01 / 2006

WASSERFIBEL

WELT DES WASSERS

INTERNORGA 2006
SEE & BE SEEN

ACCOR
ECONOMIC EFFICIENCY = COSTS & BENEFITS

DORINT NOVOTEL MUNICH CITY
INTERVIEW – TWO SUCCESSFUL YEARS

BlauWAL
BlauWAL concept solution Water supply

PRACTICAL REPORT
How important proper water treatment is ...

www.wasserfibel.com

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Is "Made in Germany" still relevant today? "Made in Germany" in the global mass market!

Quality and service, as well as solidity and continuity, are not just buzzwords, but prerequisites for surviving in the market of the future. That is why manufacturers and customers must network and reestablish direct contact under the banner of "Made in Germany" in order to achieve an economic goal in terms of mutual costs and benefits.

For customers and producers alike, shared knowledge and trust are the path to greater market share and quality assurance. Combining common interests, the need for information, and confidence-building measures, as well as contact and consultation, are the way to achieve medium- and long-term success.

Let the others continue with "stinginess, cheapness, subcontractors": this is how markets cleanse themselves.

Take advantage of the trend toward "Made in Germany" quality for your direct contacts. Use your knowledge; lead your customers to success.

Karl Klütsch

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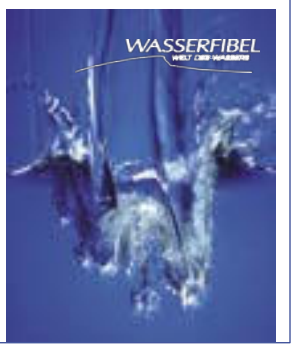

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INTERNORGA 2006

ECONOMIC EFFICIENCY = COSTS & BENEFITS

Central water treatment... Is it worth it?

Yes! By breaking new ground!

- Holistic approach
- Sustainable planning
- Reasonable use of resources
- Setting standards

No "isolated solutions," but permanently economical and needs-based systems.

How should we proceed?

Establishing the fundamentals:

- Existing infrastructure/planning
- Existing water quality
- Existing water consumers (all of them!)
- Hygiene requirements (polishing)
- Existing cost structure
- Required result (standards)

Influence options:

- Planning expertise
- Supplier portfolio/consulting
- Importance of the interplay between water quality and costs
- Individual decision-making frameworks

Results:

1. Operating cost-intensive individual solutions with high operational expenditure, fluctuating and incompatible, inhomogeneous results.
2. Sustainable, economical, and reliable solutions with a focus on securing results. ***As a decision-maker and person responsible for results, which of these two outcomes do you prefer?***

If 1, then leave everything as it is! Don't concern yourself with this topic any further!

If 2., then you should take the time to take a closer look at the following practical guide to cost-effectiveness and securing results guidelines from practical experience:

Example of planning and investment for a holistic approach to the task of "water treatment."

Basic assessment:

- Unsatisfactory (hygienic and visual) rinsing results
- Considerable time required for downstream handling (polishing, multiple rinses, maintenance organization, etc.)
- High (often unrecognized because they have always been present) operating costs (chemicals, cartridge replacement, repairs, complaints, etc.)
- Consumers:

1x basket conveyor dishwasher
1x under-counter dishwasher
1x glasswasher
2x coffee machines
1x steam cooker
1x ice cube maker

Cost structure: (current situation)

- High personnel costs for polishing and handling (> Guests neglected...)
- Various different cartridges that need to be replaced and handled
- Above-average consumption of cleaning agents and rinse aids (multiple rinses, overdosing to conceal the underlying problems)

Cost analysis:

- *Annual operating costs*
  10,850 euros
- *Annual costs for personnel to polish the washed items*
  13,500
  (approx. 3 hours/day x 300 days x 15 euros/hour)
- *Annual costs for replacement of breakages due to polishing*
  Approx. 2,000

Total annual costs: EUR 26,350

Measure:

Design and planning of a central water treatment system to supply all existing equipment while establishing quality standards.

Investment in water treatment plant (softening with post-reverse osmosis to achieve the different blend water qualities).

- *Water softening and osmosis system 13,500 euros*
- *Pipe installations 3,000*

Total one-time cost: €16,500

Result:

- *Annual operating costs (system including maintenance and cleaner/rinse aid): 4,000 euros per year*
- *Annual costs for personnel to polish the rinsed items: €0*
- *Annual costs for replacement of breakages due to polishing EUR 0*

Savings in operation:
(26,350 - 4,000)
22,350 EURO p.a.

=> The measure paid for itself within one budget year! (EUR 16,500 / 22,350 = 0.7a or 9 months!)
=> From the 10th month after introduction of the measure: Approximately (EUR 22,350 / 12 months) = 1,860 per month EURO net less costs!

If the estimated personnel and breakage costs cannot be taken into account because they "are there anyway," then the amortization period is 16,500 euros / (10,850 euros - 4,000 euros) • 2.4 years
=> in the worst case, then thus 21/2 years every month (10,850 - 4,000) / 12 = 570 euros less in costs.

Therefore: Let us break new ground! The partners of Wasserfibel are ready to assist you! Demand their expertise and insist on a presentation of the economic efficiency of the systems offered based on a holistic view! No islands!

Source:
Summary of a profitability calculation for a Novotel in Munich.

Christoph Wohllaib

QUESTIONNAIRE

FOR HOTELS & RESTAURANTS

Part 1 Problem assessment (by the customer)

Is a drinking and service water analysis available?

- Entire building or per consumer as required and in accordance with DIN standard

Are there any problems with, for example, limescale deposits (in/on)?

- Glass, cutlery, crockery, and pot dishwashers
- Steamers and steam cookers
- Ice cube/crushed ice machines
- Coffee and tea machines
- Boilers & water heaters
- Bathrooms & wet rooms
- Aerators & shower heads

How hygienic and clean (DIN) are the glasses, cutlery, and dishes?

- Limescale and water spots on glasses
- Water stains – residue on cutlery
- Gray deposits – deposits on dishes

Do cutlery, glasses, and other items need to be polished?

- Costs for polishing EURO/h =
- Costs for broken glass EURO/item =

Are partial and full desalination cartridges used?

- Costs for purchase + service + results per month EURO =

Coffee machines with cartridges (among other things) and service?

- Costs - effort - service etc. per month EURO =

Problems with water/costs etc. in building services? Pipes, mixing valves, fittings, pitting corrosion, rust—brown water Legionella—germs, climate, humidifiers/washers

Problems with installed water treatment systems?

Centralized/decentralized systems (magnets, softeners, chemicals, dosing)

Are you planning any changes in these areas?

