WFI

Hot WFI production

In our distillation plants, we produce water for injection using evaporation columns. The WFI is produced in temperature-graded pressure column distillation plants with natural circulation evaporation. In order to make the required evaporation and condensation process energy-efficient, the distillation plants are usually designed with multiple stages. This leads to optimized utilization of heating energy through heat recovery during evaporation and heating of the feed water. We also offer twin systems for the production of WFI and Pure Steam.

Efficient stand-by operation

In stand-by phases, the temperature in the pressure columns is lowered to 80° to 90°C in order to maintain microbiological safety and at the same time ensure rapid operational readiness.

Anti-Rouging concept

In order to comply with EN 285, we remove CO_2 and other gases that cannot be condensed by means of thermal degassing. By removing CO_2, we can significantly reduce the effect of rouging.

Technical Data

Material	Stainless steel 1.4404 with roughness Ra < 0.8/1.6 µm or 1.4435 with roughness Ra < 0.6 µm and electro-polished
Process technology	Circulation/heating of the feed water, degassing (optional), temperature-graded pressurized column distillation, heat recovery by using the condensation heat for heating the downstream stages and the feed water. Cooling of blowdown, vapours and sampling volumes
Available performances	one to seven-stage systems, steam heating: up to 6,000 l/h, electric heating: up to 3,200 l/ h
Possible combinations	Combination with Pure Steam generation by taking partial quantities of Pure Steam from the first column
Blow down	5 % continuous (more with low system capacity)
Degassing	Thermal degassing (optional), membrane degassing (optional)
Heat exchanger	DTS heat exchanger for heating, evaporation, cooling and heat recovery
Total sanitization of the system	Self-sanitization through permanently high temperatures (> 70 °C) and internal circulation
Connections	Clamp connections in accordance with DIN 32676, use of safety clamps in accordance with AD-2000, aseptic flange in accordance with DIN 11864-2
Valves	Diaphragm valves, seat valves suitable for Pure Steam
Inline / Online Process monitoring	Conductivity, TOC (optional), temperature, pressure, level, flow rate

Technical changes and errors excepted.

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