

## ESCALATOR MODERNIZATION

Modernize your escalators  
with new user-friendly solutions  
for everyone



# ESMOTION

Efficient

Energy-smart

Safe & Reliable

Beautifying

# Even regular maintenance cannot prevent the deterioration of escalators.

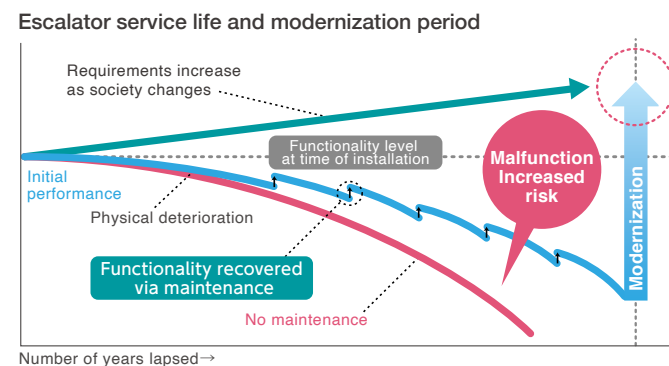
## Escalators have limited lifecycles.

Just like other building equipment, escalators also require updating. They are designed for a service life of approximately 20 to 25 years.



## Machinery deteriorates despite continuous maintenance.

Even periodical maintenance work cannot prevent progressive deterioration of core components such as drive unit and control equipment. Furthermore, updating to meet societal requirements is also necessary, including responding to newly introduced laws and regulations.



# Now... is the time for modernization!

# Times have changed. So have expectations for escalators.

The escalator—the face of your building and a vital mover of many people every day. Technological advances and new trends have driven the evolution of escalator performance and safety. But that's not the only change. The expectations that building visitors, tenants, and other users have for escalators have transformed dramatically.



Escalators have to do more than maintain their current level of operational performance.

## They must serve the needs of today's users.

**Key words for rethinking your escalators**  
**1 Downtime**  
 Building managers and tenants know that lost sales opportunities must be minimized.  
 Escalators are high-profile facilities essential to the movement of people in buildings, and that's why escalator stoppages significantly impact customer visitation. And, that impact is felt even more today as building management practices shift toward reduced staffing.

**There's a solution! See page 3**

**Key words for rethinking your escalators**  
**2 Energy Savings**  
 Today, a proactive commitment to saving electricity and reducing environmental impact is considered a core element of a building's value.  
 Older escalators are less energy-efficient than the latest models and thus increase building management fee. And, choosing products that use less power is one way we all can help prevent global warming.

**There's a solution! See page 5**

**Key words for rethinking your escalators**  
**3 User Safety**  
 As escalators become more widespread, the number of accidents involving them is growing, making safety more important than ever before.  
 Escalators can be found everywhere today. With more people riding escalators more often, falls and other escalator accidents are on the rise—a real risk that building owners cannot overlook.

**There's a solution! See page 7**

**Key words for rethinking your escalators**  
**4 Bad Impression**  
 "That place is run-down. Even the escalators are filthy." Escalators can make or break your building's reputation.  
 People's perceptions of a building are often shaped by the impression created by just one part of it, such as the restrooms—or even the escalators. Discolored floor plates, handrails dulled along their center, and other blemishes could leave visitors with a bad impression of your building as a whole.

**There's a solution! See page 9**

# 1

Key words for rethinking your escalators

## Downtime

### How do long escalator stoppages affect shops and other tenants?

The tendency for building facilities to fail rises as they age and are exposed to various environmental factors. Escalators are no exception.



### Sales opportunities

#### Long stoppages negatively affect sales opportunities.

Escalators quickly and easily convey a large number of people. When escalators are out of service, customers are less likely to visit stores and other establishments on higher floors. As a result, even just one hour of downtime can negatively affect sales opportunities, much more than is the case with elevator stoppages. Naturally, the longer the downtime, the bigger the impact.

### Burden on staff

#### Building staff are confused because they don't know what's wrong with the escalator until a technician arrives.

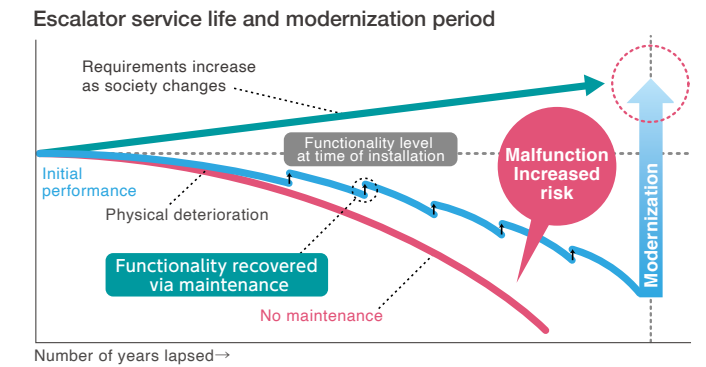
In addition to inconveniencing visitors, escalator stoppages can increase the workload of the building personnel, as they may have to put their regular duties aside to announce the service suspension, guide visitors to other routes, call for maintenance, and perform other extra tasks. This impact is becoming greater today, as more and more buildings operate under reduced staffing.

## ESMOTION

The key to preventing lost sales opportunities: Reducing the risk of unplanned stoppages, and quickly restoring service when they do occur.

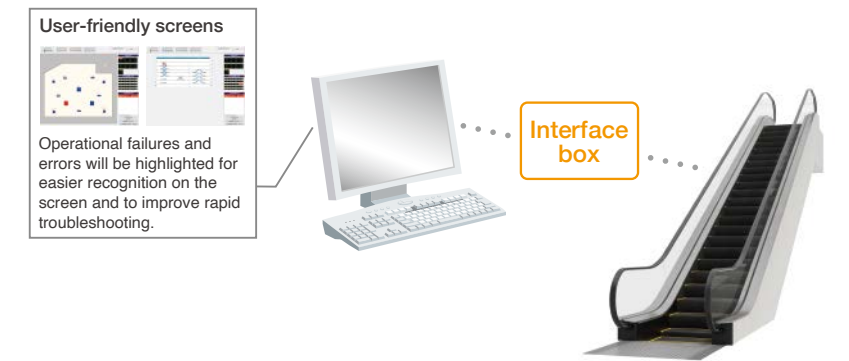
### Improve reliability by modernizing drive unit and control panel.

The service life of the core components of an escalator is about 20 to 25 years. Physical deterioration of escalators over long-time use is unavoidable. Renewing the components in a timely manner is advisable, as it can be difficult to procure the parts in the event of a breakdown and the repair time can be long.



### Upgrading to MeEye remote monitoring system enhances building management.

MeEye allows you to continuously monitor the operational status of your escalators from a single computer. It immediately notifies the building manager of problems that occur, facilitating early restoration of service.