New construction, renovation, investments, repairs, and/or optimization

CONCEPTSOLUTIONS BlauWAL WATERSUPPLY · Quality

1

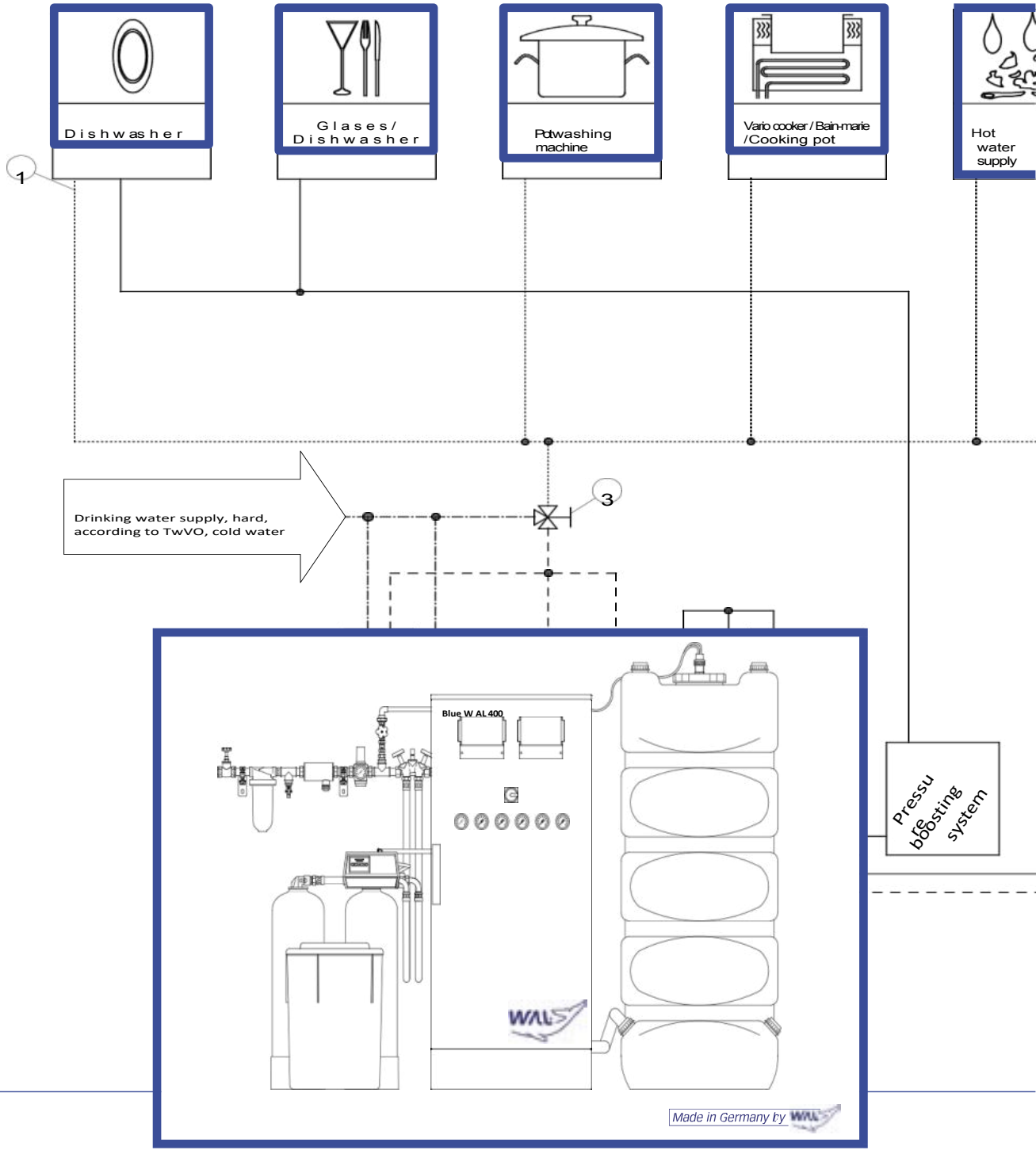
- *CONTACT*
- *VIEWING APPOINTMENT*
- *CONSULTATION*
- *ACTUAL/TARGET SOLUTION*
- *BUDGET QUOTE*

2

- *OFFER PLANNING*
- *SUPPLY - CUSTOMER*
- *INTERFACE DEFINITION*
- *COORDINATION - PLANNING*
- *APPOINTMENT SCHEDULING*

3

- *DIRECT DELIVERY*
- *FREIGHT*
- *INSTALLATION*
- *COMMISSIONING*
- *TRAINING*



- Competence “Everything from one hand" · IS - Results

4

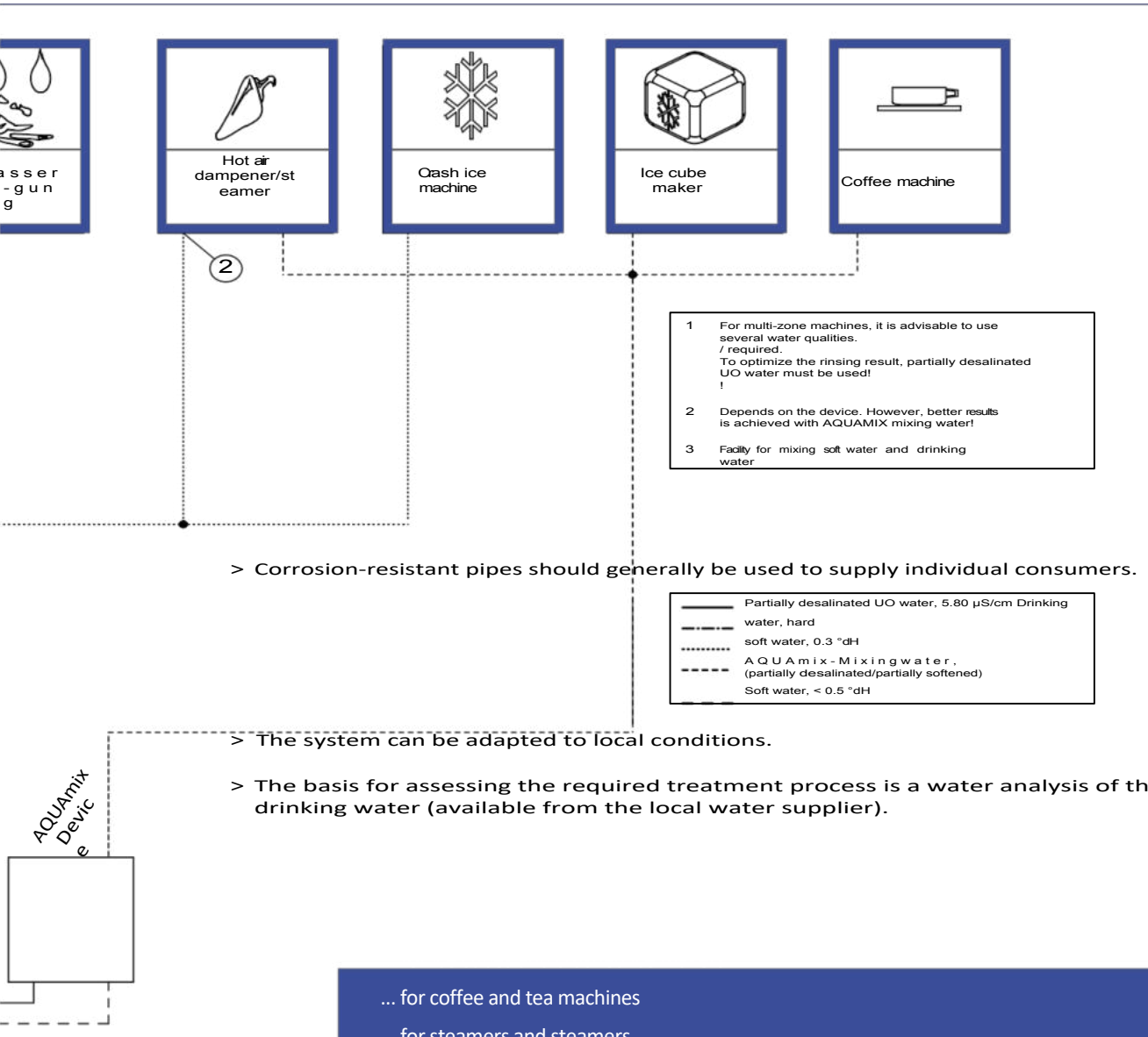
- *SERVICE*
- *MAINTENANCE*
- *WARRANTY*
- *REPAIR*
- *SPARE PARTS*

5

- *SUPPORT / ASSISTANCE*
- *SAFETY*
- *PERFORMANCE*
- *ECONOMY*
- *BENEFITS*

6

- *QUALITY*
- *MADE IN GERMANY*
- *SYSTEM SOLUTIONS*
- *CONCEPT SOLUTIONS*
- *WAL WATER SYSTEMS*



... for coffee and tea machines

... for steamers and steamers.

Aquamix water is supplied to customers in a specified quality (regardless of the raw water quality) with a permanent carbonate hardness of 3-4° and a mineral content of 250 µS/cm.

Clean, clear ice cubes, no more cartridges (service), and aroma and germ protection thanks to UV. This means protection against calcification and deposits.

