

# Kumera Powder Coolers

## For more than 1000°C hot:

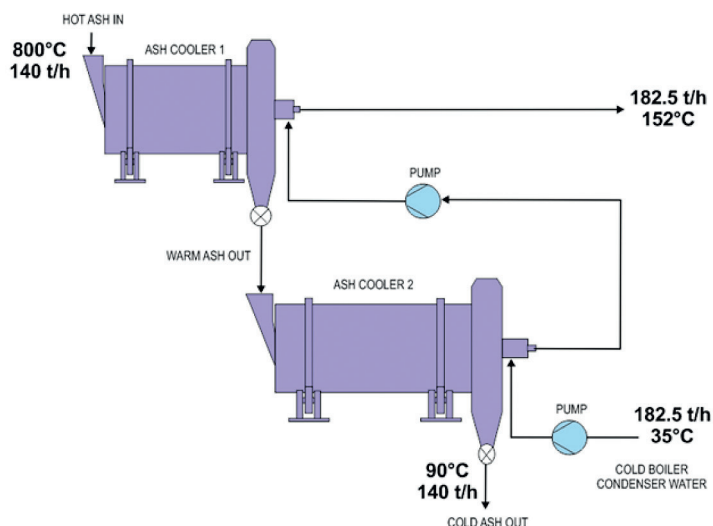
- Ash
- Calcined products
- Kaolin
- Converter dust
- Cement process residues
- Mining industry residues
- Reactive products requiring inert atmosphere, e.g. coke

With experience of more than half a century Kumera Corporation serves mineral and metal industry with a wide range of process equipment. The Kumera Powder Cooler is suitable for hot fine powders from:

- Non-sticky industrial flows of ash, calcined products, kaolin and converter dust
- Process residues from cement and mining industry
- Reactive products requiring cooling or processing in inert atmosphere, e.g. coke

Kumera builds single coolers removing heat quantities of 0.1 MW to 30 MW.

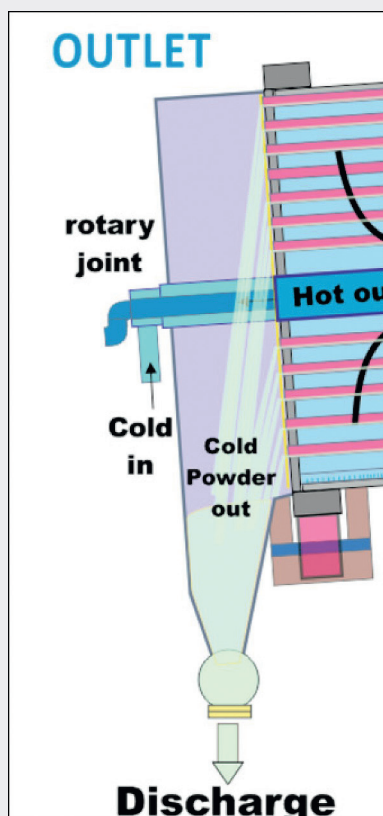
### Case: Boiler condensate preheating with hot Oil Shale ash



### Kumera Ash Cooler benefits:

- Stand alone sub-process = no disturbances to boiler operation
- 24.9 MW<sub>t</sub> heat to cold condensate, with only 76 kW<sub>e</sub> power input
- Saving potential ≈ 4 M\$/year
- High availability by robust and optimal cooler design eliminating disturbances
- No product losses (entrained dust)
- Small footprint
- Sturdy design, suitable for cooling coarse particles or even agglomerates
- Deoxygenized atmosphere for reactive products
- Outstanding cooling capacity, safe handling of high inlet temperature and throughput

# Kumera Powder Coolers



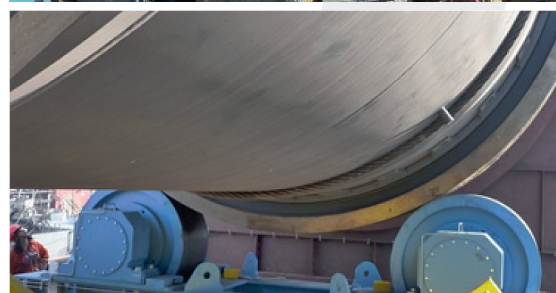
## Benefits of the Kumera Powder Cooler:

- First rate availability
- High capacity of powder feed rate
- High efficiency
- Compact standard design with lowest powder outlet temperature
- Lowest operational expenses of coolers
- Very low dust emission rate
- Very low maintenance need
- Easy maintenance by light weight standardized components and design
- Minimum space requirement
- Low power consumption
- Small footprint gives optimal customer tailored multi-stage heat recovery
- Large heat accumulation stabilizes plant operation

## Kumera Powder Cooler - Technology for Hot Ash Cooling

### Scope of supply for hot Ash Cooling

- Hot ash pre-treatment and feeding to cooler:
  - Pre screening unit
  - Roll crusher
- Hot water regulation and handling
- Cooled ash discharge system
- Exhaust gas handling system
- System for inert cooling atmosphere
- Instrumentation and process control



### Economical benefits:

- highly integrated energy efficient Kumera Powder Coolers
- optimal OPEX+CAPEX powder cooling concept



### Kumera Corporation Technology Center

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# Kumera Corporation

Kumera Corporation is a worldwide manufacturer of industrial machinery and engineering services. The corporation consists of four major operating divisions:

**Power Transmission Group** provides a comprehensive range of industrial and marine gearboxes for all major process industries. Kumera has more than 50 years of experience as manufacturer of mechanical power transmissions. There are more than 200.000 Kumera gear units in operation world-wide.

**Technology Division** specializes in state-of-the-art engineering and heavy process equipment for metallurgical and environmental industries. Kumera has successfully performed several modernization projects for metals industry and is a leading manufacturer of industrial steam dryers for copper and nickel smelters and lignite.

**Foundry Division** with **Peiron Oy** as the leading company produces all types of steel and iron castings, forming a link in the vertical refining chain of Kumera Corporation.

**Marine Division** produces propulsion gearboxes and propellers including control systems for any seafaring vessels.

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Your message will be answered within  
the next business day.

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## Emergency Repair Service & Maintenance 24/7 – All major brands and manufacturers

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