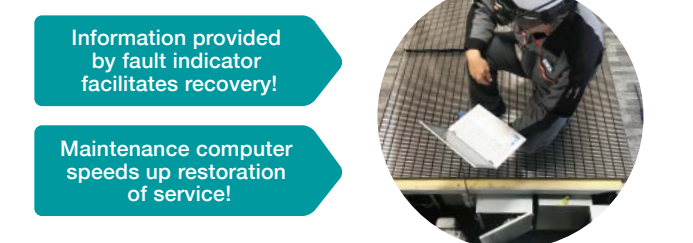
### Fault indicator makes it easier for you to determine if operation can be resumed.

The fault indicator notifies building management staff of the occurrence of faults in escalator operation. The indicator is designed to enable the staff to determine whether they can place a stopped escalator back in service, and thus avoid unnecessary suspensions that would have occurred if they had to wait for technicians to arrive and assess the situation. This is a big plus for buildings that operate with reduced staffing.



### Maintenance computers streamline recovery.

The maintenance computer enables technicians who arrive at the site to grasp the situation and perform the maintenance efficiently, thus reducing restoration downtime.



The applicability of the equipment and optional features in this brochure depends on the escalator currently in use and modernization specifications. Please consult our local agents for your escalator planning. We can also provide information on how to meet the legal requirements.



# 2

Key words for rethinking your escalators

## Energy Savings

Milestones for innovation and energy efficiency in our escalators

Decade	1950~	1960~	1970~	1980~	1990~	2000~	2010~	2020~
Our escalator series	L series (1952)	D series (1959) M series (1958)	E series (1965) K series (1969)	W series (1965)	G series (1977) A series (1979) ES-A series (1972) K-A series (1972)	N series (1982) J series (1986) A+J series (1988)	Z series (2007)	u series (2020)
Drive unit	Worm-gear			Helical-gear Energy savings: Approx. 20%				
Motor drive	AC1 control						VVVF control	Optimum VVVF control technology
Lighting	Fluorescent light						LED	
Automatic operation (Optional)	Stationary in stand-by Energy savings: Approx. 30%			Slow operation in stand-by Energy savings: Approx. 20%		Energy-saving mode Energy savings: Approx. 10%		
Power consumption	100%		Approx. 70%		Approx. 50%			Approx. 40%
CO <sub>2</sub> emissions	Approx. 5.7 (t/year)		Approx. 4.0 (t/year)		Approx. 2.9 (t/year)			Approx. 2.3 (t/year)

The table above shows the comparison of our escalators series for generations. See the next page for the amount of reduction in energy consumption and CO<sub>2</sub> emissions in actual modernization project.



### Energy conservation is more important than ever before.

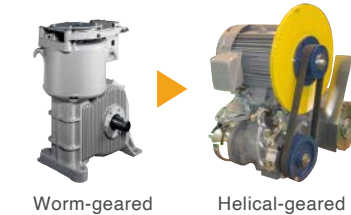
All around the world people have become more aware of the need to save energy. This can be seen in the various green building rating schemes that have been created to enhance buildings' environmental performance. Switching to equipment offering better energy efficiency not only lowers building operating costs, but also contributes to the effort to combat climate change.

## ESMOTION

Eco-friendly solutions enhance your building's reputation and reduce your overhead.

### Improve energy efficiency by modernizing drive unit and control panel

Replacing the existing worm-gear drive unit with a helical-gear drive unit used in new products significantly reduces frictional loss during driving. Further, it improves the efficiency of regenerative power utilization by approximately 30%\*, greatly enhancing energy saving performance.

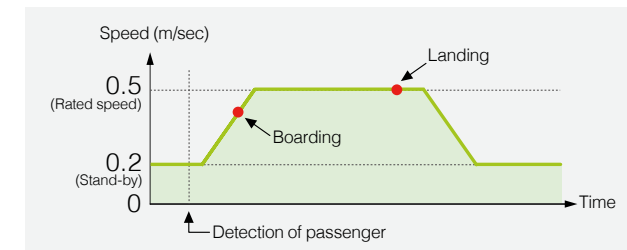


Up to approx. \*1 \*2  
**20% energy saved**  
Power conserved: approx. 1,900 kWh/year  
CO<sub>2</sub> emissions reduction: approx. 1.1 t/year

### Automatic operation – slow operation in stand-by

Up to approx. \*1 \*3  
**20% energy saved**  
Power conserved: approx. 1,400 kWh/year  
CO<sub>2</sub> emissions reduction: approx. 0.8 t/year

The escalator operates at low speed when no one is on the steps, and gently accelerates to the rated speed when the sensors detect someone approaching. Since it runs continuously, the travel direction is readily apparent to approaching users.

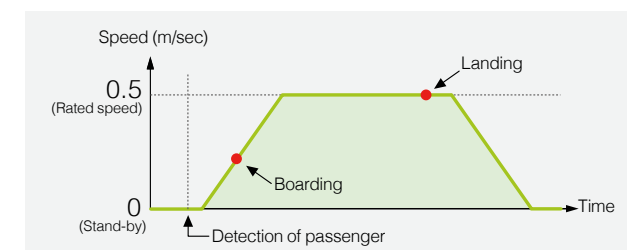


Time during which energy is used

### Automatic operation – stationary in stand-by

Up to approx. \*1 \*3  
**30% energy saved**  
Power conserved: approx. 2,100 kWh/year  
CO<sub>2</sub> emissions reduction: approx. 1.3 t/year

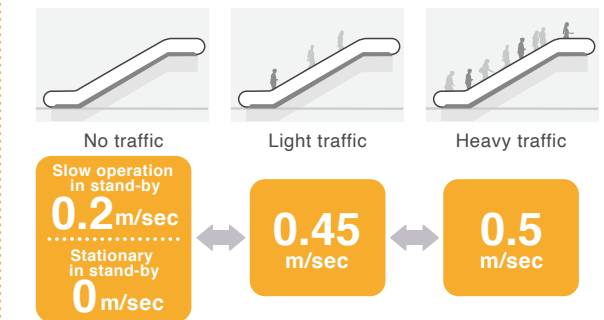
The escalator stops when no passengers are on the steps. When the sensors detect a passenger, the escalator gently accelerates to the rated speed.



Time during which energy is used

### Energy-saving mode

Energy-saving mode combined with automatic operation controls the travel speed automatically depending on the passenger traffic volume detected by the sensor. This mode saves energy without compromising riding comfort.



Extra improvement in addition to automatic operation

Up to approx. \*1 \*3  
**10% energy saved**  
Power conserved: approx. 700 kWh/year  
CO<sub>2</sub> emissions reduction: approx. 0.4 t/year

In the previous automatic operation, the installation of photoelectric-sensor posts for passenger detection was an obstacle to adopt the automatic operation, but now postless sensors are available for automatic operation. To install escalators with stationary in stand-by, direction indicators or signage (by the owner) are required.

The automatic operation that combines both stationary and slow operation in stand-by is also available.

