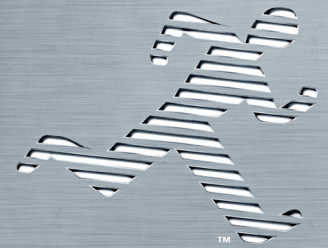


AFTER SALES SERVICE

Maintenance Programme



For the life
of your plant



Maintenance Programme for the Atomizer Wheel

The atomizer wheel is a key component of any spray drying plant. It rotates at high speeds and is, consequently, exposed to very high centrifugal forces and high levels of tensile stress.

Spray drying plants equipped with rotary atomizers are completely safe when operated and maintained in accordance with operating and maintenance instructions and safe industrial practices. However, in cases where insufficient attention has been paid to the maintenance of atomizer wheels and/or where non-original parts have been incorporated into GEA Niro atomizer wheels, dangerous incidents can occur involving wheel fragmentation while the spray dryer is in use.

Atomizer wheel disintegration can be caused by any one, or a combination of, the following:

- High temperature;
- Stress corrosion cracking;
- Wear or abrasion;
- Material fatigue;
- Use of non-original parts.

Regular maintenance and careful monitoring of the condition of atomizer wheels is essential to prevent such dangerous incidents.

The GEA Niro atomizer wheel is designed to withstand a high level of tensile stress by precise mechanical design, avoiding stress corrosion and securing an adequate cross-section of high strength material throughout the wheel. Materials that can resist the anticipated temperatures, corrosion and wear during atomizer operation are used throughout.

However, as the wheel is operating in an industrial environment, it is subject to degrading effects such as wear and corrosion, and therefore should be carefully monitored and maintained by its operator.

Operating and Maintenance Instructions

The safe operation of all GEA Niro equipment, including the atomizer wheel, can be achieved by using the operating and maintenance instructions provided, along with any other training programme for the customer.

It is imperative that operators are aware of the following:

- Never run the atomizer wheel at speeds higher than those specified or recommended by GEA Niro;
- Never run the atomizer wheel when it might be only partially assembled, i.e. without upper plate or with loose bolts;
- Never attempt an atomizer wheel repair;
- Only clean the atomizer wheel with approved liquids i.e. water and dilute organic acid and CIP liquids recommended for stainless steel surfaces. When in doubt, consult GEA Niro. Never use liquids that contain chlorine;
- Only use original GEA Niro replacement parts.

AFTER SALES SERVICE

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GEA Niro Certified Service Programme

The GEA Niro Certified Service Programme is a voluntary programme that supplements the wheel inspections performed by on-site plant operators. The programme requires the entire atomizer wheel to be returned to a GEA Niro office for inspection, repair and spin testing.

The service procedure begins with a careful inspection of possible degrading effects. Unless the wheel is considered to be unsafe or damaged beyond repair, the service also includes repair or replacement of damaged parts. Finally the wheel parts and the assembled wheel are accurately balanced.

Service Intervals

GEA Niro recommends that every atomizer wheel is submitted to GEA Niro at specific times in its operational life.

The recommended service points are:

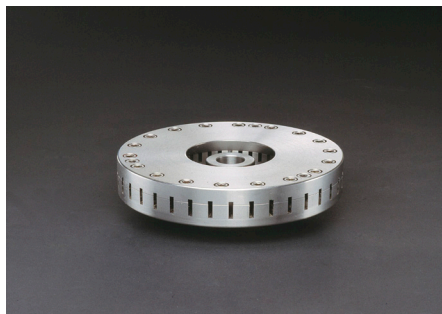
- For stainless steel wheels containing wear-resistant parts:

- 1st service: After 2 years of operational duty
- 2nd service: After 4 years of operational duty
- 3rd service: After 5 years of operational duty

- For stainless steel wheels containing no wear-resistant parts:

- 1st service: After 5 years of operational duty
- 2nd service: After 8 years of operational duty
- 3rd service: After 10 years of operational duty

- Thereafter service is recommended each year



These are only [guidelines](#) and are not considered an extension of warranty. Any sign or suspicion of damage should be taken seriously.

If in doubt about the condition of the wheel, it should be returned in its entirety to GEA Niro for a certified service inspection, repair, and spin test.

Concluding Remarks

Since the operator has control of the operational conditions, GEA Niro cannot guarantee wheel performance beyond that provided in its contract terms. However, GEA Niro and every plant operator have a common interest to avoid the potential risk of personal injury and damage to equipment.

Therefore, operators are urged to be aware of the need to give proper attention to the condition, operation and maintenance of atomizer wheels as outlined in GEA Niro's operating and maintenance instructions, and to use only original GEA Niro replacement parts.

GEA Niro strongly advises customers to use the GEA Niro Certified Service Programme as part of a preventive maintenance programme.