulfilled in the processing of a device are enormous. Four rooms must be reserved for this purpose. The first room is for putting on personal safety equipment (gloves, masks and disposable aprons).

In the second room, the devices which have been delivered are unpacked. Filters, travel pouches and manuals which cannot be decontaminated are disposed of in special containers. A thorough disinfection of all surfaces is then carried out. The third room is for the disinfection of the devices themselves. In this room, the components through which liquid has passed are cleaned. A special device creates ozone and blows it through the device which is to be cleaned. This system is known as **KEREDUSY**

(**KEimREDUZierungsSYstem** [germ reduction system]). In the KEREDUSY system, distilled water is converted into ozone and continuously monitored by means of a special UV beam. As ozone (or active oxygen) alters surfaces, this effect is used to destroy the structures and enzyme proteins of micro-organisms. The disinfection of one piece of breathing apparatus lasts for c. 80 minutes, that of a respiratory therapy device c. one

hour. After disinfection, the device is then rinsed thoroughly in order to remove the ozone. It can then be said with certainty that the devices are germ free. The fourth and last room is for the post-processing of the devices. Here, the devices are fitted with new filters and thus made once more ready for use. The devices are also re-calibrated and a disinfection record is enclosed with the devices. We go to this effort and expense in order to kill off, amongst other things, MRSA bacteria. MRSA is the abbreviation of methicillin-resistant Staphylococcus aureus and is used to describe strains of microorganisms which are resistant to certain antibiotics.



Staphylococcus aureus  
9560 x enlarged

Each year, 40 000 to 50 000 patients in Germany become infected with MRSA, of whom between 700 and 1 500 die. The fight against germs is therefore fully justified.



## MEDICA 2007

### The preparations are at their peak

This year as well **HOFFRICHTER** will exhibit at MEDICA, the world's largest trade fair for medical technology in Düsseldorf, from 14<sup>th</sup> November to 17<sup>th</sup> November. The motto this year is "Fly the kites for a fresh breeze in respiration therapy." This is clearly reflected in the way the stands will be arranged. Kites will fly over the stand and the advertisements in the press are preparing our clients for this motto. In addition to the exhibition space and the consultation stand, we have a bar and a quiet room with the right atmosphere for

negotiations. **HOFFRICHTER** will exhibit new innovations in respiration therapy and technology. We will exhibit the **VECTOR et** series, the mobile respiration therapy device **point** and the pressure and volume controlled ventilators **CARAT I** and **CARAT II**, that are marketed by DeVilbiss, our sales partner in Germany, under the name **CARAT I plus** and **CARAT II plus**. The highlights for the optimization of these devices are the simple operation, the improved handle and the clearly lighter and more efficient batteries.

The exhibition team is adequately prepared and is looking forward to the "MEDICA 2007" challenge. We look forward to welcoming you to our stand (Exhibition hall 11, E13) in the trade fair hall in November 2007.



## Visit of the "Heideschläfer"

During a lecture at the self-help group "Heideschläfer" in Celle, the idea to visit the **HOFFRICHTER** company and the city of Schwerin developed. This idea was implemented on 26.09. 2007 when Mr. Küchemann (Marketing Manager and Authorized Representative) welcomed Mr. Klingeberg, the head of the self-help group and 40

patients from the group. The subsequent tour of the premises through the development, casting, prefabrication and end production departments gave the group a deep insight in the company. Thereafter a speech was held on the founding of the company and the company's wide product range. During the lunch break

intensive discussions were held and the advantages of the new device series were presented. After the FLEXLINE speech the group proceeded to the MS Hamburg, a "White Fleet" excursion boat. The impressions of the company tour were discussed over coffee and cake during the two-hour trip on Lake Schwerin. A visit to the Schwerin Castle rounded the day off.



## 3<sup>rd</sup> National Sector Conference in Rostock-Warnemünde

The 3<sup>rd</sup> National Sector Conference for Health Care 2007 took place on 24<sup>th</sup> May and 25<sup>th</sup> May. The motto of this event was "Complementary and Alternative Medicine as an Economic Factor: Chances – Limits- Standards". German and international experts met and discussed new possibilities of acknowledging complementary and alternative therapy like acupuncture, Ayurveda and Reki in conventional medicine. Mr. Hoffrichter welcomed Prof. Dr. Damdinsuren Natsagdorj, the Khamba Lama (Great Teacher) as a special guest. He is the Manager of the Manba-Datsan-Clinic and the Training Center for Traditional Mongolian Medicine in Ulaan-baatar, Mongolia. He is also a member of the Council for Traditional Mongolian Medicine at the Mongolian Ministry of Health. ■■■■



## Hospitalar in Sao Paulo, Brazil

Expo Centre Norte Exhibition Center, German Pavilion, Stand A01, White Hall. That was the address for the **HOFFRICHTER**-Stand at the Hospitalar in São Paulo, Brazil from 12<sup>th</sup> – 15<sup>th</sup> June 2007. Hospitalar is the largest trade fair for medical technology in South America. About 70,000 visitors (clinical staff, doctors and traders) gather information on the latest innovations in medical technology. The **HOFFRICHTER** devices went down well with interested parties and we were able to win over new clients. ■■■■



Mr. Küchemann welcomes new clients: Meditron, Brazil und Age Medical, Argentina.



## German Unification Day

This year, the German Unification Day was celebrated in Schwerin, the capital city of the German Federal State of Mecklenburg-Western Pomerania (MV).

**HOFFRICHTER** had its stand in the information tent: "The Health Federal State MV is good for Germany." The latest product range was exhibited. Among our numerous visitors were the Deputy Prime Minister and the Minister for Economic Affairs, Employment and Tourism in the Federal State of Mecklenburg-Western Pomerania Mr. Jürgen Seidel and Mr. Till Backhaus, the Minister for Agriculture for the Federal State of Mecklenburg-Western Pomerania. ■■■■



Mr. Hoffrichter explains the mobile respiration therapy device point to Mr. Seidel.

# CARAT

## Approved ventilation technology with a new look

It is already a common practice in the automotive industry. Cars are on the market for a few years then they are given a face-lift. Small details in the look and functionality are changed to match the customer's latest demands and market trends. It was likewise the right time for us to integrate technical innovations in the **CARAT** ventilation device and to improve its external appearance.

The handle has been shifted from the front of the device to the top of the device. This makes ergonomic carrying possible. The large operations button with the double function ON/OFF and the alarm confirmation on the top of the device has been separated into two buttons and has been shifted to the front of the machine. This simplifies the operation of the device. Only one button is now responsible for switching the device on and off. The second button is for the alarm confirmation. Using the "Alarm button" an alarm can be suppressed before it goes off. This can for example occur when the patient has to be aspirated. For the optical display of the alarms, an additional LED was fixed next to the LEDs for internal and external tensions. It is now possible to immediately see from a distance if an alarm is existent. The new screen menu clearly simplified the process of changing ventilation



modes.

The old mode button has been replaced by a new esc | mode – button. This button not only changes the mode but also resets erroneous parameters that have been fed in. It can also take you back from a selected screen to the standard screen. An important change is the evidently lighter internal battery. The heavy lead-gel batteries have been replaced with a lithium-ion battery. This reduced the weight of the device by 1.8kgs – about 30%. Furthermore it increases the total running time and reduces the charging time by half. The device also has a new colour. Fresh lighter colours give

ventilation devices a lighter appearance. Further technical innovations can be found in the software. Among other functions we should mention the new automatic expiration trigger. 

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# HOFFRICHTER Worldwide

LABS Medikal Elektronik Ltd. is one of our most loyal clients. The company headquarters is in Istanbul in Turkey, Europe's second largest city with approximately 10,000,000 inhabitants.



With its three-thousand-year old history, Istanbul is one of the world's oldest existing cities. The company has a branch in Ankara



Dr. A Latif Ersoy cares for his patients with the complete HOFFRICHTER product range.



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## Location Schwerin

### A nice place for living and working

„Working where other people go on holiday.” That is a sentence that you often hear and think: “I would also love to do that.” Many people often think of distant countries - the Caribbean or other fantastic holiday locations. But like Johann Wolfgang von Goethe said: "Why travel so far? See, the best things are so close!"

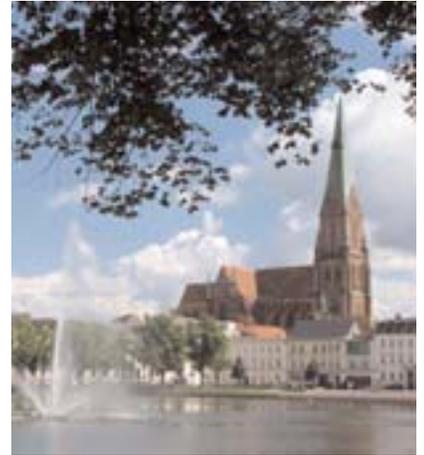
The Federal State of Mecklenburg-Western Pomerania has become one of the most popular tourist destinations in Germany over the years. Mecklenburg-Western Pomerania’s coastline is the longest coastline in Germany with a total length of about 1700km. The Pomeranian bay and coastal waters take up most of it. The outer coast is about 350km long. You will find recreational activities for all tastes here. The inland is also very beautiful. Lake Müritz has an area of 117km<sup>2</sup> and is Germany’s second largest lake. The Müritz National Park (318 km<sup>2</sup>) was founded in 1990 around Lake Müritz. Among other animals you can marvel at the rare birds like the White-tailed Eagle or the Bittern in the park.

Schwerin is the capital city of the Federal State of Mecklenburg-Western Pomerania. It is the smallest capital city in Germany with about 100,000 inhabitants.

Over time, Schwerin expanded on the western and southern shores of the lakes. There are a total of 12 lakes with in the urban area. In the mid 10th Century a travelling trader told of a castle in a fresh water lake – a preceding structure of the current emblem, the Schwerin Castle, which was formerly the residence of the Duke of Mecklenburg and is since 1990 the domicile of the Parliament. And Schwerin has more to offer:

- Core city of the region West Mecklenburg
- Media Center
- Exposed residential and work area
- Popular city tourism location with interesting cultural, recreational and sport settings
- Home of the 2009 Federal Flower and Garden Festival
- City of lakes and forests

Schwerin offers a good educational basis with its 42 day-care centres, 30 schools, 10 vocational schools, 1 evening high school



and an adult education centre.

The infrastructure fulfils your every wish. It is 30 minutes to the Baltic Sea, 1 hour to Hamburg and 2 hours to Berlin. The A24 highway in the South of Schwerin leads you into the metropolis and the A20 leads to all the Baltic Sea destinations.

When you consider how cosy the people of Mecklenburg are, you stop to wonder: "Why travel so far?" Because: "See, the best things are so close!"



# Sleep Apnoea Syndrome

## Disease – Possible causes – Therapy

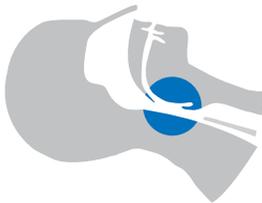
The Sleep Apnoea Syndrome is a clinical presentation that is normally caused by cessation of breathing (apnoea) during sleep. It is mainly characterized by pronounced exhaustion, momentarily falling asleep and other symptoms as well as subsequent illnesses. The cessation of breathing causes a reduction in the oxygen supply and repeated sleep disruptions (sudden awakening like an automatic alarm reaction of the body) although the patient is rarely conscious of what is happening. The result of this is a non-relaxing sleep.

There is obstructive, central and mixed sleep apnoea syndrome. The central apnoea is caused by damages to the central nervous system. The breathing musculature is inadequately controlled and the brain “forgets” to breathe. Central apnoea is usually genetic but it can also be caused by neurological damages.