REFERENCE EXAMPLES ACCOR - Concept solutions BlauWAL


Dorint Novotel Munich City


Mercure Hameln


Mercure Munich Perlach


Mercure Garmisch


Dorint Novotel Aachen City


Dorint Novotel Hamburg Alster


Mecure Orbis Munich Perlach

Ibis Hotel Munich City (central water softening) · Mecure Hotel Saarbrücken (osmosis) · Mecure Hotel Airport Stuttgart (Aquarent) · Novotel Bochum Stadion (Aquarent) · Mercure Eschborn (water softening) · Dorint-Novotel Berlin KPM (BlauWAL) · Sofitel-Mondial Cologne Cathedral (osmosis) · Novotel Hamburg Airport (water softening) · Mercure Hotel Cologne-West (water softening)

. Novotel Frankfurt Airport (central water softening) . Novotel Böblingen (water softening) . Ibis Bremen (water softening)


Dorint Sofitel Mondial Cologne Am Dom (bar)


Dorint Sofitel Mondial Cologne Am Dom (lobby)


Dorint Sofitel Mondial Cologne Am Dom (lobby 2)


Mercure Stuttgart Böblingen (bar)

WATER QUALITY ACCOR STANDARD

Subject: Water quality at ACCOR hotels

Consumer	Required water quality
Basket transport dishwashers	Filling with (blended) soft water, cold, 0-3° dH (via water softener) Rinsing with (blended) osmosis water, cold, 0°dH, blended to a conductivity of 15-80 µS/cm
Universal/pot washing machine	as pot washing machine (blended) soft water, cold, 0-3° dH (via water softener) as cut osmosis water, cold, 0°dH, blended to a conductivity of 15-80 µS/cm
Glass dishwashers	(blended) osmosis water, cold, 0° dH, blended to conductivity of 15-80 µS/cm
Hot air steamers, ice cube makers	Aquamix blended water, see coffee machine, with conductivity up to 250 µS/cm salt content or 3-4° carbonate hardness Alternatively -> (blended) soft water, cold, 0-3° dH (via water softener)
Variocooker, bain-marie, Cooking kettle	(blended) soft water, cold, 0-3° dH (via water softener)
Coffee machines	Aquamix blended water -> osmosis water blended with soft water (blended to 250 µS/cm salinity or carbonate hardness of 3-4°) ***AQUAMIX CAN ONLY BE USED IN CONJUNCTION WITH THE BlauWAL CONCEPT SYSTEM!***

Soft water, cold, blended to 0-3° dH if necessary:

Softened to a hardness of less than 0.5° dH using a water softening system and then blended to a residual hardness of 0 to 3° dH, depending on requirements.

(Reverse) osmosis water, cold, blended to a residual conductivity of 15-80 µS/cm:

Desalinated using a reverse osmosis system and blended with soft water to a conductivity of 15-80 µS/cm.

Aquamix blended water:

Desalinated using a reverse osmosis system and then blended in the Aquamix system, usually with soft water (alternatively with hard water) to a conductivity of up to 250 µS/cm or a carbonate hardness of 3-4° KH.

Kitchen concepts in comparison – pros and cons

Anyone who wants to stand out from the competition and offer high-quality catering services must be prepared to explore new kitchen concepts. At PALUX, we always view the kitchen as a complete unit that must meet the requirements of an economically efficient catering business in every respect. Experience shows that the more individually the kitchen is tailored to the respective type of business, personnel structure, capacity, and menu, the higher the productivity of the kitchen.
PALUX offers a whole range of different kitchen concepts that are secure investments in the long term.

During the consultation, we clarify the requirements for the F&B concept with kitchen, bar, and service office. Already in the conception phase, after weighing all factors, the entire logistical process and the organizational form of the new kitchen are determined.

This report presents two very different, tried-and-tested kitchen concepts as examples:

PALUX cooking block for à la carte and banquets

At the Dorint Novotel Munich City, the objective and requirement was to create clear functional areas and to create an effective kitchen organization. A glance at the layout plan reveals the well-thought-out kitchen concept with its individual functional areas. From the various cold rooms, preparation, pre-production, à la carte kitchen, cold kitchen with dessert and ice cream area, serving area, and washing-up area to the chef's office.

The heart of the kitchen is the central Topline cooking block, which is designed for à la carte service on one side and for the preparation of banquets and buffets on the other. On the à la carte side, the selection of thermal appliances with versatile multifunctional devices is perfectly tailored to the range of dishes on offer. The work areas, cooling elements, hot air steamers, and microwave ovens are located at the rear. The separate hot food serving area is directly connected to the waiter's passage.
For pre-production and preparation of banquets and buffets, Vario roasters Plus, Vario stoves, and Vario cookers are available on the other side of the cooking block. With two hot air steamers, the capacity is sufficiently dimensioned. Work surfaces, refrigeration, and freezer elements are also directly assigned to the station at the rear. During peak times in à la carte service, this concept allows for classic kitchen organization with a saucier and entremetier. This ensures Maximum flexibility and adaptability to the respective workload situation is guaranteed.

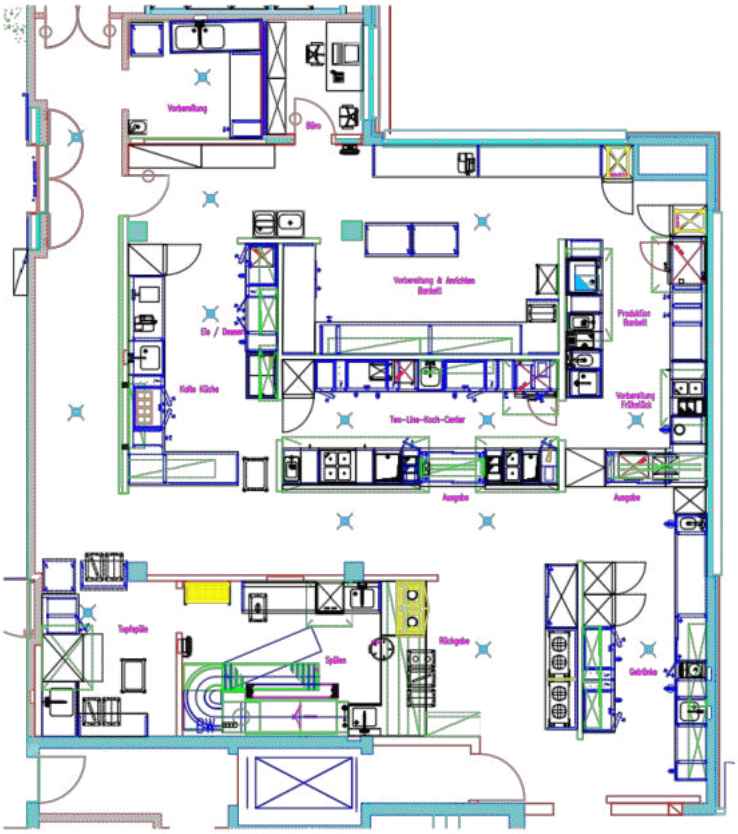
PALUX Two-Line Cooking Center

The PALUX Two-Line Cooking Center concept was implemented in the Dorint Novotel Hamburg Alster project. The aim was to create a modern kitchen with clearly organized functional areas and optimal output with as few staff as possible.

A first glance at the layout plan reveals the clear structure and flow of all areas, from storage, preparation, and production to serving, including dishwashing.

The hub of the à la carte kitchen is the two-line cooking center. The thermal line at the front, with the hot food serving area in the middle, allows for classic à la carte cuisine. Saucier and entremetier cook in a line directly next to each other. The work line on the wall with a large work surface, sink, and cooling elements directly assigned to each station is used for preparing and storing food components. Hot air steamers, microwave ovens, and salamanders complete the thermal equipment. Additional ingredients are stored transparently and clearly in a tall refrigerator with glass doors. The advantage of the two-row arrangement is that it allows for a classic kitchen organization with saucier and entremetier working directly next to each other.

cooking is possible. Everything is in its place with the shortest possible distances between stations. When workload is low, the kitchen can be operated by just one employee thanks to the linear layout and thermal equipment. This would not be possible with a block layout. Depending on the situation, the cold kitchen for cold starters, salads, and desserts can also be assigned to the respective station. Depending on requirements, this station can also be supervised by the saucier or entremetier. Thanks to its special design concept and spatial arrangement, the PALUX Two-Line Cooking Center guarantees maximum flexibility, increased performance, and optimal deployment of staff with maximum efficiency, depending on capacity and workload.

