

CLEAN UTILITY SOLUTIONS

GENERATION, STORAGE & DISTRIBUTION



**GMP
Compliant**



**Sanitary
Design**



**Customized
Solution**



**Energy
Efficient**

Flexible Clean Utility Systems For Pharmaceutical Applications.

All Pharmaceutical production processes require a stable and consistent supply of quality controlled water for applications ranging from non – critical processes to product formulation. Clean utilities are the lifeline of all bioprocess industries. MACHINFABRIK Clean Utility Solutions Services produce Purified Water and WFI that meets the current US and European Pharmacopeia guidelines.

With over 37 years of experience in sterile processing solutions, we know exactly what is involved in getting a customized system built and running. From initial water testing, to design, to technical specifications, and on-site commissioning, our team of experienced technicians ensure that every detail is addressed. We make sure to provide all the support you need to meet the standards required for your application from a wide variety of industry-leading water treatment solutions.

► Pre treatment for water

Water pretreatment removes suspended impurities, solids, colloids and living organisms from raw water.

- Water Softeners
- Multi-grade Sand Filter
- DM Plants
- Carbon Filters.

Our water treatment technologies have been developed to maximize the overall water processing plant lifecycle, thus reducing costs.



► Ultra Filtration System



Ultrafiltration is an important process that can separate micro organic molecules and colloids from water with maximum efficiency and effectiveness. The process is used as the pre- treatment for RO system.

The modular design of ultrafiltration are energy efficient, low maintenance equipment providing excellent quality output compare to conventional filters. Systems are provided with advanced monitoring & controlling systems for data validations.

- Auto / Manual backwash cycles.
- 100 KD cutoff membrane.
- <3 SDI guaranteed.

► Reverse Osmosis and EDI (Purified Water Generator)

Fully automatic and integrated Sanitary Skid mounted RO – EDI system with Hot Water / Steam sanitized pre-treatment, Ozonation/ UV, Fully Automatic CIP skids and high reject membranes.



► WFI Generation Unit

Machinfabrik has been key partner of scores of Life Science companies for generation of clean utilities. Our WFI Still produces distillate that meets the standards set by current US and EU pharmacopeias. Systems are equipped with range of features to ensure that your installations and qualifications are quick and trouble-free.



► Pure Steam Generator



The Pure Steam Generator is provided with all standards features- automatic pure steam pressure regulation, pure steam sampling, pure steam conductivity monitoring and many more.

- Pure Steam Sampler.
- EN285 compliant.
- Dryness value < 0.95.
- Super heat value < 25°C.
- Non Condensable Gases < 3.5%.
- Pure Steam Testing Kit available on demand.

► Storage and Distribution



It is essential that the storage system and the distribution of the water for pharmaceutical use must not alter the quality of the water at the Points Of Use (POU). PW and WFI Storage tank and Distribution Skids system are 316L stainless steel pipe work, internal surface finish <math><0.5 \text{ Ra.}</math>, PLC controlled with touch screen HMI and is accompanied with standard features compliant with the latest Pharma regulatory standards.

Data Monitoring and Validation Software.



Keeping in pace with rapidly evolving regulatory requirements we have in-house expertise for documentation and validation of all our systems. As part of our validation process, we offer data monitoring and software support as standard features with all our clean utility solution systems.

The Application software is validated in house and meets most of the current GAMP standards. All our control systems feature Programmable Controller, Intuitive HMI touchscreen, Multiple user logins - Electronic maintenance reminders, integration and system alarms.

Total solutions for clean utility.

- Pre treatment for water.
- Multimedia Filters.
- Soft Water Generation System.
- Chemical Dosing System.
- Ultra Filtration System.
- RO Unit.
- EDI Unit.
- WFI Generation Unit.
- Pure Steam Generation Unit.
- Storage Tanks.
- Distribution skids for PW and WFI.
- Heat Exchangers.
- Zero dead leg valves.
- Pumps, fittings, pipings and accessories.
- 21 CFR Part II Compliant System on demand.
- ASME BPE Compliant System on demand.