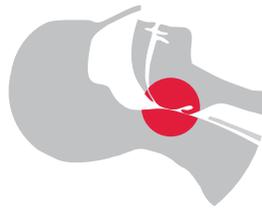
The most common form is the

obstructive and mixed apnoea syndrome (OSA). It is caused by a destruction (obstruction) of the airways with or without concurrent affection of the central nervous system. It can be diagnosed when apnoea phases, heavy snoring and its symptoms and subsequent illnesses develop. Snoring alone and occasional shortages of breath are not a risk to health. In Germany, 1-2% of the women and 2-4% of the men in their middle ages suffer from OSA – approx. 800,000 people. The relatives of OSA patients report loud snoring interrupted by second-long breathing pauses that are ended with a heavy sighing gasp or a loud snore. The best documented and the most acknowledged therapy worldwide for OSA is the CPAP therapy (Continuous Positive Airway Pressure) with a CPAP respiration therapy device. The **VECTOR ET** device series has a silent compressor that is connected by a tube to an nCPAP-

mask that is pressed onto the face using headbands around the nose (or rarely the mouth). With the help of this machine slight pressure of about 8hPa will be created in the airways as you sleep to prevent the apnoea and the snoring. This therapy is also referred to as the “pneumatic splinting” of the upper airways. Sleep will become relaxing if the therapy is carried out regularly and constantly. Sometimes when the nasal mucosa dries out, a warm air humidifier for the respiratory air is necessary.



*Normal open upper airways*



*As you sleep the upper airways collapse more or less causing apnoea.*



*During the nCPAP therapy the upper airways are “pneumatically splinted” so that they remain open.*

## News from the IT “Backup and restore”

### A network only for memory

In addition to ensuring the smooth functioning of all computing systems in the company, one of the most important tasks of the IT department is the backup of data. More important than backup is certainly the restoration (Restore) because in case of errors, the backup data is useless if it cannot be restored.

In this respect, a backup strategy is actually a restore strategy and should incorporate and document all faults – from accidental deletion of single documents to complete malfunctions of several servers. Besides it is now and again necessary to test the restored documents in preparation for emergencies. The quality of these precautions is always an aspect of internal and external audits – there have been four so far this year. These days not only the TÜV is interested in the quality certification of our emergency preparations – even bankers and auditors have taken special interest. At this point, it is slowly becoming clear why the backup topic is so important and is treated with a certain sense stepmotherliness – it is expensive, very time consuming and the direct need for it is normally not visible.

So back to the practical aspects. Whoever has and regularly uses a computer is familiar with the problem of constantly increasing documents. In the past it was possible to burn all the important documents onto a CD. Today a DVD is in most cases not enough for all the photos, videos and other important documents.

I observe the same phenomenon every day as I control the summaries of the evening backups. When I took over the management of the computing systems in our company exactly 6 years ago, the documents that needed to be backed up fitted on a small magnetic tape similar to a cassette tape of an analogue answering machine. Today we must place over 30 cassettes in the tape deck in order to backup all the information – a futile undertaking.

To solve this problem we recently started using the so-called SAN (Storage Area Network). A network only for memory – that is obviously a case for networkers! In addition to the high “wow factor” SAN is very helpful. Instead of backing up on cassettes, we are using large hard discs (then the cassettes).

This increases the quantity of the data to be backed up by a factor of 5 and when necessary it is possible to add other hard discs without much effort.



In addition SAN increases the chances that there will be no malfunctions and the availability of our data since it is not stored in the same section of our building as the server. In case of an emergency we can quickly proceed with our work...

In the hope that this does not happen soon. 

---

R. Rothbart  
Systemadministrator

## Castings from our company

### Manufacturing components

In the company-owned foundry for injection molding we manufacture heavy machine filigree plastic parts that are used in the various therapy devices. Injection molding (often referred to as molding or casting process) is a molding process that is mainly used in plastic processing.

This process enables us to economically produce the parts that we need. Injection molding allows us to manufacture parts with a high level of precision with in the shortest time possible. In so doing it is possible to freely select the top surface of the component. Smooth surfaces for optical use, grainings for touch-friendly surfaces, patterns and engravings can be manufactured. The injection molding process is cost effective (almost only) for large quantities. The costs for the equipment comprise of a huge part of the necessary investment. Even with simple instruments, the economic efficiency is achieved only if a few thousand parts are produced. Despite this the equipment can be used for the manufacture of up to a few million parts regardless of the molding material.

So how does it function? Granules are put into the machine using a funnel (2). The worm drive (1) leads the granules through the heating chamber. The hard granules will become soft material that can be used to die cast. The material is then injected into the instrument (4 and 6) through the nozzle (3). The opening, also called cavity, gets filled and the new part is created. After a short cooling period the instrument halves will open and the cast (5) will fall out. The instrument will close again and the next component can be manufactured (see sketch)

The **HOFFRICHTER** instrument warehouse has about 150 instruments that can be used to manufacture 200 components. This ensures that old devices always have spare parts.



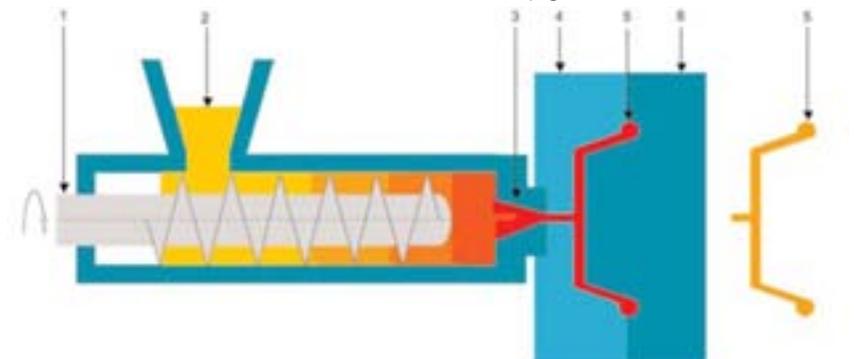
During production the quality is constantly checked.



Different granules are used to produce different components.



The granules are colored by adding colored pigments.



# MEDICA 2007 A great success

The fourteenth exhibition of the world's largest trade fair for medical technology, MEDICA 2007, was a great success for **HOFFRICHTER**. From 14th to 17th November 2007 almost 4,800 exhibitors from 65 nations presented their products there – as much as never before. The prevailing trend that can be seen everywhere on the fair strongly moves into the direction of compact medical products. A trend **HOFFRICHTER** is following consequently as well. The devices **point** and **VECTOR** are very good products that are highly accepted by the market. The further enhancement of the **CARAT** ventilation devices are also going down well with our customers. A lot of custo-



mers visited our trade fair stand every day. Customers from near and far were able to convince themselves of the quality of our products and got a deeper insight in the enhancements of our devices in a conversation with our exhibition staff. Some promising contacts could be established in this way. For the first time, we also had promising discussions with interested customers from Aus-

tralia. The South-American market could be expanded as well.



Well-known medical practitioners and scientists talking to Mr Hoffrichter about the future issue tele-medicine.

We were very pleased about the numerous visits of self-help groups or their representatives. The 10-year „fair-anniversary“ has been appropriately celebrated on the Rhine ship “Riverstar”.

Mr Hoffrichter invited all our customers to do so. Nothing was actually missing on the festively decorated ship. One of the highlights was the kitchen that retracted from the ship's body, where guests were able to get some food at the rich buffet. Later this evening, there was a live band playing and a lottery rounded down the whole event. Three questions concerning the company had to be answered on a questionnaire in order to win the attractive prices. The third

price was a kite, appropriate to the fair motto „Fly the kites for a fresh breeze in respiration therapy“. The second price was a drawing with an appropriate motif, signed by our designer Gerald Hross. The first prize was a **VECTOR et** respiration therapy device with humidifier that had been designed from an airbrush artists with a warm beach motif with kites. Mr Leo Walsma of ComCare Medical B.V. from the Netherlands was the lucky winner of this unique device. All in all a very successful evening that everybody will remember for a long time.



Above: The first prize was in high demand of our customers.

Below: The Riverstar awaits her guests.



## Necrology

### Johann Häcker

On January 8th, 2008 the 1st Chairman of the Federal Association Sleep Apnoea and Chronical Sleep Disturbances e.V., Mr Johann Häcker died at the age of 69.

Mr Häcker was a valued and competent partner for the company from the very beginning. There was always a lively discussion about ideas and suggestions going on for the patient's good and a successful therapy.

Although he is not longer with us, he will remain unforgotten.



Johann Häcker  
\* 21.09.1938  
† 08.01.2008

## Customs and its perfidies

Import of respiration therapy devices, medical products and accessories into Germany is customs-free. This is what law tells us.

**HOFFRICHTER** GmbH has some components pre-produced by its subsidiary **HOFFRICHTER Co., LTD.** in China. Those components are pre-assembled plastic parts, cables and other components that can be produced at a much cheaper

price in China. These parts are only appropriate and pre-assembled for respiration therapy devices of **HOFFRICHTER** and cannot be used by anyone else for different purposes. Everybody knows, that more favourable prices mean that the company can sell larger quantities. This fact creates employment in Schwerin, as the imported parts have to be assembled to complete devices. These devices are not only of high-quality but also competitive. However, customs have a completely different view. Parts of medical products are not medical products and therefore not customs-free. A German CPAP-manufacturer would have to completely dislocate his production to China or elsewhere to a foreign country. Only in such case would he then have the right to import devices manufactured in China by Chinese workers customs-free into Germany. A confirmation received proves that. Pure lunacy – companies that are not producing in Germany and only imports devices for the German market is being rewarded by the fact that he can do it customs-free. Who comes up with such things? But you can calm down! Our devices will carry the seal of approval “Made in Germany“ in the future as well, and not “Made in China“.



Plastic parts and cables

## Arab Health, Dubai



The literal translation of Dubai is “meeting point”. Beautifully set on the Persian Gulf, Dubai is the second-largest city of the United Arab Emirates (UAE) with more than 1.4 million inhabitants.

Arab Health is a meeting point as well. A meeting point for more than 220 exhibitors from 65 countries from the health care. The significance of this fair can be seen by the visit of and opening by the sheik of Dubai, Muhammed bin Raschid Al Maktum.

For **HOFFRICHTER** GmbH it is the most important fair after MEDICA. Valuable contacts to the Medex Arabia could be established this year.



Dr. Abdulaziz Al Sadhan (left), Medex Bandar A. Al Bahouth (right), Medex

# There's another way as well..... with airbrush art for instance



Originating from the idea to have a specially designed device for MEDICA 2007, a whole series of artistically designed devices somehow gained momentum. Different ideas all around the motto "A fresh breeze in respiration therapy" have been realized by airbrush artists J. Techt and M. Stamer from the region of Hamburg. The **CARAT**-device shown left above is decorated with a summer meadow and a dandelion, of which seeds are flying in the wind.

The **point**-device shown right above shows a sunset at the sea. This very calm motif is supposed to chase the hectic pace of the day away for a recreative sleep. Down in the middle the strength and dynamic of the devices series **VECTOR et** is reflected by a city scene with skyscrapers and powerful cars. Patients can literally feel a relaxing night on a sailboat on the sea under a full moon when looking at the device down on the right. The device down on the left also

makes patients almost feel the fresh breeze that blows around one's nose on a nice balloon trip in breezy air.

These different motifs show that high-quality medical engineering does not have to look like grey medical engineering. However, **HOFFRICHTER** is moving away from the sterile hospital design, even without these airbrush designs. ■



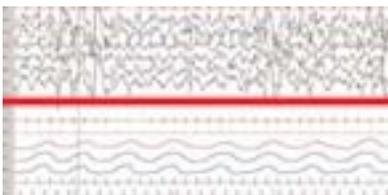
## High Quality Accessories

### Interface



The accessory line for the respiration therapy devices of **HOFFRICHTER** GmbH consists of three devices. The Interface, the Data box and the Remote Control.

The Interface is exclusively being used in sleep laboratories and operated by qualified staff and carries out the transmission of digital signals of the respiration therapy devices of **HOFFRICHTER** GmbH into analogue signals and their transmission to polysomnographic systems (PSG). Polysomnographic systems gather very different patient data such as EEG, ECG, pulse oxymetry, expiratory flow and respiratory movements during sleep and transfer these data on to an evaluation software. The Interface can be connected, to different PSG systems. The data storage "Data Box" is the latest **HOFFRICHTER** accessory device.