### Switching to LED lighting

Replacement of conventional fluorescent lighting with highly energy efficient LED lighting can provide energy savings of **approx. 60% and a service life that is around 7 times longer.**



Notes [※1]: Calculated on the basis of the following conditions: Step width of 1m, rise of 5m (terminal drive), traffic of 100 passengers/hour, standby period of 30min/hour, speed of 0.5m/sec, 12 hours/day and 365 days/year operation. CO<sub>2</sub> conversion rate of 0.6kg/kWh [※2]: Compared with existing G series escalator. [※3]: Compared with existing J series escalator in continuous operation. [※4]: Calculated on the basis of the following conditions: Step width of 1m, rise of 5m (terminal drive), load rate of 40%, downward operation, speed of 0.5m/sec

The applicability of the equipment and optional features in this brochure depends on the escalator currently in use and modernization specifications. Please consult our local agents for your escalator planning. We can also provide information on how to meet the legal requirements.

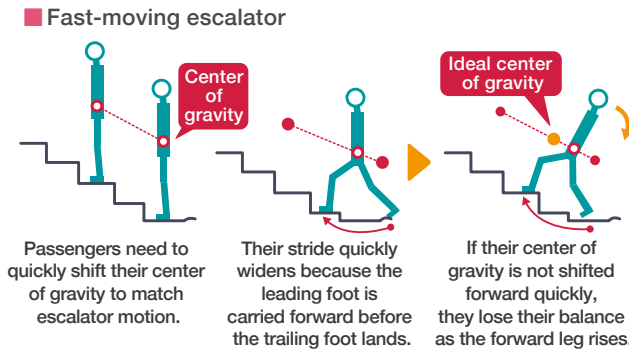
# 3

Key words for rethinking your escalators

## User Safety

### Seniors are prone to falls when boarding or exiting escalators. The main factor is operating speed.

Fast-moving escalators require boarding passengers to considerably extend their strides, making it easier for them to lose their balance. The percentage of people who experience difficulty in synchronizing their movement with escalator motion increases with age.\*1



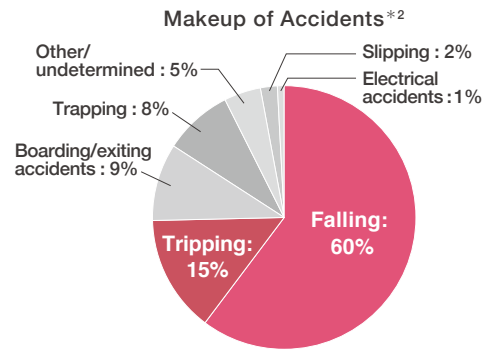
### Emergency stops can cause passengers to lose their balance and trip or fall.

For safety, escalators are equipped with emergency mechanisms that quickly shut them down when activated, such as when the emergency stop button is pressed or when a sensor detects that something has been drawn inside a handrail inlet. However, sudden stops can cause passengers to lose their balance and trip or fall, a serious concern that needs to be addressed in system design. This is why there is a growing demand for inverter control, which overcomes the limitations of older escalators by providing gentle deceleration.



### Tripping and falling account for more than 70% of accidents.

Tripping and falling make up more than 70% of all escalator accidents, and are mostly the result of poor riding practices, such as not holding on to the handrails. Moreover, tripping and falling can cause other passengers to fall or lead to injuries from dropped objects. These accidents attest to the importance of using handrails.



### Improper riding practices such as failure to stay within the yellow lines are also closely tied to accidents.

Another constant concern is accidents involving the trapping of objects such as soft sandals or low-hanging clothing between the steps and the skirt guards. These accidents can be easily prevented through proper riding practices, and hence there is a need to take action to encourage that behavior, such as enhancing the visibility of the yellow lines on steps and using other cues to help passengers avoid boarding near the sides of the step.

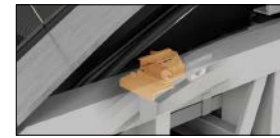


## ESMOTION

Up-to-date safety features reduce accident risk. And, they bring peace of mind to elderly people.

### Modernize safety switches to improve reliability

The reliability of existing safety devices can be greatly improved by replacing their switches with the latest design. Safety can be further enhanced by installing additional safety devices. For details, see page 14.



Skirt Guard Safety Device (SSS)



Handrail Speed Safety Device (HSS)



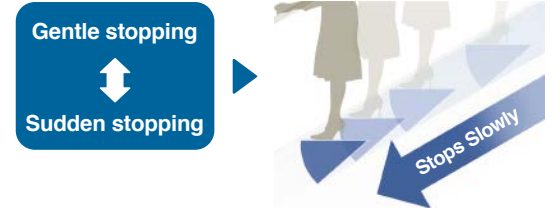
Step Chain Safety Device (SCS)



Comb-step Safety Switch (CSS)

### Slow-stop feature makes emergency stops safer

The sudden stop triggered by the emergency stop button or other safety devices can cause passengers to lose their balance and fall. This function stops the escalator gently to prevent the passengers from falling. Safety can be further enhanced by the mechanical structure that stops the escalator gently in case of power outage.



### Enabling elderly people to confidently board & exit

Elderly people and children can fall when they get on or off an escalator because their steps are small, and they have difficulty in stepping on or off the steps moving fast. Operating the escalators at lower speed ensures a safe and comfortable ride for all passengers.

### Foot-level illumination and contrastive flooring help passengers board safely.

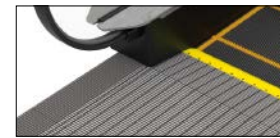
The step demarcation lighting and comb light illuminate passengers' steps to increase visibility at landing areas. Also, the floor plate pattern provides a visual guide for safe landing. These features prevent passengers' shoes or skirts from getting caught in the escalator.



Step demarcation lighting (Shows the step boundaries)



Comb light (Illuminates passengers' steps)



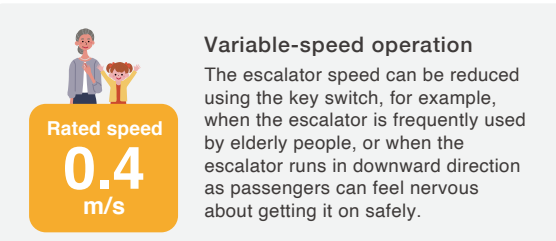
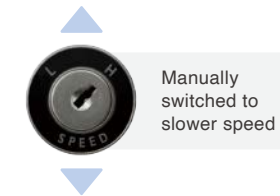
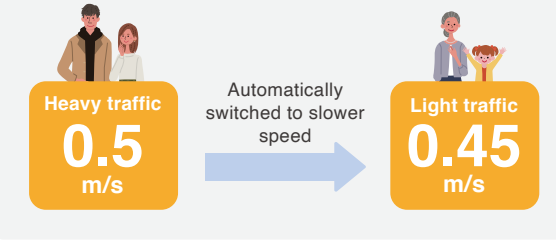
Floor plate pattern (Guides passengers to safe landing position)

### Renovating handrails encourages their use

Replacing the handrails gives the escalator a fresh, brand-new look. Various colors are available so that the escalators match your building interior.



### Energy-saving mode



-The escalator does not go into energy-saving mode (operation during light traffic) when it is in variable-speed operation.  
-The speed can be set at your desired speed.  
-The switch to be installed on the skirt guard at a landing area is optional. If the switch is not installed, a maintenance person can switch the speed by operating the control panel.

