

Alfa Laval ALSHE STW

Standard Spiral heat exchanger for sludge / water

Introduction

The ALSHE STW spiral heat exchanger is intended for sludge/ water applications. The heat exchanger offers unique abilities within sludge treatment applications. The ALSHE STW range of spirals can fit most duties

Applications

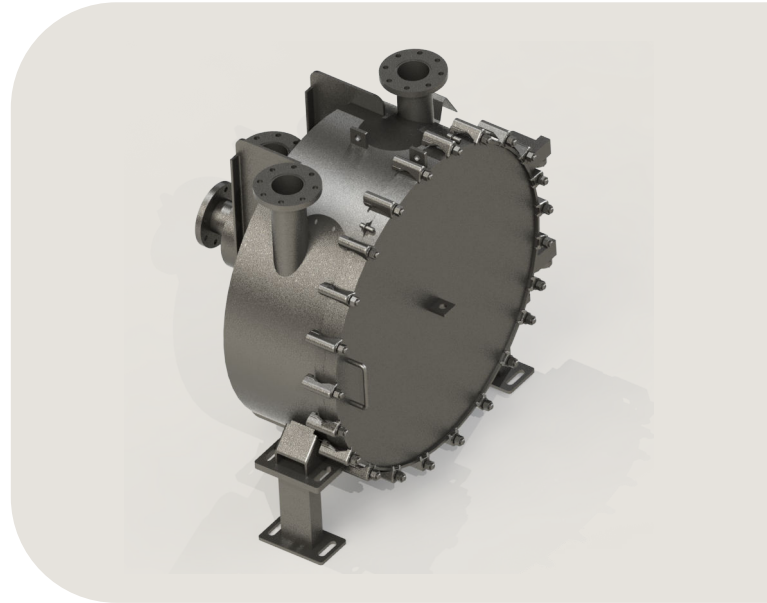
- Heating of sewage sludge in digesters
- Heating stages in pasteurization systems
- Preheating of sludge for enhanced dewatering
- Cooling of industrial sludge and waste waters
- Heat recovery

Benefits

- One single free-flow channel and high shear forces in the fluid provides a 'self-cleaning effect'.
- Counter current flow gives the most efficient heat transfer and makes the unit compact.
- Compact, space saving design, reduces installation cost.
- Low maintenance cost because the 'self-cleaning effect' extends the operation period.
- Single door gives easy access to the sludge channel for mechanical cleaning.
- Cleaning-in-place or back flushing also reduces maintenance down time.
- Unobstructed channels provide smooth flow through the unit with constant velocities.
- Low lifetime cost. This is due to high thermal efficiency, small space requirements and low maintenance needs.

Working principle

The ALSHE STW consists of a spiral wound from two sheets of metal strips that form two concentric spiral flow passages. The media flows counter currently in the two channels. The flow is from the centre to the periphery and vice versa. The sludge channel is open on one side and closed on the other and the water channel is closed on both sides. Each channel has one connection in the centre and one on the periphery.



Design

- On the open sludge channel, the spiral is normally provided with a carbon steel hinged cover fastened to the spiral body with hook bolts.
- The cover is protected from the sludge media by a rubber gasket.
- The hinged cover has no connections. This provides easy opening for manual cleaning, if required. An inspection cover on the sludge inlet provides ready access in case of blockage.
- The spiral body has floor mounted supports with the centre line horizontal.



SelfClean

Design that prevents fouling

A single channel for each fluid ensures reliable self-cleaning of the heat exchanger.



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Technical data

Dimensions: see below

Area range: 7.2 – 27.7 m² (78 – 298 sq.ft.)

Performance range: see below

Sludge channel spacing: 25 mm (1 inch)

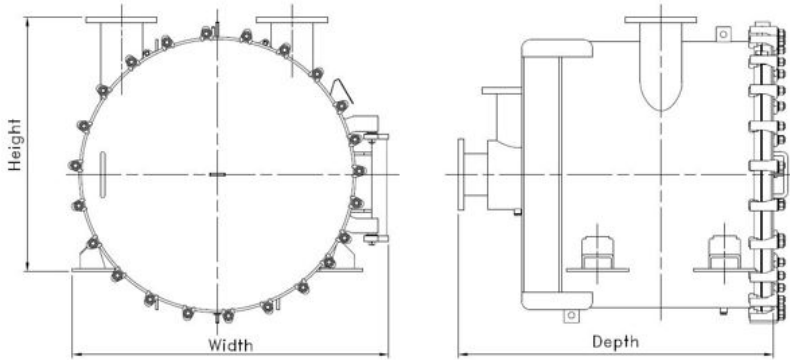
Material of construction: 316L SST

Pressure vessel code: PED according to 97/23 EC Article 3.3 (SEP), ASME

Design Pressure: 6 barg (87 psig)

Design temperature: min. 0°C – max. 100°C (32°F - 212°F)

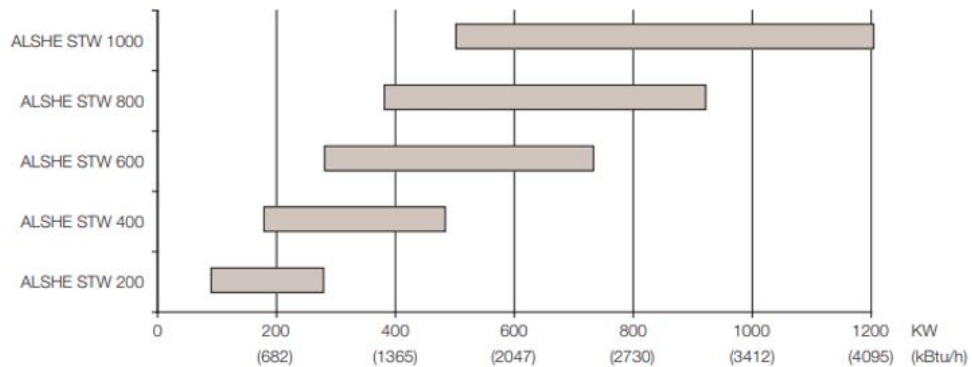
Possible options: floor feet



ALSHE STW

Model	Height	Width	Depth
ALSHE STW 200	1025/40	1290/51	720/28
ALSHE STW 400	1025/40	1290/51	870/34
ALSHE STW 600	1025/40	1290/51	1070/42
ALSHE STW 800	1025/40	1290/51	1270/50
ALSHE STW 1000	1025/40	1290/51	1470/58

Performance range*



* Performance values shown are typical for sludge digester heating applications

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