### Data Box



Herewith, a device has been developed to save patients to take the therapy device to the medical practitioner in order to modify settings or to read out therapy data. The Data Box stores all important therapy data. This large data quantity is being written on a memory card (SD) and can be taken out of the device. The attending medical practitioner only receives the memory card then. All essential data can be read out now with the help of the corresponding **TRENDset** software. Possible parameter variations will be written on the card and will be automatically transferred when the therapy device is being restarted. Apart from therapy data, there is the option also to measure oxygen saturation and pulse. A finger clip is used to do this.



### Remote Control



Last but not least we would like to present the Remote Control. This is a wired remote control for all respiration therapy devices of **HOFFRICHTER** GmbH. It allows sleep laboratory staff to interfere in the on-going therapy without the operator being close to the respiration therapy device so that the patient is not being disturbed by that.

The Remote Control is exclusively used in sleep laboratories and operated by qualified staff. All parameters of the respiration therapy device can be modified by using the remote control. It is not appropriate to use it at home.



# HOFFRICHTER Worldwide

 , one of our most important customers in Germany with its headquarters in Malsch near Heidelberg.



**HOFFRICHTER** GmbH has been working with DeVilbiss Healthcare since 2005. DeVilbiss Healthcare sells the **CARAT** ventilators and the respiration therapy device **point** in Germany exclusively. The **TREND** series is being distributed as well. However, DeVilbiss do not only appreciate sales but also service. Apart from the German market, DeVilbiss Healthcare also distributes our devices in some other European countries.



Left: F. Hückelheim, Director Commercial Operations  
Right: O. Niemann, Vice President Europe



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## QM-System in China

### Quality from Far East

Our subsidiary in China, HOFFRICHTER Co., Ltd in Kunshan has been established in 2004. Exclusively components for the **HOFFRICHTER** GmbH for respiration therapy devices and accessories are being manufactured there. For the realization of the statement of principles of the management concerning the quality policy, an own QM-system according to the corresponding standard for medical products EN ISO 13485 has been successfully established when the company was founded. The QM-system enjoyed considerable support from Mr Reinhard DaEVERS, QM representative of **HOFFRICHTER** GmbH and has been successfully certified in March 2004 in presence of the General Manager Mr Helmut Hoffrichter for the first time. The QM-manual is superior to this system. Described are mainly processes within the company as well as technical and organizational measures for the quality assurance of our products and last but not least, all persons in charge for the system are stated here. The manual relates to further documents such as process instructions and forms or templates. As far as the process instructions are concerned, all processes within the company, that are occurring in the purchasing or production department, as well as their responsibilities and communication amongst each other is described and defined here.

All relevant products and specifications concerning the production as well as modification histories are documented in the product main files (Device Master Records). The manual especially contains manufacturing and test specifications as part of the QM-system, that are important for the daily work in manufacturing. These specifications indicate very detailed, how what has to be produced under which conditions with which articles and components. These manufacturing and test specifications are generally defined by the development department of **HOFFRICHTER** GmbH. If necessary, special quality criteria are defined here as specifications. Modifications of the process for articles and manufacturers may only take place after consultation with and approval of the company. Production Manager Mrs YuanYuan Liang is responsible for the compliance with requirements. All testing aids for intermediate and final testing are being monitored by QM-representative Mr Feng Ma on a regular basis. Quality criteria for the provision of articles from suppliers are being defined in external partial specifications, if not contained in the standards. These do at the same time apply as a standard for the supplier and for the company's own incoming inspection. For new quality-relevant or not yet specified articles, sample approvals of the development are being executed.

To be able to trace back articles, lots of numbers are assigned and documented for the internally relevant work processes. The quality of the manufactured products can be captured with the help of error statistics. Occurring errors are being documented and notes or specifications concerning the remedy of errors are being given. Measures in this case might be modified processes, training of employees or even a change of supplier in case of incorrect supplier parts. The quality system is annually tested within monitoring audits by the German Technical Inspection Service South with its headquarters in Shanghai and the certificate has to be defended every 4 years.

The last one successfully took place in January this year. Moreover, internal audits are executed by the QM-representative on an annual basis and suggestions for improvement of the system, to prepare for the audit of the Technical Inspection Service, are given.

Reinhard DaEVERS  
Quality Management

# EMC

## Electromagnetic Compatibility

Signs in front of medical practices and hospitals advise people of switching off their cell phones before entering. These signs can also be seen at fuel stations. We are especially advised to switch off electronic devices on a plane before take-off and landing.



But why is that? EMC is the ability of an electronic appliance to satisfactorily work in its electromagnetic environment. That means that the devices have to work in a way that their environment, of which other devices and appliances are also part, are not being influenced in a disturbing way or are disturbed by it. Electromagnetic waves can cause tensions or currents in circuits, for instance. These might lead to a noise in the TV in the best case and to a breakdown of the electronics in the worst case. The electromagnetic compatibility makes sure that, for instance cardiac pacemakers or the control electronics of vehicles or airplanes do not break down.

In the Federal Republic of Germany the EMC-regulation is realized in the law about the electromagnetic compatibility of devices (EMVG). This law applies to all devices, systems and appliances containing electric or electronic components and regulates their

marketing and operating regarding their emitted interference and their interference resistance. In the European standards there are stipulated requirements regarding emitted interference and interference resistance, of which the compliance has to be proved by measurements.

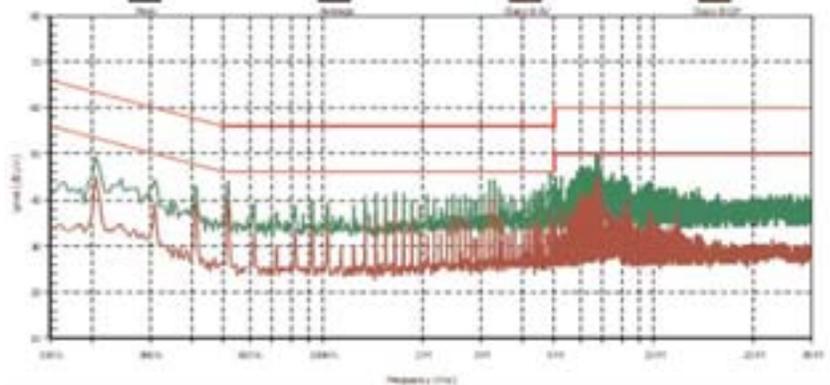
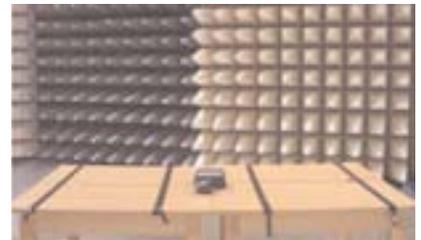
Already when developing our devices, we strictly pay attention to the electromagnetic compatibility. To do this a “development system emitted interference” has been acquired years ago. This system makes it possible to pre-test devices to see if they correspond to the statutory requirements or not. This system, however, is not enough for a concluding certification. Our devices are being certified at CEcert that has been found in 1999 in Wismar. All devices have to undergo countless tests in cooperation with the Technical Inspection Service North. This is where it shows, if our engineers’

development work has been successful and if the devices are in correspondence with all requirements. Only in this case the new product is allowed to carry the CE-sign and can be introduced to the market.



Above: point in the pre-test in the development system emitted interference.

Below: **VECTOR** et at a test in the absorber hall at CEcert.



## News from the IT

### Barcode on type label and packaging

#### Motivation

We are counting on the advantages of barcodes for many internal processes, for instance the electronic long-term filing of our technical documentation and the control of production orders, for many years. Thanks to that, monotonous, error-prone and timely extensive process steps can be automated in a very elegant way. As a manufacturer, we do profit of shorter process times, a high automation depth and lower error rates.

At our customer's suggestion and partly due to regulatory requirements of the national health authorities of some EU-countries we are now standardizing and expanding the scope of application of barcodes. In the future, every device will carry a type label with the corresponding serial number as barcode. Additionally, there will be further barcodes on the packaging – an internationally clear article number as well as the corresponding serial number of the device will be applied here.

#### Technology

The barcode type we are using is EAN 128. This standard is accepted worldwide in many industries and gains more and more importance in medical engineering. It combines advantages of a flexible and standardized barcode format

for logistics and warehousing with a very easy handling. Hard- and software that customers require for the downstream processing of barcodes is widely spread and many of our customers are already using it – therefore you can also profit from the logistic benefits of the barcodes. During planning phase it became quickly clear that we would need a special printer that prints out type labels plus barcode during running production. We decided to take a Zebra thermo transfer printer which is able to print even very little signs and symbols with a resolution of up to 600dpi.



#### Hardware

This type label printer will find its place in our production office in the future and will hopefully do a good job there – it makes a sufficiently solid impression in any case. We will be prepared for the future with this printer as it can be changed over with little effort to print RFID labels as well.

The special labels we are using for our devices consist of a silver PVC film and are printed on by thermo transfer printing. For this combination the manufacturer guarantees for a very long life expectancy of

the printed labels that has been confirmed by our internal quality department in several processes according to DIN EN 60601.

R. Rothbart  
Systemadministrator

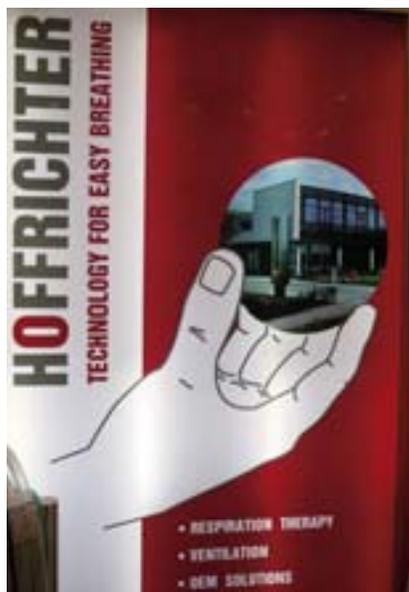


Above: The new barcode printer.

Below: Barcode labels for **VECTOR et.**



## 12th Southeast Asian Healthcare Show Kuala Lumpur



In the Convention Centre of the vibrant metropolis of Kuala Lumpur, which is home to millions, in Malaysia, the twelfth Southeast Asian Healthcare show took place on 12-14th March, the largest medical technology trade fair in Asia. With a stand in the German shared stand, the company **HOFFRICHTER** was also on-site.

Some items of the show



Here, numerous trade fair contacts were able to be made. Countries such as Malaysia, Bangladesh, Nepal, Indonesia and Brunei, to mention just a few, showed great interest in our ventilation equipment. The company **HOFFRICHTER** was the only exhibitor of respiratory therapy and ventilation equipment. The growth of the CPAP market is still at the very early stages in Southeast Asia and therefore offers us good opportunities.

The **HOFFRICHTER** invitation promotion had persuaded many of our customers to come to the trade fair and to be updated on news at our stand and to intensify contact to the marketing staff.

The symbol of Kuala Lumpur. The Petronas Towers, at a height of 452m, are the highest twin-towers in the world.



Particularly noteworthy is the “differentness” of the markets. Where in Germany there are very high standards and requirements for the equipment, in Asian countries it appears significantly more relaxed. There a respiratory therapy device in ST mode has already been used as a ventilation device. Even in ambulances respiratory therapy equipment is found for use in primary care of patients. What is commonplace here would be unthinkable in Germany. And that is good how it is.

## Mindless spray-painting

In April we became victim to a mindless graffiti spraying. People with a complete lack of understanding have decorated the windows and the border of the marketing office with white paint and original words. Unfortunately the creativity did not outreach MFK (multifuncti-



on button) and Fu... Perhaps it was only an attempt to call attention to the multifunction button (MFK) of the CARAT. However, it is doubted that the artists are familiar with our equipment and they wanted to help create more glory for the devices. What remains? Smearred windows, plenty of unnecessary work and less money in the pockets of the sprayers. ■■■



Mr. Hoffrichter showed the girls the different stages of production.

