ZOZEN: Best Industrial Thermal Oil Heater Manufacturer for Food Safety

Wuxi, Jiangsu Sheng Jan 18, 2026 (Issuewire.com**)** - Food processing demands unwavering commitment to safety, quality, and precision. Every heating system operating within food production facilities must deliver consistent thermal performance while maintaining the hygienic standards that protect consumer health. From thermal processing and material heating to oil refining and sterilization, industrial thermal oil heaters provide the controlled, high-temperature heating essential for modern food manufacturing. ZOZEN Boiler has established itself as the **Best Industrial Thermal Oil Heater Manufacturer** by engineering solutions specifically addressing food industry requirements—systems that combine operational efficiency with the safety protocols and temperature precision food producers require.

Food Processing's Thermal Demands

The food industry encompasses diverse manufacturing processes, each imposing unique heating requirements. In the food industry, the thermal oil heating system is mainly used for heating bread

baking device, biscuit baking device, candy production device, grain drying device, cooking oil squeezing and refining device, distillation pot, autoclave and conveyor belt dryer.

These applications share common characteristics: temperature precision directly impacts product quality, process consistency ensures batch-to-batch uniformity, and heating system reliability prevents costly production interruptions. Unlike general industrial applications, food processing adds another critical dimension—any heating system malfunction risking thermal oil contact with food products creates immediate safety hazards requiring equipment shutdown and thorough decontamination.

Understanding these sector-specific constraints positions ZOZEN as a **Global Leading Thermal Oil Heater Manufacturer** with deep application knowledge. The company's engineering approach accounts for food safety regulations, process temperature requirements, and the operational economics that food processors manage within competitive global markets.

Thermal Oil Technology: Advantages for Food Applications

Thermal oil heating systems, also called organic heat carrier boilers, refer to boilers heated by heat medium oil. Due to the characteristics of low pressure, high temperature and precise control of the working temperature, thermal oil heaters are widely used in the food industry.

High Temperature at Low Pressure

Traditional steam boilers face physical limitations—achieving temperatures above 200°C requires elevated pressures demanding robust pressure vessel construction and stringent safety protocols. Thermal oil heaters circumvent this constraint by utilizing heat transfer fluids that remain liquid at atmospheric pressure while reaching temperatures up to 320°C.

This capability proves particularly valuable for applications like frying systems, where precise oil temperature control determines product texture and color. Cooking oil refineries require elevated temperatures for deodorization and winterization processes that remove unwanted compounds. Candy manufacturing depends on exact temperature control during cooking stages that define final product consistency.

Precise Temperature Control

Food processing requires highly accurate and stable heating. Excessive temperatures can damage raw materials or affect product quality, while insufficient heat may compromise safety and process consistency. Thermal oil systems provide controlled, reliable high-temperature heating, ensuring uniform and repeatable thermal conditions across production.

The boiler’s intelligent control system delivers precise regulation of temperature and pressure, maintaining a stable and safe heat supply. This level of control is essential in food plants with continuous or large-scale operations, where even small temperature variations can impact product consistency and processing efficiency.

Closed-Loop Safety

ZOZEN's thermal oil heaters accommodate diverse fuel types including various coals, biomass fuels (such as biomass pellets, wood chips, rice husks, and agricultural residues), and oil-gas fuels (natural gas, liquefied petroleum gas, diesel, heavy oil, and light oil). The system adopts the thermal oil pump to

force the medium conducting the circulation in the liquid phase. The medium transfers the heat energy to the heating equipment and then returns to the furnace for being reheated.

The closed-loop circulation isolates thermal fluid from food contact surfaces. Heat exchangers transfer thermal energy without allowing direct contact between heat transfer oil and food products. This separation maintains hygienic conditions while enabling high-temperature processing—a combination difficult to achieve with direct-fired systems.

ZOZEN's Thermal Oil Heater Portfolio

As a **Leading Steam Boiler Company** expanding comprehensive thermal solutions, ZOZEN manufactures multiple thermal oil heater series addressing diverse food industry applications.

