



HBJ

## HYGIENIC STEAM & PURE STEAM GENERATOR

### GENERAL FEATURES

**Material:** Stainless Steel (AISI 316 Ti)

**Working Principle:** Creation of hygienic steam quality using the steam heat exchanger as the primary heating energy for high steam demands.

**Design:** The unit consists of a clean steam tank, heat exchanger, on the chassis, pumps, valves, level controls and control panel. The unit is pre-wired and piped. Tested by hydrostatic tests. The structural steel is mounted and delivered as a fully packed unit with a simple connection for installation and use.

**Dimensions, capacities, input and output connections will be designed according to the requirements. Single tanks are available on request.**

**Conditions:** Standard operating pressure between 1 to 5 bar (g) 150 kg/h – 4,000 kg/h capacity. Higher pressure ratios and capacities on request Flange Standard acc. DIN EN 1092-1, PN6 / 16 / 40 Standards: The product complies fully with the requirements of the European Pressure Equipment Directive 97/23 / EC and has the CE marking.

### Specifications

- Complete Stainless Steel (1715 / 316L) Manufacturing
- Plated or Tube type construction
- Wide Capacity (150–4000 kg / h unit) Range
- Spiral Heat Changer
- Pump Feed Station
- Steam Production Module
- Deaerator (Gas Separation) Module
- Steam Dryer Cell
- Automatic Blowing Module
- Thermal Body Isolation

## HYGIENIC STEAM & PURE STEAM GENERATOR

Steam Purity Range	Steam Application Area
Pure	Pharmaceutical Industry
	Biotechnology
Clean	Hospital
	Cosmetic
	Food & Beer
Filtered	Food & Beer
Plant	Hvac
	Textile
	Petrochemical

System is perfect for heat transfer application for petrochemicals, pulp mill and paper industries. Food companies should use filtered steam at a minimum level or use hygienic steam to remove the risk of contamination. Pure steam is the highest grade choice and is required for pharmaceutical and biotechnological applications.

Hygienically and pure steam; It is used for sterilization, vacuuming, humidification and heating processes in Food, Pharmaceutical, Cosmetic and Hospital establishments. Since steam used in these processes must meet the hygiene norms, Hygienically Steam Generation is provided by Sekonder Hygienically Steam Generators which are suitable for sterile steam conditions.

### HYGIENIC STEAM



When “Steam Cleaning” is mentioned, it is often referred to as “Hygienic Steam” rather than system steam.

This is usually divided into 4 different categories:

**System Steam:** FDA approved standard boiler chemicals are used in a typical conventional water treatment and inside the steam generated boiler. The tubing is standard carbon steel or even black pipe can be cast iron. All the condensate is recovered.

**Filtered Steam:** Steam, which is generated by conventional boiler, is filtered to remove condensate and solid particles. FDA approved chemicals used in standard boilers. If the pipe is a standard carbon steel or black iron, it must be replaced with 316 Stainless Steel. All the condensate is recovered.

**Hygienic Steam:** is not include any addiction (boiler chemicals etc.) and ionized or produced by reverse osmosis systems. All materials, components and pipes are 316 L Stainless Steel. Rarely recovered condensate is typically sent to a settling tank and then it is for water purification.

**Pure Water:** is not include any addiction (boiler chemicals etc.) and which is production of pure water. All materials, components and pipes are 316 L Stainless Steel.

# HYGIENIC STEAM & PURE STEAM GENERATOR

## VERTICAL TYPE HYGIENIC STEAM GENERATORS



SIZE	300	500	750	1000	1500	2000	3000
<b>POWER</b>							
Steam Power (kg/h)	300	500	750	1000	1500	2000	3000
Heat Output (kW)	203	338	508	676	1014	1352	2028
<b>Consumption kg/h</b>							
	360	600	900	1200	1800	2400	3600
<b>DIMENSIONS</b>							
Height A (mm)	2450	2450	2450	2450	2800	2800	2800
Width B (mm)	1230	1230	1230	1230	1480	1480	1480
Depth C (mm)	780	780	780	780	1180	1180	1180
Weight (kg)	350	380	400	500	750	800	950
<b>CONNECTIONS</b>							
electrical (kW)	0,75	0,75	0,75	0,75	0,75	0,75	0,75
Pure Steam (DN)	40	50	65	80	100	125	150
Primary Steam (DN)	25	32	32	40	50	65	80
Condensate (DN)	32	32	32	40	50	50	65
Water In (DN)	15	15	15	15	25	25	25
Drain (DN)	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

This clean steam converter generates clean steam in accordance with EN285, optimized for the supply of sterilizers and ventilation systems.

After it has been preheated in the feed water preheater by the condensate, the demineralized water is led into the thermal high-temperature degasser.

There, the feed water is further heated by pure steam and degassed in countercurrent with high efficiency. Three stages ensure safe and efficient separation of the non-condensable gases.

There is a calming section in the lower area of the degassing. The degassed water is fed into the separator tank with the plate heat exchanger. The pure steam is generated in the plate heat exchanger by means of heating steam.

Before the pure steam is fed into the pure steam line, it flows through a highly effective steam conditioning system that optimally processes the pure steam.

