GEA NIRO® F100D ROTARY ATOMIZER

Robust, reliable performance, every day

Engineering for a better world.

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GEA Niro® F100D rotary atomizer

The GEA Niro® rotary atomizer F100D is designed to offer customers a sustainable and versatile atomization system to meet ultra-low emission limits when used for semi-dry flue gas cleaning, and efficient drying of wastewater for zero liquid discharge solutions.

The GEA Niro® F100D atomizer is built on the proven F100 platform and offers variable speed for greater flexibility and fine tuning of process parameters to meet a wide range of requirements within:

- Spray drying absorption (SDA) applications for waste incinerators, steel plants and more
- Spray drying for evaporation (ZLD solutions) of wastewater and other effluents

The GEA Niro® F100D rotary atomizer features:

- Direct drive
- Patented high speed motor
- Heavy duty design
- Flexible spindle concept
- Vented skirt
- Feed adapted wheel design

GEA Niro® F100D	Unit	
Power	kW	up to 40
Nominal feed rate	kg/h	up to 5,500
Wheel speed	rpm	up to 14,000
Wheel diameter	mm	210
Spindle design		flexible
Weight, including motor	kg	500

The atomizer drive

The GEA Niro® atomizer drive consists of two main parts. The high-speed motor at the top, which drives the spindle, and the lower part of the atomizer, which is largely identical to the original F100 design and includes the spindle bearing support, feed line and cooling air assembly, and the conical protective skirt.

The spindle runs in special high-speed bearings, and the drive is designed to minimize feed rate irregularities and other sources of imbalance without damaging the spindle and bearings.

The atomizer wheel

The GEA Niro® rotary atomizer, type F100D operates with a corrosion and abrasion resistant wheel. The wheel type, material and configuration of wheel inserts depends on the application and operating specification.

The main body of the atomizer wheel is made of corrosion resistant material, whereas specific inner parts are made of advanced abrasion resistant ceramic material.

The continuous monitoring system comprises:

- Oil flow monitoring
- Oil level monitoring
- Spindle vibration monitoring
- Flooding alarm protecting against upstream leakage
- Hour meter logging running time
- Tachometer, spindle speed (rpm)

Designed and manufactured according to relevant EU directives and harmonized standards.

GEA experience

GEA Process Engineering A/S has successfully delivered process design and key equipment including more than 1,500 rotary atomizers for flue gas cleaning at waste incinerator plants, power stations and steel plants all over the world. Central in this achievement stands the unique GEA Niro® rotary atomizer, world-wide recognized as the leading atomizer brand providing reliability and efficiency for owners and operators. Among many distinctions over the years, the GEA Niro® rotary atomizer was recently awarded the “End-user recommended equipment for Waste-to-Energy” by the E20-association in Shanghai, China, honoring the outstanding quality of GEA and our products and technology.

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