

# Buildings Systems



Heavy-duty control panel



Heavy-duty permanent magnet motor traction machine



**1** Drive and control equipment for 1,260-m/min elevator (left) and artistic impression of Guangzhou CTF Finance Centre (right)

## **1** Ultra-high-speed Elevator with World Record Speed of 1,260 m/min

The ultra-high-speed elevators with a rated speed of 1,200 m/min (72 km/h) that are being supplied to Guangzhou Chow Tai Fook (CTF) Finance Centre, a mixed-use skyscraper in Guangzhou, China that is due for completion in 2018, achieved what is now a world-record speed during operating trials conducted in May 2016. As a result of upgrades to control and safety equipment intended to improve drive, control, safety, and comfort, the elevator recorded a speed of 1,260 m/min (75.6 km/h) during on-site speed testing at the CTF Finance Centre. Formal certification of the speed was received in May 2017 from the National Elevator Quality Supervision and Inspection Center (Guang Dong), a public certification agency.

Hitachi intends to utilize the technologies for drive, control, safety, and comfort acquired in the process of obtaining speed certification to supply elevators that provide greater peace of mind and are more comfortable and convenient.

## **2** TX Series Escalator for Chinese and Asian Markets and the Middle East

Hitachi merged its Japanese and Chinese escalator businesses in July 2016, consolidating resources for both countries at Guangzhou, China. This was followed by the development of the TX series of escalators for shopping centers aimed at the robust Chinese market and markets elsewhere in Asia. The TX series was launched in August 2018<sup>\*1</sup>.

The TX series was developed to comply with the relevant laws and technical standards in each market, using existing technologies for safety and peace of mind as a base. For user comfort and ride quality, the functional design is based on the concept of an escalator that fits closely with the unconscious actions of users. It also achieves greater simplicity at the entrance and exit points (landings) by reducing the number of recesses and protrusions around the hand rail, and uses non-slip surfaces at these entry and exit points.

The TX series offers flexibility with a selection of various product specifications designed to cater to a diverse range of customer needs. By shortening the span dimensions<sup>\*2</sup> by 150 mm compared to previous models<sup>\*3</sup>, the TX series has made it possible to install escalators in more confined spaces.

In the future, Hitachi intends to win more orders from the Chinese and Asian markets by expanding its product range to meet diverse customer needs.

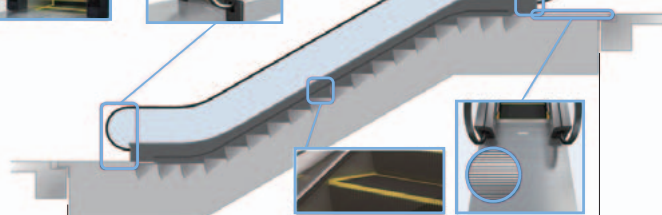
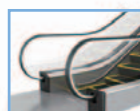
<sup>\*1</sup> First launched on the Chinese market in June 2017.

<sup>\*2</sup> The span between the beams for the upper and lower floors of the escalator.

<sup>\*3</sup> Compared to the earlier SX series model (based on research by Hitachi).



In conventional designs, parts of the frame covering the outer edges of the balustrade glass are prominently visible. The TX Series design minimizes these parts. The space available for installation of lighting fixtures had also been expanded, enabling enhanced lighting options for illuminating the entire balustrade surroundings.



The side portions of the escalator steps are 8 mm higher than the central portion. The skirts are fitted with brushes at foot level to alert users to their foot coming into contact with the sides

The landing plates at the entrance and exit points of the escalator are finished with a special surface.

The span of the escalator is 150 mm shorter than that of conventional designs, enabling installation in more confined spaces.

