

**DOWA THERMOTECH CO., LTD. Develops the Z-TKM, a Carburizing and Quenching Furnace That Contributes to a Low Carbon Society**

DOWA THERMOTECH CO., LTD. (14-1, Sotokanda 4-chome, Chiyoda-ku, Tokyo; 1 billion yen; President: YAMADA Kiyoshi), a subsidiary of DOWA HOLDINGS CO., LTD. (14-1, Sotokanda 4-chome, Chiyoda-ku, Tokyo; 36.4 billion yen; President: SEKIGUCHI Akira), developed the Z-TKM, the next-generation carburizing and quenching furnace that contributes to realization of a low carbon society.

Heat treatment is essential to enable gears, shafts used for automobiles, construction machinery, agricultural machinery, industrial robots to have reliability, abrasion resistance. Heat treatment is associated with a lot of energy consumption and also involves carbon itself in the gases used in the main process, carburizing treatment. Therefore, efforts to conserve energy and reduce CO<sub>2</sub> emissions in this process are a necessary for the realization of a low carbon society and the achievement of carbon neutrality, which are global social issues.

The Z-TKM developed by DOWA THERMOTECH CO., LTD. can minimize gas and CO<sub>2</sub> emissions from heat treatment and also enable operations that generate very low CO<sub>2</sub> emissions from the heat treatment processes by combining the Z-TKM with green energy source, ammonia or hydrogen burners in accordance with the development of social infrastructure.

The Z-TKM can become a powerful means of achieving the carbon neutrality of a customer's site by providing heat treatment facilities to customers that are introducing or already possess equipment for heat treatment processes. Also in the heat treatment processing business, DOWA THERMOTECH CO., LTD. will promote the introduction of this equipment to contribute to the reduction of CO<sub>2</sub> emissions. Because of this, the furnace is expected to contribute to reduction of greenhouse gas emissions in supply chains, including for the production of automobiles.

Going forward, we will introduce trial equipment at the Hamamatsu Plant of DOWA THERMOENGINEERING CO., LTD., a wholly owned subsidiary of DOWA THERMOTECH CO., LTD., and accumulate operational expertise. At the same time, we plan to accept trial heat treatment production projects from customers, aiming to begin receiving orders in full scale in 2023 after demonstration and evaluation.

## **Major features of the Z-TKM**

- It can minimize gas consumption and CO<sub>2</sub> emissions and enable operations that generate very low CO<sub>2</sub> emissions by combining the Z-TKM with green energy and ammonia or hydrogen burners.
  - DOWA THERMOTECH CO., LTD. can maintain heat treatment quality at the same level as conventional treatments by collecting the technologies and expertise as a heat treatment-dedicated manufacturer and can also achieve stable operation by improving the driving mechanism.
  - Customers that have installed our heat treatment equipment (TKM series) can install this furnace in the same pit. Replacement with a short construction period is possible because of the realization of complete compatibility.
  - Operations are simple due to our unique operation support system (D-IPS\*). In addition to reducing maintenance costs using digital technologies, it can support the maintenance of the quality of heat-treated items.
- \*DOWA-Intelligent Production Support system

DOWA THERMOTECH CO., LTD. will continue to support customers with one-stop solutions from both the perspective of the development, production, sale and maintenance of heat treatment facilities and the perspective of the heat treatment process on commission and will provide value in many parts of the world as a leading heat treatment company.

## **[Overview of DOWA THERMOTECH CO., LTD.]**

- Nagoya Head office: 19-1, Ukishima-cho, Mizuho-ku, Nagoya, Aichi
- Representative: YAMADA Kiyoshi
- Founded: May 2006
- Capital: 1 billion yen
- Shareholder: DOWA HOLDINGS CO., LTD. 100.0%
- Business outline: Design, manufacture, sale and maintenance of heat treatment equipment, heat treatment processing, surface treatment processing, and surface modification processing

## **[Overview of DOWA THERMOENGINEERING CO., LTD.]**

- Nagoya Head office: 19-1, Ukishima-cho, Mizuho-ku, Nagoya, Aichi
- Hamamatsu Plant: 2-27-1, Aoinishi, Naka-ku, Hamamatsu-shi, Shizuoka
- Representative: NUNOKAWA Susumu
- Founded: May 2006
- Capital: 0.1 billion yen
- Shareholder: DOWA THERMOTECH CO., LTD. 100.0%
- Business outline: Design, manufacture, sale and maintenance of heat treatment equipment, heat treatment processing, surface treatment processing, and surface modification processing



## Contacts for inquiries

Inquiries about this release

DOWA HOLDINGS CO., LTD.

<https://ir.dowa.co.jp/en/ir/contact1.html>

Inquiries about products and services

DOWA THERMOTECH CO., LTD.

<https://www.dowa.co.jp/thermo-tech/en/contact/>