WFI and Pure Steam in Best Quality

GENERATION, STORAGE, DISTRIBUTION AND MONITORING
EXCEPTIONAL PRODUCTION
Another advantage: our production sites. BWT handles its own development, production, inspection and documentation all over the world – from proven EDI modules to completely pre-qualified, performance-tested, completely pre-assembled systems for Purified Water and Highly Purified Water, Water for Injection (WFI) as well as Pure Steam.

BECAUSE LIVES ARE AT STAKE
In complex applications, it is not the individual expert that is important but the effective cooperation of many different participants. BWT’s global team has impressed its customers for decades and has completed thousands of successful projects around the globe.

WE GENERATE PURE CONFIDENCE
Critical Utilities – the simplest thing in the world? Not for your production requiring Water for Injection (WFI) and Pure Steam of the highest quality level and according to the international pharmacopoeia. That is why you should place your confidence in a partner that accepts this challenge in full – from engineering via manufacturing to the life cycle service: BWT Pharma & Biotech.

EXCELLENCE IS OUR STANDARD
Is standards-compliant water quality ensured every second? Does the manufacturing process meet state-of-the-art requirements regarding efficiency, sustainability and cost-effectiveness? BWT builds, delivers and installs convincing turnkey solutions and uses a wide range of proven standard systems.

COMMUNICATING EFFICIENTLY
From pre-treatment to the Point of Use: BWT implements turnkey solutions for your Critical Utilities project – in the fastest way possible and with a central project manager as your responsible contact person.

TWO PROCEDURES, EFFICIENT PROCESSES
WFI is the critical raw material for pharmaceutical production. The qualities at the Point of Use are regulated in the international pharmacopoeia, such as USP, Ph. Eur. and JP. For a long time, the Ph. Eur. prescribed distillation as the only method for the production of WFI. Recently this was expanded – as it was in other pharmacopoeia as well – to include cold production procedures for the production of WFI. BWT has many years of experience using both techniques.
COMPLETE SOLUTION FOR WFI AND PURE STEAM

Generating, storing and distributing WFI and Pure Steam made from potable water or Highly Purified Water – it takes experience and process knowledge to achieve this demanding objective: to the point, conform, 100 percent reliable utility quality. BWT offers different process paths and stages from its own hand, from pre-treatment to the Point of Use.

STORAGE AND DISTRIBUTION INCLUDED
WFI must be stored and distributed in a way that assures its quality is preserved. A challenge that you can easily leave to BWT’s integrated storage and distribution system. The solution is called LOOPO. The system analyzes, sanitizes, monitors, controls and documents the complete process – fully automatic.

OPTIMAL PRE-TREATMENT
The starting substance is potable water – its composition is the basis of the pre-treatment technology. BWT convinces with high-grade solutions, including for the most difficult raw water conditions. You’re welcome to benefit from our experience all over the world!
FULLY AUTOMATIC TO PERFECT RESULTS

MULTITRON, MULTISTILL, VAPOTRON, COMBITRON – these are the top performers for WFI and Pure Steam generation at the latest technological standard. LOOPO H takes on the hot storage and distribution of the WFI. Use these components to create a highly efficient and reliable complete solution – exactly coordinated to the scale of your needs.

MULTITRON
Efficiency through flexibility – with MULTITRON, variable performance requirements are at your disposal. The multi-column distillation system is particularly economic at producing WFI in a natural circulation procedure – both for large and small quantities.

MULTISTILL
The robust falling film distillation system provides continuous WFI generation. With patented integrated pre-heating and separating system for long lifecycles with continuous high performance.

VAPOTRON
Fast and comfortable while yielding desired results: The Pure Steam generator VAPOTRON offers a convincing option due to its precise pressure regulation and excellent Pure Steam quality in accordance with EN285.

COMBITRON
A particularly economic way to combine the generation of WFI and Pure Steam: With COMBITRON, you will not only reduce your investment costs, but also the required footprint by up to 30 percent in comparison to separate WFI and Pure Steam systems.

