Industrial Solutions for the minerals industry

Rotary Cooler

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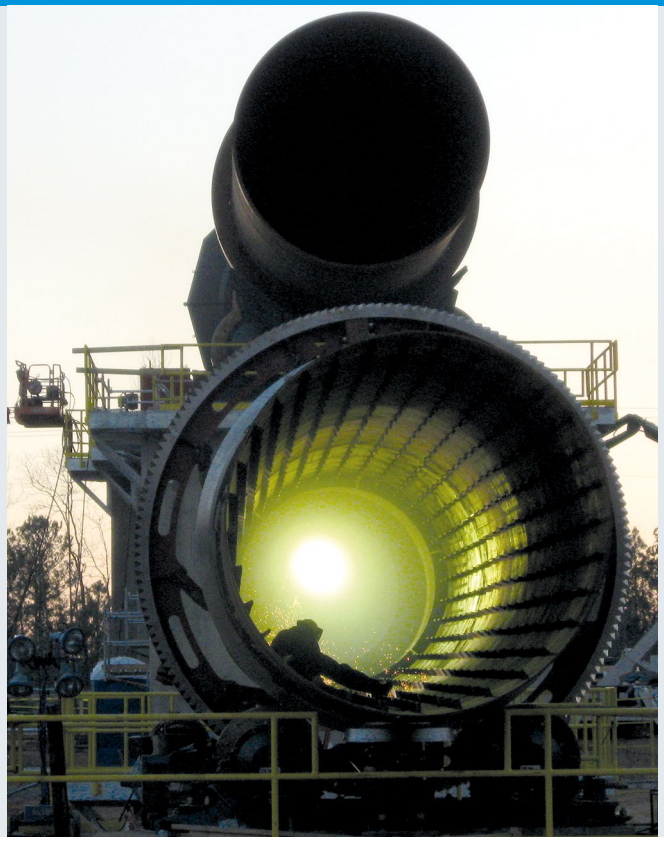

The thermal performance for cooling

Proven design – highest process flexibility – low maintenance

For many processes the robust rotary/drum cooler is the optimum solution for cooling – either **for direct cooling of the material with air** or indirect cooling with water.
High throughput rates, easy handling, great flexibility for coping with fluctuating material properties and quantities, high availability and low maintenance requirements are benefits of rotary coolers.

The Rotary Cooler always operates with direct contact of the bulk material and the cooling media in counter-current design.

Depending on the material characteristics, different shapes of blades/internals such as a scoop lifter can be selected for higher heat transfer between hot gas and material. The cooling air passes through the cooler counter-current to the material, thus providing the most efficient heat transfer and lowest product temperature. The flights inside the cooler are specially designed for improved cooling considering the particle sizes and heat transfer characteristics of the bulk material enabling for very large contact area with the cooling air. Optionally, direct cooling can be enhanced by means of a water spray lance at the feed or at the discharge end respectively by external water spray on the cylinder of the drum.

If the feed temperature of the material to be cooled is very high, the feed end of the cooler can be fabricated from high temperature resistant steel or be refractory lined to ensure low maintenance.

The hot air leaving the cooler can be utilized as pre-heated secondary combustion air, increasing the overall efficiency of the thermal process.

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Fields of application

Cooling of various free-flowing bulk materials such as
- Minerals and ores (iron ore, manganese ore, mineral sands, lime, dolomite, magnesite, etc.)
- Proppants
- Waelz furnace slag
- Fertilizer (DAP, MAP, NPK, TSP, etc.)

Main features

Counter-current design of material- and gas-flow to optimize cooling efficiency

Direct cooling of bulk material only with air or enhanced by water injection

Custom design and layout to maximize thermal efficiency

Design parameters

Custom flight design for optimized cooling process

Variable speed drive system

Utilization of preheated air for enhanced thermal efficiency

Long or short residence time

Diameter: up to 6 m

Length: up to 60 m

Contact

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