Notes [※1]: Source: Tokyo Fire Department, "Report on Measures for Preventing Escalator-related Accidents" [※2]: As of October 2020, according to our research.

The applicability of the equipment and optional features in this brochure depends on the escalator currently in use and modernization specifications. Please consult our local agents for your escalator planning. We can also provide information on how to meet the legal requirements.



# 4

Key words for rethinking your escalators

## Bad Impression

### What message does your escalator send to people?

Escalators are often the first thing people see when entering a building. Floor plates discolored with age, handrails that have dulled in the center, and other blemishes could leave them with the impression of a building that is old and shabby. And, since deterioration is associated with compromised safety, just the appearance of your escalators could make some visitors and tenants feel uneasy about your building as a whole.

It sure is gloomy. I don't feel comfortable being here.

Office worker



I don't feel like touching dirty handrails. Can't they be replaced?

Visitor



Handrail that has become discolored and lost its sheen from years of use.

→ Passengers don't want to touch it.



This place is run-down. I wonder if it's safe.

Visitor

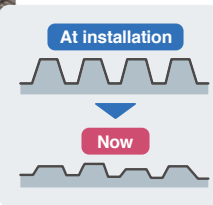
Safety Concerns

Steps with prominent blemishes and faded demarcation lines.

→ Passengers aren't guided to the proper standing area.

Floor plate with noticeable fading. Worn surface that creaks and bends makes passengers feel uneasy.

→ Slippery surface makes it harder for passengers to board safely.



I'm afraid this place will give clients a negative impression of our company.

Office manager



How can we attract customers in a dingy building like this?

Restaurant owner



## ESMOTION

### Boost your building's reputation by restoring the safety and beauty of your escalators.

The new look has really brightened up the place.



New handrails restore the sense of cleanliness.

Simply replacing dirty-looking handrails gives your escalator a makeover.

Better safety puts me at ease.



Clean handrails make me feel comfortable grasping them.



Improved Safety

Replace steps for better safety.

Restoration of visual contrast enhances safety by making it easier for passengers to step in the right areas.

Renovated floor plates and skirt guards create a positive impression.

By replacing elements such as floor plates and skirt guards, you can enhance the impression given by the boarding area. This also restores the floor plate grooves, helping to put users at ease.

The improved atmosphere will help us to make contracts with more clients.



Our customers love the cleaner look of the building.



The applicability of the equipment and optional features in this brochure depends on the escalator currently in use and modernization specifications. Please consult our local agents for your escalator planning. We can also provide information on how to meet the legal requirements.

# Plans

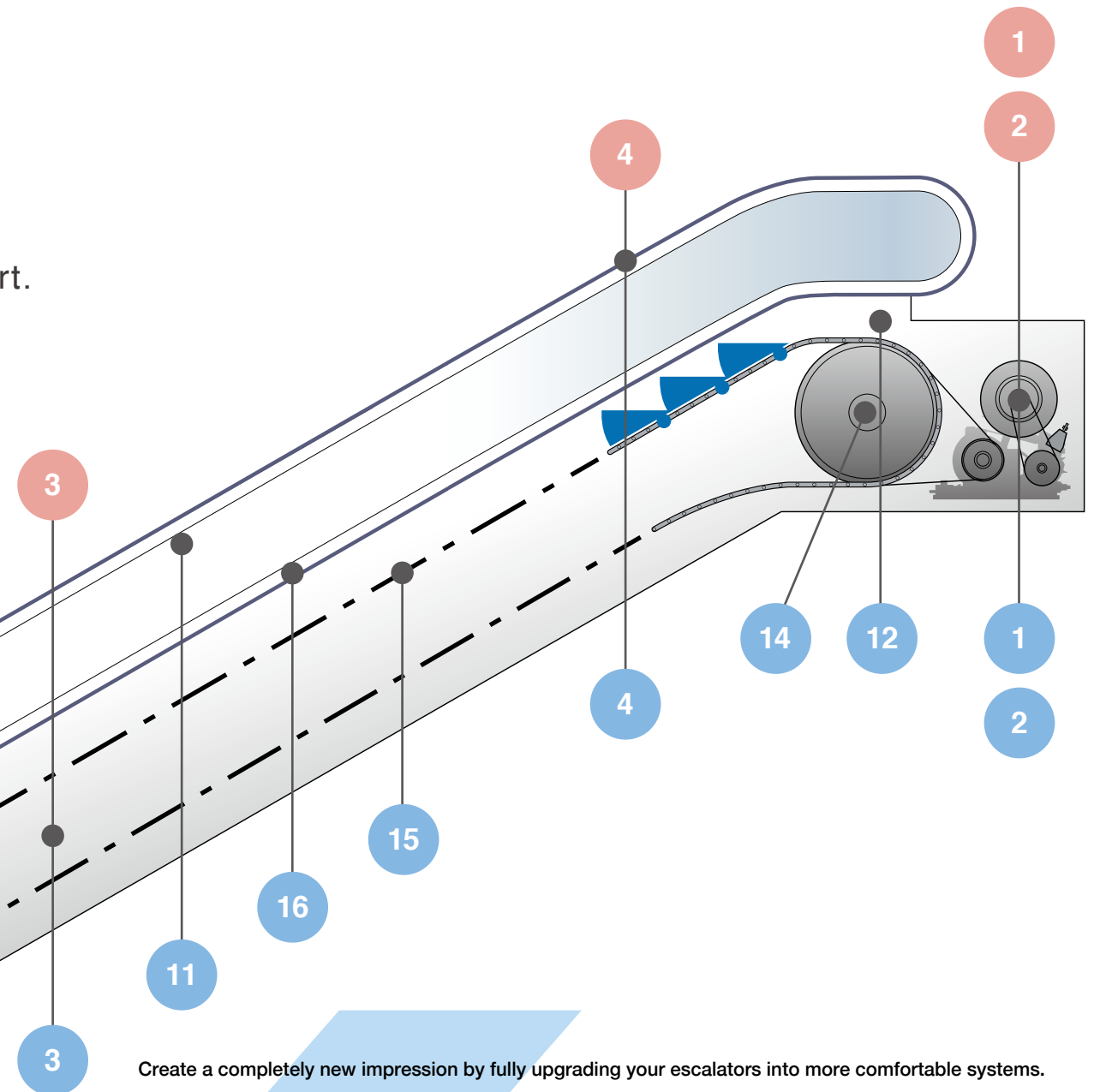
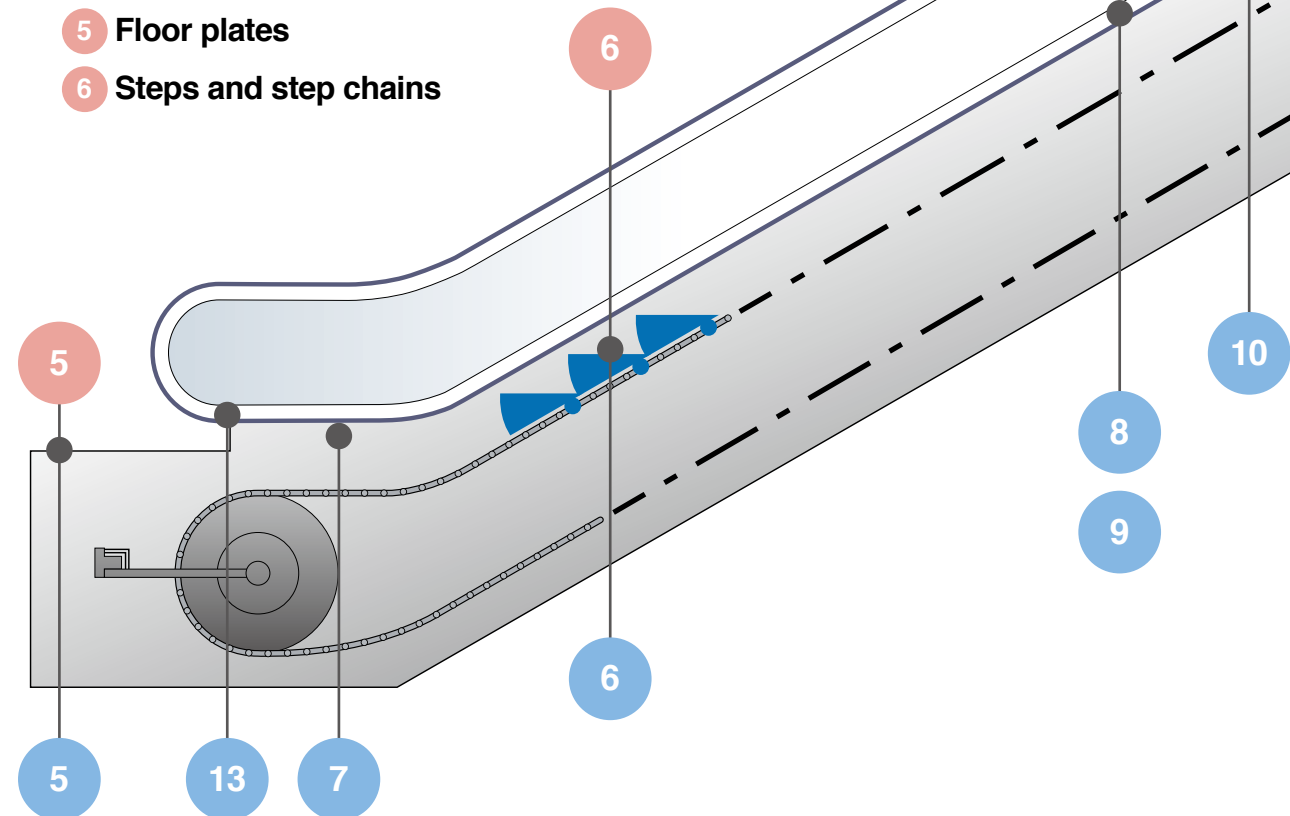
We offer two modernization plans that serve your needs and match contemporary trends while delivering greater reliability, safety, energy efficiency, and comfort.

