



Zeta – the world's best electric boiler



**ZANDER &
INGESTRÖM**

A PART OF CHRISTIAN BERNER

Zeta – best economy and environment

The world's best electric boiler is called Zeta and is manufactured by Zander & Ingeström. It is made in two basic designs: one is for steam production in industries and power plants, the other is for hot water production in heating plants and hot water networks.



▲ Zeta boiler customers are found all over the world with Europe and Asia as the largest markets.

The Zeta boiler from Zander & Ingeström transforms electricity to steam or heat that can be utilized in district heating networks and industrial processes. This is a technical solution that, among others, appeals to the power and process industries. They usually let the boiler work at night when the electricity price is lower. See below for more uses.

The Zeta boiler can thus replace all steam and hot water boilers powered by oil, coal and other fossil fuels. In other words, a Zeta boiler is a farsighted investment in a cleaner environment.

Zander & Ingeström is objectively the world's most qualified manufacturer of steam and hot water boilers. Not only have we built the largest ones and installed by far the most. The Zeta boiler is above all a quality product in all its details and functions. As this is a well-known fact around the world, the boiler market is growing by itself (please see the customer examples on the last page).

Of course, Zander & Ingeström fulfills the relevant formal quality criteria. We are certified according to ISO 9001, ISO 14001 and OHSAS 18001.

▼ Zeta boiler applications

- 1 ● Production of steam and hot water when the electricity price is low
- 2 ● Energy accumulation at night
- 3 ● Conversion of renewable electric power to heat and steam
- 4 ● Auxiliary boiler in power and paper industry

▼ Zeta boiler features

- 1 Efficiency ● Extremely high efficiency, as well as availability and control accuracy.
- 2 Cost of capital ● Low capital cost in combination with minimal maintenance.
- 3 Steam quality ● Boiler steam quality meets the very highest claims.
- 4 Voltage ● Supply voltage is selected between 400 V to 22kV depending on the model.
- 5 Regulatory ● Stepless capacity control from 0 to 100 percent depending on the model.

Zeta – basic models

Steam boilers

Zander & Ingeström offers customized boilers for all needs and applications.

- 150kW – 70MW, max 110ton/h
- 400V – 22kV
- Up to 65 bar
- Excellent steam quality
- Efficiency 99%
- Ramp up from 0 to 100% in 5 minutes
- Markets/applications: Power plants incl. nuclear as auxiliary and start-up boilers
- Industry applications e.g. pulp- and paper mills

Hot water boilers

Zander & Ingeström offers customized boilers for all needs and applications.

- 30kW – 50 MW
- Max 180 °C
- 6-22 kV
- 6-25 bar
- Efficiency 99%
- Ramp up from 0 to 100% in 5 minutes
- Markets/applications: Power plants, district heating
- Industry applications: Balancing of power grids

Tanks and vessels

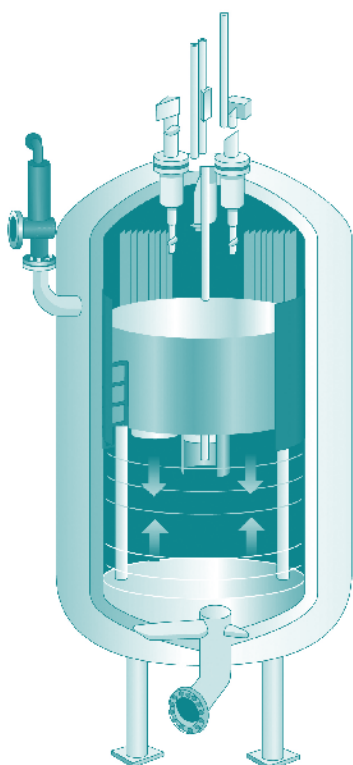
Standard or customized products for all needs.

- Feed water tanks
- Blow down tanks
- Expansion vessels

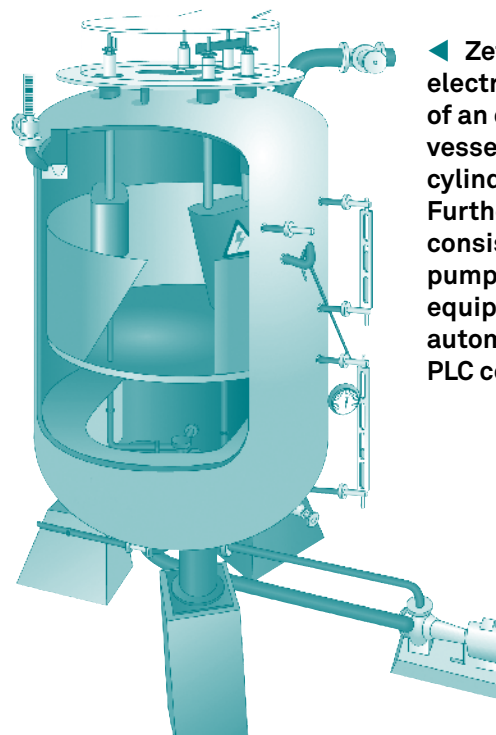


▼ Zeta hot water boiler

▼ Zeta steam boiler



◀ Zeta boiler of electrode type can never boil dry because the electric current is automatically broken when the electrodes are not surrounded by water. These boilers can be found in different models to suit different customer needs. They manage demanding tasks and environments.



◀ Zeta steam boiler of electrode type consists of an outer pressure vessel and an inner cylindrical vessel. Furthermore, the plant consists of circulation pump, fittings, control equipment and automatic locker with PLC control.

Zeta customers around the world



CHINA

Harbin, Manchuria Fushun, Liaoning

Assignment: China is the world's largest market for electric boilers and accounts for 90 percent of the world market. Leading supplier of these boilers is Zander & Ingeström. During 2019, we have built the world's largest electric boiler to one of the power plants in the city of Harbin. The assignment included two 50 MW boilers that now produce hot water of wind power and surplus electricity. And to the city of Fushun we have delivered a steam plant of 6x60 MW, the largest ever built.



BELARUS

Cities: Grodno, Servernaya, Minsk, Gomel and others

Assignment: During 2019 we delivered 20 electric boilers totaling 700 MW to Belarus. As a result they can cut coal and gas imports from Russia.



GERMANY

Saarbrücken/Ludwigsfelde, Flensburg, EON-Shamrock

Assignment: In Germany, plants have long been installed which generates renewable electricity with the help of solar and wind. To take care of the excess electricity that naturally occurs in these plants Zeta boilers are installed, which convert the surplus into heat or steam for district heating networks and industrial operations.



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