



CLAUDIUS PETERS

# Ash Handling Technik

We know how

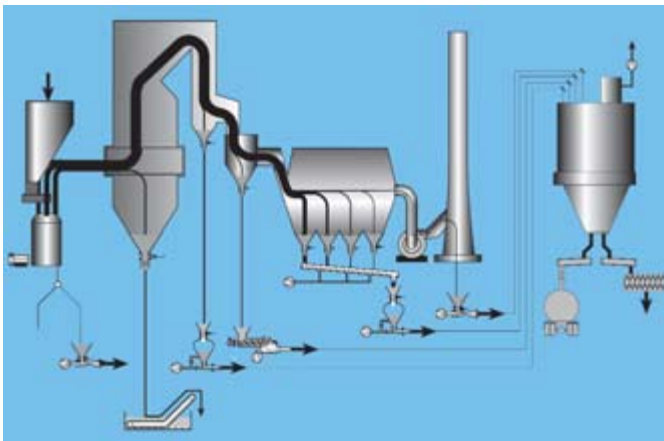
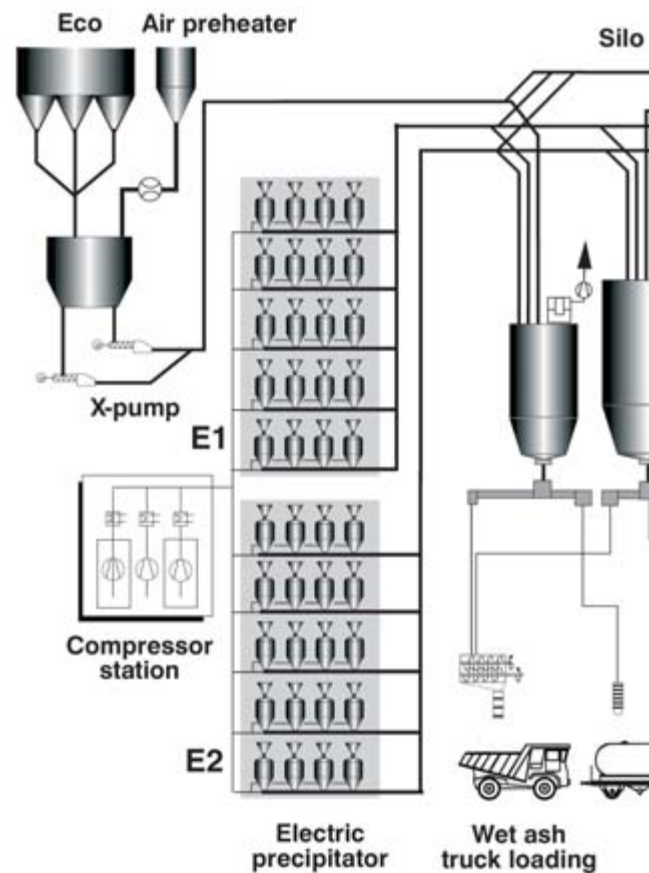
[www.claudiuspeters.com](http://www.claudiuspeters.com)

## Ash Handling Systems above all require sound experience

### About us

Claudius Peters Projects GmbH, Germany and Claudius Peters Technologies SAS, France are part of the Technologies Division of Claudius Peters Group GmbH, headquartered in Buxtehude, near Hamburg, offering technologies in the field of materials handling and processing and providing turnkey or semi-turnkey systems to a wide range of industries. Claudius Peters Group GmbH is a wholly owned subsidiary of Langley Holdings plc, a privately controlled UK engineering group, with regional offices in the Americas, Europe, China and the Far East.

When discussing the energy sources available for the generation of power, besides gas and oil, the combustion of coal still plays a major role. Combustion residues, however, remain a negative side effect. As a consequence today special emphasis is laid upon the environmentally sensitive treatment of such residues at high economic efficiencies. Only those who precisely know the raw material coal and its processing possibilities can offer reliable solutions for even the most extreme tasks. Claudius Peters has established itself firmly as a supplier of various products for this market. More than 60 years of experience in the field of ash removal systems for coal-dust-fired plants guarantees Claudius Peters's expertise in this technology, satisfying today's demands for modern ash handling systems.