Transform your escalators into high-performance systems while retaining usable existing components.

## Motion-E

The basic plan improves safety, reliability, and energy efficiency by replacing the drive unit, control panel and switches of safety devices, or by adding new safety devices. As add-ons, you can also request replacement of handrails, floor plates, and steps.

- 1 Drive unit
- 2 Control panel (continuous or automatic operation)
- 3 Safety devices
- [Optional]**
- 4 Handrails (rubber)
- 5 Floor plates
- 6 Steps and step chains



Create a completely new impression by fully upgrading your escalators into more comfortable systems.

## Motion-R

In addition to replacing drive unit, control panel, and switches of safety devices or adding new safety devices as offered by Motion-E, this plan also renovates various exterior elements as well, enhancing both the performance and beauty of your escalators.

- 1 Drive unit
- 2 Control panel (continuous or automatic operation)
- 3 Safety devices
- 4 Handrails (rubber or polyurethane)
- 5 Floor plates
- 6 Steps and step chains
- 7 Skirt guards
- 8 Inner decks
- 9 Outer decks
- 10 Interior panels
- 11 Under-handrail lighting
- 12 Combs
- 13 Handrail inlets
- 14 Sprockets
- 15 Tracks
- 16 Handrail drive

The applicability of the equipment and optional features in this brochure depends on the escalator currently in use and modernization specifications. Please consult our local agents for your escalator planning. We can also provide information on how to meet the legal requirements.

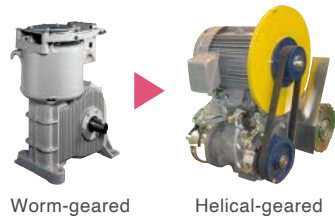


# Motion-E

Transform your escalators into high-performance systems while retaining usable existing components.

## Replacement of drive unit and control panel

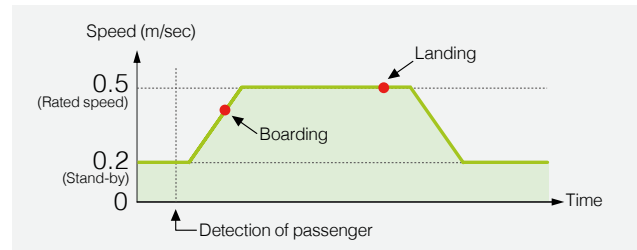
Replacing the existing worm-gear drive unit with a helical-gear drive unit used in new products significantly reduces frictional loss during driving. Further, it improves the efficiency of regenerative power utilization by approximately 30%\*, greatly enhancing energy saving performance.



Up to approx. \*1 \*2  
**20% energy saved**  
Power conserved:  
approx. 1,900 kWh/year  
CO<sub>2</sub> emissions reduction:  
approx. 1.1 t/year

## Automatic operation – slow operation in stand-by

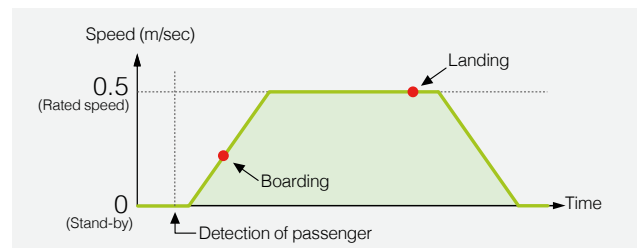
The escalator operates at low speed when no one is on the steps, and gently accelerates to the rated speed when the sensors detect someone approaching. Since it runs continuously, the travel direction is readily apparent to approaching users.



