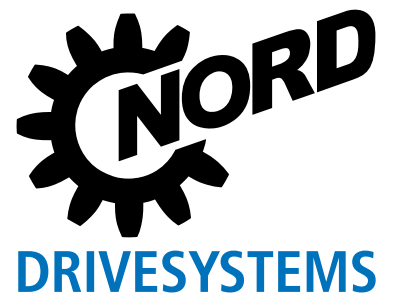


# DRIVE SYSTEMS FOR CLEAN RESULTS

CASE STUDY: GONDOLAS IN DESIGN, S.L.



**Lifting & Turning**  
Helping You Reach Every Corner



**Smooth & Precise**  
Gentle Positioning



**Safe, Wear Resistant & Reliable**  
Excellent Durability and Performance



**NORD Gear Drives**  
Compact, High Capacity



**NORD AC Vector Drives**  
High Performance, Innovative Design



*Gear Drives and AC Vector Drives featuring precise positioning capabilities are used to lift and turn a gondola designed for the “New York by Gehry” skyscraper. It enables maintenance and cleaning staff to reach every angle of the complex facade.*

## PROJECT CHALLENGE



**Construction Industry**  
Facade Cleaning Gondola



**Gear Drives**  
Parallel Helical CLINCHER™  
Helical In-Line &  
Helical-bevel Gear Drives



**AC Vector Drives**  
SK 500E

Since 2011, a new skyscraper stands tall on the island of Manhattan, not far from the Brooklyn Bridge. Known as “New York by Gehry,” in reference to the renowned architect, Frank Gehry, this high-rise is currently one of the tallest residential towers in the world. Standing 76 stories tall, the structure’s facade is covered in irregular waves of stainless steel, which provide for a spectacular appearance due to ever-changing light reflections. This spectacular design presented a major challenge during the development of a functional cleaning and maintenance gondola that accesses every spot along the undulating surface.

### **A Gondola for an extravagant facade**

Góndolas in Design, S.L., worked with NORD DRIVESYSTEMS to develop a rugged and reliable customized solution. The unique

system was designed to ensure reliable operation for many years. Due to the extensive surface area, the cleaning gondola is used daily, except during extreme weather conditions.

### **Gentle, precise, reliable**


Powerful gear drives and AC vector drives are required to operate this drive solution. The gondola has to be lifted, lowered, and rotated, the weight of a telescopic arm must be adequately compensated for, and the precise control over all movements must be ensured at all times. Excellent product and service quality as well as the availability of worldwide technical support for the drives were equally important, since they were crucial for the overall implementation of the gondola installation.

## FOCUS ON THE CUSTOMER



Góndolas in Design, S.L., develops and manufactures custom maintenance and cleaning systems for building facades. GinD equipment meets the highest standards of quality and safety and is used in many countries throughout North America, Europe, Africa, the Middle East, and Asia. The Madrid-based company is known for its innovative gondola designs created to meet distinctive challenges presented by buildings with extraordinary architectural features.





*“NORD services are available around the clock. All of the challenges which have arisen during the course of the project were successfully resolved by NORD.”*

**Hugo Donoso, Managing Director at Gind**

## APPLICATION SOLUTION

The gondola solution for the skyscraper consists of a telescopic arm, a specialized guiding system along the facade, and a multi-telescopic platform for accessing the inward curving surfaces of the building. NORD drive technology lifts and rotates the platform, counterbalances its weight, and drives the unit all around the building.

### Gently moving up and down

For lifting, NORD supplied a Helical-Bevel gear drive with a brakemotor that turns the gondola's cable drum. An SK 500E AC drive provides the gentle starts and stops of the gondola. It also ensures that the gondola remains properly positioned relative to the building's facade when the telescopic arm is in use.

### Keeping the balance

The counterbalance component is fundamentally important for the system. Without it, the entire installation would have to be built much more durable, heavier, and more costly. The counterweight is moved forward and backward by a Helical-Bevel gear drive whenever the telescopic arm is extended and retracted. A second SK 500E AC drive provides acceleration/deceleration ramps to move the mass of the counterweight.

### Accessing all sides

Two Helical In-line gearmotors power a gear ring in order to turn the gondola so that the machine may be used on each and every surface area of the building. Included in this piece of the equipment, another SK 500E frequency inverter supports the soft start and stopping movements of the gondola, and provides variable rotation speeds.



**Safe At Any Story**  
NORD drive technology gently moves the gondola and ensures precise positioning

## FOCUS ON THE PROJECT

NORD drive technology manages the lifting, turning, and exact positioning of the gondola system used to clean the facade of the Gehry skyscraper in New York. In addition, the drive solution provides:

- 24% higher radial stress tolerance for the gearmotors in comparison to other leading manufacturers
- 25% higher overload capacity on the frequency inverters in comparison to AC vector drives from other leading manufacturers



## MORE REFERENCES AND CASE STUDIES MAY BE FOUND AT :

- [www.nord.com/references](http://www.nord.com/references)



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### **Global Vision, Local Support**

NORD makes its wide product range easily available through a global network that includes representation in over 60 countries. By providing all of our customers with prompt delivery, and expert support services, we are firmly committed to exceeding customer expectations and being responsive to the ideas and specifications of every customer, anywhere in the world.