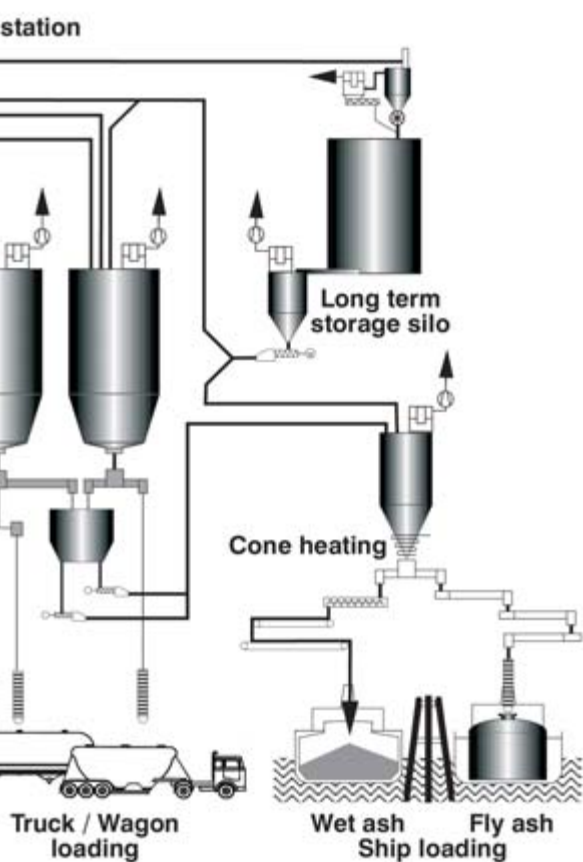
Ash collecting points in a direct fired power plant



Claudius Peters X-Pump for ash intermediate transport



## The right engineering philosophy



Claudius Peters provide turnkey solutions from ash accumulation points to storage or loading, independent of the coal types used from one source. In addition every solution takes into account that starting the boilers with other combustibles, such as oil or gas, may be necessary.

Operational safety and economic efficiency coupled with compliance to regulations on environmental protection and the modern work place are of top priority for the Claudius Peters ash removal systems.

### Proven capability

The ash resulting from more than 40,000 MW generated in power stations all over the world is removed by Claudius Peters ash removal systems. Conveying capacities of 200 t/h and conveying distances of 3000 m have been undertaken.

Claudius Peters offers the construction of complete ash removal plants, from the connecting flange of the ash accumulation points to the conditioning and loading of the ash from one source.

Whether twin pressure vessel conveying systems in single or group connection, dust pumps, aeroslides, airlift systems or combinations of the above, the following features apply to all Claudius Peters systems:

- Strong, solid construction
- Low energy consumption
- High availability
- Maximum environmental protection
- Minimum wear

Delivery of the plant from one sole supplier reduces the technical risk for the customer and ensures that time schedules are met.



Pressure vessel ash collecting system



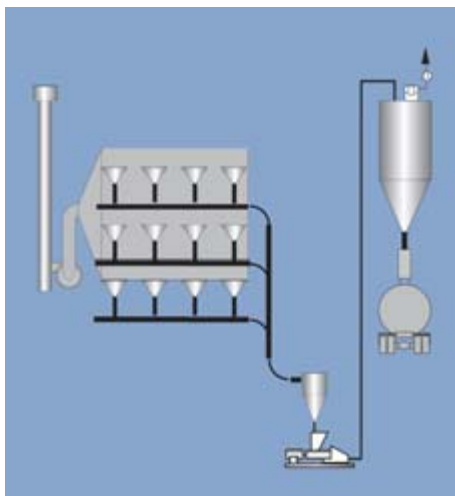
## Claudius Peters FLUIDCON system and HY-Mixer

### FLUIDCON

The Claudius Peters FLUIDCON system combines the advantages of a pneumatic airslide - a low energy requirement with the advantages of conventional pneumatic conveying with standard pipes, the flexible design of the conveying pipe course either horizontal, vertical or raised. An aeration bottom is put into the pipe to produce fluidization of the bulk material.

As well as the energy efficiency due to a low pressure and velocity level, the FLUIDCON is characterized by its low construction height in combination with a rotary feeder and a double pendulum flap which leads to low investment costs for the electrostatic precipitator.

Due to the conveying of fly ash from the electrostatic precipitator into an intermediate bin / day bin the pneumatic transport into the storage silo can be carried out with X-Pumps or with pressure vessel conveying. For this kind of conveying the FLUIDCON system or standard conveying pipes can be used alternatively.



