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A Perfect Integration:  
Advanced Technologies and Energy Saving  
Art and Wisdom

# Series K

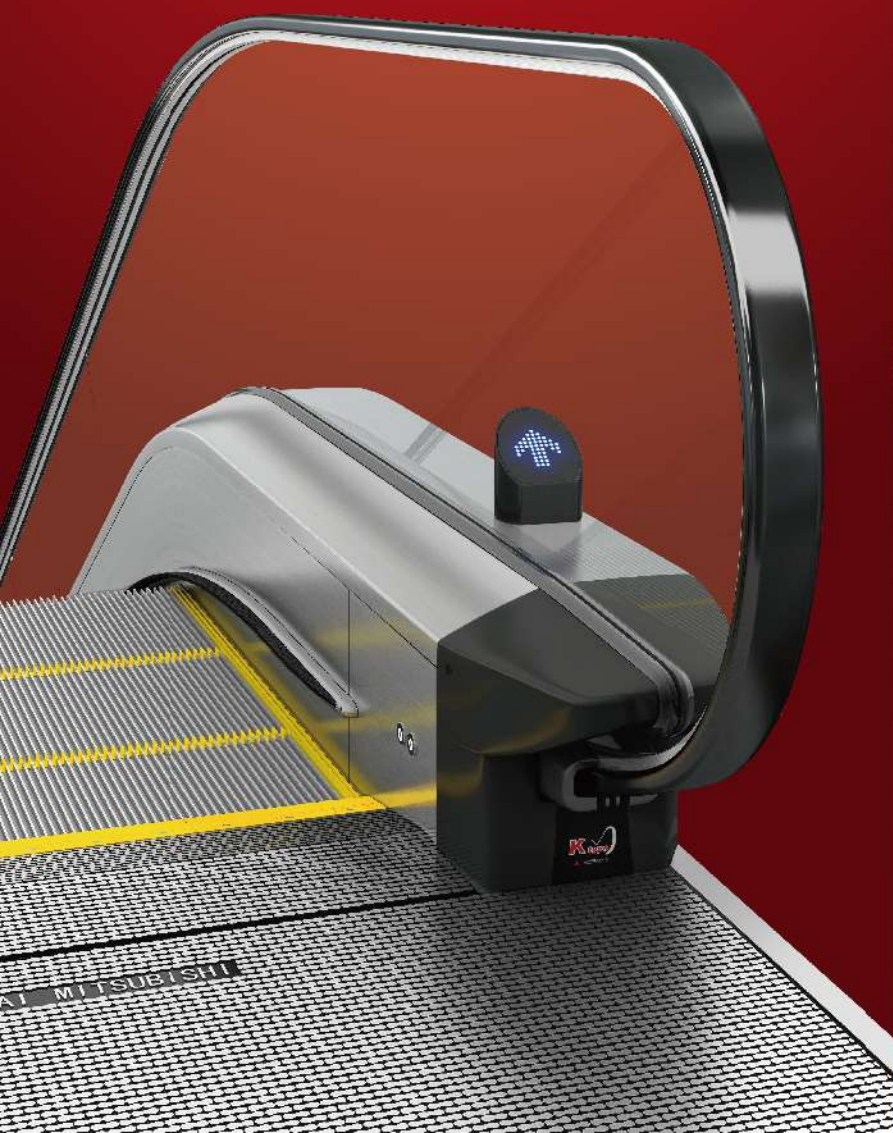
Escalator



# Series K | Escalator

## Excellent Quality Supported by Technological Advantages

Shanghai Mitsubishi Elevator (SMEC) has elite employees and world-class manufacturing equipment, processing accomplished manufacture system and abundant experience. Inheriting consistent technical advantage from Mitsubishi Elevator and keep pursuit of human comfortable needs, SMEC creates humanized high-tech product. This smooth, comfortable and highly efficient K series escalator developed by SMEC gives users comfortable, stable, safety riding feeling. Meeting different requirements of use conditions, K series escalator can be applicable to various locations like malls, business buildings, hotels and etc...



A Perfect Integration  
Advanced Technologies and Energy Saving  
Art and Wisdom  
The Escalator – the Series K

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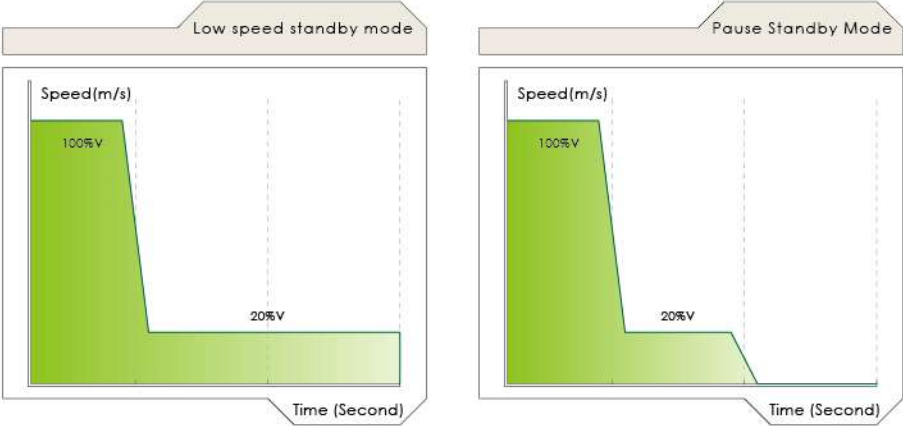
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Specifications





### Frequency-variable Specification Energy Saving



In case of frequency-variable specification, there are multiple ways detecting passenger flow, achieving intermittent operation, standby of escalator so as to avoid unnecessary operation and save the energy.

