

TECHNICAL BROCHURE · HEAT EXCHANGERS

Shell-and-tube heat exchangers

Individual solutions built around customer needs: high quality and design precision, working at high temperatures and pressures.

**TN**

shell-and-tube heat exchanger series

0.08–2.31m³ vessel volume**up to 0.5**

MPa working pressure

D.ENERGY is a developer and manufacturer of heat-exchange equipment. Years of experience in building shell-and-tube heat exchangers of different types, designs and purposes allow us to make this equipment for the toughest operating conditions, taking into account all customer wishes and technological requirements.

Shell-and-tube heat exchangers are devices for exchanging heat between two media. They consist of a shell that holds a bundle of tubes, which can be straight or spiral. Most often the medium that gives off heat passes through the tube bundle, and the medium that receives heat through the shell. Heat is exchanged through the walls of the inner tubes; the large shell tube also forms the outer body of the exchanger.



Spatial orientation

Vertical

More compact in footprint and effective with steam and gas media, including as condensers, since the vertical position makes condensate removal easier.

Horizontal

More effective with liquid media; the horizontal orientation makes it easier to build very large units and high thermal capacities.

Design flexibility

Shell-and-tube exchangers are first of all characterized by very high flexibility and the ability to adapt to a wide range of process conditions, needs and operations. It is possible to:

- build them with many different pass arrangements for tube-side and shell-side media;
- use thick-walled (reinforced) heat-exchange tubes and various temperature-compensation mechanisms;
- use a variety of construction materials — heat-resistant, acid-resistant, cold-resistant and others.

As a result, shell-and-tube exchangers can operate across a very wide range of temperatures and pressures, including with chemically aggressive, abrasive and contaminated media. Multi-section schemes make it possible to reach almost any capacity (thermal duty).

Compared with other heat exchanger types, shell-and-tube units offer

- simple engineering (technical) implementation;
- easy maintenance and reparability;
- high technical reliability and long service life.

Shell-and-tube heat exchangers are used in industrial processes with high operating temperatures and pressures and chemically aggressive media that require very high thermal duty or capacity. Functionally they serve as powerful, high-capacity heaters, coolers, condensers and evaporators.



Specifications

D.ENERGY shell-and-tube heat exchangers have fixed tube sheets. When selecting a unit, thermal calculations are made and materials are chosen to resist corrosion. Selection is carried out by D.ENERGY engineers on the basis of technical conditions, taking all customer wishes into account.

Size range

Model	Space	Working pressure, MPa (kgf/cm ²) abs.	Wall temperature, °C	Working medium	Volume, m ³
TN.002.000.000 ... TN.014.000.000	Shell side	0.034 (0.34) ... 0.098 (0.98)	70 ... 176	Steam, solvent, water vapor	0.08 ... 2.31
TN.002.000.000 ... TN.014.000.000	Tube side	0.035 (0.35) ... 0.5 (5.0)	30 ... 140	Miscella, return water, sludge water, water vapor	0.63 ... 2.31

A D.ENERGY heat exchanger means

- individual solutions built around customer needs, with high quality and design precision;
- strong, high-quality constructions;

- modern European tube-rolling equipment;
- effective maintenance and service programs;
- increased service life;
- warranty and post-warranty service;
- reasonable value for money.



Need a calculation or a quotation?

Send us your requirements — we will select the model for your raw material and capacity.

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