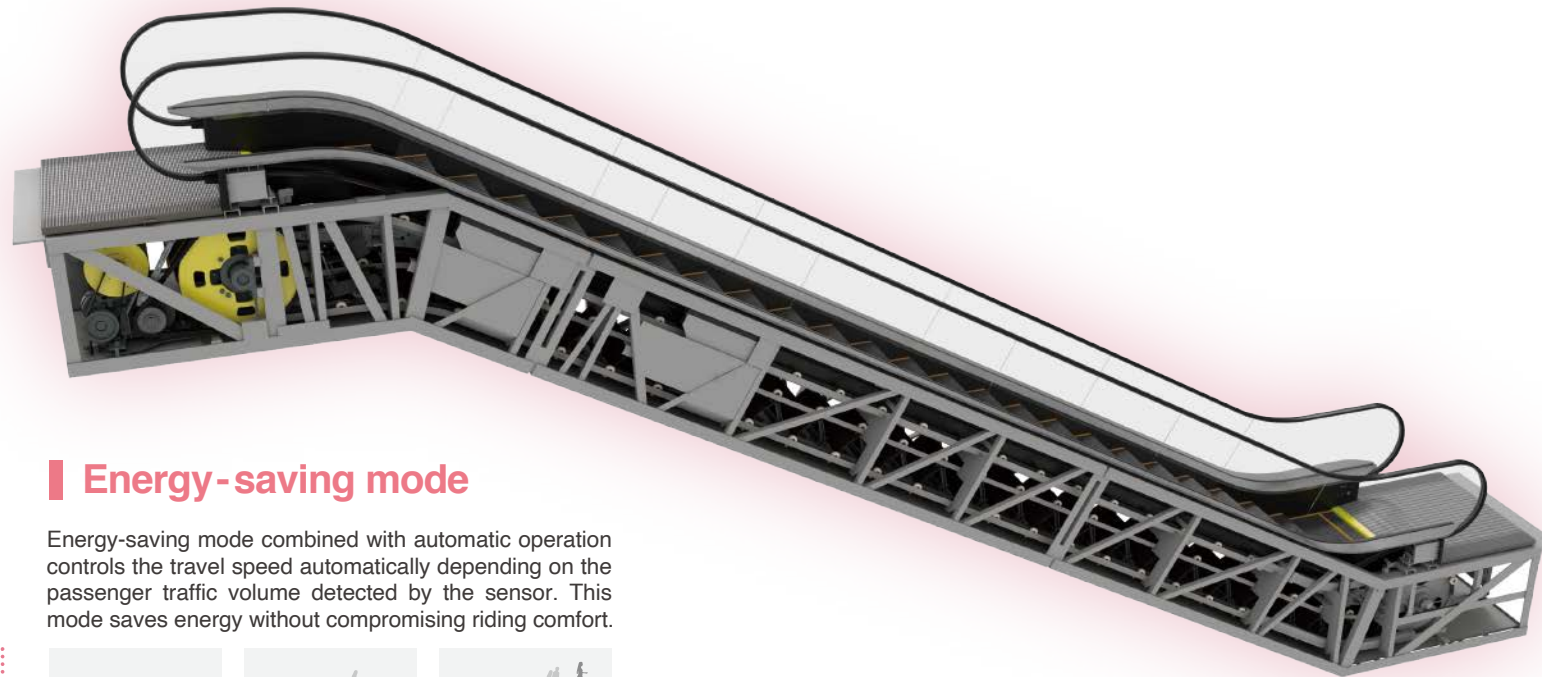
Up to approx. \*1 \*3  
**20% energy saved**  
Power conserved:  
approx. 1,400 kWh/year  
CO<sub>2</sub> emissions reduction:  
approx. 0.8 t/year

## Automatic operation – stationary in stand-by

The escalator stops when no passengers are on the steps. When the sensors detect a passenger, the escalator gently accelerates to the rated speed.

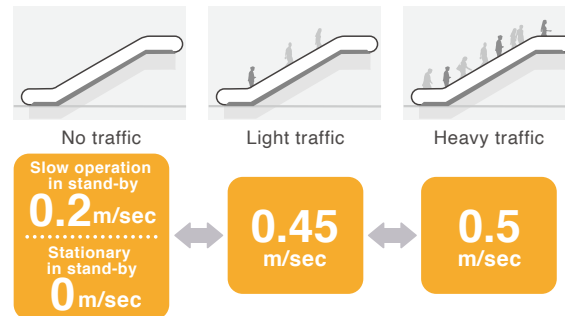


Up to approx. \*1 \*3  
**30% energy saved**  
Power conserved:  
approx. 2,100 kWh/year  
CO<sub>2</sub> emissions reduction:  
approx. 1.3 t/year



## Energy-saving mode

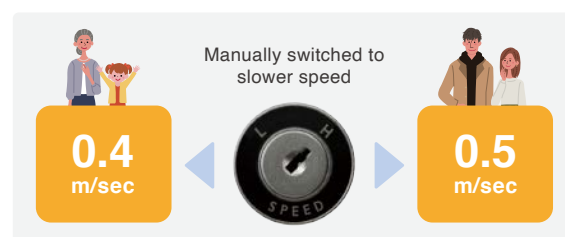
Energy-saving mode combined with automatic operation controls the travel speed automatically depending on the passenger traffic volume detected by the sensor. This mode saves energy without compromising riding comfort.



Extra improvement in addition to automatic operation  
Up to approx. \*1 \*3  
**10% energy saved**  
Power conserved:  
approx. 700 kWh/year  
CO<sub>2</sub> emissions reduction:  
approx. 0.4 t/year

## Variable-speed operation

The escalator speed can be reduced using the key switch, for example, when the escalator is frequently used by elderly people, or when the escalator runs in downward direction as passengers can feel nervous about getting it on safely. (See page 8 for details.)



## Replacement of existing safety device switches, and addition of new safety devices

The reliability of existing safety devices can be greatly improved by replacing their switches with the latest designs. Safety can be further enhanced by installing additional safety solutions.

### Safety device switches replaced

<b>Drive Chain Safety Device (DCS)</b>
Stops the escalator if the drive chain breaks or stretches beyond an allowable limit.
<b>Step Chain Safety Device (SCS)</b>
Stops the escalator if the step chain breaks or stretches beyond an allowable limit.
<b>Handrail Guard Safety Device (HGS)</b>
Stops the escalator when physical contact is made with the handrail inlet (hand, etc. is drawn in).

### Safety device switches replaced (if already installed) or safety device added

<b>Step Motion Safety Device (CRS)</b>
Stops the escalator when a step has been dislocated on its riser side because of an object trapped between the step and another step or the skirt guard.
<b>Skirt Guard Safety Device (SSS)</b>
Stops the escalator if an object becomes trapped between the step and skirt guard.
<b>Step Level Device (SRS)</b>
Stops the escalator if a step tilts due to a broken step roller.
<b>Handrail Speed Safety Device (HSS)</b>
Stops the escalator if handrail speed falls out of synch with step speed.

### Safety device added

<b>Comb-step Safety Switch (CSS)</b>
Stops the escalator if the comb is pushed upward due to an object trapped between it and a step.

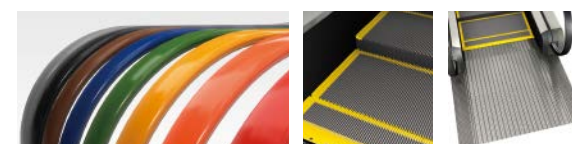
## Slow-stop feature

The sudden stop triggered by the emergency stop button or other safety devices can cause passengers to lose their balance and fall. This function stops the escalator gently to prevent the passengers from falling. Safety can be further enhanced by the mechanical structure that stops the escalator gently in case of power outage.