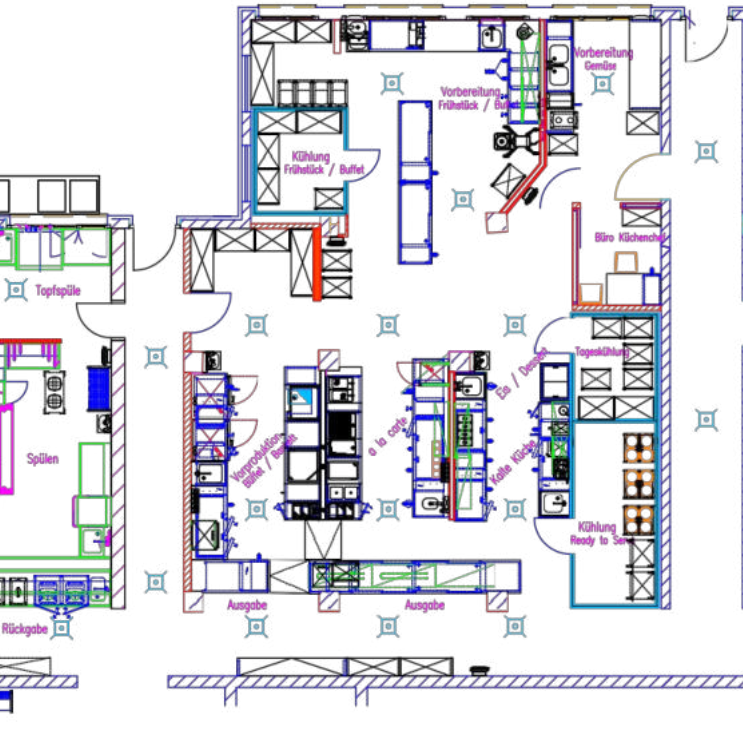


Dorint Novotel Hamburg Alster

Summary

Both Dorint Novotel hotels have been in operation for a long time. Experience has shown that the concept developed for both kitchens has proven itself in practice. Taking all aspects into account, an individual, tailor-made solution can be implemented for every size and type of business. PALUX is your expert partner when it comes to professional and economical overall kitchen concepts.
Put us to the test!

Frank Rossmeisl
Key Account Manager, PALUX Aktiengesellschaft



Dorint Novotel Munich City

Resource conservation more relevant than ever

It is impossible to live without water. Everyone knows this, and yet it seems necessary to point it out again and again. We in Germany are among the countries with the most abundant water resources, and yet we treat it very carelessly. Per capita, three percent of water is used for cooking and drinking, thirty percent for bathing and showering, and 32 percent for flushing toilets," says Dietmar Zapf, authorized signatory at the Offenburg-based dishwasher manufacturer Meiko. These are alarming figures when you consider the UN figures, which also state that at least 1.2 billion people worldwide have no access to clean water and 2 billion have no toilet. Experts recommend looking less for new water sources and instead using the available resources more efficiently.

MEIKO embarked on this path 20 years ago when pump rinsing was invented for the first automatic dishwashers, setting a milestone in the industry. This technology made it possible to reduce water consumption in commercial dishwashing by around 25%. But less water also means lower operating costs. The latest technical developments serve to save energy and water, thus ensuring greater cost-effectiveness. For example, the "Premium Class" series of high-performance automatic dishwashers has been equipped with EWS technology.

technology. It is the consistent implementation of all the advantages offered by the lye filter technology

"AktivPlus" lye filter technology. For example, it achieves a previously unattainable

"purity" of the washing lye. The new technology ensures consistently clean water in the tank, which is regenerated with less than three liters of rinse water per rinse cycle. This and other features make these machines so interesting for users because they combine first-class cleaning results with enormous savings. And the great thing is that the water savings achieved in this way do not compromise hygiene.

Save on washing up: 18,000 liters less water

Experts have calculated that MEIKO EWS technology can save up to 18,000 liters of fresh water per year. It also reduces the amount of detergent and rinse aid required. The shorter cycle times of the machines per wash cycle enable higher basket capacities.

Sparkling results – hygienically perfect

Minerals invisible to the human eye form limescale and scale in the water, damaging sensitive machine technology. Whether it's a cooking kettle or a combi steamer, a dishwasher or a coffee machine – before a

deviceinoperationtakenis,

The hardness levels of the water

If the analysis shows that the water is too hard, the hardness minerals must be exchanged for sodium ions. The optimum of all desalination efforts is osmosis, which can be used to produce almost mineral-free water. This method also helps to increase the service life of machines, extend their maintenance intervals, save on cleaning chemicals, and thus reduce operating costs. The improvement in environmental protection is also not insignificant.

The glass in the rinsing process

It is wrong to assume that the use of cleaning chemicals such as detergents and rinse aids promotes the collapse of beer foam or causes the collapse of bubbles in carbonated drinks. As a rule, such phenomena are due to residues of fats and starches in the glass. This happens when there is a malfunction in the dishwasher or when "the wrong water" is used. In most regions of Germany, the water does not meet the requirements necessary to achieve good washing results. What is easily tolerated by the human organism as drinking water is harmful when washing (glasses): minerals and salts.

Water, as an essential element, can already cause problems when washing glasses.

But there are other energy-saving technologies that experts believe will delight the hotel and catering industry. LOW-Energy Management, or LEM for short, is integrated as standard in MEIKO's conveyor and basket transport dishwashers. In a nutshell, energy that has already been used is dynamically fed back into the machine and directed precisely to where it is needed at any given time to ensure hygienic safety. This has earned the company a special award, as experts from the Association of Specialist Planners (VdF) have recognized the LEM system as the most economical and environmentally friendly washing technology and awarded it the Dr. Triebe Innovation Prize 2005 in gold.

Water that is not treated properly for washing leaves a gray haze and limescale deposits on and around the items being washed, even after an intensive wash cycle.

However, anyone who still polishes glasses by hand today is doing something wrong. The combination of dishwasher-safe water and the right chemicals leaves nothing to be desired. The special technical design of a glasswasher protects the items being washed and thus increases their lifespan, for example that of the glasses and their decorations. Of course, the dosage of the chemicals is important. If the concentration of the cleaner is not optimally adjusted to the respective starting position, its special active ingredients cannot take effect, for example by counteracting glass corrosion. The correctly applied rinse aid ensures optimal wetting of the glass. If this is done, droplets with water marks cannot form. The use of a polishing cloth is definitely unnecessary.

Marc Schumacher
Key Account Manager,
Source/Photos: MEIKO

Two successful years Dorint Novotel

Hygiene – cleanliness – economy through an optimal water system.

Interview at the Dorint Novotel Munich City with Director Kröger and Mr. Schüler, Building Services.

We congratulate you on your successful work. What was decisive for the success of your hotel?

Director Kröger: Since April 2004, we have been operating a modern hotel product with an innovative concept in a very good location. A great deal of experience from the ACCOR system has been incorporated into the plans, e.g., the technology required for operation. Thanks in particular to our highly capable team of employees, we have been able to achieve very good occupancy rates right from the start. Furthermore, in our first full financial year in 2005, we were the ACCOR Group's highest-grossing hotel in Germany.

For the editors of Wasserfibel would of course be interested to know how your water systems and osmosis softening helped you in this regard – and why you wanted the systems for your hotel.

Director **Kröger:** Based on the experience we had at our hotel in Munich-Perlach. There, ACCOR Technik installed and demonstrated a central osmosis water supply system for us. The positive economic result was enormous. (See ACCOR Purchasing profitability calculation). That is why ACCOR's new construction management team also made changes to the plans for this hotel construction and had a complete water treatment system installed in accordance with ACCOR standards. After testing and calculating the costs, the benefits were important to us and extremely convincing.

Hygiene, cleanliness, and cost-effectiveness are not mutually exclusive. Can you give some examples of the advantages of working cleanly for your hotel?

Director Kröger: Through hygiene and cleanliness, the hotel and its employees demonstrate their level of quality to customers. This reduces follow-up costs for repairs and maintenance. Our technical equipment lasts longer and our hotel is in top condition.

Our ultimate goal is absolute The satisfaction and well-being of our guests. By appealing to their emotions and feelings, we are able to attract more and more satisfied and returning regular guests.

You brought Mr. Schüler into the conversation as a competent technical expert. Perhaps you could both say something about service and support for the building and technology? What are your expectations?