## Girl's day 2008 Girl's future day

On 24 April the Federal Chancellor, Angela Merkel, opened Girl's Day 2008 in a launch event in the Federal Chancellery in Berlin. On this day, girls from the 5th to the 10th grades (equivalent to Years 6 to 11 in the UK) could see in person the most varied technical careers in businesses. With this campaign the girls should not shy away from technical careers. After school, girls still overwhelmingly decide on "typically female" occupational fields or fields of study. In doing so the girls do not completely exhaust their career options. Within the framework of Girl's Day we were also visited by 5 girls who wanted to be advised about technical careers. After a presentation about the company, the various technical careers and a tour of the company with Mr. Hoffrichter, the girls could "muck in" with the different positions in the company under the instruction of experienced staff. ■■■



On Girl's Day, items were soldered and screwed on with enthusiasm.

## Visit of Dreescher Werkstätten

The Dreescher facilities have made it possible for about 335 disabled people to participate in the daily work process in three different sites in Schwerin. Participating in the social event of work is of great importance to disabled people. Through regular work they can come to know their own strengths and capabilities and continue to build on these. The company **HOFFRICHTER** has used the option for years of allowing the more simple work to be carried out by the Dreescher facilities. In this way, for example, the filter cassettes for the TREND series and the turbine boxes are stuck together by the employed people with disabilities. In March we were visited by 18 young people who are employed by us in the Dreescher facilities. Mr. Bendlin (production manager) and Mr. Klein (sales) showed the visitors our site and what the parts manufactured by them are used for in the final manufactured state. ■■■



Mr Bendlin and Mr Klein looked after the visitors to the Dreescher facilities



The **TREND II** series is the newest generation of CPAP therapy devices from **HOFFRICHTER** GmbH. Consistent implementation of reliable technology with innovative improvements distinguishes this series. A premium design and high functionality guarantee the best possible therapy and compliance.

## TREND II

"Never change a winning team!" so goes an English saying. Do not change anything in your team as long as it is winning. With a football XI e.g. the jerseys can be changed without the quality of the team changing. Likewise the hairstyle of the players has no impact on the game. Whereas if the goalkeeper or centre forward is changed, you can no longer say what consequences this has for the next game. In the same manner reliable technology should not be discarded. The new **TREND II** series builds on years of experience with the **TREND** series. Electronics which have been relied on for years. Turbine technology which works without breakdowns

and extremely quietly and, as an entirely secondary feature, also still offers ample power reserves. The clear menu navigation to set the parameters, the pluggable warm air humidifier and the easily exchanged filter. These are all properties in which nothing can be changed in order to maintain the high quality standard. And yet we have trusted ourselves to make a very good device even better. A new high-gloss housing suitable for the time was developed. Distinguished by a Bordeaux-red stripe the white device seems very luxurious. Immediately on first contact with the new **TREND II** you notice that very high-quality materials have been used. On the

front right of the device the ON/OFF button has been fitted onto a protrusion. Not without reason! The small protrusion can also be felt in the dark immediately and thereby helps in finding the ON/OFF button without any problems. In addition to the common buttons, an "information button" can also be found on the device. By pressing the **i**-button an information menu is obtained in which all of the set parameters can be read. This helps the doctor or the service technician in remote diagnosis. The operating data and parameters are shown on a display presented in black with the brightness adjustable. The integrated multi-area mains adapter

characterises the **TREND II**. There is now only a single cable to be plugged into a power outlet whereby the device is activated. Of course the **TREND II** can still also be operated with a vehicle cable in a HGV or caravan. The warm air humidifier has been completely revised. One third more capacity (from 200 ml to 300 ml), a significantly easier filling and clea-

ning are the results. The removable air-guiding system in the cover of the humidifier makes it easy to clean the device. The modern case for the device offers sufficient space for the device itself as well as for the therapy tube, the therapy mask and the humidifier.

The strap on the back of the case is also practical in order to attach this easily to a trolley. The **TREND II** series is available in the following models: CPAP, AUTO CPAP, BILEVEL and BILEVEL ST20.



Years of know-how makes the perfect device from many details

# HOFFRICHTER Worldwide

**VitalAire**  
Atmen Sie auf.

VitalAire GmbH, a sister company of Air Liquide, one of the worldwide leading producers of technical and medical gases, is a nationwide operative service and service providing company with eight branches which have specialised in respiratory therapy at home. Since the first **HOFFRICHTER** respiratory therapy equipment was marketed (and also previously the SIDS monitor, KIDS), VitalAire has become a dependable partner for us. The good cooperation has continued with the OEM device series **VECTOR II**. With the new **VECTOR ET** series the success can continue to be built on.

VitalAire markets the **VECTOR ET** as an OEM product in Germany. The close contact to VitalAire in the development of the **VECTOR ET** series has not least contributed to the great success.



## VitalAire

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\* 6 cent per call from the german landline, different prices for mobile calls.

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## Storage and shipment

### An important quality instrument

If you look under warehouse /storage in the dictionary, you find the following explanation:

Storage means the intentional break of the operational material flow, i.e. it results in consciously created stock. Storage requires a warehouse, i.e. a space, building or area where goods or merchandise can be stored.

At **HOFFRICHTER** GmbH the warehouse is situated in the newest building. Here the manufactured devices are stored until despatch to our customers. Yet the warehouse is much more than just an device store. Here, final checks are carried out, and packing, sorting, preparing, shipment and much more is completed.

Below, an device is accompanied on its route through the warehouse on all its different stops.

#### Delivery

The devices arrive by truck in the warehouse from completion of manufacture. Every device has to pass a Burn In Test beforehand. This means that it already has a 24-hour duration test behind it. In the acoustics laboratory a sound level protocol is generated and attached to the device (report in **LIFE** no. 1).

#### Final check

Before an device is packed, it is put through its paces once again. Different investigations and tests are involved. Initially the device is subjected to a visual examination. Are there any marks on the device? Is there any trapped dust in the area of the display? Is the print clean and neat? In short – is the device produced in such a way that you would be happy to have this in your own bedroom? Afterwards the function test follows. Here the device is again examined thoroughly.

The button functions and especially the release button of the therapy air humidifier, which is plugged onto the device for the first time, are examined. Now, the device receives a filter. In doing so, attention is paid to checking that the filter is easy to insert into the device and can just as easily be removed.

By means of the accompanying documents, it is checked whether the device has undergone all the tests on completion. As mentioned these are the endurance test, components test, linear test and the audibility test. The device is also connected to mains voltage. But not to the “normal” 230 volts that comes from the power outlet, but to a special power supply that tests that the wide-range power supply of the devices at the lower end of the scale. Likewise a short-circuit test is performed and the power cut function verified.



Now, every device is connected to a PC that is equipped with the evaluation software **TRENDset**. Here the device data can be read that is collected during the various tests (check whether the device has really run for 24 hours). Particular attention is paid to the therapy pressure. The values set in the software must be transferred flawlessly by the device and supplied by the turbines.

Now the factory settings are programmed and the appropriate language for the customers set. Then the time, date and welcome text, according to customer preference.

If all the tests are passed, the device receives the guarantee certification of the company **HOFFRICHTER**.



## Storage

After the devices have been approved (should this not be the case, the devices are sent back to the completion stage to be repaired and then the process of the final check runs through again), they are stored in shelves; they are still not finally packed because the language settings may potentially still have to be tailored to the respective customers.

## Packaging

As soon as the final destination of the devices is known, they are programmed and packed by the (female) despatching staff. Yet the devices are not just simply packed in boxes. Now, everything that belongs to the device is assembled.

The transport case, mains adapter, therapy tube, users manual and possible accessories are packed according to the type of device, in cardboard boxes specially made for this device.

## Palletisation and despatch

In palletisation attention is particularly paid to whether the delivery arrives at its destination safely and undamaged. Depending on how the delivery is going to be transported, whether by airplane or by freight forwarder, particular pack sizes must be adhered to. Likewise attention must be paid so that the shipment endures the often rough transportation without damage. For this purpose each pallet is completely wrapped in film and provided with transportation strapping.

Often, the work of the (female) staff in the warehouse and despatch departments is underestimated, yet all of these tasks and measures contribute significantly to the quality of **HOFFRICHTER** devices and are therefore very responsible tasks.



Packaging



Palletisation



Despatch

## News from the IT

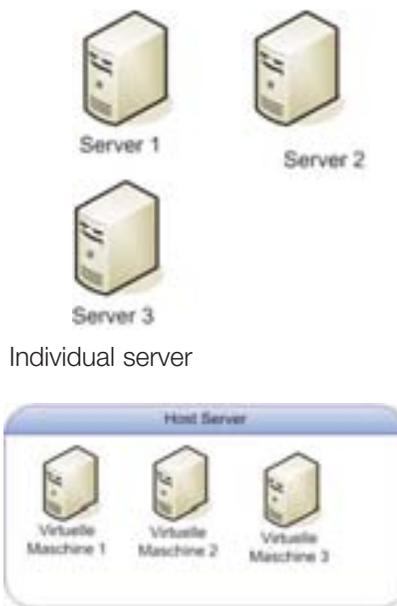
### Virtual solutions for real challenges

As with every other department in a medium-sized, growing company such as **HOFFRICHTER** GmbH, the IT department is also constantly in action. From experience it is not done simply to set up a well-equipped computer workstation for a new employee, rather the entire IT infrastructure must be adapted to the changing requirements (and not vice versa). This begins with an upgrading of the physical network hardware and with new servers to cope with the flood of information from e-mails, CAD or enterprise resource planning systems; it is not completed for a long time.

In order to guarantee in the long-term a high availability and data security of the systems which are increasingly stronger linked with each other, new (thought) processes are necessary. The magic word is "virtualisation". After an initial hype, this process in the course of the last years has erupted with solutions which are meaningful and promising for a company of our size as well.

At the core of this approach is the idea that several so far individual servers are transferred into so-called virtual machines (VM) which

then run everything on a single physical server. This physical server must be very powerful in order to provide each virtual server with sufficient capacity for its specialist tasks. The principle is presented below.



Individual server

Virtual server

The following advantages for us arise from this:

- The existing server hardware will be better utilised than it has been to date.
- Older servers are separated, use no power and no resources.

- For new tasks, no new server has to be purchased, it will simply be developed on another virtual machine.
- The data management and data security is considerably simplified as there is only one common hard disk pool (a so-called SAN, see **LIFE** No. 3).

In the meantime the range of virtualisation solutions of the various providers has become very large. Many meaningful features have been added over the course of time which continues to increase data security and availability. So it is, for example, possible to relocate a virtual machine in continuous operation to a stand-by server, in case maintenance work has to be carried out on the main server (consequently it will not be necessary in the near future for scheduled work on the servers to have to only be carried out at the end of the working day or at weekend – my wife has greeted this solution with enthusiasm).

With this family-friendly outlook I would like to conclude this article and wish everyone a great summer.

Ronald Rothbart  
IT-Systemadministrator

## Auto-CPAP

### A new pressure-regulated method in automatic CPAP machines

The regulated therapy pressure is a quality that covers the individual requirements in general. Yet in the course of a night, sleeping apnoea can accumulate intermittently and there are others in which no apnoea at all occurs. If necessary it must also be possible to increase the pressure a little in order to prevent or reduce an incident accumulation, if a higher pressure is not necessary. This function can be transferred to the automatic CPAP devices in which they are permitted to deviate from the regulated pressure upwards or downwards by a certain value.

But how does an automatic CPAP regulate?

The basic principle applies that the pressure should be as high as necessary and as low as possible. In doing so an automatic CPAP, provided that there are no incidents such as apnoea and hypopnoea, will want to reduce the pressure always according to a specified algorithm. This goes on for so long, until an incident occurs, for example, an obstructive apnoea, and then the pressure must be increased again.

This main point of criticism applies currently to all automatic CPAP devices. In order to be able to regulate and optimise the pressu-

re, an incident must be provoked by the device. In doing so the total count of events is not reduced but is even increased by an automatic CPAP. Despite this a well-functioning automatic CPAP is favoured because the constant adjustment of the pressure leads to the fact that the same therapy effect can be achieved with a somewhat lower pressure.

