

PSGE

ELECTRICALLY HEATED STEAM GENERATORS

GETINGE

Getinge understands the importance of Pharmaceutical Water as the most widely used ingredient in drug manufacturing and that Pharmaceutical Water and Steam are the fundamental utilities for the manufacturing process. Complete water and steam systems are built up module by module. Each module is assembled on a skid and delivered fully ready for validation. This design saves time and provides flexibility in the production area. New demands just mean adding a new module.

Getinge PSGE Generators are designed to produce Pharmaceutical Grade, Pyrogen Free Pure Steam for direct product contact, vessel sterilization, SIP, steam sterilizers, clean room humidification, etc. Steam is produced by the evaporation and purification of feed water.

A key operating principle of the electrical heaters used in the PSGE, is the advanced PLC-controlled heating elements that assure optimum response to varying loads, specially for use with autoclaves.



PRODUCT DESCRIPTION

The evaporation column is designed as a fast responding boiler (pressure vessel) with vertically mounted electrical heating elements. The feed water inlet is held in the lower part of the boiler, where the heating elements are designed to ensure a constant and uniform evaporation profile.

The evaporation column also contains Getinge's unique combination gravity and centrifugal separation system which has the ability to remove impurities and is essential for the quality of the pure steam. This system is far superior to gravity only separation systems used in most electrical steam generators and allows the PSGE to generate pharmaceutical grade pure steam from lower quality feedwater.

A level measurement controls the feed water and ensures that the water level is always higher than the heating elements. The generator is equipped with all necessary equipment including safety valve, pressure gauge, level control, feed water inlet and pure steam outlet. The sanitary design allows for complete drainage with no risk of stagnant water.

EN 285 / STERILIZER INTEGRATION

The systems are ideal for applications with fluctuating flow and pressure requirements, such as the supply of steam to autoclaves.

An optional degassing system is available to ensure non-condensable gas content remains below 3.5%. This together with the precision control and separation systems ensures compliance with EN285 and HTM 2031 irrespective of feedwater quality.

KEY FEATURES:

- Range: From 25 to 300 kg/h (55 or 660 lbs/h)**
 Eight standard models to match the capacity requirements; larger capacities can be supplied.
- Regulatory Compliance**
 When condensed, the pure steam fulfils all of the criteria for WFI as established by the latest editions of the US- (USP), European- (EP) and other Pharmacopoeias.
- GMP Design**
 The generator is designed according to cGMP requirements.
- Unique Separation System**
 The cyclone chamber uses centrifugal action (more than 200 G) to remove impurities, resulting in pure steam of the highest quality.
- Save Money on Feed Water Pre-treatment**
 Expensive purified feed water systems are not required. Getinge PSGE units only require Reverse Osmosis permeate as feed water.
- Open Design - Easy to Maintain**
 The compact column design minimizes external piping and leaves space for easy inspection and service resulting in fewer maintenance hours.
- All Stainless Steel**
 All piping and framework are constructed of stainless steel. Painted carbon steel is strictly avoided.
- Validation Support Documentation**
 Complete documentation package to fulfil the demands for the pharmaceutical industry.
- 21 CFR Part 11 Capable**
 Get full access to the unit from your plant supervisor system (e.g. SCADA) by adding Ethernet communication. Remote control, performance data and alarm collection.

Capacities

Electrically Heated Steam Generators

Model PSGE	Capacity kg / Hr	Model PSGE	Capacity kg / Hr
25	25	100	100
35	35	150*	150
50	50	200*	100
75	75	300*	300

* Not available for the Japanese market

GETINGE

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