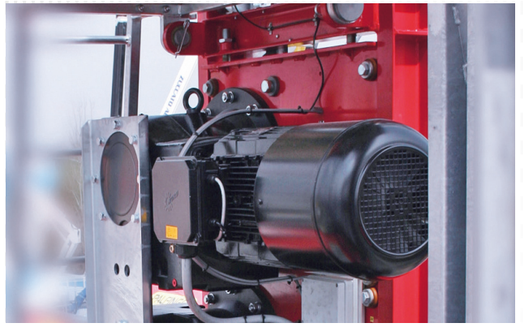
Further references
and applications:

www.nord.com/references

Strong and reliable,
in any weather

Fail-safe, fast,
continuously available



Multi-ton loads
precisely positioned

Drive solutions for construction hoists

Case study: STROS

DRIVESYSTEMS

EN

Headquarters
Getriebebau NORD GmbH & Co. KG
Getriebebau-Nord-Str. 1
22941 Bargteheide, Deutschland
T: +49 45 32 / 289 0
F: +49 45 32 / 289 22 53
info@nord.com

Members of the NORD DRIVESYSTEMS Group

EN – CS0007 Part No. 6066402 / 4914

Several skyscrapers in the "Moscow City" construction project were built using hoist solutions from Czech manufacturer STROS. On structures rising taller than 300 m, strong NORD drives ensured that the hoist cages moved safely up and down in any weather.

Building construction
Personnel and material hoists

Geared motors
Helical bevel geared motors

Frequency inverters
Cabinet-mounted inverters

"Whatever new challenges we meet, NORD provides consulting and tests and develops a solution. These units are tailored exactly to our needs."

Zdenek Coubal,
STROS CHAIRMAN

Project challenge

The "Moscow City" business complex adds a number of high-rise landmarks to the Russian capital's skyline. For instance, the much-vaunted construction project includes the Mercury City Tower, whose 340 m currently make it Europe's highest building. Such long ways up require construction hoists capable of traveling quickly, even in adverse conditions with wind speeds up to 20 m/s.

Sky express. – STROS Sedlčanské Strojírny, a. s., was commissioned to supply mast-climbing equipment for eight new buildings in the "Moscow City" complex. The Czech company manufactures hoists systems that currently feature capacities up to 3,200 kg and speeds of up to 100 m/min. Such systems are fitted with a unique safety device – an original STROS development. This mechanism is triggered whenever the nominal, safe lowering speed is breached: a gear on the output shaft then engages a pinion, which gradually stops the hoist cage. However, in order to avoid such emergencies altogether, a sophisticated drive solution engineered by NORD ensures highly reliable operation.

Double back-up. – If a hoist is out of order, an entire construction site may come to a standstill. Hence, hoist drive solutions must take every available measure to ensure maximum reliability. In order to prevent costly downtimes, NORD DRIVESYSTEMS' concept for STROS hoisting equipment is therefore based on up to three autonomous geared motor units. They are complemented by an intelligent frequency inverter that provides for particularly smooth movements.

Application solution

The drive system for STROS construction hoists in "Moscow City" comprises three helical bevel geared motors with external braking resistors. The motors are equipped with electromagnetic disc brakes that can be manually released. NORD's full-scale custom solution also features an inverter with hoist functionality that controls all three motors. Mounted inside a control cabinet, this intelligent controller enables soft starts and stops and ensures high leveling precision.

Long-standing, comprehensive cooperation.– NORD first devised a reliable custom drive system for STROS in 1997, and has been the hoist manufacturer's sole source of drive solutions for the past 15 years. NORD has also supported STROS in their recent foray into new market segments: besides construction hoists, the Czech company now also focuses on manufacturing hoists for permanent use on buildings, including e.g. power plant chimneys. All of these systems are equipped with NORD drives as well.

Application-specific engineering. – Instead of standard gears, STROS is supplied with customized units assembled exactly as requested. Depending on the project, some of these gears are e.g. fitted with reinforced bearings, or use special gear case materials, or are ATEX and NEC-compliant. Cabinet-mounted inverters are available in different performance classes and with scalable functionality. In addition to features like emergency evacuations, optional functions include e.g. positioning and safety features like STO and SS1 for safety requirements up to SIL 3.

Strong and safe
Electronically controlled geared motors gently move loads of several tons.

Customer profile

STROS Sedlčanské Strojírny, a. s., is the largest manufacturer of construction hoists in the Czech Republic. The company produces three new systems per week for customers around the world, and also provides maintenance services on request. The STROS portfolio includes personnel and material hoists, special and permanent elevators, suspended platforms, work platforms, and custom-engineered projects. The first systems in the tried and tested NOV hoist series originally went into production in the 1960s.

The project at a glance

In Europe's largest metropolis, STROS construction hoists helped erect eight high-rise buildings for the "Moscow City" project, including the Mercury City Tower that now stands some 340 m tall. A NORD solution featuring three electronically controlled helical bevel geared motors served as the drive system for this skyscraper's hoist featuring

- a lifting height of 350 m,
- a load capacity of 2 tons, and
- a speed rating of 70 m/min.