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INDUSTRIAL STEAM GENERATORS

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Today, there are only a few industries that use industrial steam generators. This device makes the operation of industrial facilities more efficient, because the produced steam is a heat carrier, and various fuels are the energy source of the steam generator. Steam generators allow heating of certain substances, implementation of a technological process or steaming of any parts and objects in chemical enterprises. Currently, such steam generators are used as heating systems, to ensure a certain level of humidity in the room, to sterilize and process products.

Purposeful use of an industrial steam generator.

1. To heat and maintain the required temperature in closed boilers and pipes during the transportation of certain substances (butter, fuel oil, chemical compounds), that is, during their transportation in the cold season.
2. To increase humidity in different rooms with dry air.
3. In the food industry - in the process of canning, steaming, pasteurization processes (for example, dairy products), in the process of special heat treatment of equipment parts and dishwashers.
4. In agriculture - in the steaming of fodder and in the steaming production of granulated fodder.
5. In the construction industry - building materials, foam plastic (foam material), asphalt, etc. are created with the help of a steam generator. In addition, thanks to this device, it is possible to quickly de-ice the fittings and construction sites when they are filled with concrete. It is much more effective to dry the concrete mass in winter using a steam generator.
6. In the wood processing industry - wood and wood-based materials are dried using a steam generator.
7. Special steam generators are used for fuel and lubricants, fuel oil, etc.
8. In the production of paper and cellulose-paper products.
9. In the medical and pharmaceutical industry - as a disinfectant, as well as for the process of sterilizing clothes and tools.
10. In the chemical and cosmetic industry - as a disinfectant.
11. To facilitate the operation of power plants.
12. In the textile industry - for the effective operation of sewing industries.
13. For the work of laundry and dry cleaners - Especially strongly contaminated materials are cleaned with steam, and this cleaning process remains the safest for the material.
14. For the operation of baths and saunas.
15. It is used for heating pipes

It can be noted separately that the need for a steam generator in the food industry is increasing today. Steam generator is used for various heat treatment of milk, fish, meat products, vegetables. In meat production - for defrosting and cooking products (the industrial steam generator sets a certain temperature in the range of 75-85 ºC that is constantly maintained).

A steam generator is used to supply steam to their furnaces for the production of beer and alcohol. It is also used in the disinfection of dishes, in the production of raw milk products. Steam generators are also used in the confectionery industry (special boiling pots are heated using a steam generator). In the production of bread products, steam produced by a steam generator is used to prepare the dough.

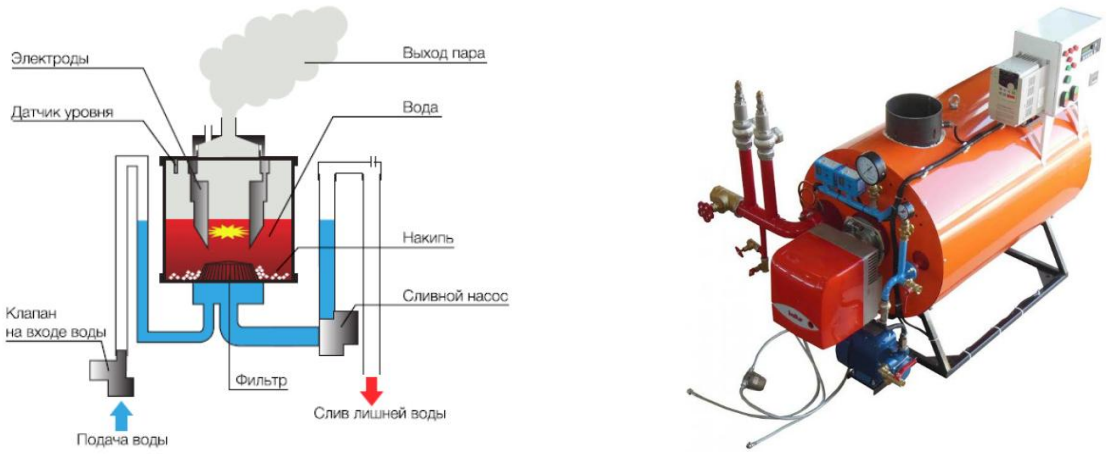

Figure 1. Structure and appearance of an electrode steam generator.

The industrial steam generator is cost-effective, allows significant savings in energy costs, and emits the required amount of steam only at the time of consumption, due to which the steam generator is far superior to other units.

How does an industrial generator work? The construction of an industrial steam generator includes several important elements at the same time. Modern steam generators are mobile, small in size, easy to use (except for solid fuel models). Typically, industrial steam generators use plain water to generate heat and steam, so the steam generator must have an additional water tank. However, in some models, steam is not obtained from water, but from the heat released during the combustion of fuel. Any steam generator, regardless of its type, has a frame, a steam boiler and an electronic control unit. A pump can be additionally installed to supply the device with water.

In addition, the steam generator can be equipped with the monitoring of the level and supply of water, pressure, and temperature indicators, and in case of any malfunction of the device, the function of automatic shutdown and the function of safe mode.

Selection steps considering types of industrial steam generator.

1. First of all, it is necessary to determine what type of steam generator is needed. Today, equipment manufacturers offer gas, electric (induction, resistance device, electrode), liquid and solid fuel models. Each of them has its own characteristics.

For example, gas and electric (induction, resistance device, electrode) steam generators are currently the most popular, because they are environmentally friendly, do not harm the environment and people, do not emit harmful emissions, and are very simple and economical to operate. Gas steam generators can be used in the food industry (for sterilization, canning, disinfection), pulp and paper production, and production of reinforced concrete products.

But electric (induction, resistance device, electrode) models are universal and can be used not only in the above objects, but also in many other things. Induction electric steam generators are produced with different power and steam output depending on the needs of the customer. Most often, they are used in sausage, cheese, beer, wineries, poultry farms, juice production, wood processing industry, pasteurized dairy products manufacturers and other industries.

Steam generators running on liquid fuel (usually gasoline, fuel oil, diesel fuel) are also highly economical in production, they are compact, convenient, but not as environmentally friendly as electric ones (induction, resistance devices, electrodes). Industrial steam generators running on liquid fuel emit a large amount of harmful substances into the environment, so it is necessary to install special pipes and outlets for industrial waste.

The same problem, i.e. high environmental pollution, exists in the steam generator working on solid fuel - coal, wood. The advantage of such steam generators is the low cost of fuel, but in other

respects they are significantly inferior to gas steam generators, since a number of disadvantages (a large amount of emissions during combustion, significant damage to the environment and management difficulties) are not provided. .

2. It is necessary to pay attention to the functional characteristics of the industrial steam generator. Some models are equipped with additional functions that simplify the use of the device. These functions include: water preparation that warns when deposits are formed, function to protect the pump from running "without water", function to monitor the water level and temperature indicators in the system, water saving function (due to the reuse of condensed steam).

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