Director Kröger: For us, service and maintenance from a single source—i.e., directly—makes a lot of sense. It is perhaps also part of our success, as we have the expertise of our partner directly and quickly on site when needed. Incidentally, all Wasserfibel partners are our personal contacts.

Mr. Schüler, does it make sense to work directly, i.e. when delivery, manufacturing, and service come from a single source? **Mr. Schüler:** Having a direct contact person is absolutely fantastic for us technicians. Minor issues can be easily resolved over the phone, thereby avoiding downtime and costs. Our colleague in water treatment, Manfred Borchers, knows our company and our requirements and, above all, "his" osmosis system very well. This gives us operational reliability and quality and avoids






"Emergency repairs" with high costs.

Can you define your "savings potential"? More specifically: your benefits from an osmosis water concept? How many euros do you save per year on polishing, glass breakage, hygiene, and cleanliness?

Director Kröger: You can set the costs Take the cost accounting for our restaurant in Munich-Perlach, for example. Cartridge costs, polishing times, broken glass, descalers, cleaners, chemicals: restaurateurs are familiar with all of that, right? No, I'm glad we have the water treatment system.
I estimate that it saves us a total of around €20,000 per year.

Director Kröger, Mr. Schüler, a question for both of you: Would you recommend a central osmosis system to other establishments for new construction, renovation, or retrofitting, despite the investment costs?

Director Kröger: Absolutely yes—a must for every modern and economically run business.

Mr. Schüler: Very important – as there are no additional costs in the long term.

Mr. Kröger, Mr. Schüler, you operate at the highest level of quality. In your opinion, should be any restrictions on the defined quality standards for hygiene and cleanliness? Doesn't it make more sense to pursue and enforce the highest quality standards (e.g., at ACCOR) from the outset?

Director Kröger: Right from the start. Based on my experience today, I would not recommend any restrictions in terms of quality, hygiene, and cleanliness.

Mr. Schüler: That should definitely be enforced.

Mr. Schüler, Director Kröger, in your opinion, would it be right for the catering industry to negotiate more openly and honestly with suppliers about quality, prices, and service? And would it be desirable if consulting and support in day-to-day business led to better and more successful business relationships?

Mr. Schüler: What you are asking, we are already doing. We are only confirming your primer.

Director Kröger: The agreements on prices/contracts and suppliers based on the specifications from the central purchasing department for technology make sense. However, consulting, discussions, and inspections can and must then be carried out directly on site at our premises.

Thank you for the friendly conversation.

April 2006, © Wasserfibel

HYGIENE AND CLEANLINESS …

... for glasses, cutlery, and tableware. Thanks to a new DIN standard, there is now clarity (VGG - Information for glass, cutlery, and tableware).
DIN regulation:
Glasses must be dry after 2 minutes. No need for time-consuming repolishing. Contamination from cloths is avoided.

HYGIENE IS THE BEST ADVERTISEMENT

In addition to high-quality food, the most important thing in the restaurant industry is clean dishes and cutlery, as well as staff with an impeccable appearance.





PRACTICAL REPORT

The importance of proper water treatment for perfect dishwashing results is illustrated here with examples from practice.

initial situation , , a , a new newly equipped dishwashing kitchen, whose operator is a long-standing and satisfied ECOLAB customer. However, after the kitchen was renovated, i.e., the appliances (dishwashers and osmosis system) were replaced, the following problem arose:

After the dishwasher had been running for approx. 1 hour, the washing results no longer met the standard jointly set by ACCOR and ECOLAB as usual.
On the contrary, the impairment was serious, even though no changes had been made to the cleaning products or the dosing technology.
Even after several test runs in which the dosage was varied, there was no improvement. The dishes continued to leave the machine in an unacceptable condition.

The dosing system, dishwasher, and osmosis system (water treatment system) were then examined more closely.
The tests showed that the poor washing results were not due to the cleaning products used or the dosing technology from ECOLAB. The osmosis system was also functioning properly, but it was could not provide the required amount of water of consistent quality. The reason for this was an incorrect calculation of the amount of water used. Based on this miscalculation, an osmosis system that was too small was installed.

The conclusion is that the interaction of all components—dishwashing technology, chemicals, and water treatment—is crucial for optimal hygienic dishwashing results. This means that when planning a dishwashing kitchen, care must be taken to ensure that all installed appliances have the required capacities. If the water used is not properly treated, even the best detergent and the best dishwasher will not achieve satisfactory results.

In another case, the ECOLAB consultant was also called to an ACCOR hotel due to poor dishwashing results.

After checking the dosing technology, the water treatment (softening system), and the dishwasher, a major defect was found in the dishwasher.
This was described in the Ecolab customer service report and discussed in detail with the management and the head of building services.
After the building services department had obtained a cost estimate for the
Once the repair had been carried out, the request for an EcoTemp dishwasher was forwarded to the responsible ECOLAB consultant.

The following must be taken into account in order to prepare an accurate quote.
The water quality must be checked; the ACCOR standard stipulates that newly installed dishwashers and glasswashers must be operated with osmosis water.
After determining all water data, an EcoTemp quote including the RO18 osmosis system was prepared. This was followed by consultation with ACCOR headquarters in Munich. The contracts were signed, the system was installed, the dosage was adjusted, and the staff was trained.

The systems have been running without any problems since commissioning, the washing results are optimal, and cleaning agent costs have been reduced by approximately 10%.

The most important thing for ECOLAB as a partner of ACCOR can only be customer satisfaction.

Detlef Halm
Head of Corporate Accounts,
ECOLAB

EcoTemp
The revolutionary dishwasher carefree concept

EcoTemp is a comprehensive concept on a rental basis - dishwashers, cleaning products, dosing technology, and service are all included. This means you no longer have to worry about investment, repairs, or the cleaning results of your dishwasher. It's all part of the dishwasher carefree concept, and you only have one contact person!

DO YOU STILL POLISH GLASSES AND CUTLERY?

"My glasses have stains, even though the machine has an integrated water treatment system!" is a common complaint after purchasing a dishwasher. Poor results when washing glasses, especially streaks and mineral residues (stains), are often attributed to defects in the dishwasher.

However, the dishwasher only cleans as well as the water quality allows. It transports the water to the dishes at the right temperature, pressure, and chemical dosage.

Salts and minerals dissolved in the water have an equal influence on the washing result. A high mineral content in the water leads to mineral residues (stains) on the dishes. The residues are usually removed manually by laborious polishing.

Lime is one of the minerals dissolved in water. Water with a high lime content is indicated by its hardness level. Water hardness is responsible for deposits on machine parts and burnt-out heating elements.

TOTAL SALT CONTENT

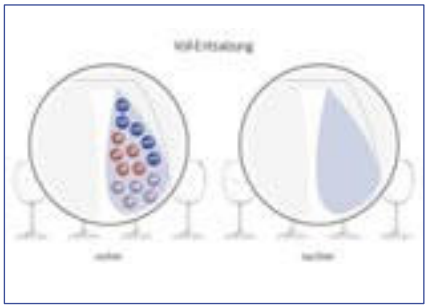
The total salt content of water consists of carbonate hardness, non-carbonate hardness, and residual minerals.
The total salt content is measured is measured as a conductivity value in µS/cm (microsiemens per centimeter).

TOTAL HARDNESS

Total hardness consists of carbonate and non-carbonate hardness.
Carbonate hardness is part of total hardness and precipitates at high temperatures. This causes solid deposits on dishes and machine parts such as heating elements and washing arms. These deposits can only be removed with descaling agents. Carbonate hardness is measured in °dH (degrees of German hardness). Non-carbonate hardness also precipitates at high temperatures and remains in the water as
"flakes" in the water.

MINERALS

The remaining minerals remain on the dishes and machine parts as stains and gray haze when they dry. Carbonate hardness is measured in °dH (degrees of German hardness). The following guideline values are ideal for dishwater quality:



Total hardness: 0-3 °dH
Conductivity: 80 µS/cm for spot-free cutlery
max. 100 µS/cm for spot-free glasses
max. 400 µS/cm for spot-free porcelain

Appliance protection and stain-free glasses and cutlery

SOFTENING

Hardness is responsible for deposits on machine parts and burnt-out heating elements. It leads to increased energy and chemical consumption and, in the medium term, to dishwasher failure. Softening removes limescale and protects the machine. During softening, limescale is replaced by other salts. These salts are "harmless" to the dishwasher. The use of a water softener prevents deposits and damage to the machine. A water softener does not guarantee spot-free washing results.