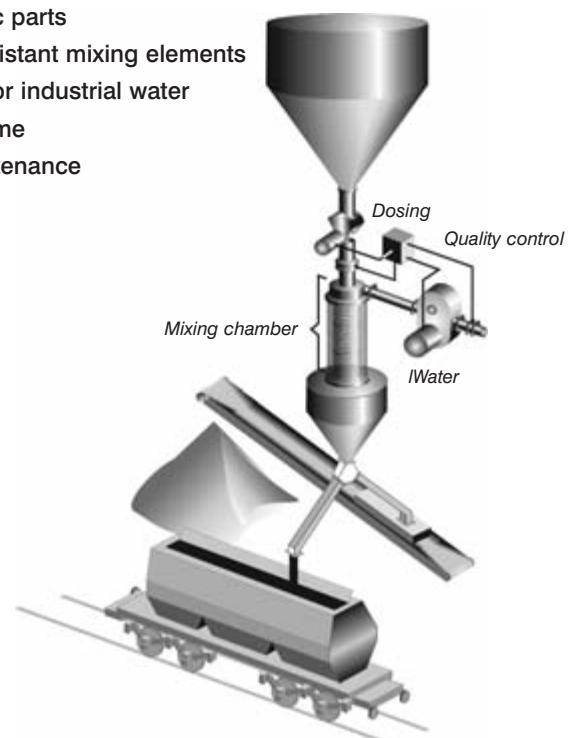
*Humidification station for 400 t/h*

### HY - Mixer

Humidification and dust free loading into wagons or onto belt conveyers for free flowing, dust free materials such as e. g. fly ash.

#### Facts at a glance

- High throughput capacities up to 400 t/h
- Low energy consumption
- Only static parts
- Highly resistant mixing elements
- Suitable for industrial water
- High lifetime
- Low maintenance

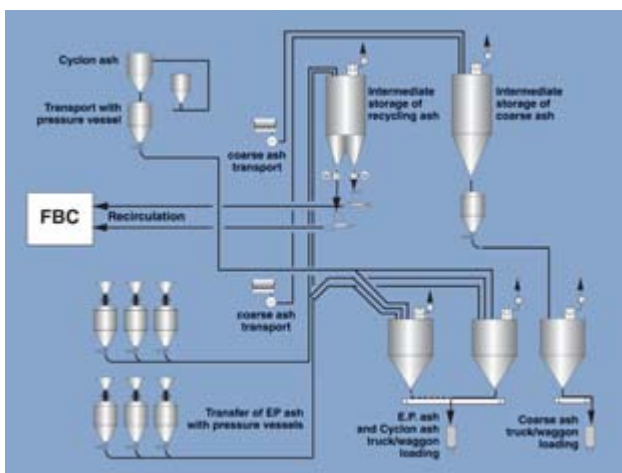




## New generation power stations demand optimum solutions

### Fluidized bed ash

Claudius Peters is able to offer optimum solutions for the new and old generations of power stations. Whether stationary, circulating or pressurized fluidized beds, the most efficient solution meeting the clients' demand, is provided.



*FBC ash handling principle*



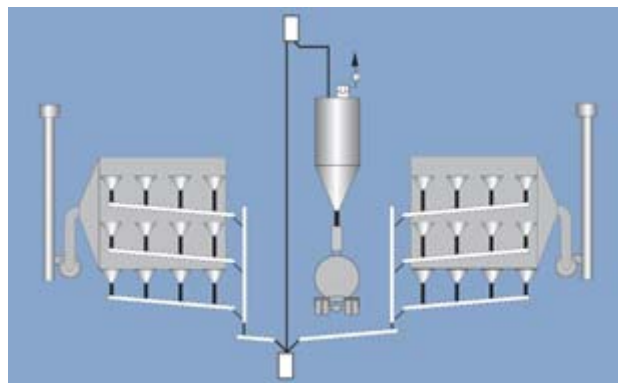
*Ash collecting aeroslide system beneath the ESP*

### Aeroslide Systems

A modern plant is above all characterized by an optimum availability and an economic mode of operation. The extremely efficient aeroslide system together with the airlift conveyance guarantees low wear and energy saving operation. The use of the ash bin between the electro-static precipitators ensures short conveying distances, and thus saves energy. Pneumatic aeroslides feed the fly ash to the airlifts which then transport the ash into the ash bin. This arrangement ensures highest availabilities and a maintenance-free operation, reduces the wear to an absolute minimum and guarantees lowest energy consumptions.