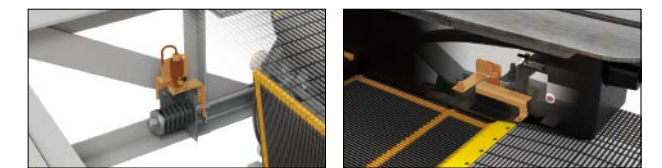


## Replacement of handrails, steps and floor plates

Restoring the components where scratches and dirt are noticeable improves aesthetics, visibility and safety of the escalator.



Skirt Guard Safety Device (SSS) Handrail Speed Safety Device (HSS)



Step Chain Safety Device (SCS) Comb-step Safety Switch (CSS)

## Fault indication and remote monitoring system – MeEye

MeEye provides vital support for building management operation performed with reduced staffing. (See page 4 for details.)



Notes [※1]: Calculated on the basis of the following conditions: Step width of 1m, rise of 5m (terminal drive), traffic of 100 passengers/hour, standby period of 30min/hour, speed of 0.5m/sec, 12 hours/day and 365 days/year operation, CO<sub>2</sub> conversion rate of 0.6kg/kWh [※2]: Compared with existing G series escalator. [※3]: Compared with existing J series escalator in continuous operation. [※4]: Calculated on the basis of the following conditions: Step width of 1m, rise of 5m (terminal drive), load rate of 40%, downward operation, speed of 0.5m/sec

The applicability of the equipment and optional features in this brochure depends on the escalator currently in use and modernization specifications. Please consult our local agents for your escalator planning. We can also provide information on how to meet the legal requirements.

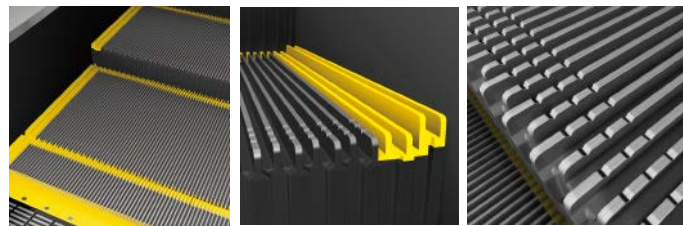


# motion-R

Create a completely new impression by fully upgrading your escalators into more comfortable systems.

## Steps

Existing steps are replaced with ones that have highly visible demarcation lines. The demarcation cleats on both sides are raised to encourage passengers to move away from the sides, thus helping to keep clothing and other items from becoming trapped. Also, the front edge has grooves that prevent slipping off the step when boarding and exiting.

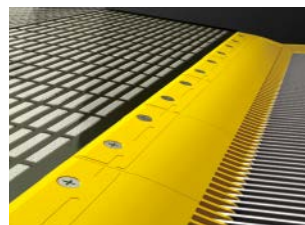


## Interior panels (glass or stainless steel)

Replacing the panels restores the luster of their glass or stainless steel surfaces.

## Comb with smaller angle

The forward edge of the comb is angled at a more gentle 10° to reduce catching and thus enable passengers to board and exit more smoothly.

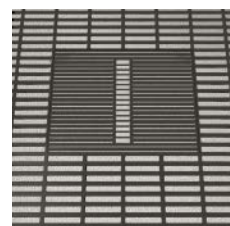


## Floor plates

Combining beauty with function, our floor plates highlight the boarding/landing area with a contrastive pattern. Floor plates indicating the floor number are also available.

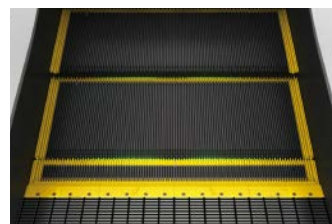


Floor number



## Step demarcation lighting LED

Installing lighting under the steps enhances the visibility of their edges, making easier to board and exit.



## Comb lights LED

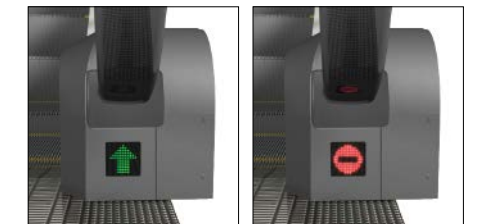


## Skirt guard lighting LED



## Direction indicator LED

An array of LED lights displays either an arrow or a no-entry symbol so that passengers can readily tell an escalator's direction of travel.



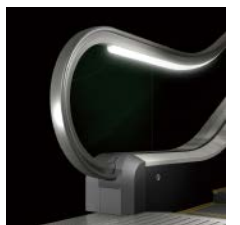
## Handrails (rubber or polyurethane)

Bring back the sheen of worn handrails by replacing them with new ones. Our wide color assortment allows you to match the handrails with your decor. In addition to the standard rubber type, our handrails are also available in polyurethane, which exudes classiness with its glossier shine.



## LED under-handrail lighting LED

Replacing existing fluorescent lights with LED provides steady, nonflickering illumination, saves energy, and extends the service life of the lighting.



## Skirt guards

The smooth surfacing not only helps to prevent trapping but also enhances the escalator's beauty.



## Inner decks

Further improve the look of your escalators by renovating the inner decks.