2 TX series escalator

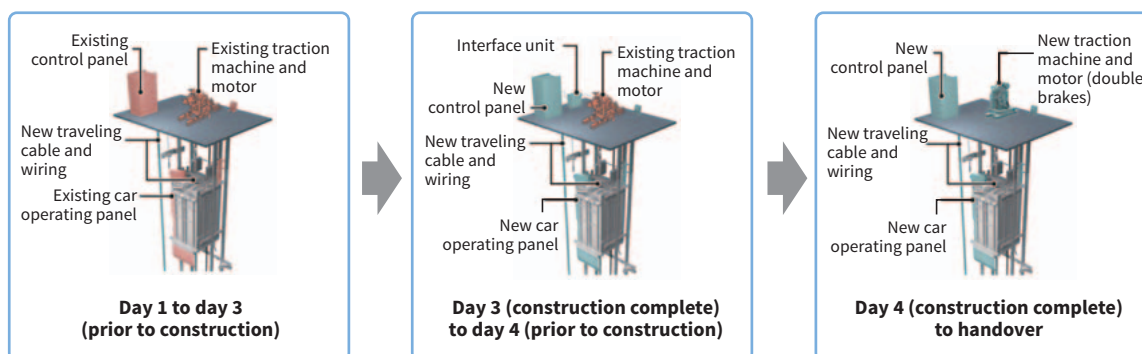
### 3 Modernization Package for Compliance with New Elevator Regulations Requiring that Elevators be Available Every Day, Even During Construction

Hitachi's modernization package for elevators that was first launched in 2012 allows customers to select from a range of upgrade options based on their requirements. Past practice for elevator upgrades, including Hitachi's modernization package, assumed that the traction machine and control panel would be replaced simultaneously. This required that the elevator remain out of service for five consecutive days,

making such upgrades impractical for some customers.

For its new modernization package, Hitachi has developed an interface unit that is compatible with both existing traction machines and the new control panels. This makes it possible to replace these two items of equipment separately as an elevator can now operate with its existing traction machine and a new control panel. This eliminates any all-day shutdowns and enables the upgrade work to be scheduled around the times of day when the elevator is in use at that particular type of building.

At the time of launch, the new package was available for approximately 10,000 of the



3 Replacement of traction machine and control panel using interface unit

standard Hitachi elevators that have been manufactured since 1986. In the future, Hitachi intends to expand the scope to a wider range of elevators to encourage their modernization. (Hitachi Building Systems Co., Ltd.)

## 4 Elevator and Escalator Maintenance Service

### Building Care Pack

To meet diverse customer needs, Hitachi has launched building care pack as a maintenance service for elevators and escalators that is split into two parts, one being a basic service for maintaining the core performance of the elevators and escalators, and the other a service with high added value that provides peace of mind and comfort.

Together with a remote intelligent diagnostic system offered as a basic service that provides monitoring, diagnosis, and inspection for elevators and escalators that is available at all times, 24 hours a day and 365 days a year, building

care pack also offers a choice of other added-value services so as to adapt flexibly to customer requirements. These include an automatic diagnosis/recovery system offered as a service that allows customers to temporarily restart halted elevators after an earthquake as well as to configure for themselves certain aspects of elevator control and the liquid crystal display (LCD) indicators in the elevator cars, and a remote intelligent diagnostic system for website access to maintenance reports that were previously issued on paper.

Hitachi is seeking to enhance safety and quality by working to further build on the remote intelligent diagnostic system and to develop predictive maintenance techniques that are able to detect and deal with the warning signs of elevator and escalator faults before they occur through the adoption of the Internet of Things (IoT) for maintenance and by integrating the skills of experienced technical staff. (Hitachi Building Systems Co., Ltd.)

#### Basic service

The remote intelligent diagnostic system provides high-quality maintenance that includes remote monitoring and diagnosis to detect and deal with the warning signs of elevator and escalator faults before they occur, 24 hours a day and 365 days a year

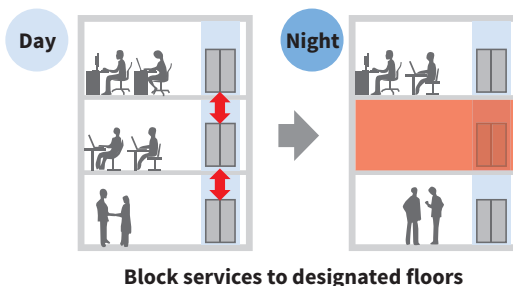


**Customer center that provides 24-hour/365-day support for elevators and escalators**

#### Services with high added value

Provides the ability to block selection of buttons for particular floors when user access to elevators is restricted, such as during the night

Use of LCD indicators in elevator cars to display useful information, such as news or weather



**Block services to designated floors**



**Weather report**

#### 4 Overview of Building Care Pack