LOOPO H
Turnkey, high-grade distribution system for cGMP-compliant storage and distribution of WFI. LOOPO H also takes on the monitoring and control of hot WFI loops.
Material quality as a factor: orbitally welded seams and smooth surface polishing increase the functional reliability and hygiene of the system.

EFFECTIVE SELF-MONITORING
A MULTITRON system monitors, controls and documents your distillate automatically and permanently. Distillates with, for example, excessively high conductivity or insufficient temperature are automatically discarded.

Generating WFI using distillation – at small or large scales, and as energy-efficient as possible: Multi-effect distillation system in the MULTITRON series are perfectly designed to meet these requirements. With one or eight columns, according to requirements, budget and level of desired efficiency.

MULTITRON PERFORMANCE BROUGHT IN ROW

TUBE BUNDLE HEAT EXCHANGERS
Advantage BWT: Multitron’s unique double-plate tubular bundle heat exchanger is installed in each column completely without a holding bracket, i.e. without any constricting fixing mechanism. This leaves the heat exchanger enough room to expand. This free space prevents thermal-mechanical strain, which in turn benefits the system’s lifecycle.

MULTITRON uses the natural circulation procedure – for maximum operational reliability. The integrated degassing unit results in an even lower conductivity of your WFI.

Power output regulation of 20 to 100 percent and state-of-the-art control technology ensure optimized, energy-efficient operation.
3+ TECHNOLOGY
In the 3+ separation system, an intelligent construction uses gravitational and centrifugal forces to generate the purest WFI reliably and under all kinds of conditions – with an amazingly broad range of feed water qualities.

MULTISTILL
THE ECONOMY OF PUREST WATER

The MULTISTILL falling film distillation system continuously generates WFI – at the highest level of cost-effectiveness. The robust system processes a surprisingly broad range of feed water qualities. The basis of this tolerance is a completely optimized and patented construction in which the distillation process takes place. The system covers a performance up to 13 m³/h.

Both the pre-heating system, as well as the 3+ separation system are unique and integrated in the columns. This improves the performance and extends the lifecycle of the system.

CLEANER THAN THE STANDARDS REQUIRE
The WFI generated in the MULTISTILL not only meets the current specifications of the USP, Ph. Eur. as well as other pharmacopoeias, but clearly exceeds them.

LOAD CHANGES HANDLED OPTIMALLY
A unique advantage of the BWT brand: Due to a pre-heating unit integrated in the columns, the falling film evaporator can adjust extremely well to load changes, while the performance can be regulated comfortably and seamlessly via the heating steam pressure and feed water volume.
VAPOTRON
THE INDESTRUCTIBLE PURE STEAM GENERATOR

Robust, long-lasting and proven in hundreds of applications worldwide: VAPOTRON, the reliable Pure Steam system for the generation of sterile and pyrogen-free Pure Steam. The compact construction saves space, a large panel facilitates the operation using validated AQU@VIEW software.

COST-EFFECTIVE AND POWERFUL
VAPOTRON works like the first column in a multi-effect distillation system. Advantages: low energy consumption, very regular Pure Steam pressure fed into the Pure Steam network, low pressure fluctuations even at high removal volumes.

BROAD RANGE OF APPLICATIONS
VAPOTRON systems are true all-rounders and prove themselves in the sterilization of systems, tanks and piping as well as other applications in the cGMP area. For requirements to sterilize autoclaves, VAPOTRON systems can also be equipped with an additional degassing stage to reliably comply with the quality requirements according to EN285.
INDIVIDUALLY PROGRAMMABLE
Using AQU@VIEW, COMBITRON is easy and comfortable to operate. The SPS control with touchscreen panel handles the complete monitoring of the system.

LONG LIFECYCLE
In the natural circulation procedure, the heat exchangers of all systems are completely immersed in feed water – this prevents tension, thermal-mechanical stress, prevents wear on the equipment and extends the lifecycle.

