ROLLCE ENGINEERING PTE LTD
COMMITTED TO EXCELLENCE

HIGH PRESSURE STEAM GENERATORS - NATURAL CIRCULATION THERMOSYPHON (MODEL: EFFISYPHON)

Product Description

Operating Pressures:

- Up to 1450 psi (100 bar)

Fuel Option:

- Natural Gas
- Fuel Oil/Diesel
- Light Fuel Oils
- LPG
- Dual Fuel
- Additional Fuel Options Available

Orientation:

- Vertical

Membrane Tubes Design

Combustion Air Preheater Optional
Model EFFISYPHON-AH

Product Wright Up

The EFFISYPHON Steam Generators are our natural circulation, high pressure steam generators (high pressure steam boilers). Therefore, circulating pumps are not required to operate the EFFISYPHON. Boiler water is used as the heat carrier. The water is evaporated in this boiler within a hermetically sealed circuit. The steam flows to the heat exchanger and the condensate flows by gravity back to the boiler. The internal membrane wall / coils of the steam generator surround the flame of the burner, absorbing the thermal energy and transferring it directly to the process fluid, in this case water. The water then changes phase and is supplied to the customer's process as high-pressure steam. The EFFISYPHON is designed with minimal thermal inertia, allowing for quick start up (roughly 2 to 3 minutes) and is ideal for continuous or batch processes.

These high-pressure steam generators are primarily used with a deodorizer during the final stage in oil refining. Deodorizing removes odoriferous material, free fatty acids and other undesired minor components to produce edible oils or biodiesel.

The EFFISYPHON has also been designed to be supplied with a variety of forced draft burners as provided by some of the world's leading burner manufacturers. This allows us to utilize a variety of fuels, meet stringent emissions requirements, and even allow our customers the opportunity to select the burner of their choice.

The EFFISYPHON is supplied in only a vertical configuration to minimize the risk of vapor lock.

The EFFISYPHON - AH is our high efficiency option of the EFFISYPHON Steam Generator. The EFFISYPHON - AH is constructed in a vertical orientation and is supplied with a combustion air preheater alongside the heater.

The EFFISYPHON and EFFISYPHON - AH Steam Generators are designed and constructed to various local code requirements around the world. The most common codes are ASME with National Board registration for the United States, CRN for Canada, and CE/PED/TUV/DIN for Europe. Additional code requirements may be met if necessary.

Package and containerized systems are available for both the EFFISYPHON and EFFISYPHON - AH Steam Generators.

Steam Generators in General

Steam Generators are a form of low water content boilers used to provide customers with steam as a heat transfer media. There are two types of low water content steam generators, forced circulation and natural circulation.

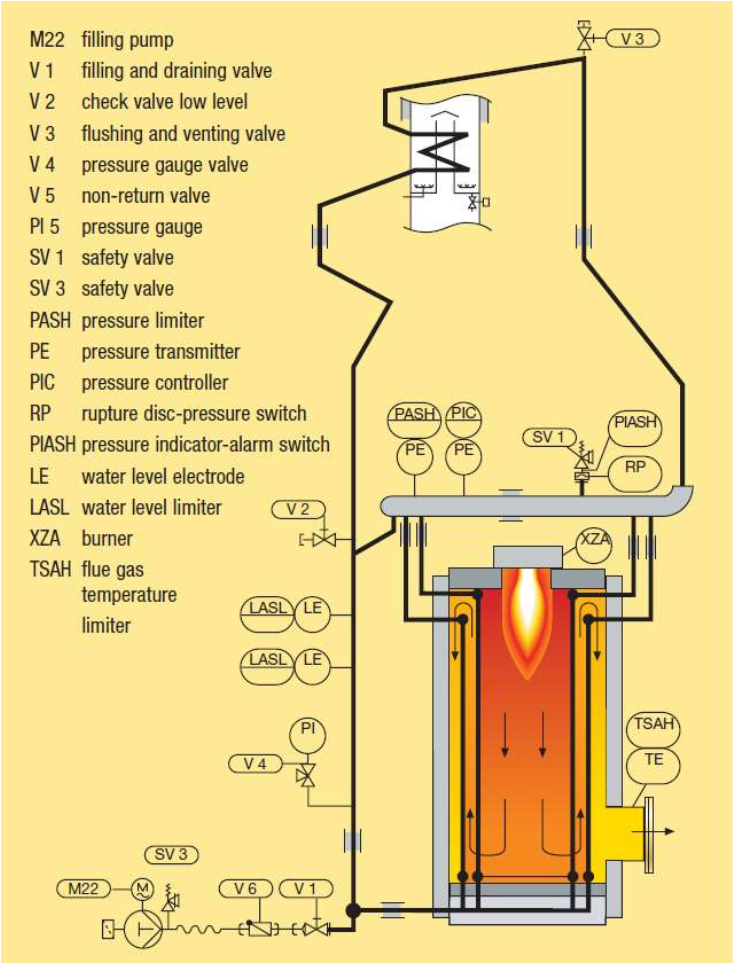
Forced circulation steam generators utilize a pump to maintain a steady and constant supply of water to the generator. Water is supplied to the steam generator at a rate determined by the customers' process requirements. As heat demand fluctuates, the burner and pump will make the necessary adjustments to properly supply sufficient steam to the customer's process.

Natural circulation steam generators utilize gravity and differential density to maintain a steady and constant supply of water to the generator.

ROLLCE ENGINEERING PTE LTD
COMMITTED TO EXCELLENCE

Design

The EFFISYPHON consists of vertical rising tubes connected to a top and bottom collector. The riser tubes are welded to cylindrical tube baskets. Two baskets and the boiler shell ae the basis of the boiler system. Flue gas flow is conducted in the 3-pass flue parallel-counter-flow principal.



Monitoring instruments

The EFFISYPHON is equipped with all the necessary safety devices specified by the corresponding safety regulations. This equipment guarantees safe and reliable operation and ensures that the boiler is shut down in the event of a fault.

Standard Equipment

- 2 electrodes in self-controlled mode to monitor the minimum water level, redundant wired
- 1 pressure switch to monitor maximum operating pressure.
- 1 flue gas temperature sensor to limit the maximum flue gas temperature.
- 1/2 spring loaded safety valve
- 1/2 rupture disc with pressure monitoring device
- 1 pressure gauge with shut off valve and testing flange

All safety equipment's are corresponding to the rules and are tested by the notified body.

Moreover, any items of equipment can be adapted to the regulations in force in the country in which the boiler is to operate.

Permanent Monitoring

- Boiler water minimum level
- Steam Pressure
- Flue gas Temperature
- Burner Control

ROLLCE™ ENGINEERING PTE LTD
COMMITTED TO EXCELLENCE

Application/Advantages

Application

- Food industry for Distillation and fractioning of fatty acids,
- esterification of fatty acids,
- distillation of glycerine,
- deodorising edible oil,
- fat splitting.

Applicable in all process heating plants in which plant-relatively a natural circulation can be implemented in the heating system.

Advantages

- non-toxic processing heating system.
- Efficient,
- Very low flow resistance in the vertical evaporator pipes to guarantee high water circulating rates.
- Low radiation load in the combustion chamber and a large convection heating surface.
- Steam bubble formation in the pipe system is therefore very low.
- Controlled heat transmission at the heating surfaces is guaranteed and a high combustion efficiency is achieved.

CONTACT US

10 Marina Boulevard, #39-00,
Marina Bay Financial Center,
Singapore, 018983

+65 68186131
info@rollceglobal.com
www.rollceglobal.com