

IMS.81 Pro LN

Barrier & Access Systems





Building Engineering / Barrier and Access Systems

Just walk in? Safety first!

Would you allow everyone to just walk into your living room? No? Nor would we! Especially for companies and public institutions, high-performance access and barrier systems are of utmost importance to consistently ensure safety and control. We from IMS Gear have the appropriate planetary gears.

- Compact desing
- High power density
- Long service life

Consistently Successful.

With its modular system, IMS Gear's spectrum ranges from quick quality solutions to customer-specific adaptations and sophisticated special gear configurations. The same applies to our solutions for modern access and barrier systems.

Open. Slose. Open. Close.

Especially in peak times, access systems need to be **quick, low-noise and reliable**. Eltrex Motion B.V. Together with Bühler Motor GmbH and for the manufacturer Royal Boon Edam B.V., Eltrex Motion B.V. (The Netherlands) has developed a drive solution for worldwide use in powerful sensor barriers. The integrated sophisticated 3-stage planetary gear is from IMS Gear. Boon Edam is one of the leading companies worldwide for the setup of future-oriented mobility hotspots to control large crowds of people that are increasingly common at airports, stations, hotels, clinics or administrative and office buildings.

“What characterizes a successful access system? It has to be slim, show harmonious proportions and take up little floor space. The focus is on the sensor barriers: In particular in peak times, they need to be quick, silent, and reliable. Low Noise planetary gears from IMS Gear provide the perfect solution.”

Slim, Low-Noise and yet Quite Powerful

Up to 30 moves per minute. Year after year. And all this in perfect shape: “An access system that aims to be successful in the market needs to be slim, have **elegant proportions** and take up **little floor space**, e.g. to adapt into modern foyers”, IMS Sales Engineer Andreas Sigwart summarizes the essential challenges. The slimmer the solution, the more systems can be

installed in a given space - and accordingly scale up the capacity.

Low noise is another important criterion. And the noise that is unavoidable must not be perceived as unpleasant. Translated into the technical requirement this means: Transmit high torque in smallest installation space, run smoothly, control high radial load.

Modularity as Trump Card

“The **modular system from IMS Gear** has proved itself all round in this project”, Andreas Sigwart states. The schedule was tight as the customer was looking for a gear specialist that could implement the requested solution within months. “Our long-time partner Bühler Motor gave us the hint that IMS Gear would be a competent partner”, reports Eric Peeters, Key Account Manager at Eltrex. And the hint proved a hit. “The modular system allowed to test the complete mechatronic system with motor, gear drive, brake and control promptly, repeatedly and with different gear reductions and

configurations. No other company could offer that”, Peeters confirms. “You can calculate a lot, but only tests are really meaningful; you just have to try things out”, Sigwart adds. The customer was highly satisfied: Especially the short response times convinced the Dutch group of companies, because they save time to synchronize the remaining system components and still allow to realize a **short time-to-market**.

Power in Motion

A strong solution was sought-after: After all, in the single door version of the system a heavy safety glass panel needs to be moved. In this case, motion means: **Accelerate quickly, brake sharply - with minimum noise emission**. In the face of high load requirements, the IMS Gear engineers selected the biggest planetary gear possible for the installation space

available, in this case with a diameter of 72 millimetres. The first stage that reduces the major share of the electric motor’s high rotational speed consists of plastic planetary gears - for the **effective reduction of noise emissions** while opening and closing.

Hybrid Material Combination - the Best from 2 Worlds

IMS Gear has many years of experience with selecting the suitable plastic and the adequate gearing for the material. In this case, a helical gearing ensures low-noise operation and smooth bidirectionality for the steady switch from open to close and open again. The second and third stage - spur geared and in metal only - feature lower rotational speeds of the planetary gears and thus in general less noise, but in the third stage the full torque. Due to the hybrid material combination **two competing objectives - low noise and the transmission of high torques - can be combined in one gear drive.**

In face of the rapid switching of the passage and the high requirements to convenience the bearing must be backlash-free. This challenge also entailed comprehensive tests of various bearing types that resulted in the decision to use two ball bearings. The **high variability** of the IMS Gear solutions from the modular kit at the output side allows the customer to attach an extra-long flange to achieve the maximum possible distance between the ball bearings. In this way, the radial forces of the glass door can be absorbed even in the heaviest model without applying any load to the gear drive/motor unit.

Quick Derivation

"The modular approach of IMS Gear has helped us across all project stages to meet the many different requirements of the complex mechatronic overall system, because modified designs have always been quickly available", Peeters points out an important advantage. And that's not all: The ability of IMS Gear to generate derivatives from the modular system can be implemented here in many ways. Thus, depending on the concrete application, the drive solution is available in different gear reductions, and for models with a lighter glass door, e.g. the "Speedlane" from Boon Edam, also with a smaller gear drive with a diameter of 62 millimetres. What exactly is the modular system about? **Shorter time-to-market and economic benefits, because solutions can be adapted to the actual requirements.** Only IMS Gear can do that!

The end customer applies the resulting solution in various ways. The number of airport users or visitors to company headquarters and administrative buildings is increasing steadily so that security staff is finding it ever more difficult to determine who is allowed to enter a certain building tract and who isn't. Versatile security gates helping to make sure that only authorized visitors gain access to the protected areas of a building while simultaneously allowing a high throughput of visitors are therefore important installations - in particular against the background of **increasing safety requirements.** Access systems with IMS Gear technology are already being used in bank and office buildings as well as in public institutions. "The products from IMS Gear are robust, reliable and low noise. The last point is particularly important as it goes well with the high-quality touch & feel of the Boon Edam products", a spokeswoman of Boon Edam said.

Summary

Sensor gates are real endurance runners. Like the planetary gears from IMS Gear. With this application, the advantages of the modular system come into effect in many ways:

- **quick and reliable assessment of the technological feasibility**
- **short-term availability of modified samples in the development and coordination process**
- **implementation of proven materials and gearings**
- **clear paths to derivations**

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