DOUBLE THE LOAD? ANY TIME!
COMBITRON systems are customized and adjusted to the required volume of WFI or PS. A ratio of 2:1 to 1:4 is possible. The generation can take place in parallel or alternating.

COMBITRON WFI & PURE STEAM COMBINED EFFICIENTLY
Low investment costs, less space required: Combine a WFI system with a Pure Steam system instead of investing in two separate systems – COMBITRON. The special feature of this system is a specially designed first column that makes it possible to use PS and WFI at the same time. The robust natural circulation procedure used in the COMBITRON guarantees maximum reliability, even at high loads.

The savings in investment costs and space can amount to up to 30 percent when you combine WFI and Pure Steam generation in one system: COMBITRON.
**LOOPO H**

**HOT FOR MAXIMUM HYGIENE**

With LOOPO H, you can store and distribute your WFI hot and cGMP-conform. The turnkey distribution system regulates the WFI-temperature, monitors and controls the water quality in the ring circuit system and offers options for sterilization at 121°C to the Point of Use.

---

**CLEAN FINISH**

Loopo H is arranged as a rack in order to save space – a compact alternative to conventional individual devices. The „H“ means that the device handles the hot storage and distribution of WFI. A speed-controlled pharmaceutical-compliant conveyor pump ensures an optimal adjustment to the hydraulic ratios in the distribution system.

---

**SELF-MONITORING**

The system keeps the temperature of the entire ring circuit and the tanks at a constant temperature, e.g. 65°C or 80°C. A sterilization with 121°C superheated water is also possible as an option. Cold removals can also be realized using PoU coolers.

---

**PERFECT INTERACTION**

LOOPO H and WFI generators such as COMBITRON are optimally coordinated to each other: uniform components, uniform AQUA@VIEW control, optionally uniform graphic visualization and a uniform documentation and validation package facilitate the process of acquisition, setup, official approval and operation.

---

**CONNECTION-READY**

All LOOPO H systems are pre-assembled, fully functional, pre-tested and pre-qualified by being subjected to a Factory Acceptance Tests (FAT).

---

**SETTING PRIORITIES**

The AQUA@VIEW Point of Use Manager makes it possible, provided suitable technology is used, to prioritize or to block tapping points in order to optimally supply the PoU with WFI and protect persons and processes. With corresponding additional equipment, you can set the temperatures needed at the tapping points.
Your Critical Utility system is operating in the middle of your production? That makes system availability all the more important as a factor. Good to know: Even after you have started using the system, BWT will still be by your side, as a reliable, competent partner. Our AQU@SERVICE offers all services related to the operation of your system as a one-stop shop covering the complete life cycle of your system.

QUALIFICATION GIVES YOU WINGS
Safe system operation in a regulated environment: Only the qualified service of the original manufacturer can ensure this in the long term. AQU@SERVICE will provide you with "waterproof" documentation. Your administration and coordination efforts will be reduced significantly, and external audits and inspections will be carried out quickly and efficiently.

QUALITY
For our products.
For your processes.
For all our lives.

EXPERIENCE DICTATES WE DON'T TAKE HALF-MEASURES
BWT employs over a hundred specialized service engineers worldwide. Decades of experience make all the difference. One result among many: the manufacturer-independent AQU@SERVICE Audit. A BWT service engineer determines the condition, performance and potential of your system and recommends concrete measures to be taken to optimize your system – an interesting option even for users of third-party brands.

QUICK SERVICE AT ANY SCALE
We're aware of flexibility as a competitive factor. In an emergency, we’ll be on site in a flash, no matter where in the world. The agility principle also applies to more complex endeavors. For example, BWT can qualify, validate and document your conversion project. Or would you rather invest in a new system? AQU@SERVICE Upgrade will quickly answer any questions you may have and manage the recommended measures as a matter of routine.

SAFETY
Enjoy the good feeling of being in the best hands!

PERFORMANCE
More performance with lower energy consumption!
Sustainability through optimum use of resources.

AVAILABILITY
Vitally important for you – and thus also for BWT.