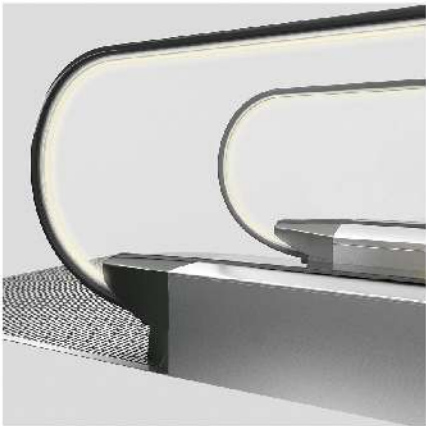
## Energy Efficient, Space Saving

### High-precision Helical Gear

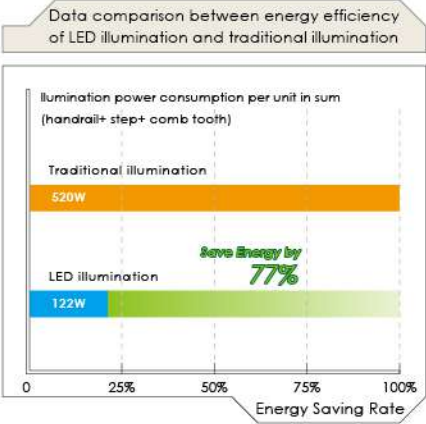
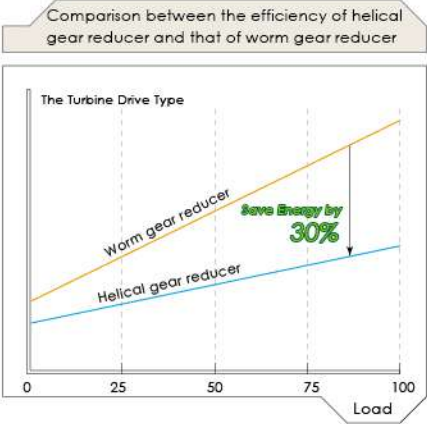


The high-precision helical reducer starts smoothly and quietly. It's more efficient than traditional turbine worm reducer which ensured outstanding energy efficiency.

### LED Illumination Energy-efficient and Environment Friendly



Handrail illumination, skirt illumination, comb tooth illumination, illumination below step, all these illuminations adopt LED illumination system completely, significantly improving quality, environment friendly and energy efficient, safe and reliable.



Note: take KS-LB escalator with lifting height 4.5m as an example



## Exquisite Processing, Excellent Quality

### Large Special Jig

Assembled with large special jig, accuracy and quality of the staircase system are ensured, and extra workload from re-assembly and adjustment is avoided.

### High efficient motor

Adopt highly efficient motor in accord with GB18613-2012 and 2005/32/EC, achieving International Energy Efficiency Grade IE3, which has smaller size and higher efficiency up to 92% (take 13kW as an example). Embedded temperature switch is provided for overload protection as a standard specification.

### Disc Brake

The disc brakes adopted make the structure compact and the braking smooth.

### Quiet Turning and Meshing



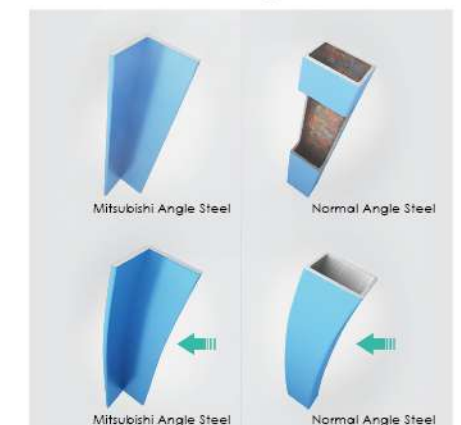
The drive chain wheel is directly meshed with the step roller made of high polymer wearable resin, which avoids rigid shock between metal of the chain wheel and the step shaft. The turning and meshing of steps are quiet and smooth.

### Integral Design



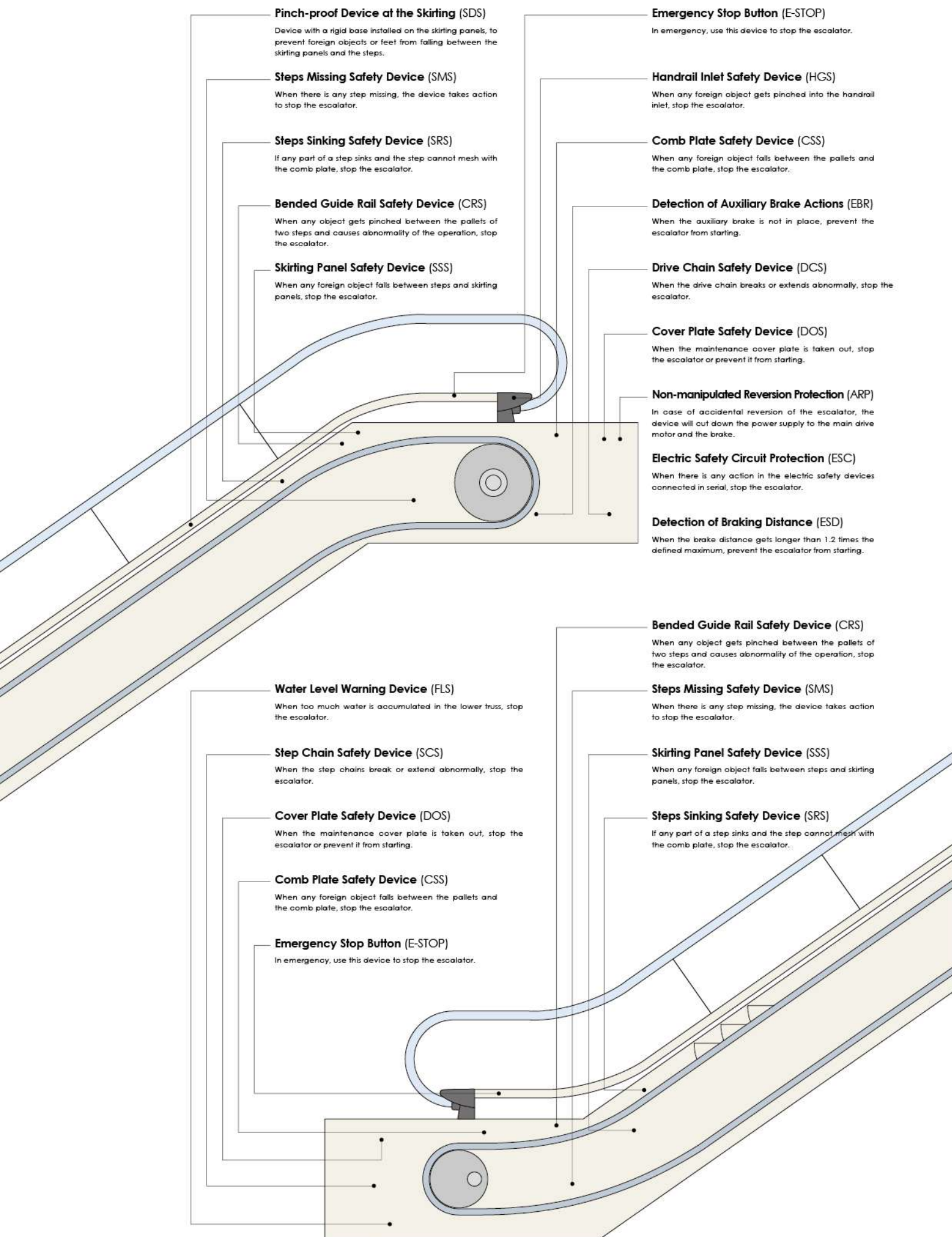
The upper and lower reversions and the staircase guide rails are designed as one piece, so as to avoid movement of the staircase, ensure seamless linkage between the guide rail and the reversion at the turning section, and reduce the vibration of steps in operations.