YQ(Y)W Series: Horizontal Gas/Oil-Fired Solutions

The YQ(Y)W series gas-fired/oil-fired horizontal thermal oil heater offers thermal capacity from 1400 to 14000 kW with working pressure of 0.8 to 1.0 MPa and outlet temperature of 320°C. The two or three passes round coil structure optimizes heat transfer while maintaining compact dimensions suitable for space-constrained facilities.

Available industries include petroleum, chemical, chemical fiber, pharmaceutical, textile printing and dyeing, building materials, wood processing, vegetable oil processing and other industries. The series accommodates natural gas, coke oven gas, biogas, heavy oil, diesel oil, and light oil, providing fuel flexibility that helps food processors optimize energy costs.

The horizontal configuration facilitates maintenance access and allows complete factory assembly. Units arrive at installation sites ready for connection, reducing commissioning time and enabling faster project completion—critical factors when food processors face seasonal production pressures or market opportunities requiring rapid capacity expansion.

YQ(Y)L Series: Vertical Gas/Oil-Fired High-Capacity Design

For larger food processing facilities, ZOZEN offers the YQ(Y)L series gas-fired/oil-fired thermal oil heater providing thermal capacity from 7,000 to 29,200 kW. The vertical arrangement achieves high output within limited floor space, addressing the spatial constraints typical in urban food processing facilities. This series utilizes gaseous and liquid fuels including natural gas, liquefied petroleum gas, coke oven gas, biogas, diesel, heavy oil, and light oil.

YLW Series: Biomass-Fired Horizontal Thermal Oil Heater

The YLW series biomass-fired horizontal thermal oil heater provides thermal capacity from 2,800 to 29,000 kW with working pressure of 0.8 to 1.0 MPa. This horizontal chain grate assembly heater features separate manufacturing of the chain grate and heater body, enabling efficient transportation and installation.

The system adopts chain grate for mechanical coal feeding, mechanical ventilation via blower and induced draft fan, and mechanical slag discharge through slag machine. The heater offers wide fuel adaptability, accommodating biomass pellets, wood chips, rice husks, corn cobs, sawdust, palm shells, and other agricultural residues. This renewable energy solution proves particularly suitable for these processing facilities with access to abundant biomass resources, delivering sustainable heating while

reducing operational costs.

YLW Series: Coal-Fired Horizontal Thermal Oil Heater

For regions where coal represents an economically viable fuel source, the YLW series coal-fired horizontal thermal oil heater provides thermal capacity from 2,800 to 29,000 kW with working pressure of 0.8 to 1.0 MPa. The horizontal square coil chain stoker assembly design ensures efficient combustion across various coal types including bituminous coal, lean coal, and anthracite. Advanced oil temperature and pressure control systems precisely regulate operating conditions ensuring safe operation.

Real Food Industry Applications

ZOZEN's food sector experience demonstrates practical capability across diverse processing operations, serving over 500 food factories worldwide.

Edible Oil Refining Operations

A large-scale agricultural industrialization enterprise with 24 production bases spanning edible oil, condiments, and vegetable processing selected ZOZEN's thermal oil heating solutions. The facility maintains annual production capacity of 1 million tons for edible oil and 100,000 tons for condiments, requiring reliable thermal systems supporting continuous operations.

ZOZEN's technical team customized various thermal fluid heater models according to the plant's actual conditions. Multiple units including 14 MW, 10.5 MW, and 4.2 MW capacity thermal oil heaters were installed to meet the complex edible oil processing requirements—drying/cooling, hot air frying, suction cooling, rolling crushing/peeling, and steaming operations.

Customer feedback confirmed ZOZEN's service commitment: "During the installation process, the technicians of ZOZEN always put the customer's interest first place, and they are not afraid of tiredness and loss, and stayed by the boiler for a record test overnight. In addition, they train the customer about operation and maintenance in detail, to ensure the normal operation of the boiler."

Rice Vermicelli Processing - Thailand

Cho Heng Rice Vermicelli Factory Co., Ltd. in Thailand, established in the 1930s, specializes in the production, processing, sales, and export of rice products including rice vermicelli, glutinous rice flour, rice starch, and mixed flour. With products exported to over 30 countries and regions worldwide, the company requires stable and precise heat sources that directly affect rice vermicelli texture, quality, and production output.

