CREATING A CULTURE OF CLEAN™

Swash™

Electro-Steam® ESTABLISHED 1952

Stationary Steam Generators - All Electric

APPLICATIONS

- **Brewhouses/Stills**
- **Bottling/Canning Lines**
- **Barrels/Foeders/Tanks**
- **Autoclaves/Bioreactors**
- **Sterilizers/Food Service**

PERFORMANCE

Dry, saturated steam, generated by an electric steam generator, contains no boiler additives and provides a clean and effective way of delivering heat to surfaces it contacts. In contrast to hot water, which gives up its heat by conduction and absorption (an inherently slow process), steam delivers heat through the very rapid process of condensation. With sufficient time and temperature, and the moisture derived from the condensation process, heat destroys the proteins which form the cells of the microbes and can result in sterilization of the surfaces in contact with the steam or, in the case of porous materials, the material itself.

The heat required to cause a volume of water to be converted into steam at the same temperature is called the latent heat of vaporization. When steam comes in contact with surfaces of a lesser temperature, it virtually instantly condenses and all the latent heat is absorbed into the material it touches. As a result, a surface can be heated far more efficiently with 212°F steam than with 212°F water. The pressurized chamber of an electric steam generator efficiently produces steam and delivers significantly greater amounts of heat than can be achieved with hot water heaters in far less time and with significantly less water consumption.

The quality of steam is dependent on the incoming water supply, the materials of construction of the boiler/steam generator, and the method of heating to create steam. Steam from a gas fired boiler with tap water feed and boiler additives is referred to as Plant Steam. It is acceptable for industrial applications or where there is no direct food contact, such as tank jackets. Steam from an electric steam generator with a carbon steel tank and brass/copper piping, with tap water feed, requires no boiler additives and is referred to as Culinary Grade Steam. It is acceptable for direct food contact. Steam from an electric steam generator with all wetted surfaces of 316 stainless steel, with deionized water feed which is required with stainless steel construction, is referred to as Clean Steam and is suitable for direct contact with most pharma, biotech, and medical device products. In pharma facilities with high purity RO/DI water, further processing to remove pyrogens results in steam referred to as Pure Steam.

FEATURES AND BENEFITS

- **All electric with no open flame, no fumes, no combustible fuel and no fuel storage** – resulting in safe operation, no boiler operator required in most areas, and lower insurance rates than with fuel fired boilers.
- **Dry, saturated steam in 10 to 15 minutes delivers heat with 98% efficiency** – no loss of energy up the flue as with fossil fuel boilers.
- **No boiler chemicals required** – with use of tap water, softened water recommended, generates steam with very low mineral content and qualifies as culinary grade steam as opposed to plant steam from a fuel fired boiler.

(Features and Benefits continued on reverse side.)

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FEATURES AND BENEFITS (continued)

- **Available in 10kw (1 bhp) to 240kw (24 bhp) sizes** - producing up to 34.5 to 818.0 lbs/hour of steam based on 212°F feedwater. Units from 100kw to 240kw to can be double or triple stacked and manifolded for large applications.
- **Configured to operate with virtually any available electric power** – 208, 230/240, 460/480v, 3-phase. Other voltages available for foreign power grids.
- **Construction complies with ASME [American Society of Mechanical Engineers] Boiler and Pressure Vessel Code, Section 1, Part PMB, for safety assurance** – a National Board number is stamped on each pressure vessel documenting the individual inspection of each unit by an authorized insurance company Boiler Inspector.
- **UL and CSA approved** – for electrical safety.
- **Low water cutoff** – prevents damage to the unit in the event of loss of water supply.
- **Condensate return systems** – available for low or high pressure units. Pumps included on low pressure units to overcome internal pressure.
- **Adjustable pressure setting** – A pressure gauge displays operating pressure. Manual reset pressure switch for safety.
- **Feedwater pump on all high-pressure units** – overcomes the internal pressure. Accepts up to 140°F incoming water for improved efficiency.
- **Steam outlet port with ball valve** – for easy hook-up to equipment and accessories.
- **304 stainless steel cabinet** – isolates and insulates tank. Piping easily accessible for service.
- **Optional 316 stainless steel on all wetted surfaces** – with use of deionized water, unit generates steam with extremely high resistivity and qualifies as clean steam for use in pharmaceutical/biotech applications. For high purity feedwater, an optional 316 stainless steel float switch is utilized.

ABOUT SWASH SANITIZING EQUIPMENT

SWASH Sanitizing Equipment is an operating division of ARS Enterprises. ARS was established in 1971 to provide sterilizing and washing equipment and field maintenance and repair services to food and beverage firms, hospitals, laboratories and pharmaceutical or medical device manufacturers. Our equipment and service have earned us an outstanding reputation among our customers who have come to rely on ARS.

Our philosophy is to provide dependable equipment incorporating high quality components. The ARS team is dedicated to the highest standards of workmanship. Our pride rests on your satisfaction with the products and service we provide. We believe that with ARS you can achieve many years of reliable performance and an overall low cost of ownership.