

SKS STEAM TO STEAM HUMIDIFIER



neptronic[®]
www.neptronic.com

The SKS humidifier provides chemical free steam by using an on-site central boiler or steam generating station as a heat source. The raw steam under pressure or high temperature hot water (HTHW) from the boiler provides the energy to produce clean sterilized steam.

SKS Advantages

The SKS humidifier offers an innovative design and trouble free operation. The wide modulation range, high capacities and ease of servicing make it the most dependable and best steam to steam humidifier in the market.

- ▶ Capacities from 33 to 1250 lb/hr (15 to 570 kg/hr) of steam
- ▶ Maximum boiler steam pressure of 15 PSI for raw steam and up to 100 PSI for HTHW
- ▶ Copper (for HTHW) or stainless steel (for raw steam) heat exchangers
- ▶ Ease of servicing: cleans and re-installs within minutes
- ▶ Comprehensive scale management system
- ▶ AFEC system, mass measuring water sensor
- ▶ Drain water tempered to below 140°F (60°C)
- ▶ Uses either domestic, RO or DI water
- ▶ Available with BACnet communication interface

Typical Applications

The SKS is recommended when a pressurized steam or HTHW is available for providing pure and clean atmospheric steam in applications such as:

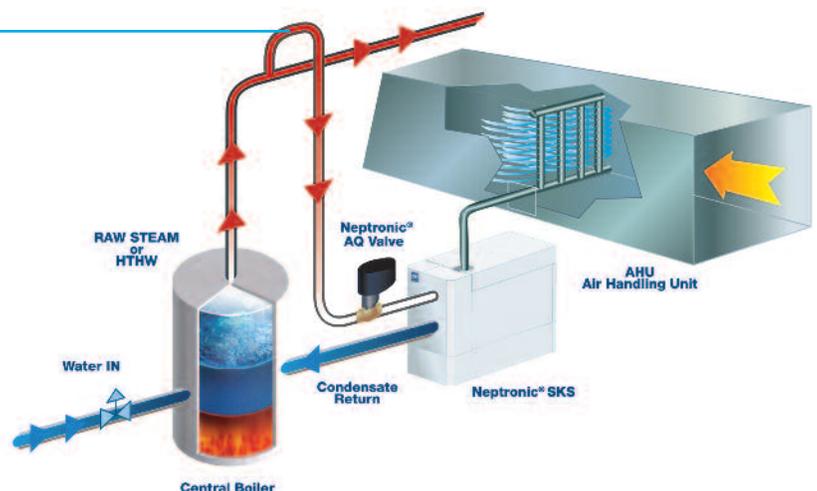
- ▶ Schools
- ▶ Hospitals
- ▶ Printing
- ▶ Museums
- ▶ Offices



Typical Installation

The main energy source of the SKS is either raw steam under pressure or high temperature hot water (HTHW) from an on-site central boiler.

The raw steam or HTHW passes through the heat exchanger of the humidifier, thus providing the energy to produce clean sterilized steam to be distributed to the Air Handling Unit (AHU) system or duct.



System Overview

Evaporation Chamber

The 304 stainless steel evaporation chamber is equipped with handles for easy removal without any tools.

Heat Exchanger

Raw steam or HTHW passes through the heat exchanger, thus providing the energy to produce clean sterilized steam. Available in 316 stainless steel (for low pressure) or copper (for HTHW).

Steam Outlet

Insulated Cabinet

The fully enclosed steel powder-painted cabinet with 1" (25mm) thick insulation eliminates accidental contact with hot surfaces and saves energy.

Scale Trap Trays

These trays can be accessed from the top of the unit allowing for easy maintenance and scale removal.



Control Panel

AFEC System

Mass measuring water sensor, foam sensor and temperature sensor for precise water level detection and increased energy efficiency as it only drains when foam is actually detected.

Condensate Return

Floor Stand (optional)

Adjustable legs ensure proper level when installed directly on the floor.

Self Cleaning System

Scale management system

The SKS is designed with a comprehensive scale management system. The supply of cold water, located at the sloped bottom of the evaporation chamber, forces the precipitated mineral deposits into baskets that can easily be removed.



Modulating Control

The SKS are supplied with a linear actuated globe valve giving full modulating control of low pressure steam.



■ AFEC System (Anti-Foaming Energy Conservation)



The AFEC technology developed by the Neptonic engineering team offers unique, safe and energy efficient control of boiling water and steam.

The AFEC system consists of:

- ▶ Mass measuring water sensor
- ▶ Anti-foam sensor
- ▶ Electronic high temperature sensor
- ▶ Interactive LCD display and microprocessor controller

The foam sensing probe, which is unique to our design, automatically initiates a drain cycle upon foam formation. Unlike the competition, the drain can be initiated only when necessary without having a continuous skimming to drain off expensive boiling water.