To ensure product quality, Cho Heng selected ZOZEN's YQL series gas-fired vertical thermal oil heater (Model: YQL-7000Q, 7,000 kW thermal capacity) to meet the precise temperature control demands of their rice vermicelli production line. The YQL series features a three-pass round coil structure that effectively transfers radiant heat while improving thermal efficiency. Equipped with advanced combustion equipment and intelligent control systems, the heater achieves precise temperature regulation with excellent safety performance, providing continuous and stable heat for rice vermicelli production through steaming, cooking, and drying processes.

Customer feedback confirmed: "We knew through the internet that ZOZEN Boiler was a professional industrial boiler manufacturer in China...The YQL series gas-fired thermal oil heater introduced this time will become a crucial heat source equipment for our rice vermicelli production line."

Poultry Processing - Jilin Chia Tai Food

Jilin Chia Tai Food Co., Ltd., a wholly foreign-owned enterprise of Thailand's Chia Tai Group, operates as a large-scale modern agricultural and food enterprise integrating breeding, broiler farming, feed processing, and chicken processing into an integrated "farm-to-fork" operation. The company's "CP Chia Tai Food" series chicken products have become a household name in China, characterized by safety, hygiene, hormone-free, and drug residue-free qualities.

For food processing operations requiring disinfection and cooking, ZOZEN provided a YQW series gas-fired horizontal thermal oil heater . This model features tapered coil tube ends that effectively protect the furnace wall, equipped with advanced combustion devices enabling fully automated operation. The complete boiler arrives factory-assembled after passing overall acceptance inspection, facilitating installation, commissioning, and use.

Customer feedback noted: "After trial operation, all technical indicators of ZOZEN Boiler fully meet our requirements. We are very satisfied with the product quality of ZOZEN Boiler and look forward to continued cooperation in the future!"

Safety Features and Quality Assurance

Food processing equipment suppliers must demonstrate manufacturing quality through systematic quality management. ZOZEN passed ISO9001:2015 international quality system certification, validating comprehensive quality control throughout design, procurement, fabrication, and testing.

The 150,000-square-meter production facility in Wuxi employs first-class equipment supporting consistent manufacturing standards. ASME "S" and "U" stamps authorize pressure vessel construction to American standards, while CE certification enables European market access. These international qualifications provide food processors assurance that thermal equipment meets rigorous safety and performance standards.

Comprehensive Service Model

As a **Leading Industrial Thermal Oil Heater Manufacturer in Global Market**, ZOZEN maintains service infrastructure supporting food processors throughout equipment lifecycles. The company builds its own engineering team providing customized solutions rather than standardized offerings.

Pre-sales consultation evaluates production processes, required temperatures, available fuels, and capacity needs. This assessment ensures thermal oil heater specifications align with actual operational requirements and facility constraints. For food processors managing multiple production lines with varying thermal demands, ZOZEN's system design expertise helps optimize equipment selection and integration.

Post-installation support includes operator training ensuring proper startup procedures, maintenance protocols, and troubleshooting capabilities. Food processing operates on demanding schedules where equipment downtime directly impacts product delivery commitments. ZOZEN's proactive service approach helps processors maintain operational reliability while achieving designed efficiency levels.

Economic Value for Food Processors

Food manufacturing operates within competitive markets where energy costs significantly impact profitability. Thermal oil heaters deliver operational advantages through high thermal efficiency—ZOZEN's thermal oil heater systems are designed to maximize heat transfer efficiency, with gas-fired models in typical configurations achieving thermal efficiency above 92% and, in optimized systems with waste heat recovery, up to about 95%. Combined with wide fuel compatibility—including natural gas, coal gas, biogas, heavy oil, diesel, light oil and biomass—food producers can select cost-effective fuels without sacrificing performance.

The precise temperature control reduces product waste from over-processing or under-processing. Energy recovery systems capture waste heat from exhaust gases, further improving overall efficiency. Over a long equipment life cycle, these operational characteristics compound into substantial cost savings for food manufacturers.

For detailed information about ZOZEN's thermal oil heater solutions for food processing applications, visit https://en.zozen.com/

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