

## Falling-Film Evaporator

The most important and only goal of WHE is to save energy and reduce steam consumption. TG-Machines can offer different configurations of a waste heat falling film evaporators. Single, Double and Triple Stage Effects are available.

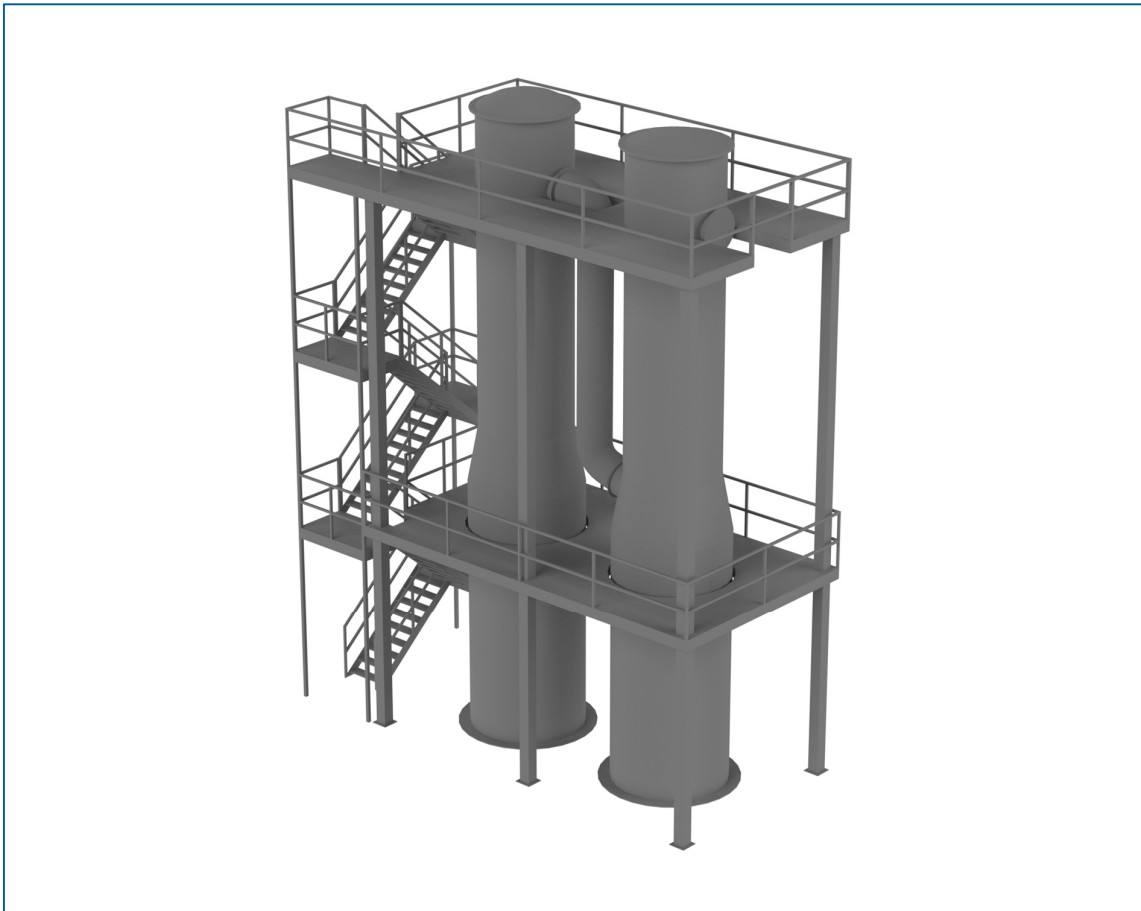
During the WHE operation, the stick water will concentrate into a thick syrup, which is transferred to the dryer and combined with fish meal. Waste Heat Falling Film Evaporator is expensive equipment and requires a highly qualified employee.

Approx. 55% saving on fuel/steam

Waste vapour from your machine is the energy

Standard size or tailor-made system

Easy operation and cleaning CIP



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# TG-MACHINES

## PROCESS ENGINEERING

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### Waste Heat Falling Film Evaporator for Fish Meal Plants

WHE allows steam consumption to be reduced by approximately 50%, it is especially important when boiler fuel is expensive. WHE is used in fish meal plants where the cooker and press are working and the stick water and fish oil are separated. For the final decision how, many stages will be used in the process, the calculation has to be taken into account. For instance, for tuna waste where the level of the stick water is low one stage will be enough. While for sardines where the level is higher two stages of the waste heat falling film, evaporators are required.

In contrast, Rotary Disc Dryer is a fish meal dryer for solid particles. WHE is a stick water dryer which comes from a decanter and a separator.

Stick water contains dissolved protein (solids), just like sugar dissolves in water. Proteins are valuable and must be recovered to obtain a higher protein content and a better price. WHE use vapors from the disc dryer instead of steam from the boiler. The disc dryer evaporates water with a normal boiling point of 100°C. The WHE evaporator evaporates water using a vacuum where the boiling point is only 60°C. The WHE design consists of:

- ⇒ Heat exchanger with tubes
- ⇒ Circulation pump
- ⇒ Vacuum pump
- ⇒ Feed-in/out pumps
- ⇒ Condenser

#### **Application:**

- ⇒ Fish meal factory
- ⇒ Factories processing meat and feathers