Our automatic CPAP devices work on the basis of a continuous measurement of the airway resistance. To this purpose a measurement signal is sent out by the device in the inaudible infrasound range and it is checked how strong this measurement signal is reproduced on the screen. With free and open airways the signal disappears in the lungs and there it is completely absorbed by the body tissue. In the case of an obstruction, the sound is measurable on the screen and even signals the degree of the obstruction with its intensity.

An automatic CPAP is always on the lookout for the lowest possible therapy pressure and continuously reduces its pressure. With the reduction in pressure the profiles of the widths of the airways similarly decrease. The progression of this process suddenly results in the effect that the airway resis-

tance rises with the inspiration flow and drops with the expiration flow. The entire process can easily be presented visually. In the case of a large therapy pressure the airways for every flow are always adequately wide and the measured airway resistance is almost constant.

If the therapy pressure decreases then the airways become increasingly closer and in the closest places can result in a venturi effect. This then leads to an additional pressure reduction which is conditional on the flow exactly in the narrow points and this causes a breath synchronised pulsing in the profiles of the narrow points. This pulsing is then distinctly reproduced in the pulsing of the airway resistance. If the CPAP again reduces the pressure even further then an obstruction will be provoked if the pulsation amplitude reaches total closure.

In the new algorithm of Hoffrichter's automatic CPAP devices this behaviour is taken into consideration in that a further reduction in pressure is always prevented if the pulsations of the airway resistance reaches a certain value. This is then the point of the minimum therapy pressure on which the automatic CPAP should adjust itself. 

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## Hospimedica Sydney, Australia

Sydney is a centre of industry, commerce, finance and transport. More than half of the largest Australian concerns have their head office in this city. This is reason enough to hold the largest Australian medical technology exposition there. The exposition took place from the 13th to the 15th of May, 2008, in the Sydney Convention & Exhibition Centre in Darling Harbour. Among others, the company **HOFFRICHTER** was represented at the German joint participation stand.

The Hospimedica took place for the first time in Sydney, which may account for the somewhat low turnout. Due to the already existing contact with our partner "Ascencia" for the sales and marketing of our devices in Australia and New Zealand, the event was nevertheless a success.

New contacts with visitors from Australia, New Zealand, Korea, India and China were made.



The sales manager, Mr. Küchemann, explains the workings of the device to customers.

A rethinking process regarding patients and health insurance companies is currently taking place in Australia. In the past, patients had to cover 100% of the cost of medical instruments, which led to the use of very cheap devices or to patients completely forgoing therapy. According to studies done by health insurance companies, this caused an increased number of secondary complications. The costs of the treatment of these complications, as opposed to the cost for the breathing therapy devices, had to be covered by the insurance companies. With the goal of reducing costs, a restructuring in the area of sleep apnea therapy has been carried out. Now, the cost is shared by state-run insurance companies

and private insurance companies, with a co-payment from the patient. Consequently, high quality therapeutic devices now have a better market chance in Australia. As health insurance companies pay for therapeutic devices in Germany, we're on a similar path. These companies want to buy only the lowest priced devices for patients, and (unfortunately) don't think about the consequential costs. Perhaps they will also get a bit smarter in Germany in a couple of years. With a little luck, someone is already starting to think outside the box and reconsidering this development with regard to what has already been learned in the "land of discovery" of CPAP therapy.

Sydney Convention & Exhibition Centre, Darling Harbour



## Visit from the American Jewish Committee and the Konrad Adenauer Foundation

In the framework of the traditional exchange program between the Konrad Adenauer Foundation and the American Jewish Committee (AJC), for the 28th time a delegation of American Jews travelled to Germany in 2008 in order to get an idea of what German democracy and Jewish lifestyles in that country are like. While 60 years after the foundation of the state of Israel Germany is perceived as a friend to this country, German-Israeli relations often remain unknown in Jewish communities in the US. This information program is therefore aimed at raising the awareness of American/Jewish visitors of the most recent developments in Germany and its role as a friend of Israel in Europe and the world, and at possibly breaking down existing stereotypes.

From the 10th to the 20th of June, 2008, 11 American Jews visited the cities of Hamburg, Schwerin, Lübeck and Berlin in order to gather information about the most recent political, economic and social developments in Germany through meetings with German journalists, academics, foundation representatives and politicians. In doing so, historic memorials, the treatment of recent German history in museums as well as the current situation of Jewish communities in Germany played particularly important roles. We had the opportunity to welcome this delegation to visit us on May 14th. Mr. Hoffrichter received the guests and invited them on a tour of the company. In the talk which followed the tour, Mr. Hoffrichter presented the company history. In closing, our guests' remaining questions were discussed. ■■■■■

## HOSPITALAR Sao Paulo

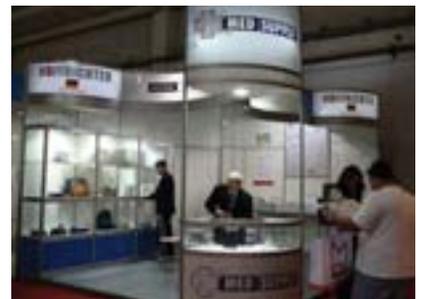
At this year's HOSPITALAR in Sao Paulo, Brazil, which took place from the 10th to the 13th of June in the Expo Center Norte Exhibition Center, the company **HOFFRICHTER** set up their booth at the German joint participation stand for the second time. There we were able to greet countless customers, including the companies Meditron from Brazil, Age Medical from Argentina, and MEDIPLEX from Chile. Contacts made with these companies last year were strengthened this year. Companies from Peru, Ecuador, Uruguay and Mexico showed a lot of interest in our breathing therapy instruments as well as our respirators. **MEDITRON**, a very well known company in Brazil, had its own booth at the HOSPITALAR, at which **HOFFRICHTER** GmbH instruments took up a large part of the exhibition space. ■■■■■



Mr. Hoffrichter and Mr. Woick introduce the company to guests.



The participants showed great interest during the company tour.



The booth of our distribution partner, MEDITRON

## Night of Business Getting in touch with businesses

Under the patronage of Minister President Dr. H. Ringstorff, the second Night of Business took place in Mecklenburg-Western Pomerania. The city of Schwerin took part for the first time. The various businesses opened their doors from 5 to 10 pm in order to give people the chance to enquire about the companies and the employment opportunities on site.

**HOFFRICHTER** GmbH had the pleasure of welcoming 165 visitors on this evening. Tours were given every hour and the product range was introduced; and not in empty halls or offices. Many employees offered to give guests an in-depth view of the company. The guests had the opportunity to see how the devices are assembled from numerous components into finished units. In addition, the production of injection moulding parts was presented in detail.



Even the youngest guests had fun at the Night of Business.



Official Advertisement

**Nacht der Wirtschaft  
Mecklenburg-Vorpommern  
in Schwerin**

**10. September 2008 –  
Unternehmen zum Anfassen**

At another stand, information about training and employment opportunities in our company was given. As many young people were present, this stand was particularly crowded.

Next to the snack bar in the company cantina, a contest with questions about the company was held. The first prize was a high quality folding bicycle, which was presented to Ms. H. Herzog from



Mr. Hoffrichter accompanies visitors on one of the five company tours.

Schwerin by Mr. Hoffrichter himself just a few days after the event. ■■■



The winner of the first prize, Ms. Heike Herzog from Schwerin, receives her new bike.

## MEDICA 2008 10 years of breathing therapy by **HOFFRICHTER**

From the 19th to the 22nd of November, the time will have come for this year's world medicine forum. The 2008 MEDICA, held in Düsseldorf, is a special event for the company for two reasons. Not only is it the 40th Medica forum, it is also the 10th Medica forum at which our breathing therapy devices will be exhibited. In 1997, the **VECTOR** was introduced to the public for the first time and 1998 it was a great success from the very beginning. Due to the technology,



**VECTOR BILEVEL ST20**

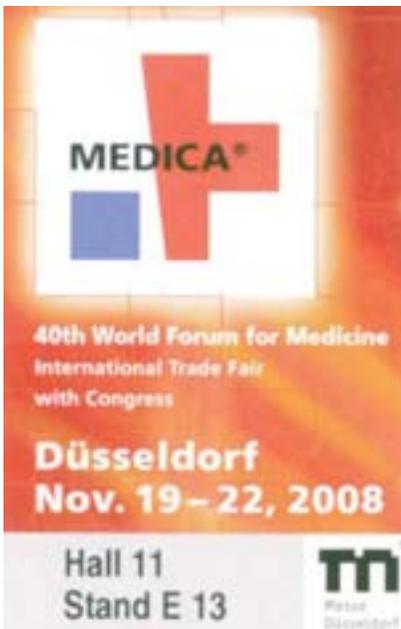
outstanding even at that time, this device made a great impression, and still does today. Many patients still swear on this reliable instrument. Nevertheless, the development of the technology did not stop there. New generations of therapeutic devices have been developed since that time. The time-tested **TREND** series from the simple CPAP to the ST machine, the completely revised **VECTOR et** series and the small but powerful mobile **point** are only some of the milestones that show that we are always improving our products. The newest generation of therapeutic devices has been

realised with the **TREND II**. High quality material, a noble design and flawless technology characterize this device series from the CPAP to the BILEVEL ST20.

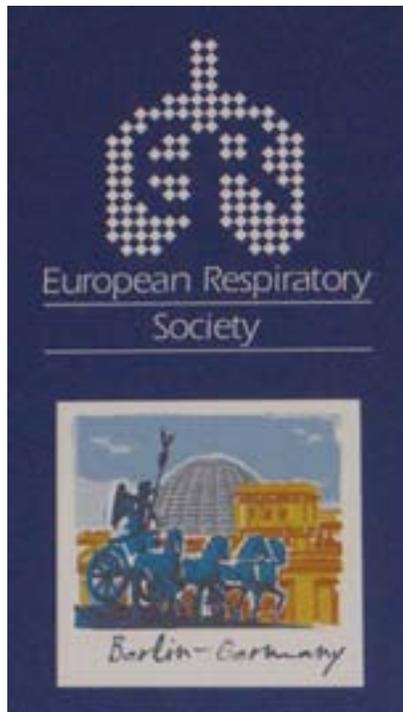


The preparations for the exhibition are already running at full speed. The booth has been remodelled and decorated with dandelions (see title page). The exhibition team is highly motivated and looking forward to your visit.

So don't be shy – come and visit us at the MEDICA 2008, hall 11, stand E 13.



## ERS Congress Berlin



The 18th yearly congress of the European Respiratory Society (in Berlin for the third time) was held under the motto "Influence of climate change, air pollution and obesity on respiratory health." Presentations and speeches about the most recent scientific and clinical developments from the whole world were held by well-known names in these fields.

At the **HOFFRICHTER** GmbH stand, an active crowd could be found at all times. Many visitors showed interest in our devices and accessories.

# HOFFRICHTER Worldwide

Sanat Darman Co. Ltd. has their main office in Teheran, the capital of Iran. Since 2004, the good busi-



ness relationship between our company and Sanat Darman has strengthened steadily. At first the company only was interested in breathing therapy devices and baby monitors. Now Mr. Naser Ghaffari markets the entire **HOFFRICHTER** GmbH product range in Iran, Irak and Afghanistan, with great success.



Managing Director Mr. Naser Ghaffari



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## Patents

### Part 1 - the greek story

“A surge of cheesecake and an influx of baked squid”, or, the story of the first patents

*Luck is needed for discovery, intellect for invention and neither can happen without either.*

*J.W. von Goethe*

As so often happens, the first precursors of the patent existed in ancient Greece. Around 720 B.C., the Hellenes founded the colony Sybaris on the Gulf of Taranto in southern Italy. This large bay lay between Calabria and Apulia, between the tip of the boot and the heel. Due to the favourable “tourist” location, the Sybarites became very wealthy very quickly.

