

Shandong Zhucheng Breeder Farm Heating Project — Case Study

Heating Solution for 8 Breeder Houses with KWDHVS070 Outdoor Direct-Fired Gas Air Heaters



Case Summary

Item	Details
Project location	Zhucheng, Weifang, Shandong Province, China
Application	Breeder house heating
Project scale	8 breeder houses
House dimensions (each)	90 m long × 16.5 m wide
Target temperature	Indoor temperature held stably at around 33 °C
Equipment model & quantity	KWDHVS070; 6 units per house, 48 units in total
Fuel type	Natural gas
Installation	Outdoor installation
Control	Independent control of front, middle and rear zones

Project Overview

Located in Zhucheng, Weifang, Shandong Province, this project provides winter heating for eight floor-raised breeder houses. Each house measures 90 m in length and 16.5 m in width. Local winter temperatures fall to approximately –10 °C, while the brooding stage requires the indoor temperature to be held stably at around 33 °C.

To meet the requirements for rapid heat-up, temperature uniformity and zone control in long poultry houses, Keywarm adopted a heating solution based on the KWDHVS070 outdoor direct-fired gas air heater. Six units are installed per house, arranged symmetrically on both side walls, delivering fast, efficient and uniform heating.

Challenges and Solutions

Challenge	Solution
Long houses require rapid heat-up while keeping the front, middle and rear zones at uniform temperature	Six units per house, installed symmetrically on both sides, provide a more balanced heat distribution
Winter lows of about –10 °C, with the brooding stage requiring 33 °C indoors	70 kW outdoor direct-fired gas air heaters deliver rapid heat-up and continuous, stable heat output
Simple on/off control cannot meet the zone-specific temperature demands of large poultry houses	The front, middle and rear zones are controlled independently by the poultry-house environment controller, enabling precise three-zone temperature control
Uniform air distribution and convenient on-site operation are both required	The three-way discharge design, combined with motorized damper control, extends warm-air coverage and improves air distribution uniformity
Multiple units operating in parallel call for clear and repeatable control logic	Corresponding left and right units are wired in parallel, simplifying zone control and unified operation
The owner wants convenient maintenance with fewer entries into the houses	All equipment is installed outdoors; servicing requires no entry into the houses, minimizing disturbance to the rearing environment

System Configuration and Installation

- Six KWDHVS070 outdoor direct-fired gas air heaters per house;
- Three units installed on each side wall for symmetrical two-side air supply;
- Natural gas used as fuel;
- Heaters operate in interlock with the poultry-house environment controller;
- Front, middle and rear zones controlled independently for precise temperature control;
- Three-way discharge design, with the air direction adjusted automatically by motorized dampers.

Performance and Customer Value

By combining two-side installation, three-zone independent control and three-way air discharge, this solution effectively resolves the slow heat-up and uneven temperature distribution typical of long poultry houses.

Compared with conventional centralized heating, the solution offers the following advantages:

- Faster overall heat-up of the house;
- Smaller temperature differences between the front, middle and rear zones, with a more uniform distribution;

- Outdoor installation, occupying no interior space in the house;
- Routine maintenance performed without entering the house, improving maintenance efficiency;
- Stable operation, suitable for long-term use on modern large-scale poultry farms.

Project Photos



Overall view of the breeder houses



Outdoor installation



Outdoor installation



KWDHVSO70 unit installation



Indoor warm-air discharge outlet



Three-way discharge structure

Recommended Applications

The KWDHVSO series of outdoor direct-fired gas air heaters is suitable for:

- Breeder houses;
- Broiler houses;
- Layer houses;
- Brooding houses;

- Duck breeder houses;
- Goose breeder houses;
- Other modern livestock and poultry buildings using outdoor gas heating.

Why Choose KWDHVSO?

- Outdoor installation — no interior space occupied in the house;
- Rapid heat-up — meets the high temperature requirements of the brooding stage;
- Three-way air discharge — wide warm-air coverage;
- Independent control of the front, middle and rear zones;
- Convenient routine maintenance — minimal disturbance to the rearing environment;
- Well suited to modern large-scale poultry projects.