Ultra High-speed Elevator

Ultra High-speed Elevator are advanced systems designed for fast and safe transportation in high-rise buildings. These elevators integrate state-of-the-art equipment and control technologies.

High-speed elevators reduce travel time within buildings, enhancing residents' convenience and quality of life. Additionally, energy-efficient systems help minimize operational costs.



▲ The cable-type capsule in high-speed elevators minimizes operating noise.

Issues to Tackle

- Elevator speed in high-rise buildings often leads to long waiting times for building transportation due to increased usage during peak hours.
- ☑ High-speed elevators in tall buildings can cause discomfort such as ear pressure, nausea, and dizziness during operation.

Expected Benefits

- ☑ Faster vertical transportation in high-rise buildings reduces waiting and travel times.
- Utilizing streamlined capsule designs minimizes operating noise and resolves discomfort like ear pressure during operation.
- Improving efficiency and preventing issues through usage analysis and remote monitoring.

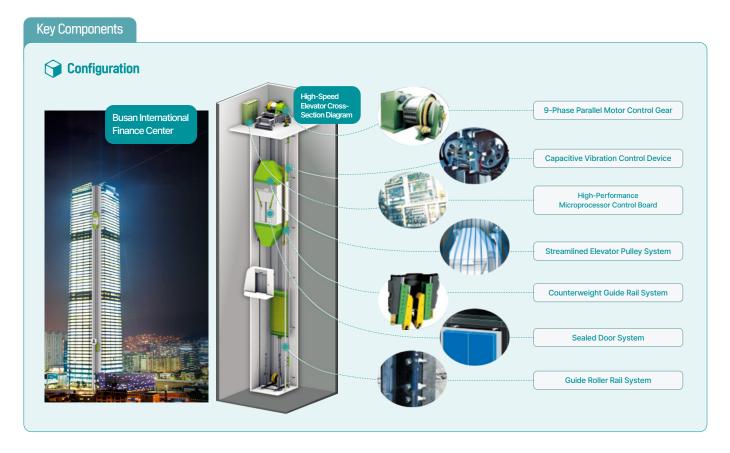
Key Services

- · Operates safely and swiftly using a 9-pole motor system (three 3-pole motors combined), enabling high-speed movement with stable control.
- * Controls cabin vibration and speed variation during high-speed operation to minimize discomfort, such as motion sickness.
- * Reduces air resistance with streamlined capsule structures and vibration control systems to lower noise and vibration.
- · Provides real-time status information, including automatic speed and location adjustments as well as monitoring via kiosks and monitors.



Use Cases

- · The Busan International Finance Center (BIFC) installed two high-speed elevators in 2014, reaching 600m. These elevators transport users from the ground to the 63rd floor within one minute.
- · Hyundai Elevator developed the world's fastest elevator in 2020, with a speed of 1,260m/min. It was tested at Hyundai Asan's testing tower, which features a height of 1,080m



Key Technologies

1. 9-Phase Motor System for High-Speed Operation

· Combines three independent motors to operate efficiently and prevent interruptions, even if a component malfunctions.

POINT Supports the highest levels of safety and stability with redundant systems

(up to 10 times enhanced safety compared to single-motor systems). 2. Active Vibration Control Device for Lateral Vibration Reduction

· A lateral vibration damping device based on real-time acceleration measurement and actuator response.

3. Streamlined Elevator Pulley for High-Speed Operation

· Features an aerodynamically optimized design, reducing air resistance during ascent and descent to minimize vibrations and noise.

4. Ultra-Fast Aerodynamic Capsule Application

· Biomechanics-based aerodynamic design to minimize air resistance during ascent and descent, reducing vibration and noise.

5. Emergency Stop Device

· A special ceramic material that maintains friction even at temperatures above 1000°C, using guide rails and an emergency friction braking system to prevent overspeed.

POINT NVH system (Noise, Vibration, Harshness) enhances quietness and stability.

6. Guide Roller Rails for Smooth and Stable Travel

· Uses neoprene materials and integrated rail designs to minimize vibrations and enable direct and steady elevator movement.

Guide Rollers and Rails to Reduce Vibration and Improve Straightness

· Guide rollers with high vibration insulation performance and high-precision rails are used to enhance straightness and minimize vibrations.

8. Rope Sway Prevention Device

· A system that predicts rope behavior in high winds or earthquakes, ensuring safety by avoiding rope collisions through limited or low-speed operation in designated safe zones.

Technology Companies

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