More and more, they neglected simple tasks and instead preferred to lead a grand and luxurious life. Noisy tradesmen such as blacksmiths and carpenters were no longer tolerated in the city; even roosters were no longer allowed to crow. This led to the first noise control law. The word “Sybarite” denoted a “spoiled weakling” and “sybaritism” an extravagant and slovenly life. In contrast, the hearty and fearless heroes from Sparta lived “spartanic” lives. An anecdote from a Sybarite who visited Sparta and took part in a feast tells that the food was meagre and the seats hard. The Sybarite said: “I used to admire the courage of you Spartans. Now I am no longer

amazed that you are undaunted by death, for even the biggest cowards would rather die than live such a life to its natural end.”

The Sybarites became very fond of luscious food and other delicacies. They reportedly also built a “wine-duct” to bring wine from the back country to the city even faster. Further cultural accomplishments, according to Athenaeus, were the invention of the bathtub and the chamber pot. The latter was not stored under the bed, however, but brought to the nightly banquets.

Not surprisingly, the lethargic Sybarites were unable to win any competitions at the games in Olympia. Therefore the disgruntled participants tried to establish their own games in which winning was

less about glory and honour than about money.

In the same way, they materially stimulated their chefs to invent new dishes. Athenaeus the Elder reported that “whenever one of the chefs invents a new, delectable dish, for the course of one year no one is allowed to prepare it except the inventor himself. During this time, he is expected to make a profit from it so that the others exert themselves and strive to best one another with such inventions [...]”.

This was what the Olympic cooking competitions looked like. Many characteristics of modern patent legislation can be found in this description:



- The inventor’s right to forbid use of the invention
- The condition of innovation and commercial application for the invention
- Commercial incentive as a motivational factor
- Regional territory limitations
- Time limits

Even though the first “patent recipes” perished with Sybaris in the year 6 B.C., the dishes invented were extolled in 5 B.C. by the comedian-poet Metagenes in a saga-like poem: “... the other river [Sybaris] carries a surge of cheesecake and meat and cooked rays which wiggle their way towards us, while the smaller tributaries full of baked squid, porgies and crab flow into it... all by themselves, stewed fish pieces draw

near and swim into our mouths.”

However, the tyrant Dionysius from Herkulia (from the 4th century) trumped the Sybarites in gluttony, which ultimately killed him. He is to thank for the first mention of sleep apnea and the first “invention” for its treatment – though without a patent. Claudius Aelian wrote about him that, “through daily gluttony and drunkenness he reached such a magnitude of obesity that he had trouble breathing (dyspnea)”. His body size was so embarrassing to him that he had a small tower built in order to hide his substantial size when talking to audiences or giving directives. Only his head could be seen above it. Dionysius fell asleep constantly and was very hard to wake up. His personal physicians deve-

loped long needles which they poked into his massive and benumbed stomach fat tissue until they met the sensitive stomach organs, which would wake him up.

By D. Meier




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1. Kryger MH. Sleep apnea. From the needles of Dionysius to continuous positive airway pressure. Arch Intern Med. 1983 Dec;143(12):2301–2303.

## News from the IT

### Chronology of a power outage

*Monday night, about 10 pm*

Shortly before the end of the Monday night TV detective story, the power goes out and, all at once, absolute darkness prevails; there's a power outage in the whole neighbourhood. Neither the streetlights nor any kind of other lighting are working, and so the good old candle gains unexpected importance as the only light source in the house.

*Monday night, about 11 pm*

While sitting in the cosy, dim candlelight, a sudden work-related thought comes to my mind: what's going on with our IT system right now? (Note: I live about 1 mile from my place of work and the probability was very high that my office was also affected by the power outage). Naturally we have provided for such incidents, even though long power outages happen relatively infrequently in our area. All important systems are connected to so-called UPS's - uninterruptible power supplies. These can keep the server functioning normally for about 15 minutes and provide for a controlled shut down of all systems during longer power outages.

As soon as the normal power supply is back, the servers start up and all services become available again. So, I relaxed again after a short time and didn't

expect any serious repercussions from the power outage the next day.

*Tuesday, 00:30 am*

The power outage is rectified.

*Tuesday, about 7 am*

As I was still a little nervous despite our precautions, I test the availability of the most important IT systems from home over an administrative connection. Inventory control, archive system, e-mail server, internet access – as expected, all systems available. So, I bring my daughter to preschool and drive to work.

*Tuesday, about 8:15 am*

Before I can even reach my office, I'm welcomed with the words "it's good you're here, nothing at all's working". That, as I thankfully discovered shortly afterwards, was a complete exaggeration. However, the words hung in the air, causing my adrenaline levels to immediately spike. (In actuality, only a part of the data saved on the server was unavailable but when someone had to gain immediate access to this data, the above statement at least seemed to be true).

*Tuesday, about 8:45*

The problem is localized. A server on which the data for the comprehensive department processes is saved was indeed properly shut down after the power outage, but could not be started

again. That was due to a defective flash module on which the operating system is stored. We don't have a second one of this exact module, so the server remained offline.

*Tuesday, about 9:30 am*

After three cups of coffee and even more phone calls with the technical support team, the strategy for restarting the servers was set. The details would outreach the scope of this article; therefore I will just describe the result.

*Tuesday, 11:03*

The server has been correctly restarted and all services are running properly!!!

*Tuesday afternoon*

The tension from the morning dissolves slowly. As soon as the adrenaline levels falls, it is time for an evaluation of the events so that in similar situations, not even 3 hours will go by before the server is available again.

Ronald Rothbart

## Now colours are coming into play



In the future, you will be able to identify the HOFFRICHTER company and product line from their colours. In order to ensure a better overview, different colours have been appointed to different product groups and to the company itself. What could be more fitting than to use the red from the "O" in the HOFFRICHTER logo to represent the company? This decision was very easy to make. The colour yellow will symbolize all products and everything that has to do with breathing therapy. Blue will be connected to ventilation technology and the grey from the HOFFRICHTER logo will be found in connection with accessories and sensor technology. Even the slogan has changed. Not only has it got shorter, but also more meaningful: "quality makes the difference". Many different ideas are buried in this slogan. The most important statement is found in the word quality: "quality" of life for the users of HOFFRICHTER breathing therapy devices, "quality" due to high-grade and high-performance devices, "quality" due to design and painstakingly selected materials, "quality" due to long lifetimes and perfect service. These characteristics make the difference. ■■■■

**Quality makes the Difference**

## 3. Sleep Forum Gelsenkirchen

The self-help group Breathe + Live from Gelsenkirchen held their 3rd Sleep Forum in the St. Augustinus parish hall on Ahstrasse on 2008.09.11.

Mr. Günter Berger, head of the self-help group and organizer of the forum, had the opportunity to greet countless guests, among them the mayor of Gelsenkirchen, Mr. Frank Baranowski.

The program offered to the audience was very diverse. From purely medical topics to traffic law, there was something of interest to everyone.



The HOFFRICHTER stand at the 3rd Sleep Forum in Gelsenkirchen

At the trade fair which took place simultaneously, many well-known exhibitors were present.

The HOFFRICHTER company also had a stand at which many forum participants were informed about our devices during breaks between talks. ■■■■



Above: nearly every single spot was taken in the presentation room

Below: the official event logo



# MEDICA 2008 Conversations on the Rhine

On November 19., MEDICA opened its doors in Düsseldorf for the 40th time. The HOFFRICHTER company was among those who took part in the world's largest forum for medical technology. The company also celebrated a minor anniversary at the 2008 forum. For 10 years we have been presenting our breathing therapy devices to the large forum audience, with steadily increasing success. In addition, our ventilation technology has been in high demand. Business was bustling every day at our stand. In particular, the malleable dandelion was a real eye-catcher. Many of our loyal customers visited us and as always, many interesting and stimulating conversations took place. In addition, we had the chance to welcome many



Motto of 2008: Dandelion



The HOFFRICHTER stand

new interested parties to our stand.

Without a doubt, one of the MEDICA highlights was the customer event evening. We were pleased to invite guests from all over the



world to board the MS Riverstar, a ship from the Düsseldorf party fleet, for an exciting event. Mr. Hoffrichter greeted the guests with a speech in which he emphasized how important the close cooperation between the HOFFRICHTER company and its distribution partners is. Only in this way can we learn what the market will demand from us in the future and where our common path will lead us.

At the beginning of the event, each of the participating guests recei-

ved a disposable camera on which the guest's name was printed. With these cameras, guests were invited to snap pictures to their hearts' delight. The three best



Television Tower by night in Düsseldorf

pictures were selected by a very strict jury and the photographers were awarded with attractive prizes.



The jury making the difficult decision about the winner

Mr. Oliver Niemann from the company DeVilbiss won over the jury with his humorous and creative self-portrait and took first prize. For his efforts he received a high-quality folding bicycle.

Second prize was taken by Mr. Gianluca Omodeo Zorini from the Italian company Medigas. Vitality and fun characterize this photo. That fact that beautiful women aren't only found in "Bella Italia" might have been the inspiration for this snapshot. A large picnic basket was awarded to the second place winner.



2

Third place was given to Mr. Gökhan Gültekin from the Turkish company LABS. In this case, the technique used won over the judges – the photographer took a portrait in a mirror without the reflection of the flash appearing in it. His photographic skill was rewarded with a telescope.



The prizes for the photography contest

After an ample buffet, many stimulating conversations took place. In the relaxed atmosphere, comple-



1

mented by the refreshing jazz music of the Ali Claudi Trio, well-tried ideas were discussed, while a new idea or two were posed as well. New customers had the chance to get to know the HOFF-RICHTER family.



At the end of the evening, many impressions had been made. Business relationships became stronger, and new friendships were cemented. And what is most important of all, many laughs and good times were had by all. The evening couldn't have been more successful.



3

# HOFFRICHTER Worldwide

MHS Medicare (P) Ltd. is based in the capital of India, New Delhi.

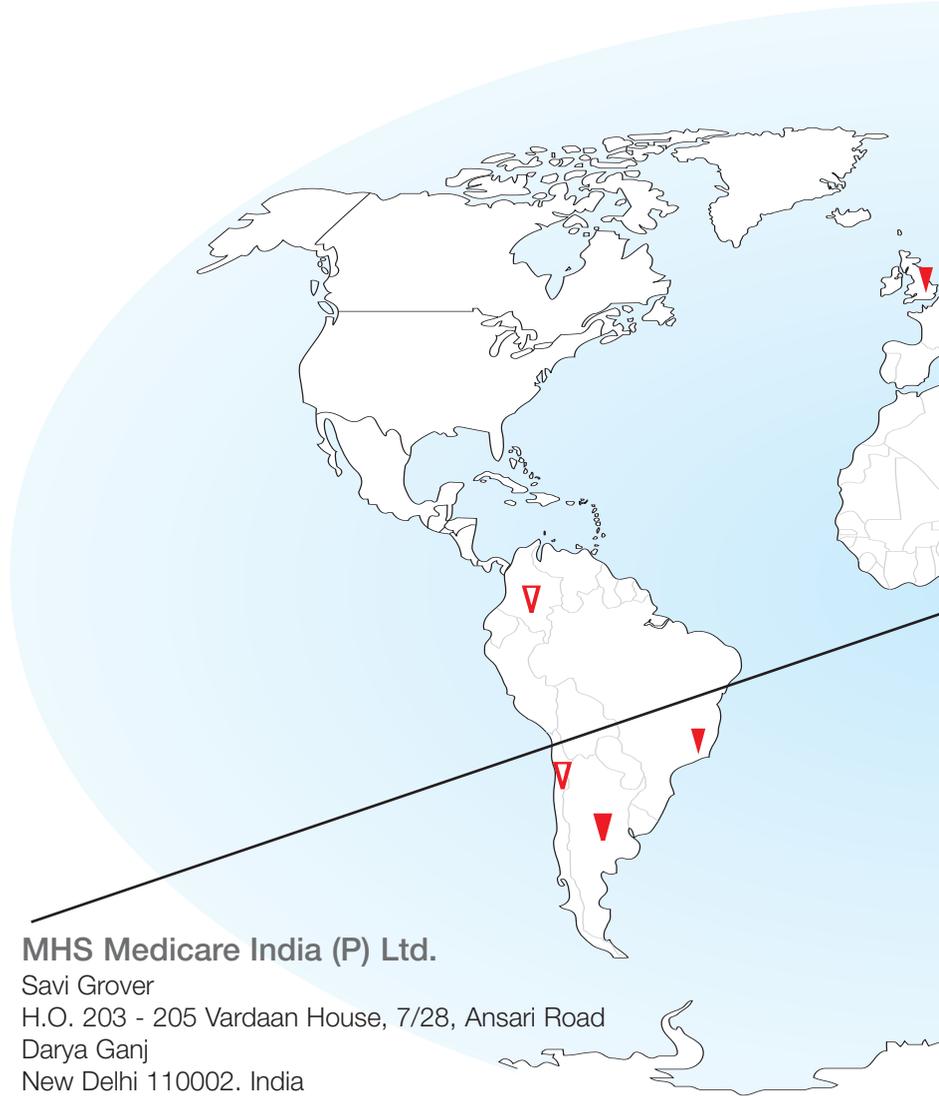


Humayun's Tomb in Neu Delhi

18 million of the total 1.13 billion inhabitants of India live in this metropolis. Mr. Savi Grover is a loyal, long standing partner of the HOFFRICHTER company who not only markets our whole product range and services our devices in India, but does so in Sri Lanka and Nepal as well. In the newly furnished showroom patients can have the devices demonstrated for them or try them themselves, as well as purchase them directly if they wish.