PARTIAL/FULL DESALINATION

Salts and minerals dissolved in the water remain on the dishes as streaks and deposits when they dry. Partial and full desalination removes the dissolved minerals from the water. Demineralized water guarantees spot-free washing results – especially for glasses and cutlery. As with water softening, the machine is protected.

Reverse osmosis system A reverse osmosis system is particularly suitable for high water consumption. It reduces the salt content by up to 98% and offers an alternative to a full desalination cartridge. The customer's requirements determine the capacity and size of the system.

TIPS AND TRICKS FOR WASHING GLASSES

1. Rinse your glasses as soon as possible after use. Dried-on beverage residues make the cleaning process more difficult.

2. Pour beverage residues down the drain and dispose of other waste in the trash can, not in the glass washing machine.

3. Do not polish the glasses! The glasses are hygienically clean after washing. Even a fresh cloth will dirty the glasses again.

4. Maintain temperatures. Only start the washing process once the washing and fresh water has heated up completely. You can tell this by the green start button.

5. Make sure that the glasses in the basket cannot touch or knock against each other.

6. Avoid leaving fingerprints on the glass when removing and storing the glasses.

7. Create separate storage areas for clean and dirty glasses. This makes work much easier.

8. Store glasses with the opening facing upwards in closed cabinets. Do not stack glasses inside each other. This can cause cracks.

9. Empty the machine after the end of operation. HOBART offers a special automatic system for this purpose. The dishwasher is rinsed completely again after the wash water has been pumped out. Check the filters and spray arms and clean them if necessary.

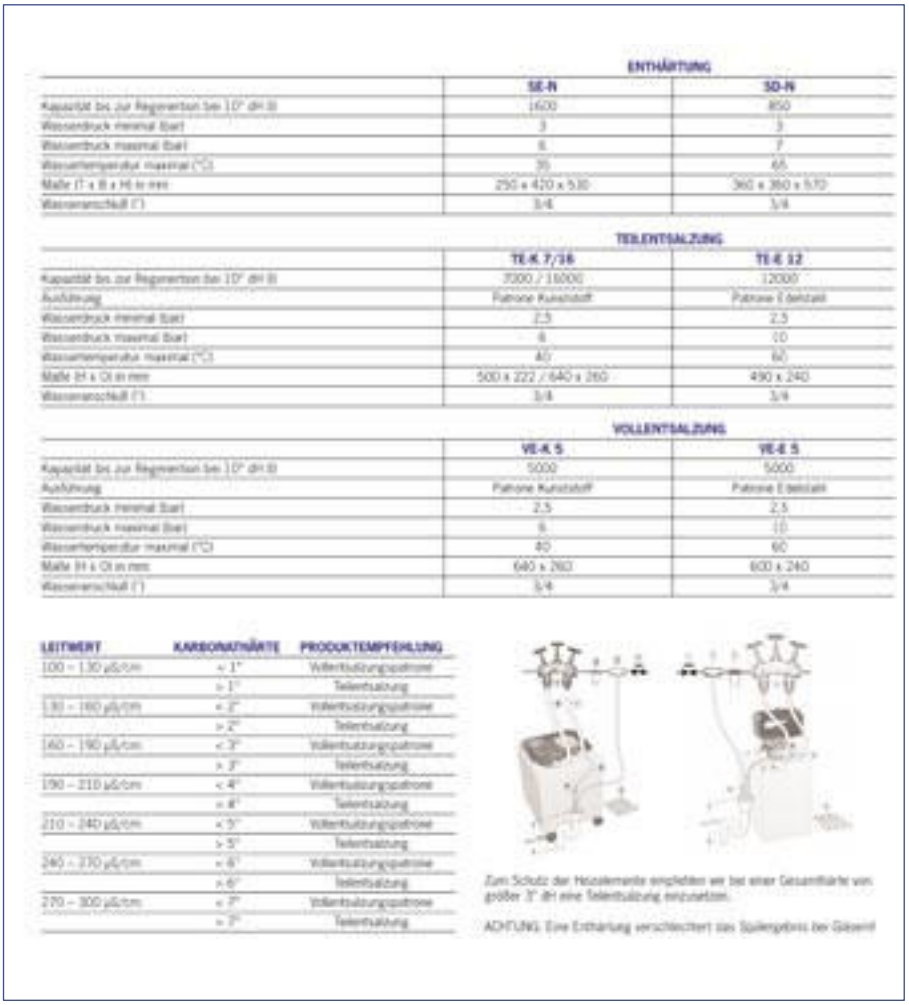
Check them again in the evening if necessary. This only takes a few minutes.

10. Leave the door open.

11. Refill with cleaner and rinse aid if necessary. Check the water treatment cartridge for depletion (water meter or depletion indicator). In addition to a clean machine, these are the most important factors for clean and hygienically pure glass washing results.

Jürgen Neumann
Key Account Manager, HOBART

Technical data



ENTHÄRTUNG

	SE-N	SD-N
Kapazität bis zur Regeneration bei 10° dH [l]	1600	850
Wasserdruck minimal [bar]	3	3
Wasserdruck maximal [bar]	6	7
Wassertemperatur maximal [°C]	30	65
Maße [T x B x H] in mm	250 x 420 x 530	360 x 360 x 570
Wasseranschluß [“]	3/4	3/4

TEILENTSALZUNG

	TE-K 7/16	TE-E 12
Kapazität bis zur Regeneration bei 10° dH [l]	7000 / 16000	12000
Aufstellung	Patrone Kunststoff	Patrone Edelstahl
Wasserdruck minimal [bar]	2,5	2,5
Wasserdruck maximal [bar]	6	10
Wassertemperatur maximal [°C]	40	60
Maße [H x D] in mm	500 x 222 / 640 x 260	490 x 240
Wasseranschluß [“]	3/4	3/4

VOLLENTSALZUNG

	VE-K 5	VE-E 5
Kapazität bis zur Regeneration bei 10° dH [l]	5000	5000
Aufstellung	Patrone Kunststoff	Patrone Edelstahl
Wasserdruck minimal [bar]	2,5	2,5
Wasserdruck maximal [bar]	6	10
Wassertemperatur maximal [°C]	40	60
Maße [H x D] in mm	640 x 260	600 x 240
Wasseranschluß [“]	3/4	3/4

LEITWERT	KARBONATHÄRTE	PRODUKTEMPFEHLUNG
100 – 130 µS/cm	< 1°	Vollentsalzungspatrone
	> 1°	Teilentsalzung
130 – 160 µS/cm	< 2°	Vollentsalzungspatrone
	> 2°	Teilentsalzung
160 – 190 µS/cm	< 3°	Vollentsalzungspatrone
	> 3°	Teilentsalzung
190 – 210 µS/cm	< 4°	Vollentsalzungspatrone
	> 4°	Teilentsalzung
210 – 240 µS/cm	< 5°	Vollentsalzungspatrone
	> 5°	Teilentsalzung
240 – 270 µS/cm	< 6°	Vollentsalzungspatrone
	> 6°	Teilentsalzung
270 – 300 µS/cm	< 7°	Vollentsalzungspatrone
	> 7°	Teilentsalzung

Zum Schutz der Hauselemente empfehlen wir bei einer Gesamthärte von größer 3° dH eine Teilentsalzung einzusetzen.

ACHTUNG: Eine Enthärtung verschlechtert das Spülergebnis bei Gläsern!

Drinking water treatment process

Drinking water and its permissible constituents are specified in the form of limit values in the Drinking Water Ordinance. Water that does not exceed these limit values is therefore suitable for human consumption.

Ingredients

What else can or may be present in water besides pure H2O?

- *Natural ingredients:*

  Mineral salts / metals / gases

- *Contaminants and pollutants such as:*

  Iron and iron compounds, including in the form of corrosion products from pipes Pesticides / herbicides, etc. / Installation residues / Other suspended solids

Which ingredients interfere with technical applications?