### Truss Built with Angle Steel



We stick to steel angles which make the truss better in rust protection and more durable. If we compare steel angles with rectangular steel pipes in terms of the same section, the deflection of steel angles are smaller than that of rectangular steel pipes, and thus the steel angles are less likely to deform.





## Post Type Passenger Detection Device



Mount detection post at upper and lower entrance of escalator, and meanwhile mount operation indicator on detection post to save energy according to the change of passenger flow.

Note: It is necessary to mount barrier (by client) to form an enclosed passage, contact SMEC for detail.

## Built-in Passenger Detection Device



The device is built into the inner side and the front of the top at the upper and lower inlets and outlets, and forms a large area of induction detection, which could adjust the speed of the escalator according to the amount of passengers loaded and save energy.

# Security System - Humanistic and Reliable

K type escalator has provided multiple safety devices. Besides the standard safety devices totally in accordance with GB16899-2011, it can additionally provide other safety devices according to client's needs as an option for further safety performance.

## Anti-creeping Device (Optional)



If there is a risk of passengers falling from the escalator, anti-creeping device could be installed onto the external cover plate so that nobody could climb onto the handrail.

## Entry Prevention Device



If there are risks of entry and/or falling after entry, please use the entry prevention device. (To be installed by the customers.)

## Anti-skid Device



If there is the risk of falling of personnel or objects, please use the anti-skid device. (To be installed by the customers.)

## Handrail Inlet



As a Mitsubishi tradition, the handrail inlet is designed to be hidden, which reduces the risk of pinch by margin. Long and soft protection covers are applied to the handrail inlet, which embodies our strategy of multiple layers of protection.

## Pinch-Proof Device at the Skirting



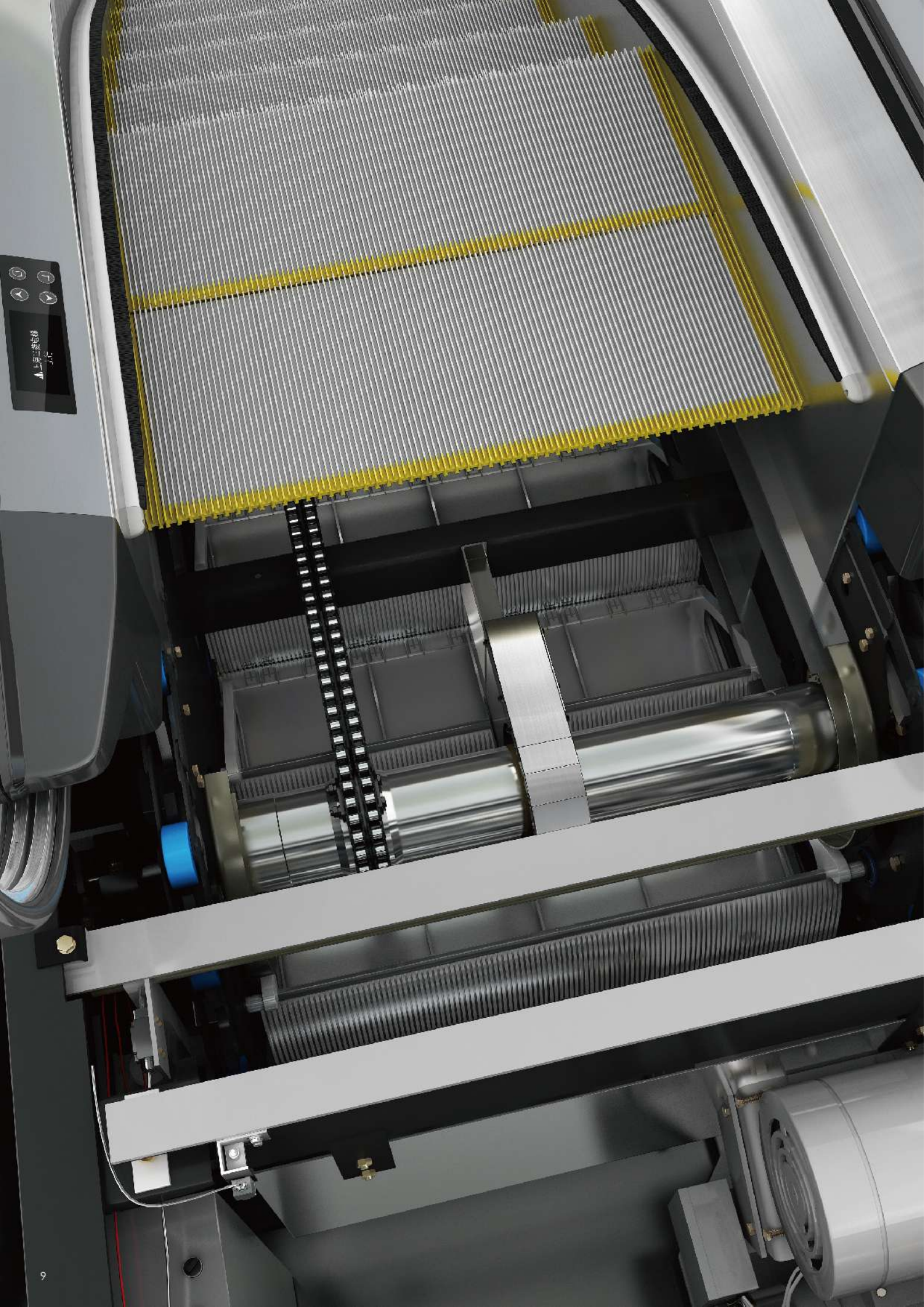
The brush ensures that the passengers will not stand too close to the edge of steps or pinch their feet by accidentally placing their feet between the steps and the skirting panels.