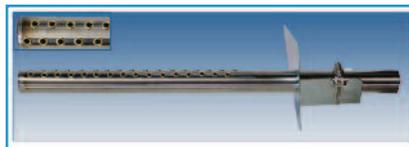
■ Options

For a duct distribution installation, the SKS requires either a Multi-Steam or a S.A.M.E2 as a steam distribution system to disperse steam.

■ Steam Distribution Systems



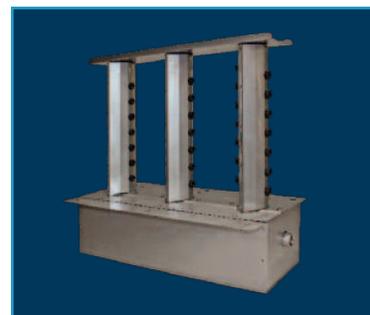
Multi-Steam:
For absorption distance
of less than 3' (99mm)



S.A.M.E2:
For absorption distance
of less than 5' (1500mm)

■ X-Stream™ Technology

- ▶ High efficiency insulated steam distributor (channel and header) with patent pending steam ejector eyelets
- ▶ Double wall 304 stainless steel with encapsulated Armacell UT/Solaflex™ foam insulation
- ▶ Specially engineered silicone eyelets prevent condensate ejection on start up and any modulating humidity demand
- ▶ Significant reduction in wasted energy
- ▶ Reduces airstream heat gain and generated condensate
- ▶ For more details, refer to the X-Stream™ sales literature



Multi-Steam™ HD

Ease of Maintenance

Easy to remove baskets

The SKS offers built in baskets located at the bottom of the evaporation chamber. These trays can be accessed from the top of the unit allowing for easy maintenance and scale removal.



Easy to remove scale trap trays



Specification

Heat Exchanger - SLP Stainless Steel 316



Model	Nb of heat exc.	Output steam capacity lbs/hr (kg/h) for supply steam pressure					Steam outlet Qty & Ø in (mm)
		5 PSI 34.5kPa	8 PSI 55.1kPa	10 PSI 68.9kPa	12 PSI 82.7kPa	15 PSI 103.4kPa	
SKS-100-SLP	1	33 (15)	53 (24)	67 (30)	80 (36)	100 (45)	(1x) 3" (76)
SKS-130-SLP	1	43 (19)	69 (31)	87 (39)	104 (47)	130 (59)	(1x) 3" (76)
SKS-190-SLP	1	63 (28)	101 (46)	127 (57)	152 (69)	190 (86)	(1x) 3" (76)
SKS-290-SLP	1	97 (44)	155 (70)	193 (87)	232 (105)	290 (132)	(1x) 4" (108)
SKS-390-SLP	1	130 (59)	208 (94)	260 (118)	312 (142)	390 (177)	(1x) 4" (108)
SKS-500-SLP	1	167 (76)	267 (121)	333 (151)	400 (182)	500 (230)	(1x) 5" (133)
SKS-690-SLP	1	230 (104)	368 (167)	460 (209)	552 (251)	690 (314)	(1x) 5" (133)
SKS-950-SLP	1	317 (144)	507 (230)	633 (287)	760 (345)	950 (432)	(2x) 4" (108)
SKS-1250-SLP	2	417 (189)	667 (303)	833 (378)	1000 (454)	1250 (568)	(2x) 5" (133)

Heat Exchanger - CHP Copper

For HTHW - CHP Copper High Pressure (100 PSI Max.)



Model	Output steam capacity lbs/hr (kg/h) for supply HTHW pressure							Steam outlet Qty & Ø in (mm)
	240°F (116°C)	250°F (121°C)	260°F (127°C)	280°F (138°C)	300°F (149°C)	320°F (160°C)	338°F (170°C)	
	10 PSI (69kPa)	15 PSI (103kPa)	20 PSI (137kPa)	35 PSI (241kPa)	50 PSI (344kPa)	75 PSI (517kPa)	100 PSI (689kPa)	
SKS-200-CHP	40 (18)	65 (30)	85 (39)	150 (69)	220 (99)	330 (150)	440 (200)	(1x) 4" (108)
SKS-333-CHP	65 (29)	110 (50)	145 (66)	255 (116)	365 (166)	550 (249)	730 (333)	(2x) 4" (108)
SKS-667-CHP	130 (59)	220 (100)	290 (132)	510 (231)	730 (331)	1100 (499)	1465 (667)	(2x) 5" (133)

Humidisoft

Specify your SKS Online



Humidifier System Design and Specification Web Application

Ready to specify your SKS Humidifier? Neptronic has developed a web application that saves you time when sizing and specifying Neptronic commercial, industrial or residential humidifiers.