Mr. Savi Grover in front of the Showroom



## MHS Medicare India (P) Ltd.

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## Patents

### Part 2 – from a ruler’s act of grace to modern patent laws

The Renaissance led to the blooming of science, trade and industry in Europe. At that time, there developed an increased interest in protecting intellectual property. This led to the protection of the technical invention becoming a part of industrial legislation.

The Venetian Republic passed a patent law in 1474 and England passed one in 1623. However, neither put the inventor or creator in the foreground. Instead, their help primarily privileged the branch of industry in question. These industry privileges were essentially based on a royal act of grace. Awarding was dependent on considerations of usefulness.

In the American colonies, the first patents were given in the 17th century in Massachusetts. The first patent law of the United States of America came into effect in 1790.

In 1791, a law was passed which traces back to the principle of “intellectual property”. It awarded the inventor a legal claim to the protection of his invention.

In some German states – Prussia, Bavaria, Württemberg, Saxony, Hannover and Hessen – there existed regulations concerning the protection of an invention (from approx. 1850 on). In the majority of German states, privileges for inventions were only passed

through the administrative channel. In Hamburg, Bremen, Lübeck and Mecklenburg, patents were not given out, meaning that they were also not documented.

The Prussian Department of Commerce held a survey in 1853 in the chambers of commerce and regional governments. Out of 47 reports, 37 argued for the dispensability of patent protection. Countries in which almost nothing new is developed have an interest in the free trade philosophy. (There are countries today that have no patent protection). Everything is imitable without restriction, but nothing is protected. However, whoever puts money and resources into developments will demand protection (a temporally and territorially limited monopoly). The future Chancellor of the Republic Otto von Bismarck was influenced by the idea of free trade.

In 1868, Bismarck introduced a proposal to the Reichstag of the North German Confederation which called for the abolishment of patent legislation.

In 1873, the world fair took place in Vienna. There was apprehension that the products displayed there were not adequately protected. By this time, Germany had established itself as a strong industrial nation. Through the influence of Werner von Siemens

(Association of German Engineers – VDI) in particular, patent legislation draft laws were introduced. On July 1st, 1877, the new patent legislation went into effect. The Imperial Patent Office in Berlin opened. In the year 1919, it was renamed the “German Reich Patent Office”.



The patent legislation agreed upon at that time has been continuously refined, but the main features are still valid today. The legislation has stood the test of time for over 100 years. Patent laws are a contract with the state. The state confers a monopoly. The price is the release of “a new model”. With that, there is an inducement for the inventor to invest money and resources. By informing the public of the invention, technical progress is encouraged. This is still valid nowadays. Studies show that there is a strong connection between the economic power of a nation, region or a sector of industry and the number of patent applications.

By the year 1943, there were approx. 800,000 patents in Germany. In 1943, all documentation of the German Reich Patent Office in Berlin was kept in salt caverns. There was a time of no patents in Germany from 1945 to 1950.

With the "legislation concerning the erection of a patent office in the united economic territory" from the 12th of August, 1949, the German Patent Office was created with its seat in Munich. The office opened on the 1st of October, 1949 with 423 employees, in the library wing of the German Museum, which hadn't been destroyed by bombing. On the 1st of October, 1950, the GDR Office for Inventions and Patents came into existence in Berlin (Mohrenstrasse). After Germany reunified, it fused with the German Patent and Trademark Office in 1990.

Since the foundation of the Patent Office in the year 1877, an increasing number of patents for significant inventions have been applied for. The patent DE77916A from Otto Lilienthal on 1893.03.09. serves as a good example. Nowadays, Otto Lilienthal is considered to be the first successful flier of humankind. His basic investigations of and measurements on model planes as well as his successful flight trials from 1891 to 1896 led to the realization of the

engine powered flight by the Wright Brothers a decade later.

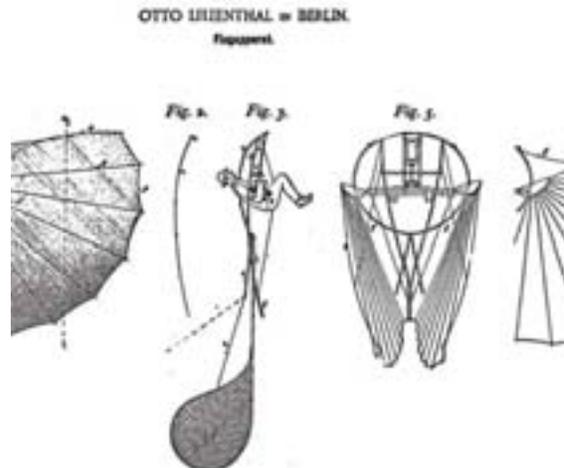


What can the patents of the past tell us today?

- Patents mirror the story of technology and therein the cultural assets of a nation.

- Patents mirror the spirit of the time (see technical drawings, illustrations of people and no longer used terminology).
- In retrospect it can be said which paths were taken, both successful and unsuccessful.

Applications are almost always filed with a deficiency of information. The risk of failing is often present. The accumulation of patented ideas is comparable with evolution in nature. Incidental changes happen constantly. Most of them don't stand the test of time and cease to exist. A few change the world gravely. Today, just as in the past, the accumulation of patent specifications is a mixture of ideas which inventors have focused all their hopes and dreams on, which sometimes fail. And still others have contributed to further development. And fewer still have changed the world.



## Production

### A big puzzle from which quality arises.

Gigantic, deserted production halls in which robots assemble equipment at high speed. Who hasn't seen these pictures in newspapers or on TV? High productivity and low personnel costs are usually why large corporations prefer this kind of manufacturing. The human factor usually doesn't play a role.

At the HOFFRICHTER company, things are different. People and their individuality still count, as is recognizing the very special abilities of individual employees in the device production process and assigning these employees to the exact right job. This is at the same time the most difficult and noble task.

Production is separated into many different areas. These include casting, sensor systems, prefabrication and finishing, and storage/transport (see LIFE no. 5).

The casting department is responsible for, in addition to the manufacturing of many pieces, the housing production for all devices. After the housing is produced, it is trimmed and drilled, glued and shaped, until, in one single stage, the complete housing for the assembly of individual components is finished.

In sensor systems, the electronic conductor boards are assembled and soldered and afterwards put

to the test.

Prefabrication is responsible for packaging and the construction of dampeners. Many busy hands assemble the most diverse components out of a myriad of parts.

Motors are the heart of all therapeutic devices. Quality plays an especially important role here, as the smooth operation of motors with flange-mounted turbines ultimately provides the customer with a device with a very quiet operation.

Some easier tasks, like for example the gluing or assembling of filter cartridges are done by the Dreescher Workshops, a disabled institute in Schwerin.

In finishing, all components are assembled into completed products, as with a puzzle.

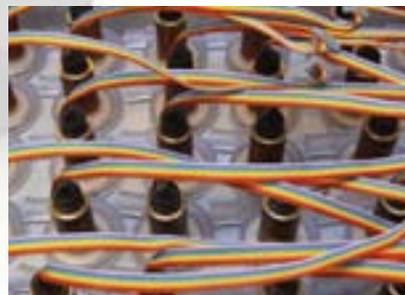
Miscellaneous tests, such as for example the 12 hour endurance test, are carried out on all devices after assembly. In addition, every device is put to a sound level test before it is brought to storage / transport. The smallest fault causes a defective device to be immediately sorted out, then the fault is rectified. Only in this way can we guarantee that HOFFRICHTER devices are always of a very high standard.



Completed turbine boxes waiting to be used in therapeutic devices



Precise soldering is necessary for perfect operation



Motors must be exactly balanced in order to run quietly



Production of humidifiers

## Visit by the Mecklenburg Promotion Center for the Physically Disabled

On 27 April, we were proud to welcome a seventh class of the Mecklenburg Promotion Center for the Physically Disabled as our guests under the scope of a vocational early orientation initiative. After a brief cordial introduction in the conference room, the guests were then taken on a tour through the entire plant that was conducted by Mr. Hoffrichter and Mr. Bendlin (Production manager). Of particular interest to the youngsters were always the parts of the tour that gave them the opportunity to directly watch the manufacturing process. Not only the pupils but also their class teacher, Mrs. Rose and the coordinator Mrs. Kampke were surprised at the high vertical range of manufacture of HOFFRICHTER devices. At the end of the tour in and around the company, there were no questions



René Fink and Daniel Röhl examine a PCB in the Sensor department

that had been left unanswered. This visit has certainly not only curtailed for some more talk in class but has maybe also been a crucial step in the decision process of the career choices of the pupils. —



## Guests from Lithuania on a visit in Schwerin

**A two-day excursion brings an insight into modern respiration therapy.**

With a minibus the six ladies and their male companion from Vilnius, Kaunas and Kleipeda finally arrived in Schwerin on Wednesday shortly before midday. The long trip with a stop for the night in Frankfurt an der Oder did not appear to have left any discernable marks of fatigue. It in fact seemed to be quite the reverse: Wide awake and with active interest they followed the remarks made by Dr. Rüdiger Karwath, medical director of the HELIOS clinics in Schwerin and director of the sleep laboratory. This meeting had come about, thanks to an initiative by the HOFFRICHTER company.

The ladies from Lithuania, among them a doctor, three nurses and a technical assistant were accompanied by three staff members. All have been working in the field of sleep medicine; however, this area is quite capable of development in their homeland. The reason is the lack of reimbursement for Sleep Disorders Diagnosis and treatment by the health insurance system. As a result, sleep medicine is only applied in connection with scientific projects or self-paying patients. There are thus only nine Sleep-measuring stations in Lithuania. The seven Lithuanian guests were

## Showroom “Schwerin” in the Vital-Zentrum Sanitätshaus Glotz GmbH

therefore eager to learn. Without further ado, they agreed on Russian as the language of communication, for Dr. Karwath not a problem, but rather a pleasure - he had after all studied medicine in Moscow.

The guests were especially interested in seeing how the Sleep-diagnosis and therapy is organized and run in the Schwerin clinic. After two and a half hours, the curiosity of his colleagues had for the meantime been satisfied.



Dr. Karwath statements are listened to with interest

After the theory, the practise follows



Since the 25.06. 2009, there is a visitors' room “Schwerin” from the HOFFRICHTER company in the Vital-Zentrum Sanitätshaus Glotz GmbH in Gerlingen near Stuttgart. Within this room the employees of the Glotz company can present our therapy devices to their customers in a relaxed atmosphere, or adjust devices already prescribed by the physicians to the individual patients. The room is on the one hand functionally furnished with comfortable chairs and a table, on the other hand has an atypical design that reflects the Mecklenburg- Western Pomerania area. A cosy beach landscape with beach chairs and gravel hereby form the center of focus. The atmosphere is underlined by a gentle sound of waves, inviting you

to relax. Pictures from the region MV trigger a sense of connectedness to Baden-Wurtemberg. An image film of the HOFFRICHTER company can be shown over a digital picture frame.