## Handrail inlet

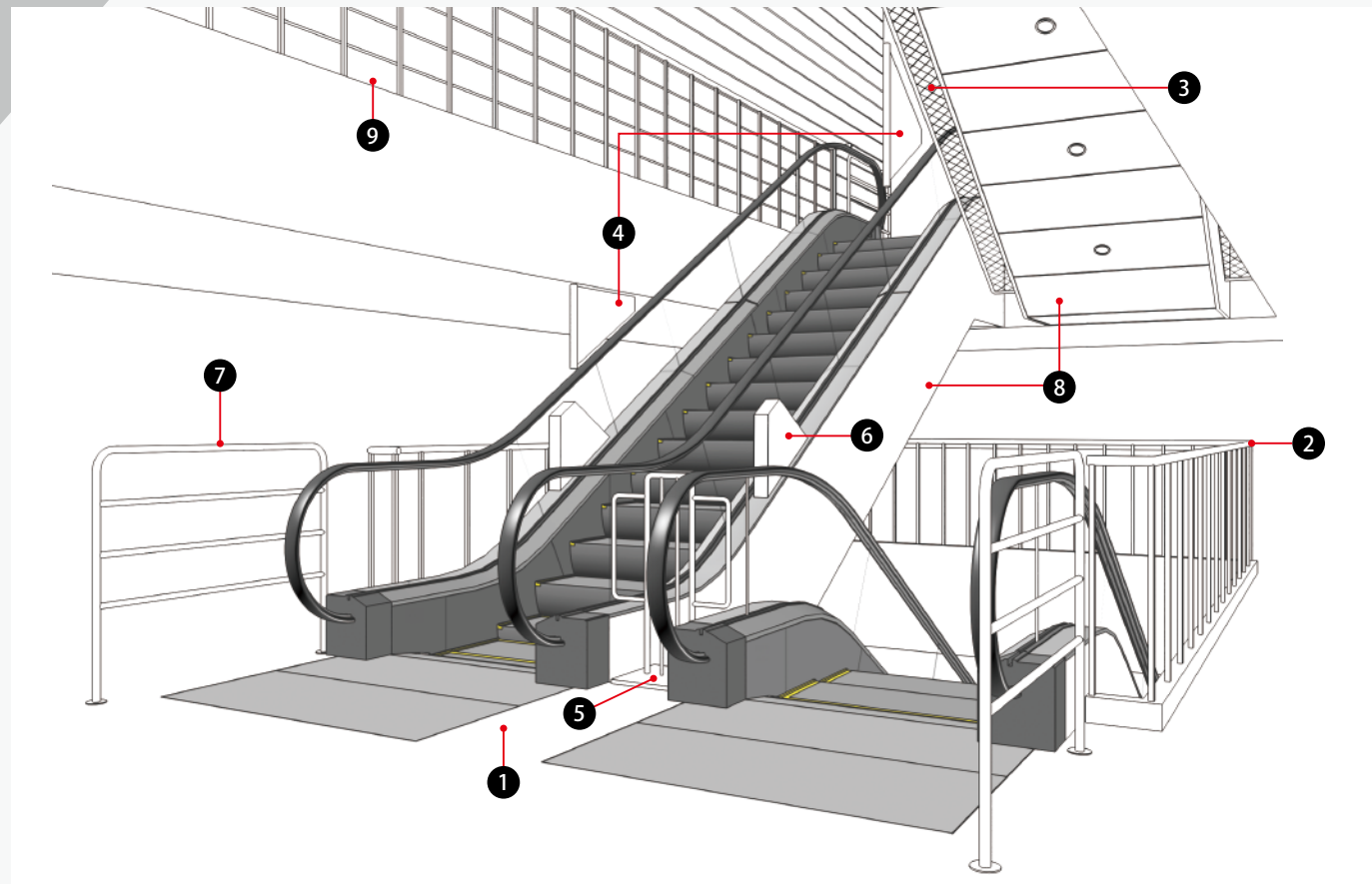
Change to a more rounded design that imparts subtle elegance to the boarding and landing areas.



The applicability of the equipment and optional features in this brochure depends on the escalator currently in use and modernization specifications. Please consult our local agents for your escalator planning. We can also provide information on how to meet the legal requirements.



# Work Not Included in Escalator Contract



The following items are excluded from our escalator modernization work, and are therefore the responsibility of the building owner or general contractor.

\*Work responsibilities in installation and construction shall be determined according to the local law. Please consult our local agents for details.

## Architectural work

1. Hole filling and floor finishing in surrounding areas after escalator installation (①)
2. Fireproofing and fire-prevention measures for escalator exterior materials and surrounding areas
3. Safety features for surrounding areas
  - Safety fences (②) ● Nets (③) ● Wedge guard (④)
  - Deck guards (⑤) ● Deck barricades (⑥) ● Guiding fences (⑦)
4. Outer panel sheathing (⑧)

## Facility work

1. Conduit and wiring work for power supply to control panel in upper truss, power supply for lighting and grounding
2. Other wiring and conduit work
3. Installation of outlets in the upper and lower trusses
4. Installation of fire-prevention shutters (⑨)

## Site preparation

1. Making space (approximately 20m<sup>2</sup>/unit) where the components and tools for escalators can be securely locked away
2. Supplying electric power for installation work and lighting
3. Securing the route for bringing in heavy equipment (drive unit, control panel, sprocket, etc.) or long objects (decorative components)

## Cautions regarding installation work

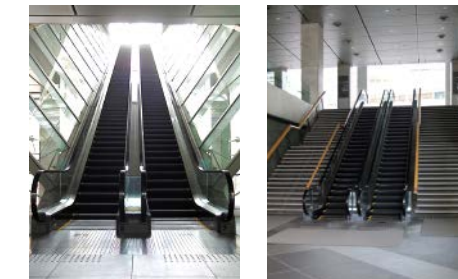
1. Temporary escalator enclosures must be built around the escalators.
2. A certain amount of vibration, noise and dust will be generated during the installation period.
3. Fire- or spark-producing tools will be used during the installation period.
4. Security guards must be stationed throughout the installation period.

# Our Solutions in Action

Launched in Japan in 2005, our ESMOTION business has modernized some 1,800 escalators at commercial centers, office buildings, train stations, and other facilities in Japan as of 2019.

## Some major projects

**Project Name :** Tokyo International Forum  
**Location :** Tokyo  
**Building Use :** Convention and Arts Center  
**Handover :** 2017-2018  
**Modernization Menu :** Motion-R  
**Number of Units :** 26



**Project Name :** Singapore Changi International Airport Terminal 2  
**Location :** Singapore  
**Building Use :** Airport  
**Handover :** 2014-2017  
**Modernization Menu :** Motion-R  
**Number of Units :** 30



**Project Name :** SOGO Department Store at Causeway Bay  
**Location :** Hong Kong  
**Building Use :** Department Store  
**Handover :** 2015  
**Modernization Menu :** Motion-R  
**Number of Units :** 42



Our elevators, escalators and building management systems are always evolving, helping achieve our goal of being the No.1 brand in quality. In order to satisfy customers in all aspects of comfort, efficiency and safety while realizing a sustainable society, quality must be of the highest level in all products and business activities, while priority is place on consideration for the environment. As the times change, we promise to utilize the collective strengths of its advanced and environmental technologies to offer its customers safe and reliable products while contributing to society.



## We strive to be green in all of our business activities.

We take every action to reduce environmental burden during each process of our elevators' and escalators' lifecycle.



\* Quality in Motion is a trademark of Mitsubishi Electric Corporation.





**State-of-the-Art Factories...  
For the Environment. For Product Quality.**

Our elevators and escalators are currently operating in approximately 90 countries around the globe. Built placing priority on safety, our elevators, escalators and building system products are renowned for their excellent efficiency, energy savings and comfort. The technologies and skills cultivated at the Inazawa Building Systems Works in Japan and 12 global manufacturing factories are utilized in a worldwide network that provides sales, installation and maintenance in support of maintaining and improving product quality. As a means of contributing to the realization of a sustainable society, we consciously consider the environment in business operations, proactively work to realize a low-carbon, recycling-based society, and promote the preservation of biodiversity.

**ISO9001/14001 certification**

Mitsubishi Electric Building Solutions Corporation Inazawa Building Systems Works has acquired ISO 9001 certification from the International Organization for Standardization based on a review of quality management. The plant has also acquired environmental management system standard ISO 14001 certification.

Mitsubishi Elevator Asia Co., Ltd. has acquired ISO 9001 certification from the International Organization for Standardization based on a review of quality management. The plant has also acquired environmental management system standard ISO 14001 certification.



**MITSUBISHI ELECTRIC BUILDING SOLUTIONS CORPORATION**

HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN  
[www.MitsubishiElectric.com/elevator](http://www.MitsubishiElectric.com/elevator)

**⚠ Safety Tips:** Be sure to read the instruction manual fully before using this product.