



KHD Preheater

- Low waste gas temperature
- High dust separation efficiency
- Low pressure drop
- Low electrical power demand

Double separator

System cyclones

Segmented immersion tubes in the lower stages

KHD offers preheater solutions for all areas of use.

Examples:

- Single stage double separator for "long dry process", installed upstream from an upgraded long kiln
- 3 stage preheater for extreme raw meal moisture levels, for example "semi wet process" with integrated flash dryer
- 4 to 6 stage single string preheater for small to medium capacities (1,500-5,000t/d)
- 4 to 6 stage two string preheater for medium to high capacities (4,200-10,000t/d)
- Special solutions for largest capacities, for example 6 stage 4 string preheater for 10,000t/d at high altitude (1,370 m a.s.l)

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Preheater

KHD Humboldt Wedag preheaters meeting high demands

In the early fifties there was a technical revolution. KHD built the first Preheater (Germany, Bomke & Bleckmann), a starting point of a new era of optimizing the heat consumption of the clinker pyro-processing system. At the time, this technical revolution reduced the heat consumption by nearly 50%. Today KHD is one of the technical leaders worldwide in this field.

Modern cyclone preheaters from KHD have considerably reduced the heat consumption of kiln lines, while ensuring availability and operational safety. The raw meal processed in the kiln first passes through the preheater absorbing the heat content of the kiln and **PYRO-CLON®** gases minimizing the heat consumption of the system.

Highlights of the new low pressure cyclones are:

- 270° inlet spiral with improved inlet geometry,
- an optimum of separation efficiency and pressure drop is obtained by properly dimensioned immersion tube, separation efficiency of top stage approx. 95%,
- steep cones to minimize coating tendency,
- low gas flow velocities in the immersion tubes between 10 and 15 m/sec.

Preheaters with modern designed cyclones produce low pressure drops and are high in separation efficiency. The resulting low waste gas temperatures lead to reduced heat losses, waste gas quantities, CO₂ emissions, dust emissions and electrical energy consumption.

Another criteria of a well functioning preheater is the uniform, homogeneous distribution of the meal over the complete cross-section of the gas riser ducts. This is a precondition for the best possible heat transfer between gas and meal. Configuration of the meal chutes, pendulum flaps, meal inlet boxes and their adjustable dispersion plates require special design considerations on calciner systems.