### ADVANTAGES OF VERTICAL HYGIENIC STEAM GENERATOR

- The use of plate heat exchangers leads to a very compact and cost-saving plant concept.
- The vertical design and assembly of the heat exchanger in the blow-down-valve saves space.
- The specially designed control equipment enables precise function of steam generator.
- The thermal degassing unit is separated from the clean steam through well proved separation units. Pressure- and load fluctuations do not affect the efficiency of the degassing unit.
- An additional steam conditioning unit improves the quality of the produced clean steam.
- The especially for this plants produced feedback control offers a fast reacting function.
- The also integrated feeding water heat unit / raw condensate cooling unit improves the thermal efficiency and decreases the amount of raw steam needed, approx. 15 %.
- The alternate offered DUPLEX-concept gives best breakdown reliability and the possibility of an over boost operation.

# HYGIENIC STEAM & PURE STEAM GENERATOR

## HYGIENIC STEAM TRAPS

### HTT-6

#### APPLICATION AREAS

Hygienic Applications  
Food and Beverage Industries

Stainless Steel AISI 316L  
PTFE, Teflon  
Hastelloy - Stainless Steel  
Socket

#### PRODUCT FEATURES

Body and Coupling  
Seat - Gasket  
Thermosatic Capsule Connections

#### OPERATING CONDITIONS

Max. Operating Pressure (PMO) 6 bar  
Max. Operating Temperature (TMO) 140°C



### TKK-41/42

#### APPLICATION AREAS

Drying units  
Pressing units  
Steam jacket pipelines Convecter heaters  
Heaters

Stainless Steel AISI 304 (TKK-41) (316 OPT.)  
Stainless Steel AISI 304 (TKK-42) (316 OPT.)  
Hastelloy  
Stainless Steel AISI 304  
Threaded

#### PRODUCT FEATURES

Body  
Thermostatic Capsule  
Strainer, seat  
Connection Types

#### OPERATING CONDITIONS

Max. Operating Pressure (PMO) 45 bar  
Max. Operating Temperature (TMO) 250°C



### SK-61/SK-61C/SFK-61 FLOAT TYPE

#### APPLICATION AREAS

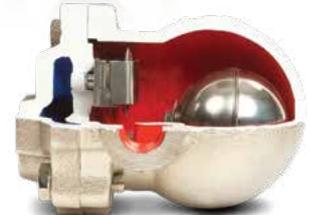
Tanks, pans, heat exchangers, drying cylinders, ovens

#### PRODUCT FEATURES

Body and Cover Stainless Steel AISI 316  
Internals and float Stainless Steel  
Connection Types Flanged and threaded

#### OPERATING CONDITIONS

Max. Operating Pressure (PMO) 25 bar  
Max. Operating Temperature (TMO) 250°C  
Max. Differential Pressure (ΔP) 4,5-10-14



### TDK-71

#### APPLICATION AREAS

Main steam lines  
Turbines  
Marine applications  
Presses  
Irons

#### PRODUCT FEATURES

Body  
Cover  
Strainer, disc, seat  
Connection Types

Stainless Steel AISI 304  
Stainless Steel AISI 304  
Stainless Steel AISI 304  
Threaded

#### OPERATING CONDITIONS

Max. Operating Pressure (PMO) 42 bar  
Body Pressure Class PN63  
Max. Operating Temperature (TMO) 400°C



#### HEAD OFFICE - FACTORY

Atatürk Sanayi Bölgesi Hadımköy Mahallesi Mustafa İnan Caddesi No: 44 Arnavutköy - İSTANBUL  
Tel: +90 212 771 01 45 (pbx) | Fax: +90 212 771 47 27  
info@ayvaz.com | www.ayvaz.com

**Cona Caserta/Italy**  
Tel: +39 0823 187 3988  
rmolaro@ayvaz.com

**Ayvaz Germany Viernheim/Germany**  
Tel: +49 62046014399  
germany@ayvaz.com

**Ayvaz Ukraine Kiev/Ukraine**  
Tel: +380 44 390 57 57  
info@ayvaz.com.ua

**Tricorr Warsaw/Poland**  
Tel: +48 530 030 810  
+48 533 603 335  
tricorr@tricorr.eu

**Ayvaz Azerbaijan Baku/Azerbaijan**  
Tel: +99 (455) 579-84-32  
ahayatov@ayvaz.com

**Ayvaz Egypt Cairo/Egypt**  
Tel: +20 122 819 78 29  
andrew.eid@ayvaz.com

**Ayvaz Gulf Dubai/U.A.E**  
Tel: +971 563550822  
+971 501306871  
mideast@ayvaz.com

**Ayvaz China Ningbo/China**  
Tel: +86 152 5830 7361  
msahin@ayvaz.com

**Ayvaz Kazakhstan LLP Almaty/Kazakhstan**  
Tel: +7 (727) 327 97 57  
info\_kz@ayvaz.com

**Ayvaz N Ispirih/Bulgaria**  
Tel: +359 8431 27 32  
office@ayvaz-n.eu

**Ayvaz Serbia Belgrade/Serbia**  
Tel: +381 61 658 70 52  
yakbiyik@ayvaz.com

**Ayvaz Vietnam HCMC/Vietnam**  
Tel: +84 89 8508345

**Ayvaz Americas Rhode Island/USA**  
Tel: +1 401 737 8380  
americas@ayvaz.com