DRIVE SYSTEMS
FOR BELT CONVEYORS

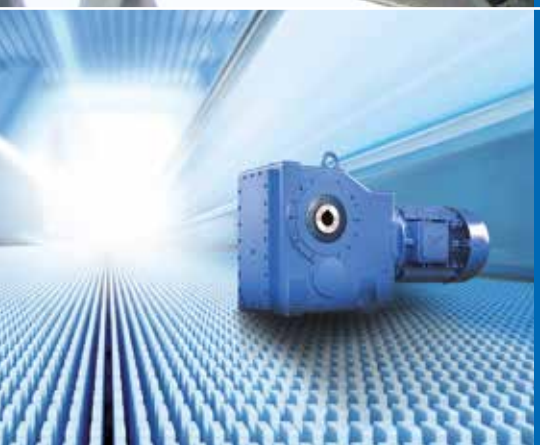
CASE STUDY: SMIL

NORD DRIVESYSTEMS

Bulk material conveying in quarry operations.

Resilient design for harsh conditions.

Long-life systems, easy maintenance.



NORD helical bevel geared motors.

Featuring mechanical run-back protection, geared motors for belt conveyors achieve excellent operational safety. These drive solutions are very durable – but, just in case, they also allow for swift repairs.

BUILDING MATERIALS INDUSTRY
Belt conveyors

GEARED MOTORS
Helical bevel geared motors

PROJECT CHALLENGE

Durance Granulats, a EUROVIA group subsidiary, operates a quarry in Gardanne in the South of France, where basic components for building materials are obtained and processed. Seeking to increase this site's production capacity, the company turned to SMIL, a metal construction specialist, to commission the design and complete installation of an aggregate processing plant comprising 25 new belt conveyors. The previous, now-obsolete plant was partly demolished and completely retrofitted in the process.

Exploit more sources. – One key goal for the new installation was to enhance capacities to enable the exploitation of three different sources of material, rather than just one as before. After the completion of the project, sand, gravel, crushed stone, and run-of-mine materials can now be obtained in the quarry itself as well as from a second site 30 km away. These products are primarily used for sub-base and base layers in road construction. The third source is a recycling facility, where materials are recovered from the rubble of public construction projects. SMIL's new conveyor system provides links between the point of arrival of the raw materials, the processing machinery, and the point where products leave the quarry.

Long-life design. – SMIL's belt conveyors required drive solutions that would not only enable safe operation from the start, but ensure reliable performance in the longer run as well. Still, if any motor failures should occur, the drive system had to allow for flexible replacements.

FOCUS ON THE CUSTOMER

A metal construction specialist based in Frontignan near Montpellier, SMIL – short for Société de Montage Industriels du Languedoc – is a manufacturer of complex conveyor systems, usually designed for heavy loads. The company primarily serves customers in three markets: quarries and mines, industrial buildings, and aeronautical and marine applications. SMIL engineers and manufactures custom systems and provides all necessary on-site installation services.

“NORD offered the best solution, both technically and economically. We were looking for robust and particularly reliable drive systems.”

Franck Herry, Project Manager at SMIL

APPLICATION SOLUTION

A tight budget notwithstanding, NORD was able to provide highly reliable, safe, and easy-to-service drive solutions for the conveyor installation.

Integrated safety. – The belt conveyors were equipped with SK 90 series helical bevel geared motors, which are sealed to IP55 standard and feature an anti-run-back system. The latter is a mechanism that operates when the conveyor is halted to prevent the belt from running backwards under the weight of the load. This device is incorporated into the gears. NORD supplied a total of 26 geared motors rated from 2.2 kW to 22 kW.

Robust and user-friendly. – One-piece UNICASE gear housings with integrated shaft bearings provide for maximum torsional strength and excellent radial and axial load capacities. Since all bearing surfaces are machined in one operation, these gears achieve a particularly long lifespan. Pre-assembly was carried out in SMIL‘s workshop to fit the geared motors to the conveyor heads. Universal motors with IEC fittings are used to allow for quick and easy replacements if a motor does break down.

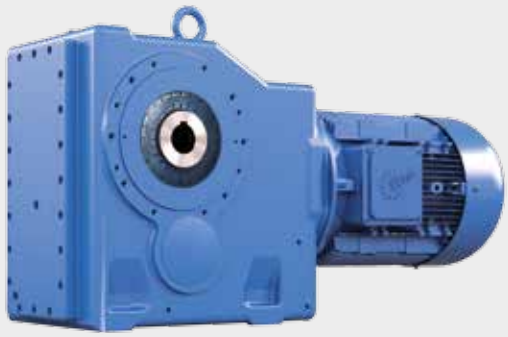
Comprehensive cooperation. – In the early engineering stage, SMIL also drew on support from NORD teams who assisted in the specification of the most suitable equipment for the target application. While work on the complex Gardanne project was underway, NORD drive systems were also selected for several other conveyor belts installed at another plant operated by Durance Granulats.

Tough design. – Robust NORD geared motors are designed to withstand harsh conditions at the quarry.

FOCUS ON THE PROJECT

At the Durance Granulats quarry in Gardanne in the South of France, a new intra-logistics system supplied by SMIL considerably enhances the plant‘s productivity. New belt conveyors equipped with SK 90 series helical bevel geared motors from NORD enable

- the exploitation of three sources of material instead of one, and
- a 25 % increase in production capacity to a new total of 500,000 tons of processed material per year.



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- Airport baggage handling
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INDUSTRIAL MOTORS AND GEARS LIMITED

Industrial Motors and Gears Limited

Tel. 01642 467999

Mob. 07815 889460

Fax. 01642 467988

Email. sales@imag-uk.com

www.imag-uk.com

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