

# ATOMIZATION OF FLUID FEEDS FOR SPRAY DRYING.

GEA NIRO® Rotary Atomizer A20D



# ROBUST, RELIABLE PERFORMANCE, EVERY DAY.



We've designed the GEA NIRO® Rotary Atomizer A20D to give customers a hygienic, versatile atomization system that meets all requirements for handling high purity chemical, food, and dairy products in spray dryers. The A20D offers variable speed for great flexibility, so you can fine tune process parameters to meet a wide range of process requirements and achieve desired powder and particle properties. The compact design featuring integrated highspeed motor provides improved reliability and easy servicing. We expect the A20D to give you top quality results and to support confidence in your processes.

#### **Plant availability & Yield maximization:**

Patented direct drive with integrated high-speed motor for compact size - Delivers efficient, high-speed power transmission in a compact design without sacrificing performance.

Minimized Downtime and Maintenance – Design enables quick access and servicing, reducing downtime and maintenance costs while maximizing throughput.

Easily changed atomizer wheels for either abrasive or non-abrasive feeds - Adapt quickly to different materials and processes and optimize flexibility.

Patented wear-resistant GEA WEARSERT® wheel design - Maximize uptime and lower maintenance costs with extended component life.

#### **Product quality assurance:**

Variable speed and particle size control via frequency converter - Ensure consistent quality and flexibility with adjustable speed control for precise particle size.

Bearings are greased and sealed for life - Eliminate contamination risk for safe, hygienic operations.

EN 1672-2-compliant – Ensure compliance with strict food and pharma standards through easy-to-clean EN 1672-2 design.

#### **Health and safety:**

Internal ATEX zone 22-compliant - Built-in compliance for safe operation in explosive environments — no extra modifications needed.

#### **The A20D atomizer standard monitoring system:**

Tachometer - Monitor spindle speed in real time for precise process control and consistent product quality.

Flooding sensor - Prevent costly damage and downtime with real-time flood detection for immediate response.

Bearing temperature sensor - Detect early signs of wear or imbalance to avoid costly downtime and extend equipment life.

Motor winding temperature sensor – Avoid overheating and ensure motor reliability with precise winding temperature control.

#### **.....beyond the standard monitoring options include:**

Air to wheel monitoring - Ensure consistent drying performance through continuous airflow monitoring.

External ATEX Zone – Safely operation in hazardous environments with a configuration designed for compliance in external ATEX zones 2/22.

### The atomizer wheel

The A20D atomizer can be configured with different 150 mm atomizer wheels to match feed characteristics, as well as the desired properties of the finished powder and particles, and production capacity/throughput.

GEA has designed the system to be user friendly for operators. A 150 mm diameter channel type wheel (for non-abrasive feeds) or insert type wheel (for abrasive feeds) is mounted on the vertical spindle.

Straight or curved channels handle non-abrasive feeds, while bushing and pin type wheels handle abrasive feeds. Parts exposed to feed are abrasion resistant, and easily replaceable.

The channel wheel is equipped with either low or high straight channels, or with low or high curved channels. The straight channel wheels are used when there are no specific bulk density requirements for the final product. The curved channel wheels produce a higher bulk density powder than the straight channel wheels, making them ideal for organic products, for example.



### The atomizer drive

The compact A20D atomizer is powered by a fully integrated, high frequency, high speed GEA motor and spindle system for improved reliability.

The lower part of the drive comprises the support for the guide bearing, feed pipe assembly and liquid distributor, all enclosed by a conical skirt. The flexible spindle design means that fluctuations in feed rate, and other imbalances, are continuously compensated, which helps to prevent damage to the spindle and the bearing. The precision-designed, high-speed bearings are greased and sealed for life to help prevent any lubricants contaminating the product.

### Specifications

Wheel diameter	150 mm
Power	up to 20 kW (depending on rotational speed)
Nominal operational range	10,000 – 24,000 rpm
Nominal feed rate	up to 1.8 t/h at 24,000 rpm (wheel type dependent)
Maximum feed rate	3.5 t/h at 13,000 rpm (wheel type dependent)
Weight	150 kg (including motor)

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