*Ash transport pressure vessel*



*Humidification station for 400 t/h*

## Lime handling system for desulphurization plants

To reduce the impact on the environment it is absolutely necessary to desulphurize the flue gases emitted by power stations running on brown coal or hard coal.

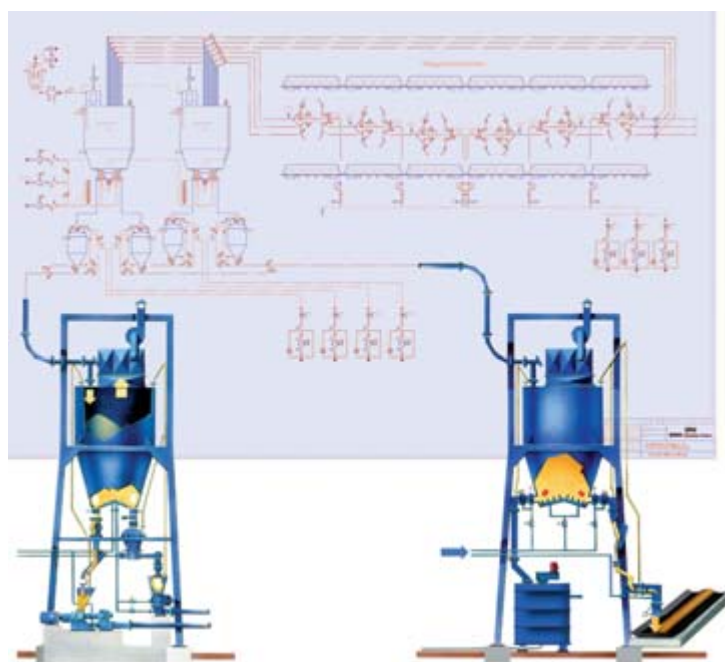
Worldwide there is a trend to introduce regulations on desulphurization. In Germany, for example, new large scale firing plants are equipped with desulphurization systems. Whether for dry processes, spray absorption processes or wet processes, at Claudius Peters the required material handling for limestone meal, lime hydrate or burnt lime is in expert hands.

The required limestone meal, lime hydrate or burnt lime is delivered in silo vehicles either by rail or road.

For unloading of the material complete unloading stations with all the necessary connecting pipelines and corresponding accessories are engineered. For brown coal power stations with their extremely high consumption of limestone meal, Claudius Peters has already supplied unloading facilities for ten tank cars connected in parallel, each with a capacity of 56 t/h. In this configuration up to 3,200 t per shift of limestone meal can be unloaded. The lime-stone meal is then stored in high capacity or service silos.



*Limestone unloading station*



To date Claudius Peters has supplied silos for limestone meal with volumes ranging between 50 m<sup>3</sup> and 4,000 m<sup>3</sup>. Silos with a volume of 10,000 m<sup>3</sup> and more are currently in the planning phase.

For wet processes and spray absorption processes, Claudius Peters offers individual solutions for the metering of the reaction agents and the transport via screws into the reaction bin.

For each single process and each plant, Claudius Peters develops an individual concept. The experience, technical know-how and the commitment of staff guarantee operational safety and the optimum economic efficiency.





## Ash storage and loading

For storage of fly ash whether in regular storage facilities or long-term storage units - Claudius Peters always has the right concept.

If only a small construction space is available Claudius Peters Duocell silos are recommended. A special silo fluidization system ensures the highest degree of discharge and the highest mixing effect for most different ash types.

In addition to fly ash storage, weighing systems with connected stationary or mobile loading systems for dry or humid loading are available. More than 1000 plants which are currently in operation demonstrate optimally designed systems which can be operated with a minimal number of personnel.



*Tank wagon loading of fly ash*



*Claudius Peters - Duocell silo (31 m diameter) with truck loading facilities*

CALCINING | COOLING | DISPATCH  
 DOSING | DRY BLENDING | DRYING  
 GRINDING | PACKING  
 PNEUMATIC CONVEYING  
 PULVERIZED FUEL SUPPLY  
 SILO SYSTEMS  
 STOCKYARD SYSTEMS  
 ALUMINA HANDLING SYSTEMS  
 MARINE POWDER HANDLING  
 TURNKEY PROJECTS



**We know how**

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