- *Coarse impurities such as:*

  Sand / chips / rust particles / residues from installation materials

- *Lead to:*

  Blockages (nozzles) / deposits / pitting corrosion / friction (wear of seals)

- *Increased iron and manganese content leads to:*

  Brown deposits / Bacterial growth (slime formation, clogging of filters, odor, etc.) Impaired function of water softening and UO systems / Impaired taste of tea and coffee

- *High water hardness = high calcium and magnesium carbonate content leads to:*

  Limescale deposits (especially in hot water areas at water temperatures of 55°C and above, as limescale solubility in water decreases rapidly above this temperature).

  1 °dH corresponds to 17.8 mg CaCO3/l = 17.8 g of "lime" per 1 cubic meter of water.

  and thus to problems in domestic plumbing such as:

  Cross-sectional narrowing in pipes / leaky seals on valves / clogged aerators Heat loss / burning out of heating coils due to overheating / high follow-up costs due to descaling and cleaning work

  Problems with dishwashers, combi steamers/steamers, and similar appliances Hardness deposits in the machines, on dishes and glasses / undesirable interactions between hardness and cleaning chemicals / reduced cleaning effectiveness and thus higher soap consumption Rinse aid / descaling effort / cleaning costs / premature wear of moving parts

- *High total salt content or high conductivity (solids content/evaporation residue) leads to:* staining on dishes/glasses and cutlery/personnel costs for polishing/basic cleaning costs for dishes/broken glass and hygiene problems during polishing/deposits in ice cube machines/higher rinse aid consumption

Measurement methods and limit values for technical applications

- *Coarse impurities max. 90 - 120 µm*
- *Iron content, to be determined using colorimetric measuring equipment;*
- *limit value max. 0.1 mg/l*
- *Manganese content, to be determined using colorimetric measuring equipment; limit value max. 0.05 mg/l*
- *Permissible total hardness, to be determined using titration measuring equipment; limit value depends on the respective application; as a rule, even a few °dH have a negative effect in the hot water range*
- *Total salt content/conductivity, to be determined using conductivity measurement; limit value depends on the application; for example, stain-free glasses and cutlery can usually only be achieved with a conductivity of less than 50 µS/cm (corresponds to a salt content of approx. 25 mg/l)*

How can the unwanted substances be removed?

- *Coarse impurities are removed by filtration – technical implementation:*

  Backwash filters
  Screen filters
  Depth filters (filter cartridges)
  Possibly multi-layer filter systems

- *Undesirable hardness in the water is removed using water softening systems – process technology:*

  Discontinuous ion exchange process / exchange of calcium and magnesium for sodium,
  ATTENTION! The total salt content before and after a water softening system remains unchanged! Limited capacity / regeneration with sodium chloride
  Unlimited repeatability!

- *Technical implementation:*

  Pre-assembled softening systems with fully automatic control Single or double softening systems

  Control types: - Time-controlled
  - Volume-controlled
  - Water meter-controlled

- *Unwanted high total salt content (conductivity) is reduced by desalination using*

reverse osmosis plants (RO plants) *- Process technology:*

Continuous membrane separation process, counter-osmosis or reverse osmosis, whereby water is passed under increased pressure through a semi-permeable membrane that is permeable to pure water but impermeable to most constituents.

The salt content of the water is reduced by approx. 98%!

Separation process: pure water = permeate water / with retained salts = concentrate Continuous process: the longer the daily operating time of the system, the better

- *Technical implementation:*

Pre-treatment by means of softening or antiscalant (absolutely necessary!!) Fully automatic systems with:

Microprocessor control / high-pressure pump / monitoring fittings Reverse osmosis module / stainless steel frame or housing

or desalination using mixed-bed cartridges

For low demand for desalinated water

Ion exchange process with limited capacity; regeneration using acid and lye outside the company The salt content of the water is reduced by approx. 99%!

Expensive and harmful to the environment

With a water hardness of 20°dH, 1 m³ of desalinated water costs approx. EUR 50, or desalination via decarbonization

For low demand for partially desalinated water

Ion exchange process with limited capacity; regeneration using acid off-site The reduction in salt content depends on the carbonate content of the water

Expensive and harmful to the environment

When can the above-mentioned processes be used and what are the requirements for raw water quality?

- *All of the above processes can be used if*

the water to be treated complies with the Drinking Water Ordinance, has a temperature between 5 and 30°C,

has a flow pressure of at least 2 bar,

if well water is to be used, a current water analysis is required; if drinking water is to be used, the following information is required for the design and selection of the appropriate process:

- Total hardness (°dH)
- Conductivity (µS/cm)
- Iron and manganese content (mg/l)
- Carbonate hardness

What are the advantages of desalinated water?

For dishwashers

- *Optimal cleaning results*
- *No stains or salt deposits on the dishes*
- *Shiny clean cutlery and sparkling clean glasses*
- *Reduced consumption of detergent and rinse aid*
- *Reduced labor costs for unnecessary polishing*
- *Reduced wear and tear and glass breakage*

Info: Osmosis water 15-80 µS/cm

For coffee machines

- *No clogging of nozzles and pipes*
- *Reduced cleaning costs*
- *Reduced susceptibility to repairs*
- *Best coffee aroma*

Info: Partially desalinated AQUAmix water (up to 3-4°KH or max. 250 µS/cm)

For steam cookers

- *No unappetizing limescale and grease deposits*
- *No salt deposits on food*
- *Reduced cleaning costs*
- *Reduced clouding of glass panes*

Info: Partially desalinated AQUAmix water (up to 3-4°KH or max. 250 µS/cm), depending on manufacturer's recommendation

Maritim Seehotel Timmendorfer Strand is participating – BlauWAL concept

Water H_2O

"The principle of all things is water; everything comes from water, and everything returns to water," recognized the Greek philosopher and mathematician Thales of Miletus more than 2,500 years ago.

It is astonishing how many thoughts revolve around a substance, how many myths and rituals entwine themselves around a substance which, viewed profanely, is a chemical compound thrown from space onto Earth consisting of two parts hydrogen (H_2) and one part oxygen (O).

"An odorless and tasteless , transparent, in di- clear layer light blue liquid," as defined in the Brockhaus encyclopedia.

Brockhaus encyclopedia .

Stinginess is ...?

Stinginess is apparently no longer quite so cool Hamburg (AP), SZ 22.9.06 - Among German consumers, there are signs of a decline in the "stinginess is cool" mentality:

In a survey, 49 percent of customers said they generally pay more attention to quality when shopping.

32 percent said they tend to pay more attention to price.

19 percent did not provide any information. This ratio was already reversed at the peak of the "stinginess is cool" wave, as revealed on Friday by the so-called quality barometer of the Nuremberg market research company PULS, for which 1,000 representative German citizens were surveyed. However, the new quality awareness has not spread to all age groups and all industries:

it is mainly the over-50s who pay attention to quality!

This is in response to "stinginess is cool."

Regards, KK Editorial Team

Facts, facts, facts should be the focus

"For the next water primer, we have come up with a case study – focus: machines, water, chemistry," I was instructed – and further: "Lots of information and little advertising."

So, a "case study"! Which case, which facts? There isn't just **one case** – there are many cases!

These are handled daily by the **Johnson Diversey Service Organization** without always being specifically mentioned. Only exceptional cases are actually brought to my attention (your responsible Key Account Manager).

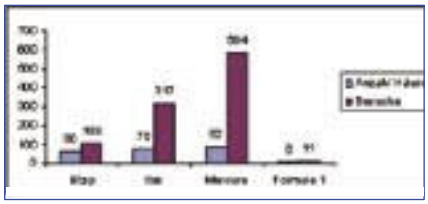
This is a good thing, because it shows that our service for you works.

The Johnson Diversey Service Organization—what does it do for you, what can it do, what should it do—what else could it do? How does it work?

Do you remember – Quality in Action? It all starts with the system: pre-planned and tested methods, using standardized tools (products and dosing devices) that have been selected and documented for each area according to the "best practice" principle. These must be maintained and monitored accordingly in "everyday life."

And is this actually happening?

In 12 months, 224 Accor Hotels (6 Formule 1, 60 Etap, 76 Ibis and Suitehotels, and 82 Mercure, Novotel, Sofitel) have received 1,015 documented visits from **JohnsonDiversey Systemservice**, which serves this purpose exclusively.