## Perpendicular protection barrier (by client)

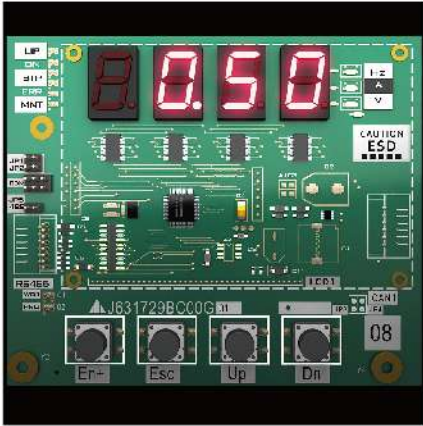


Warn and remind the passengers minding their head and hands, which as a protection.



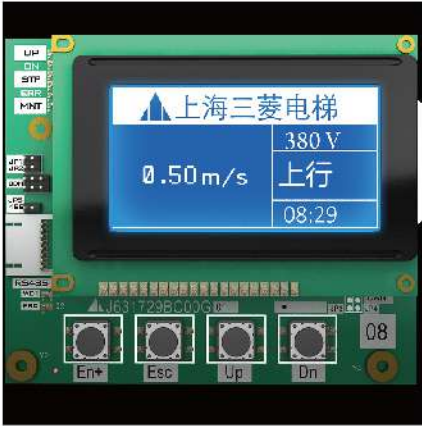


Control Panel LED Operation Faceplate



Configure parameter, check operation states and error codes via operation faceplate installed in control panel. Use LED tube for indication.

Control panel LCD operation panel (Option)



Configure parameter, check operation states and error codes via operation faceplate installed in control panel. Use LCD screen for indication.

Multi-function operation panel (Option)



Provide operation panel with VFD (Void Fluorescent Display) internal deck, achieving error check, function start and close; it still has good display even in the case of large temperature variety, direct sunlight.

# Advanced technique Supreme Experience

## Bypass Frequency Conversion — Energy Saving

When the escalator operates with the nominal speed, cut out the frequency converter automatically and shift to the power grid which could increase the lifespan of the converter significantly. In case of any unrecoverable error with the converter, switch to the power frequency grid manually, and the operations of the escalator will not be blocked. In case of no load, the escalator will automatically switch to low velocity standby or stop standby. Regenerative power from descending would be fed into the grid, which is energy saving and environment friendly.

## Phase lock switch technique——Comfort

Special frequency converter independently developed by Mitsubishi has the feature of modularized design and compact size; Advanced "Active Phase Synchronization, Phase Lock Switch Technique", realize smooth change between variable frequency to work frequency.

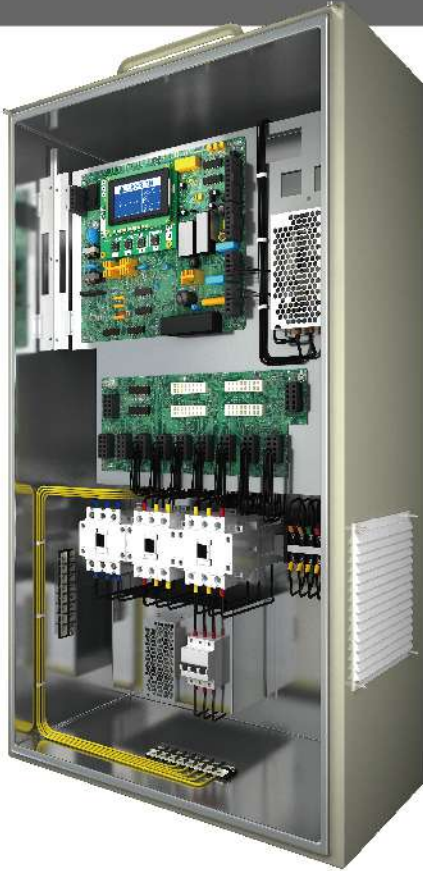
## Function Safety Technology——Safety

Pass the safety verification held by National Special Equipment Authority, and it is listed as the first in the nation passing certification of escalator function safety component PESSRAE held by European authorized German TÜV Rheinland; Adopt double channel redundant inspection to ensure the safety function is reliable and effective.

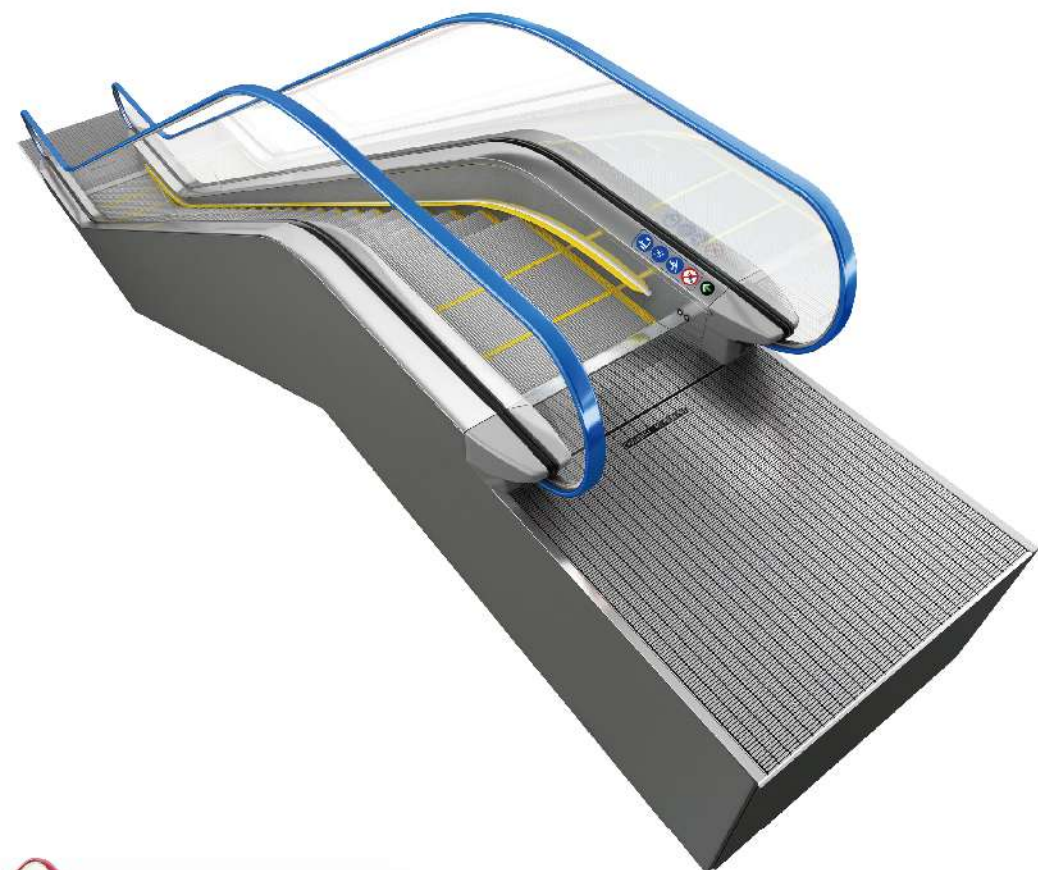
## Inspection System of Main Spindle Absolute Position

