

DRIVE SYSTEMS FOR THE FOOD INDUSTRY

CASE STUDY: AMBIT PROJECTS



**Belt conveyors in
cleaning process.**



**Corrosion protection through
nsd tupH sealed surface
conversion.**

**Versatile drive systems
for the food industry.**



**SMI worm gearboxes
Efficient and durable.**



**Smooth-surface motors
Perfectly hygienic.**



Machine manufacturer Ambit Projects uses NORD drive products in systems for rinsing agricultural produce. The nsd tupH sealed surface conversion system thoroughly protects the drives against corrosion.



FOOD & BEVERAGE INDUSTRY

Belt conveyors



SMOOTH-SURFACE MOTORS SMI WORM GEARBOXES

Corrosion protection
through nsd tupH

PROJECT CHALLENGE

One of Europe's leading fresh produce growers is a long-time customer of Ambit Projects, a British OEM. The end customer required a major upgrade and line expansion of a vegetable trimming and packaging machine. The machine removes undesirable plant parts such as roots and then washes, inspects, and packages the produce.

Aggressive atmosphere. – Incessantly exposed to this humid environment as well as to regular washdown with water and foaming agents, conventional drives had been prone to suffer. Even a high-specification anti-corrosion coating had not proven enough to provide lasting protection. The paint on the existing drives had cracked and threatened to peel off. As a result, shielded protection was required in order to prevent contamination of foodstuffs. Worst affected were the drives on the belt conveyor in close proximity to the washing

process that rinses off soil and stones under high pressure.

Integrated protection required. – The OEM eventually looked for more suitable belt conveyor and other drives, notably ones that would not require additional shielding, but come with built-in corrosion protection. With such new drive solutions, Ambit Projects were hoping to dramatically reduce their own as well as their end customer's maintenance effort and expenses. Though corrosion protection was a chief concern, of course, any new drive products also had to meet the food industry's hygienic requirements and withstand disinfectants and cleaning agents.

FOCUS ON THE CUSTOMER



Ambit Projects Ltd., based in the English town of King's Lynn, has been designing and manufacturing custom machinery for cleaning, processing, and packaging of agricultural products for over 25 years. Based on food-grade materials, such equipment is engineered with a focus on low-maintenance designs as well as high energy efficiency and environmental friendliness.



„nsd tupH drives provide long-term protection and completely reliable performance. We will certainly be using nsd tupH protection again in future developments.“

**PAUL OAKLEY,
SALES MANAGER FOR AMBIT PROJECTS**



APPLICATION SOLUTION

Ambit Projects replaced all conveyor drives and the drives in the retrofitted machine sections with new nsd tupH units from NORD. The nsd tupH sealed surface conversion system profoundly fortifies aluminum surfaces by permanently improving the material properties through an electrochemical process. Casings treated in this way are extremely robust and will not corrode even if they are mechanically damaged.

Optimized for the food industry. – The drives used in the vegetable processing plant are fitted with stainless steel standard parts as well as stainless steel output shafts by default. The systems combine non-ventilated smooth-surface motors and SMI worm gearboxes. NORD has optimized these components as well as a range of additional gearbox types for hygienically demanding applications. Smooth surfaces all around and no dead spaces anywhere ensure that

dirt cannot easily accumulate and that rinsing liquids run off easily. The gearboxes of these systems are filled with food-grade oil.

Extra-tough in all respects. – NORD drive systems with nsd tupH surface protection are approved for food applications in accordance with FDA title 21 CFR 175.300. They have passed a wide range of demanding examinations:

- blistering test per ASTM D714,
- corrosion test per ASTM D610-08,
- scribe test per ASTM D1654-08 according to DIN EN ISO 2409,
- salt-spray test per ASTM B117-09 according to DIN EN ISO 9227, and
- chipping test per ASTM D3170 (Gravelometer test).

Furthermore, they have been successfully tested for resilience against common cleaning agents in the food industry.



Corrosion-resistant. – nsd tupH converts and seals the surface of a drive system to withstand demanding operating conditions.

FOCUS ON THE PROJECT

For use in a food processing system, NORD supplied corrosion-resistant drive solutions combining smooth-surface motors and SMI worm gearboxes to the British OEM Ambit Projects. All drives feature nsd tupH sealed surface conversion treatment of the casings:

- They offer IP66/IP69K ingress protection and withstand high-pressure steam.
- They resist detergents with pH values from 2 to 12.
- Salt spray testing produced no corrosion after 2,000 hours.





**MORE NORD APPLICATIONS
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www.nord.com/references



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