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FINNED TUBE HEAT EXCHANGER

Installation Operation Maintenance Instruction Manual

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1. Introduction

Finned tube heat exchangers are widely used in various gas-to-water and steam-to-gas heat exchange and dehumidification applications, such as waste heat recovery in industries like power plants, pharmaceuticals, and metallurgy. They are also used in gas-water heat exchange systems, compressed air temperature control and dehumidification in bioengineering, underground air heating, cooling, and dehumidification systems in deep coal mines, and heating and cooling systems in industrial plants. Finned tube heat exchangers are classified into longitudinal and transverse finned tube heat exchangers.

2. Features

1. High Heat Transfer Coefficient: Testing shows that the heat transfer coefficient is within the practical range of 30 W/m²°C to 64 W/m²°C.
2. Compact Size: Due to the added fins on the original tube surface, the heat exchange surface is expanded, allowing 100-200 m² of heat transfer area to be arranged per cubic meter, resulting in a compact heat exchanger.

3. Installation

1. The installation of the heat exchanger pipeline should follow the construction drawings provided with the equipment. First, remove the covers from all pipe outlets and install valves with the same diameter on both the inlet and outlet pipes before connecting them to the system. Clear any debris from the pipes before connecting them to the equipment to prevent blockages that could reduce heat exchange efficiency.
2. The heat exchanger should be installed on a sufficiently rigid frame.

It is not allowed to place ducts or other weights on the heat exchanger.

3. During hoisting and transportation, the equipment must be lifted smoothly to avoid twisting, deformation, or damage to the fins.

4. Operation and Shutdown

1. The equipment should only be operated after passing installation tests.
2. First, slowly open the cold-side valve. If no abnormalities are observed, slowly open the hot-side valve while checking the gauges for any irregularities.
3. When shutting down, close the hot-side valve first, followed by the cold-side valve. No repairs are allowed while the equipment is under pressure.
4. For heat exchangers used with flue gas, regularly clean any ash buildup at the bottom of the equipment and flush the tube side with desalinated water to prevent scaling inside the tubes.

5. Maintenance

The main inspection and maintenance tasks for this heat exchanger include:

1. Remove any rust or sediment buildup at the bottom of the equipment and flush the tubes with desalinated water.
2. Regularly inspect or replace all connected valves.
3. Inspect and take preventive measures to avoid damage to internal components.
4. Drain the water from the heat exchanger when not in use to prevent freezing and cracking during winter.

6. Precautions

1. During the equipment delivery inspection, the user should carefully verify that the equipment meets the contract requirements. The company is not responsible for issues arising from storage or installation after the equipment has been signed off.
2. The equipment should operate in an orderly and controlled manner. During startup, the heat medium should be introduced slowly to ensure the entire system heats evenly.
3. The company is not responsible for any issues arising from unauthorized repairs or modifications by the user. It is strictly prohibited to perform repairs while the equipment is in operation. Appropriate measures should be in place to prevent burns or high-pressure injuries during maintenance.
4. It is strictly forbidden to operate the equipment under conditions that exceed the design temperature, pressure, or other parameters.

NOTE: The company reserves the right to make technical changes, and any updates or alterations to data will not be provided in advance.