Traditional techniques indirectly inspect escalator speed and operation direction via proximity switch mounted on high speed spindle (motor/reduction rear) so as to determine speeding/non-operational reversal. However, in case drive chain breaks or machine has abnormal displacement, the traditional technique is powerless.

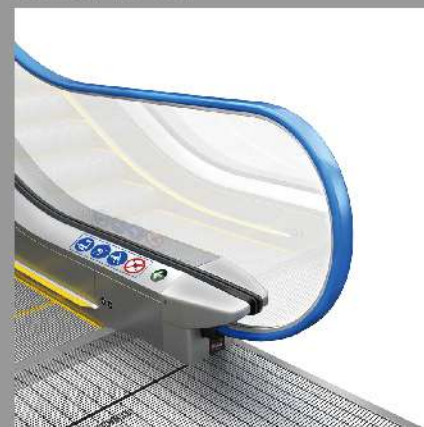
Based on encoding of absolute position, the escalator state inspection technique reads the code value of absolute position code plate mounted on main spindle via absolute position sensor so that precisely acquire current escalator speed and direction.







Type of the Balustrade  
KS-SB / KS-SBF

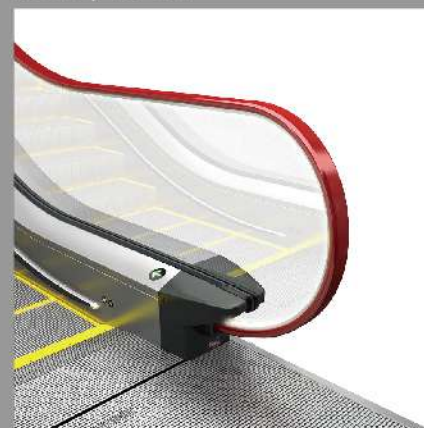


Instructions to the Components Indicated in the Figure

- Internal Side Plate**  
Transparent Rectangle Glass
- Steps**  
Aluminum Alloy with Yellow Resin Strips on Three Sides  
(With other options available), Silver Grey Coating (Color No. ZY-028)
- Handrail**  
Bright Blue PU (Color No. NT-Blue) (With other options available)
- Internal and External Cover Plates**  
Hairline Stainless Steel (With other options available)
- Handrail Inlet**  
ZHE-02A Silver Grey Aluminum Alloy, (Color No. ZY-028)  
(With other options available)
- Operation Indicator**  
ZIN-02 (With other options available)
- Skirt Panel**  
Hairline Stainless Steel (With other options available)
- Front Plate**  
ZCY-F01P Stainless Steel with Anti-skid Grooves  
(With other options available), and inside the Groove be Painted Black



Type of the Balustrade  
KS-LB / KS-LBF



Instructions to the Components Indicated in the Figure

- Internal Side Plate**  
Transparent Rectangle Glass
- Steps**  
Aluminum Alloy with Yellow Resin Strips on Three Sides  
(With other options available), Silver Grey Coating (Color No. ZY-028)
- Handrail**  
Bright Red PU (Color No. NT-Red) (With other options available)
- Internal and External Cover Plates**  
Hairline Stainless Steel (With other options available)
- Handrail Inlet**  
ZHE-02A Black Grey Aluminum Alloy, (With other options available)
- Operation Indicator**  
ZIN-02 (With other options available)
- Skirt Panel**  
Hairline Stainless Steel (With other options available)
- Front Plate**  
ZCY-F03P Stainless Steel with Anti-skid Grooves  
(With other options available), and inside the Groove be Painted Black
- Handrail Illumination**  
Milk white LED (With other colors available)

The Series-K escalators are simple and smooth in appearance, with first class quality. There are multiple styles to suit with different decorations. There are also different designs of the handrail inlet, which are both stylish and safe.

There are options of fashionable colors for EHC PU handrails and glass, textures for skirt panels and internal and external cover plates, and decoration patterns for the front plate, so as to suit with different environments.

Stainless steel steps and aluminium alloy steps are available, while there are different colors and patterns with or without yellow boundary strips for various situations.

Different LED illumination solutions are also prepared to satisfy customer needs, including illumination below steps, below handrails, and at the skirting.

## Fashion and Style – Inspiration of Technologies from Life



Form of the Balustrade  
KP-B / KP-BF



Instructions to the Components Indicated in the Figure

- Internal Side Plate**  
Rectangle Hairline Stainless Steel
- Steps**  
Aluminum Alloy with Yellow Resin Strips on Three Sides  
(With other options available), Silver Grey Coating (Color No. ZY-028)
- Handrail**  
Black PU (Color No. NT-Black) (With other options available)
- Internal and External Cover Plates**  
Hairline Stainless Steel (With other options available)
- Handrail Inlet**  
ZHE-01 Black Grey Aluminum Alloy, (With other options available)
- Operation Indicator**  
At the Handrail Corner Balustrade
- Skirt Panel**  
Hairline Stainless Steel (With other options available)
- Front Plate**  
ZCY-F04P Stainless Steel with Anti-skid Grooves  
(With other options available), and inside the Groove be Painted Black





#### Internal Side Plate

Standard: Rectangular glass side plates, with the glass perpendicular to the direction the stairs move.  
Transparent

Optional: Parallelogram glass side plates, with the joint seams between glass plates perpendicular to the horizontal plane.  
Bronze, Grey, Blue

#### Internal Cover Plate

Hairline Stainless Steel

#### External Cover Plate

Hairline Stainless Steel

#### Handrail

NT-Red

#### Skirt Panel

Hairline Stainless Steel

#### Comb

Yellow Resin

#### Internal and External Cover Plates



Hairline Stainless Steel



Fine Streak Stainless Steel



Sand Streak Stainless Steel

More options for individualized and even more valuable escalators.

