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Press Release

Chugai Ro Co., Ltd.

Delivery of Japan's Largest Hydrogen-Fueled Metal Heating Demonstration Furnace

Chugai Ro Co., Ltd. has delivered Japan's largest hydrogen-fueled metal heating demonstration furnace to Takasago Works of Kobe Steel, Ltd.

This project is adopted by the New Energy and Industrial Technology Development Organization (NEDO) as "Demonstration for the Utilization of Hydrogen in Industrial Combustion Furnaces Toward Decarbonization of Factories Where Heat-energy Consumption Is the Primary Load."

The relevant facility is a demonstration furnace that uses hydrogen combustion burners whose combined combustion capacity reaches Japan's largest capacity of 2,791 kW. Temperature distribution inside the furnace and the work is kept uniform by city-gas-only combustion, hydrogen-only combustion, and mixed combustion of hydrogen and natural gas.

This demonstration furnace has capabilities to achieve:

- Hydrogen-only combustion, city-gas-only combustion, and mixed combustion of hydrogen and city gas;
- High energy efficiency by using air preheated with exhaust heat recovered by heat exchangers;
- Uniform temperature distribution in the furnace by adopting EBC-i, an automatic air ratio control system, which enables high turndown ratio and double cross limit control; and
- Stable in-furnace atmosphere and energy efficiency by adopting Lamuda Link control system, a system to control the residual O₂ concentration in the furnace and burner air ratio in a ganged manner by using Lamuda-i, a residual O₂ concentration sensor.



Specifications of the hydrogen-fueled heating furnace	
Heating method	Heating that uses direct-fired burners that can change the ratio of fuel from 100% hydrogen to 100% city gas (13A)
Combustion capacity	2,791 kW
Number of burners	4 pcs (698 kW/pc)
Combustion temperature	Max. 1,245°C
Work to be heated	Max. 7 ton /ch. (steel)
Furnace inner dimensions	W 3,300 × L 4,300 × H 2,630 mm (Effective area: W 1,850 × L 2,800 × H 1,000 mm)

We will continue to work on the development of combustion equipment and industrial furnaces fueled by carbon-free energy and contribute to the realization of a carbon-neutral society.

<Article (Kobe Steel, Ltd. website) for reference>

“Introducing Japan’s largest hydrogen combustion direct metal heating furnace at Takasago Works to promote Initiatives to utilize hydrogen; Demonstration for the Utilization of Hydrogen in Industrial Combustion Furnaces Toward Decarbonization of Factories Where Heat-energy Consumption Is the Primary Load”

https://www.kobelco.co.jp/releases/2026/1218764_18738.html

<Catalogs for reference>

* HYDROGEN BURNER Catalog

https://chugai.co.jp/sp_db_lite/catalog-pdf/ts/cb-253-01.pdf

* Lamuda-i Catalog

https://chugai.co.jp/sp_db_lite/catalog-pdf/ts/BZ_0281_0015.pdf

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