For your safety, we check the following in detail:

- *Are the dosing devices working and are they being used correctly?*
- *Are all hygiene plans/information materials available?*
- *Are the right products being used in the right way and in the right place?*
- *Are you, dear customer, achieving the desired results?*
- *Is all "handling information" still available?*
- *Is the dishwasher loaded and operated correctly—is it in good working order?*
- *Is the water for the machine OK?*
- *Is follow-up work necessary—who is responsible?*

The necessary advice is provided directly or organized for you immediately.

Technical service:
- Installation/repair
- Dishwasher consulting

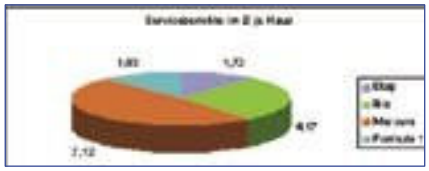
Hans Masshoff:
- Key Account Manager

System service:
- System maintenance
- Consulting / Training / Documentation

Application Technology and Laboratory:
- Fault analysis and process consulting

Are you familiar with these reports?

They were issued on average 1.83 times per year for each Formule 1 hotel,
1.72 times for each Etap hotel, 4.17 times for each Ibis hotel, and 7.12 times for each



Mercure/Novotel/Sofitel.

This then led to a further 147 documented visits by JohnsonDiversey technicians for technical repairs, new installations, and consultations, as well as approximately 20 additional consultations by product specialists, laboratory, and application technology. Are the glasses damaged by friction in the wrong baskets or by glass corrosion because unsuitable materials, water, or excessive temperatures were used in the washing process?

We will give you the answer, but *not without* always contacting Accor partners for dishwashers and water technology *in such cases.*

Accor partners for dishwashers and water technology. It is to your advantage that we know each other.

There is still room for further development here. JohnsonDiversey is prepared – if Accor so desires – to look even further "outside the box" and offer system maintenance, for a fee, for adjacent areas as well.

This begins with quality and functional checks, as are now included in almost every quality assurance programs today – including the corresponding evaluations and, if necessary, the initiation of predetermined measures.
In many cases, these measures, e.g., necessary repairs, will have to be carried out by third parties, who can then be deployed in a targeted manner without the need for a myriad of costly maintenance contracts.

Elsewhere, such services are provided at low cost by the "Johnson Diversey System Service," which already visits you regularly.

Checks such as / on

- *Routine hygiene checks*
- *Water softening systems*
- *Osmosis systems*
- *Exhaust air systems*
- *System compliance and cleaning quality in house cleaning*

which, *as described* above, are incorporated into a appropriately prepared evaluation and reporting system and, *if* necessary, automatically initiate the required measures.
Summary evaluations provide information about possible general weak points, which in turn triggers appropriate measures on the planning side.
A system that can *also* provide you with security and relieve you of some of the burden.

What is required to achieve this?
Once again, uniform, networked systems, for which this brochure is ultimately **advertising promotes!**

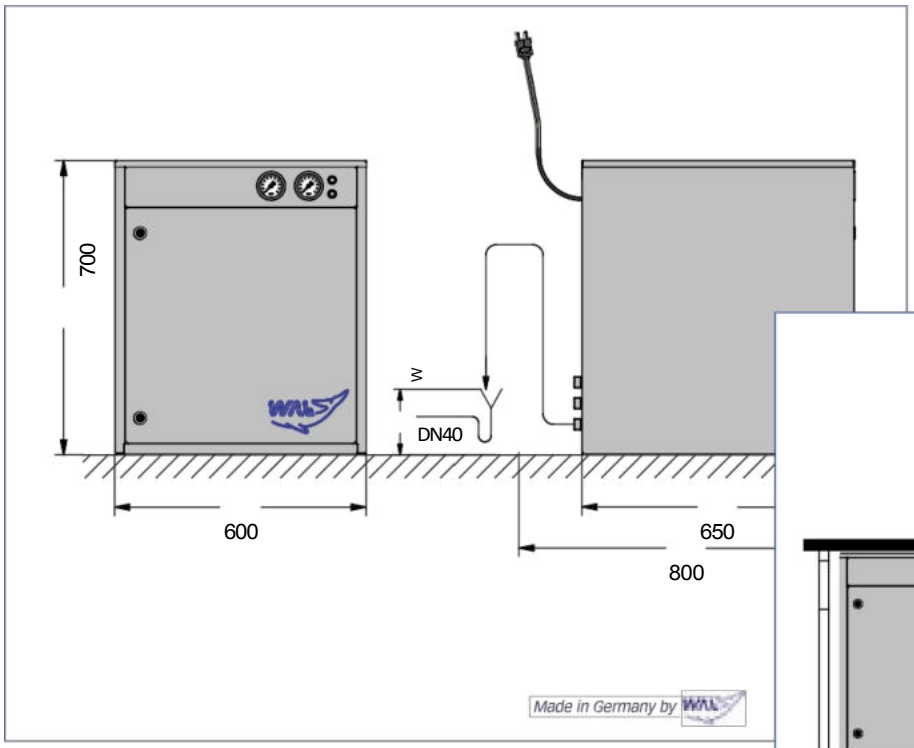
Hans Masshoff
Key Account Manager,
JohnsonDiversey GmbH & Co. oHG

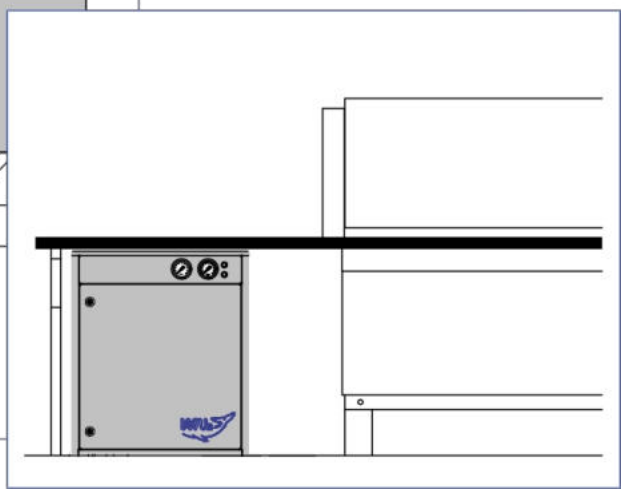
AQUArent® reverse osmosis system U

Aqua-rent® U reverse osmosis systems are modern, reliable, user-friendly, and durable devices for desalinating drinking water. The devices are extremely easy to operate. All relevant parameters are monitored by sensors and interpreted by a compact PLC. Thanks to the proven WAL-HCU technology in combination with the control software developed in-house, the ***Aquarent® U*** is permanently operational.

ready. The automatic permeate protection flush ensures particularly effective and economical operation. The built-in permeate tank stores up to 55 liters of pure or blended water and, together with the permeate feed pump, ensures a reliable supply to a wide variety of consumers. A fully automatic raw water feed ensures that connected consumers are supplied in the event of a malfunction (e.g., power failure).

- Can be installed under a counter Height = 700 mm
- Low-noise operation
- High-quality Grundfos pump
- Fully automatic emergency supply even when the device is switched off and in the event of a power failure
- Fail-safe operation thanks to proven WALHCU technology (no plug-in fittings!)
- Operating parameter monitoring
- Internal stainless steel piping
- High-quality stainless steel housing
- High-performance membranes in stainless steel pressure pipes
- Permeate flushing
- User-friendly single-valve technology
- High-quality brand components
- Potential-free fault signal output





Scope of delivery:
High-performance UO unit in splash-proof stainless steel housing (removable side walls and cover, service door), low-noise pressure booster pump and permeate feed pump, compact PLC for controlling the internal UO processes, high-performance UO membranes in stainless steel pressure pipes, 2 pressure gauges as display elements for visual monitoring of system pressures by the user, pressure sensor for pure water supply pressure, pressure switch for inlet pressure, potential-free fault signal output, blending valve for blending permeate, internal storage vessel (usable capacity 55 l), inlet solenoid valve with flap armature pilot control, integrated fully automatic emergency supply unit with de-energized open solenoid valve with flap armature pilot control, piping made of pressure- and corrosion-resistant materials.

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