## Individualized Decoration – Your Unique Decoration Solution

#### Handrail



NT-Black (Standard)



NT-Red (Optional)



NT-Beige (Optional)



NT-Blue (Optional)



NT-Gray (Optional)



NT-Charcoal (Optional)



NT-Brown (Optional)



NT-Green (Optional)

#### Skirt Panel



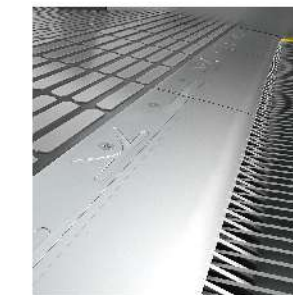
Hairline Stainless Steel



Stainless Steel with Fluorine Coating



Yellow Resin

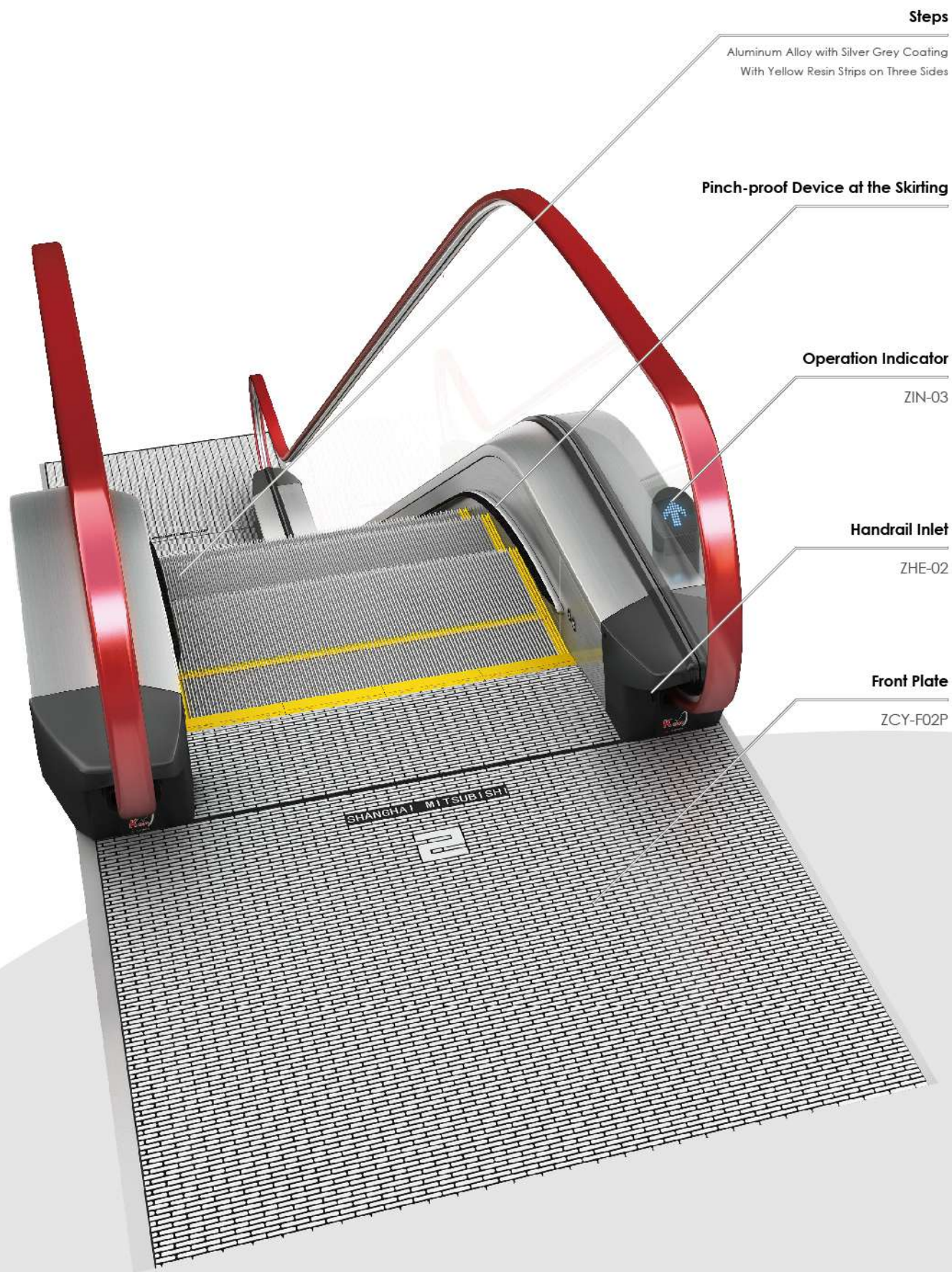


Silver Aluminum Alloy

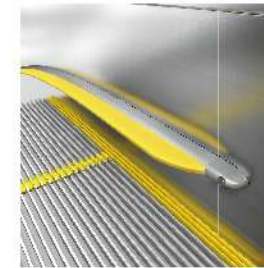
#### Comb

\* The specifications selected may cause delay of the lead time. Please contact the Shanghai Mitsubishi Elevator Co. Ltd. to confirm.





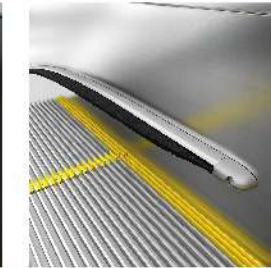
#### Pinch-proof Device at the Skirting



Silver base with yellow cleat



Black base with yellow cleat  
(with black fluoridized stainless steel skirting plate)



Silver base with black brush

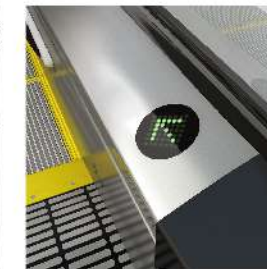


Black base with black brush  
(with black fluoridized stainless steel skirting plate)