Features

- ▶ Automatic load calculation
- ▶ Web based
- ▶ Report generator
- ▶ Display absorption distance
- ▶ Steam Dispersion Selection
- ▶ Humidifier Options
- ▶ Project Management

Easy to Use

Once you have registered for an online account, you can start creating projects and create your very own humidifier virtually with all the available features with ease.

Projects	Humidifier	Dispersion	Options	Reports	Pricing
Type					
<input checked="" type="radio"/> Isothermal (Hot Steam) <input type="radio"/> Adiabatic (cold mist)					
Category					
<input type="radio"/> Commercial Electric <input type="radio"/> Commercial Gas <input type="radio"/> Residential Electric <input checked="" type="radio"/> Steam to Steam <input type="radio"/> Direct Steam					
Entering Air Conditions		Indoor Conditions		Distribution	
Temperature <input type="text"/> °F		Temperature <input type="text"/> 69.8 °F		<input checked="" type="radio"/> In Duct	
Relative Humidity <input type="text"/> %		Relative Humidity <input type="text"/> 30 %		<input type="radio"/> In Space	
Ventilation System					
<input type="radio"/> Natural <input checked="" type="radio"/> Mechanical <input type="radio"/> Economizer					
Total Air Flow <input type="text"/> 3531 CFM			Outside Air <input type="text"/> 100 %		
Humidifier(s)					
<input type="checkbox"/> Entry Load Manually Calculated Load <input type="text"/> 70.06 lb/hr Total Capacity <input type="text"/> 100.00 lb/hr Select Model					

Projects	Humidifier	Dispersion	Options	Reports	Pricing
Flexible Steam Hose		High Limit & Air Pressure Switch			
<input type="text"/> 3" <input type="text"/> ft		<input type="checkbox"/> Air Pressure switch APS <input type="checkbox"/> High Limit Duct Humidistat HC201			
Heat Exchanger			Electrical Actuated Steam Valve		
<input checked="" type="radio"/> Stainless Steel <input type="radio"/> Stainless Steel Teflon Coated <input type="radio"/> Stainless Steel Nickel Plated <input type="radio"/> Copper <input type="radio"/> Copper Teflon Coated <input type="radio"/> Copper Teflon Plated			<input type="radio"/> None <input checked="" type="radio"/> Brass Trim <input type="radio"/> Stainless Steel Trim		
Other Options					
<input checked="" type="checkbox"/> BACnet (MS/TP) Network Capability <input checked="" type="checkbox"/> Float / Thermostatic Steam Trap <input type="checkbox"/> Steam Supply Strainer <input checked="" type="checkbox"/> Floor Legs <input type="checkbox"/> Wall Mounting Brackets <input type="checkbox"/> Hanging Brackets <input type="checkbox"/> Standard DI/RO Water (below 18 megohm) <input type="checkbox"/> Humidifier Weather Enclosure (W)					

ENGINEERED TO LAST

ELECTRIC



SK300

- ▶ Capacities from 6 - 270 lb/hr
- ▶ Permanent cleanable chamber
- ▶ Outdoor enclosure available

RESIDENTIAL



SKR

- ▶ Capacities from 4.5 - 12 lb/hr
- ▶ Permanent cleanable chamber
- ▶ Reliable Siphon drain

GAS FIRED



SKG3000

- ▶ Capacities from 110 - 810 lb/hr
- ▶ Modular design
- ▶ Outdoor enclosure available

DIRECT STEAM



SKD

- ▶ Capacities from 7 - 1157 lb/hr
- ▶ Jacketed or Multi-Steam Type
- ▶ Unique Electronic Steam Controller

STEAM TO STEAM



SKS

- ▶ Capacities from 33 - 1250 lb/hr
- ▶ Scale management system
- ▶ Insulated external panels

EVAPORATIVE



SKV

- ▶ Free cooling up to 12 °C (22 °F)
- ▶ Custom design to fit your application
- ▶ Hygienic operation with silver ions dosing system

HIGH PRESSURE ATOMIZER



SKH

- ▶ Capacities up to 2600 lb/hr
- ▶ Up to 32 zones
- ▶ Installation In-duct or In-space

STEAM DISTRIBUTION



Distribution

- ▶ Multi-Steam distribution
- ▶ S.A.M & S.A.M.E2 wands
- ▶ SDU (Space distribution unit)

HUMIDITY CONTROLS



Controls

- ▶ Humidity controls / sensors
- ▶ Safety controls
- ▶ BACnet compatible

MANUFACTURER OF ■

■ HVAC CONTROLS

■ ELECTRIC ACTUATORS

■ ACTUATED VALVES

■ HUMIDIFIERS

■ ELECTRIC HEATERS



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