

IDEX[®] System

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Decoater & Dryer



\ IDEX[®] System for UBC decoating process



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Advance technology for continuous decoating and drying, from 500 kg/hr to 20 ton/hr, complying with the strictest environmental regulations.

The IDEX[®] system is designed for removing the volatile organic (paint, lacquers, oils) and inorganic (water) contaminants from a wide range of aluminium scraps by a continuous thermal process.

Typical applications

- . Decoating aluminium shredded scrap such as UBC, profile, carter ...
- . Drying machining chips, turnings, swarf, ...

IDEX[®] system main components are:

- . The Rotary Kiln for processing the dirty scraps.
- . The Post-combustion chamber, for the incineration of the gases generated in the rotary kiln.
- . The recirculation fan between both equipments, in order to reuse part of the hot gases generated in the Post-combustion chamber.
- . The intermediate cyclone, for removing the small particles from the process, such as fines, dust, ...

Economical & environmental benefits:

- . Very low overall energy consumption.
- . Reduce the metal losses and energy consumption in the melting process.
- . Improved the Foundry safety (no water).
- . Controlled volatilization of the VOC.
- . Full incineration of the generated gases.
- . Reduces emissions to the environment.



\ UBC before IDEX process



\ Decoated UBC after IDEX process

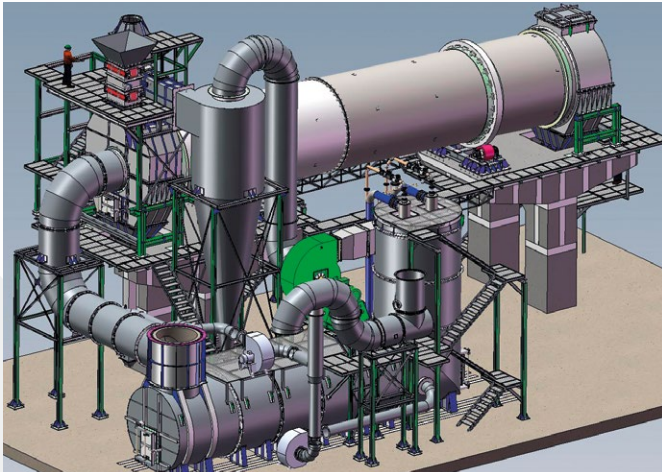
WHERE ENGINEERING BECOMES HEAT

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IDEX® System — main control parameters

Kiln discharge and temperature

The temperature at the kiln discharge is controlled to ensure a well cleaned final product. The IDEX® tube, acts as a heat exchanger giving up heat to the scrap and kiln exit gases by radiation. The Gases enter the IDEX® tube at afterburner temperature and by the time they reach the end have been cooled, and so used to control the temperature at the discharge end of the kiln, with temperatures below 550° C.

Cyclone & recirculation fan

A high efficiency cyclone unit is employed to remove any particulate from the kiln prior to the recirculation fan and afterburner. The recirculation fan provides the required gas flow from the Afterburner. The fan is fitted with a variable speed drive unit, and the speed of the fan is modulated automatically to maintain the kiln gas exit temperature at the selected control set point.

Kiln Speed and residence time

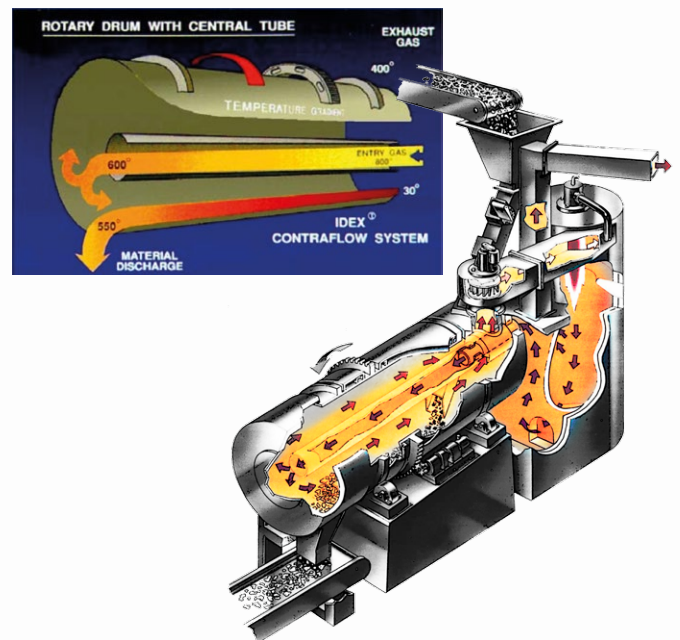
The kiln rotational speed is adjusted by the kiln drive motor. Each material has an ideal residence time within the kiln barrel.

Kiln gases pressure control

The IDEX® kiln pressure is controlled to ensure that process gases remain within the system and that the infiltration of air into the drum is kept to a minimum.

Kiln free O₂ level

The IDEX® free oxygen level is controlled to ensure the thermal process occurs in the required conditions, avoiding the generation of CO gases.



Post-combustion chamber - temperature and residence time

The temperature in the afterburner is controlled via the gas fired burner system, usually set at 850°C.

As the VOC's are liberated within the kiln they pass through to the post-combustion chamber where they are incinerated. This will cause the burner system to turn down as the VOC's are used to provide additional heat for the thermal process.

The residence time inside the afterburner chamber is related to its design and will help for the efficient destroy of VOC's, dioxins, furans, ...

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