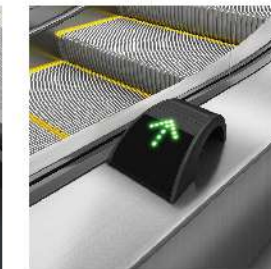
#### Operation Indicator



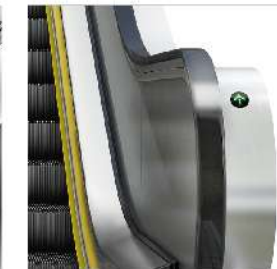
ZIN-03



ZIN-02



ZIN-01  
Only for indoor

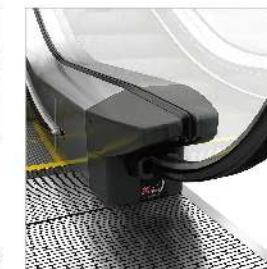


Operations indicator at the handrail  
newel balustrade  
(Only for KP-BF)

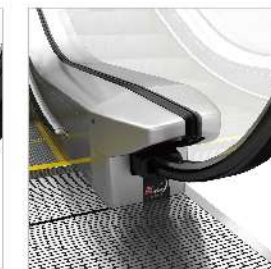
#### Handrail Inlet



ZHE-01  
Black grey resin square  
Applicable for outdoor use,  
only applicable for KP-B/KP-BF



ZHE-02  
Black grey resin streamline  
Except for KP-B/KP-BF, only applicable  
for indoor use

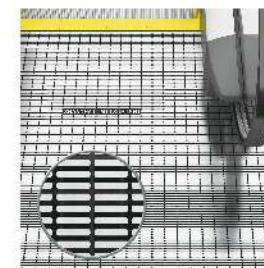


ZHE-02A  
Silver grey aluminum alloy streamline  
(Color No.: ZY-028)  
Applicable for types other than KP-B/KP-BF  
Please contact Shanghai Mitsubishi Elevator for  
confirmation.

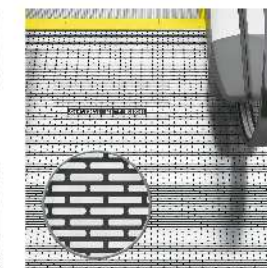


ZHE-02A  
Black grey aluminum alloy  
(Color No.: ZY-029)  
Applicable for types other than KP-B/KP-BF

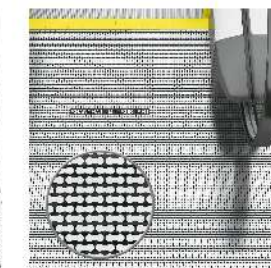
#### Front Plate



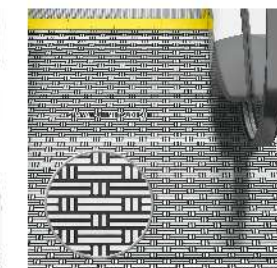
ZCY-F01P  
Stainless steel with anti-skid grooves and  
black coating inside. (color No. ZDY-027)



ZCY-F02P  
Stainless steel with anti-skid grooves and  
black coating inside. (color No. ZDY-027)

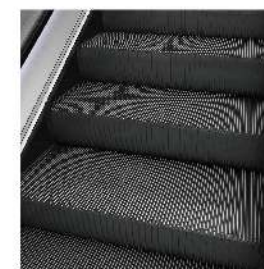


ZCY-F03P  
Stainless steel with anti-skid grooves and  
black coating inside. (color No. ZDY-027)



ZCY-F04P  
Stainless steel with anti-skid grooves and  
black coating inside. (color No. ZDY-027)

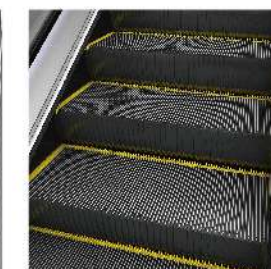
#### Steps



All-rounded Aluminum Alloy Steps  
No yellow resin strip, black grey coating  
(Color No. ZDFY-029)



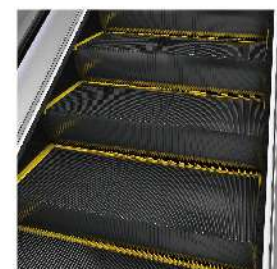
All-rounded Aluminum Alloy Steps  
No yellow resin strip, silver grey coating  
(Color No. ZDFY-028)



Aluminum Alloy Steps  
With yellow resin strips on three sides,  
black grey coating  
(Color No. ZDFY-029)



Aluminum Alloy Steps  
With yellow resin strips on three sides,  
silver grey coating  
(Color No. ZDFY-028)



Stainless Steel Steps (Only for indoor)  
With yellow resin strips on three sides,  
black coating (Color No. ZDFY-027)

\* The specifications selected may cause delay of the lead time. Please contact the Shanghai Mitsubishi Elevator Co. Ltd. to confirm.





#### ▼ Plan 1

External decoration deck seam perpendicular to step operation direction

**Balustrade type:**

(Glass interior plate ) in case of KS-SB/KS-SBF/KS-LB/KS-LBF

**External decoration material:**

Coated steel plate (color number is decided according to SMEC decoration color plate)

Hairline titanium stainless steel (color number is decided according to SMEC decoration color plate)

Hairline stainless steel

## External Decoration Deck



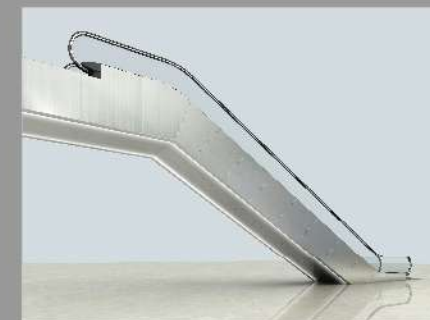
Plan 1-1

Interior plate, External decoration deck seam perpendicular to step operation direction without lighting.



Plan 1-2

Glass interior plate, External decoration deck seam perpendicular to step operation direction with base tube-light.



Plan 1-3

Glass interior plate, External decoration deck seam perpendicular to step operation direction with base belt-light.





Plan 2-1  
Glass interior plate, External decoration plate perpendicular to horizontal plane without lighting.



Plan 2-2  
Glass interior plate, External decoration plate perpendicular to horizontal plane with base tube-light.



Plan 2-3  
Glass interior plate, External decoration plate perpendicular to horizontal plane with base belt-light.

