MIURA News Release

MIURA CO., LTD.

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Electric Small Once-through Steam Boiler AE-900A Added to Lineup Contributing to Carbon Neutrality: Utilizing Green Electricity to Produce Steam

Industrial boiler manufacturer MIURA CO., LTD. (Tokyo Head Office: Minato-ku, Tokyo; President and CEO: Tsuyoshi Yoneda) has added a new product to its lineup, the electric small once-through steam boiler AE-900A (hereinafter, “this product”), and will begin shipping in December 2026.

This product offers nearly triple the equivalent output of the ME-200A electric simple once-through boiler launched in 2023, delivering an industry-leading capacity[*1] for electric boilers in the small once-through boiler category.

Also, by utilizing green electricity[*2], it is capable of achieving zero CO_2 emissions, contributing to customer initiatives aimed at becoming carbon neutral.

Electric small once-through steam boiler AE-900A

[Development background]

Electric boilers, which use electric heaters as their heat source, are classified as simple boilers, small boilers, or boilers according to their electrical equipment capacity as stipulated in the Ordinance on Industrial Safety and Health and the Ordinance on Safety of Boilers and Pressure Vessels. According to the restrictions in the above ordinances, there is a limit to the amount of steam produced per unit within the small once-through boiler classification that can be handled by persons who have received special training. This poses several challenges to users, including increased installation space due to the necessity of installing multiple low-capacity electric boilers when using electric boilers in industrial applications that generate a significant amount of steam, and the burden of installing high-capacity electric boilers that require high-level handling certification.

However, the December 18, 2023 amendment to the Ordinance on Industrial Safety and Health and the Ordinance on Safety of Boilers and Pressure Vessels resulted in revisions to the electric boiler heating surface area calculation method, achieving an industry-leading equivalent output of 900 kg/h for electric small once-through steam boilers, which led to the commercialization of this product, which enables a close installation layout design for a smaller installation footprint.

[Features]

(1) Zero CO_2 emissions and low noise

Similar to conventional simple electric once-through steam boilers, this product emits no flue gas due to combustion, and because it generates no combustion noise or fan drive noise, it makes operation quiet. Thanks to green electricity use, it achieves zero CO_2 emissions, helping contribute to a carbon-free society.

(2) Adaptation to industrial applications

Large capacity and close installation

Installing multiple units of this product, which achieves industry-leading equivalent output within the small once-through boiler classification, minimizes installation space while allowing the use of electric small once-through steam boilers. Compared to the ME-200A electric simple once-through boiler, which launched in 2023, this product enables an approximately 60% smaller installation footprint per total steam output.

Compatible with distributed installation and fossil fuel boilers

Because electric boilers do not require fuel piping or stacks, multiple units can be installed in a distributed installation according to where they are required and the steam volume. Installing it near load equipment can help reduce heat loss while supplying steam. When used with existing fossil fuel boilers, operation of electric boilers can be prioritized to use green electricity and achieve zero CO_2 emissions. In addition, operation can be maintained during power shortages or natural disasters by using multiple primary energy sources, which enables BCP measures. Combining this product with an MI controller allows the customer to change the number of operating boilers according to their CO_2 reduction goals and green electricity goals[*2].

Safe, stable operation can be achieved via self-diagnosis and data management

The power supply for the electric heater is automatically shut off when an error is detected, and a message is displayed on the panel when maintenance is required if there are concerns over safety or performance, enabling safe, stable operation. Various types of information required for daily heat management and operation control are also displayed on the panel. Online maintenance is also supported.

(3) May be handled by operators with special training or higher from the employer, according to the Japanese Small Boiler Structural Code

Boiler engineer qualifications are not required to handle this product, as it may be operated by staff with special training or higher from the employer. Also, this product can supply steam in a short time as the water content is small compared to large-scale boilers[*3].

[Main specifications]

Item	Unit	AE-900A
Boiler type	-	Once-through multi-tube boiler
Inspection specification	-	Japanese Small Boiler Structural Code
Requirements for operators	-	Persons who have participated in special training by the employer
Working pressure range	MPa	0.49 to 0.88
Electric heater capacity	kW	576
Equivalent output	kg/h	900
Heat output	kW	564
Boiler dimensions (W x D x H)	mm	1,400 x 2,895 x 2,575

*1: By MIURA's own research
*2: Electricity produced from renewable energy using nature, such as solar power, wind power, biomass, hydropower, and geothermal power.
*3: Fire tube boilers and water tube boilers

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