The entrance area in the Vital Zentrum Sanitätshaus Glotz, Gerlingen

Beach atmosphere in Gerlingen.



## MEDICA 2009 Beach life in Mecklenburg

MEDICA 2009 is just around the corner and this year there will again be a motto for the fair.

The ties that the HOFFRICHTER company has with Mecklenburg-Western Pomerania are this year very discernibly clear. The endless beaches of the Baltic Sea have this year induced us to also bring a bit of beach feeling to the MEDICA.

From the bustling, hectic trade-fair bustle one crosses a river via a bridge that leads directly to a beach. A beach chair invites you to rest. Anyone who then closes his eyes will hereby be able to hear the waves breaking on the beach. The beach bar is open all day and lures with refreshments in solid as well as in liquid form.

Don't miss out in letting yourself be enchanted by this great atmosphere! Visit us, from 18 - 21 November in Düsseldorf in Hall 11, Booth E13.



Draught of this year's exhibition stand

## Summer festival at HOFFRICHTER

Almost close to becoming a tradition, the summer festival also took place this year. All was festively arranged and decorated in a large tent behind the factory building on the 3rd of September.

After an opening speech by Mr Hoffrichter, a sumptuous buffet was open to be feasted on and one or another cold beverage could be ordered at the bar. The musical program was curtailed for by a live duo including Zachow, who hereby played music rhythms on keyboard and guitar that lured the guests to dance. As a special highlight of the event was the guest appearance of the radio host and comedian of the NDR, Leif Tennemann. Disguised as a janitor, he made some jokes with the employees. The performance ended with a song about the company.



Leif Tennemann - Radio-NDR

## SHG Fulda on a visit to Schwerin

On 2 June a self-help group from Fulda found themselves en route to Schwerin with two points on their agenda.

Firstly, to visit the HOFFRICHTER company to learn about the production of respiratory therapy equipment, and secondly, to visit the BuGa 2009 (Bundesgartenschau - Federal Garden Show).

The first point of the agenda was able to be curtailed for to the fullest satisfaction of the guests.

Mr Hoffrichter took time off to go with the guests through the entire factory and in the various departments explained the various work procedures from the idea to the finished device.

Beginning with the design and construction over the parts manufacture up to the assembly of the devices and the dispatch, all doors were open to the visitors. After being treated to a snack that rounded off the visit, the group then strengthened proceeded to the BuGa.



During a company tour with Mr. Hoffrichter in the development department.

# TRENDvent

## Ventilation and CPAP in one!

TRENDvent was developed for the pressure controlled home ventilation and respiration therapy for adults and children, who are not yet completely dependent on machine ventilation.

Three modes make an individual adjustment for the therapy possible to meet the needs of the patient starting from a breath volume of 50 ml, in the invasive and non-invasive artificial respiration.

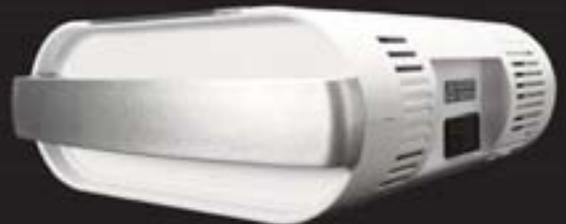
If the device is used with a single-line patient system with an external expiration valve, the ventilation can be done, both invasive (e.g. over a tracheostoma) as well as non-invasive (over a breathing mask). In the case of the use of a single line patient system with an external expiration valve, the ventilation can only be done non-invasive over an open mask.

Through a simple user interface with easy operation, a high comfort and maximum safety in clinical and domestic use is guaranteed.



The unique operating concept is convincing right from the first touch. As soon as the panel is touched, the activated operating keys and the display are brightened up. The parameters are set on the wheel. Since there is no single button on the front panel, due to the deployment of a touch sensor, cleaning is exclusively easy. All one needs is to simply wipe it over and one's done! The broad, wide handle makes transportation of the device very easy. All connections for hoses are mounted side by side

at the front of the device. Here the optional therapy humidifier AquaTREND uni can likewise be connected. At the back of the unit are connectors for power supply (external adapter) and for data transmission. A COM port for the remote control of the TRENDremote or the DATA box, a connection for the remote alarm box and, ultimately, a USB port for the connection between the device and a PC.



**Experience the new TRENDvent at the MEDICA 2009  
HALL 11 - BOOTH E13**

# HOFFRICHTER Worldwide



70 Jahre Sanitätshaus  
50 Jahre Glotz

The Sanitätshaus Glotz with company headquarters in Gerlingen and branch offices in Stuttgart and Bad Urach, including among others its own respiratory center in the Red Cross Hospital in Stuttgart, is one of Germany's leading companies in the industry with an all encompassing range of care products in the field of medical equipment aid (medical specialized trade, home care, rehabilitation technology, orthopedics technology with customized service, orthopedic shoe technology and medical technology). Medical technology plays a central role, which with approx. 50 employees curtails for sleep apnoea patients, Sleep laboratories and self-help groups in the whole of Baden- Württemberg. Home artificial respiration and oxygen supply round off the medical technology spectrum. Company owner and managing director Joachim Glotz: „Our strength is the proximity to the patient and our independence. For an additional plus in the quality of life, we are pleased to have found in HOFFRICHTER a powerful capable partner.“



Joachim Glotz leads the enterprise in the third generation.

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## Patents

### Part 3 - How fair are patents?

Patents are national rights. They are a contract between the applicant and the state. In issuing the patent the state in effect grants an exclusion right to the applicant, i.e. the applicant receives a monopoly for a limited period of time in this respective state. The applicant can then freely dispose over who may use his invention and can determine the conditions. He however needs to provide something in return. The applicant must communicate his new technical knowledge to the general public after a given time period. This happens with patents in the form of publications after 18 months. The respective Patent Office on issuing, checks, among other criteria, whether the new technical knowledge has also been revealed in such a way that an expert in the field of the patented object can understand it. In other words, a patent publication should contain valuable directly usable information. It should contribute to technical progress. This results in the dual role of the patent. The patent also develops a legislative function and an information function. It is intended that both the interests of the individual (the applicant) and the general public are balanced. This was original intention of the founders of the patent law. The patent system seems to be increasingly moving away from this ideal conception. The number of the patent applications is increasing

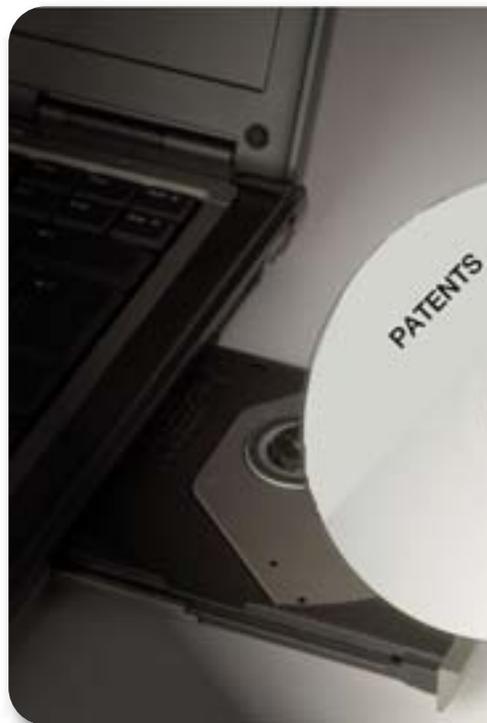
worldwide by leaps and bounds. Investigations have proven that patents are used not only for the protection of own development, but also to blockade the competition. Patents are thus every now and then more legal constructs than inventions in the engineering sense. We hereby rank the so-called trivial patents among the former category. Patent rights are hereby awarded based on facts, which are self-evident for the specialist. This goes so far that a company with new products is always in danger of violating such trivial patents. Sometimes patents are so convoluted that the expert can not overlook what is actually protected. Costly patent disputes are as such pre-programmed and inevitable.

About 90% of percent of all patents can be attributed to 10% of the applicants. Whereby, the middle-sized enterprises are to a large extent excluded. Already in the year 2004 the German trade association BVMW, the patenverein.de e.V (registered association) and the organization FFII in an open letter to the Federal Chancellor at that time called for measures to be taken against the excrescences of the patent system.

Quote:

„The German middle class does not only need protection through

patents, but also increasingly protection against patents. Some patents are not only being tactically used for the blockade of whole market segments, to the detriment of the economy but also misused by profiteers without products for legalised extortion. What patents give their owners is taken from the general public. Such a double-edged sword must be handled with care. As long as the innovation capabilities of countries and companies are measured according to the quantity and not the quality of its patents, erroneous trends are inevitable and pre-programmed. Many patents no longer



serve to protect and reward innovations, but to hinder and to punish them. Capital power creates legal rights, and the middle class is forced to resign ahead of the threatening scenery of a patent flood. “

There is a demand for a return to the original purpose of patent law. The granting practise of the Patent Offices is yet to be considered worthy. Even the patent examiners of the European Patent Office drew attention to the deficits in the granting practise through a strike in 2006. The quality of the patents is neglected in favour of quantity.



The patentverein.de e.V. suggests under the motto „inventiveness and patent ethics“ the following self obligations:

1. To submit applications for own patents only based on genuine innovations
2. To formulate patent texts under standably and to show inventions graphically and clearly and to hereby explain how the obligations are to be kept in reconcilable balance with the rights for which a monopoly is claimed;
3. To use the technically common nomenclature;
4. To hide no relevant knowledge nor conceal sources or quote delusively, even if this could either influence or interfere with the patenting;
5. In the case of a violation to seek an amicable arrangement, eventually based on the opinion of a neutral consultant;
6. To accordingly oblige commissioned lawyers.

Despite all criticism an economy without a patent system is not conceivable. Patents have a spurring and rewarding function. Whoever undertakes the development effort of creating something new should be able to harvest the

fruits of his work through patenting and the associated temporary monopoly rights. It is a stimulus to undertake an effort of the same magnitude again. One acts negligently, if existing patent rights are violated, even if this may happen by virtue of ignorance. Whoever develops new products or procedures, must undertake the effort to observe and analyze existing patent rights. An infringement of a patent can sometimes be ruinous for a company. 

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## Filter cartridges

### Targeted purity

According to investigations over the last 20 years, by far more air pollutants exist in enclosed areas, than at a exhaust loaded road crossing. Since humans spend a larger part of their life in enclosed areas, the body is exposed to a high health burden. The HOFFRICHTER filter cartridges consist of a pre-filter and a three-fold

micro-filter in a plastic cartridge. In order to ensure that the filter is always correctly inserted into the therapy device, the cartridge can only be installed in the correct position. This is not only safer for the user, but also the reason, why the filters in the cartridges cannot be interchanged. Were the filters to be installed the wrong way round, dust could get into the therapy air, which would be extremely unplea-

sant for the user. The filtration efficiency with a pre-filter is 80 ppi and 0,1 µm with a micro-filter at 0,2 m/s. Filtered therapy air is thus effectively cleaner than the “normal” breathing air. 

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Three-fold micro-filters

On the left: Different filter cartridges.

## point

### New inner life for an even better therapy.

To improve something that is good is always difficult, particularly if it has already been distinguished by a design price. Nevertheless, the HOFFRICHTER Company took this task upon itself and has improved point even further. From the outside one is hardly able to discern any changes on the small therapy device. Merely the print on the display has slightly been changed. From the inside however, point has been completely renewed. Starting with the hardware, whereby an improved higher

performance printed circuit board was developed up to the software for an even better therapy. For the user practically nothing changes. The device remains in terms of operation identically with the original point. It is now nevertheless possible to calibrate the device

exactly on the mask of the user. This also curtails for an optimum therapy. Only slight changes have been made. And this is the continued aspiration of HOFFRICHTER to make the best even a little bit better. 

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