## ◀ Plan 2

External decoration plate perpendicular to horizontal plane

**Balustrade type:**

(Glass interior plate ) in case of KS-SB/KS-SBF/KS-LB/KS-LBF

**External decoration material:**

Coated steel plate (color number is decided according to SMEC decoration color plate)

Hairline titanium stainless steel (color number is decided according to SMEC decoration color plate)

Hairline stainless steel

## ▼ Plan 3

External decoration plate perpendicular to step operation direction

**Balustrade type:**

(stainless steel interior plate) in case of KP-B/KP-BF

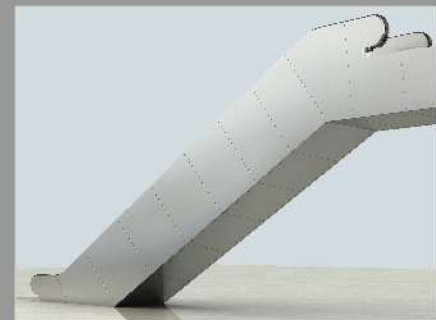
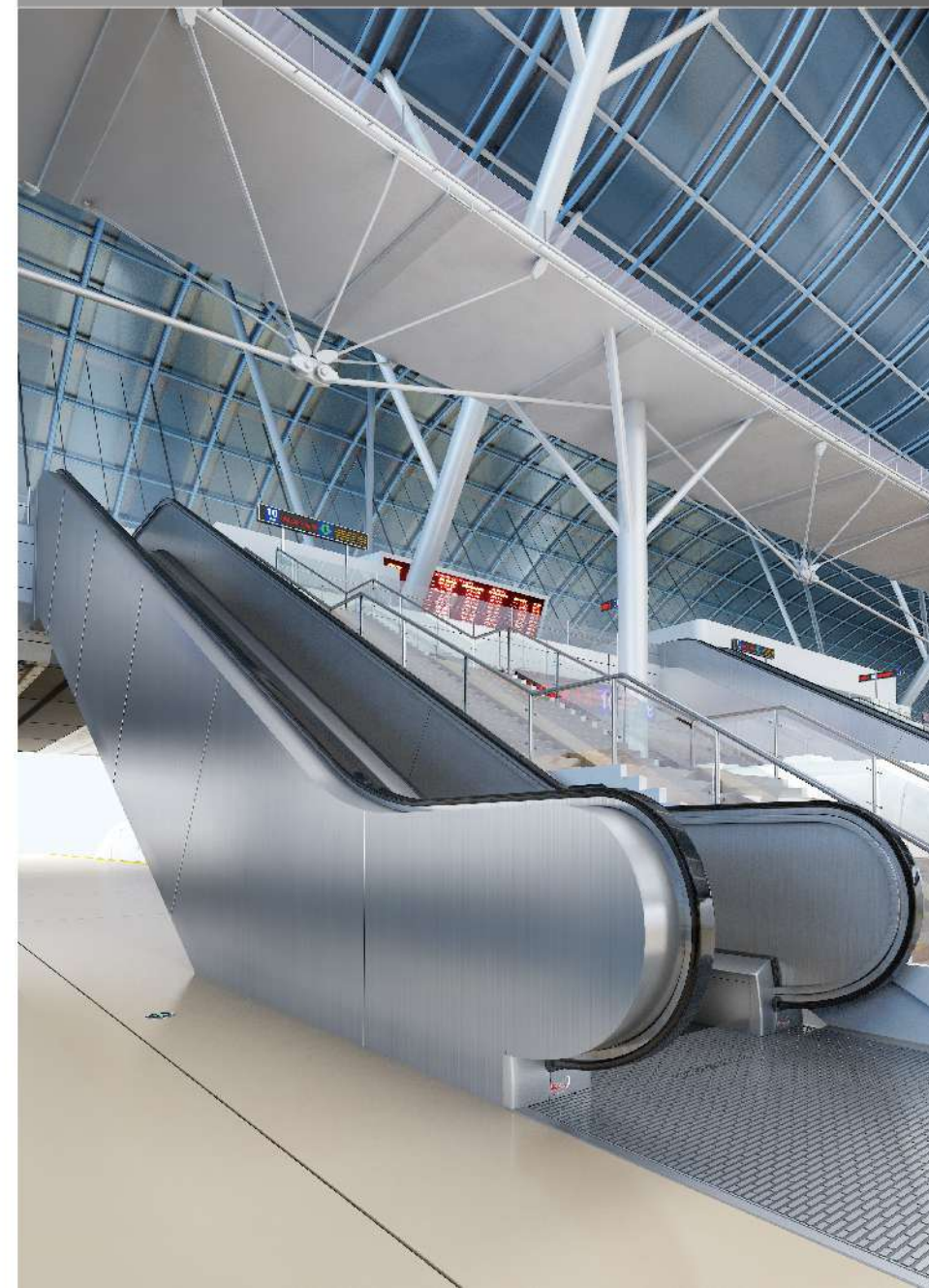
**External decoration material:**

Coated steel plate (color number is decided according to SMEC decoration color plate)

Hairline titanium stainless steel (color number is decided according to SMEC decoration color plate)

Hairline stainless steel

# External Decoration Deck



Plan 3-1  
stainless steel interior plate, external decoration plate perpendicular to step operation direction without lighting.



Plan 3-2  
Stainless steel interior plate, external decoration plate perpendicular to step operation direction with tube-light.



Plan 3-3  
Stainless steel interior plate, external decoration plate perpendicular to step operation direction with belt-light.





**Handrail Illumination**

White LED

**Skirting Illumination**

Successive White LED

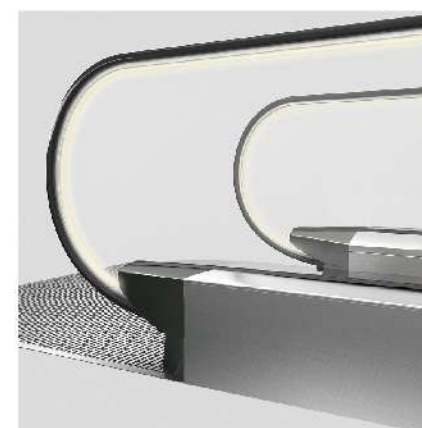
**Comb Illumination**

White LED

The Series K escalator uses LED illumination to all systems, including handrail, skirting, comb, and below steps. The all-LED solution improves the environmental conditions, saves energy, and is safe and reliable. The light below stairs is green, and colors can be selected for all other illumination systems.

## All-LED Illumination

**Handrail Illumination**



Only for KS-LB/KS-LBF, and colors can be selected.

**Skirting Illumination**



Successive type, and colors can be selected.



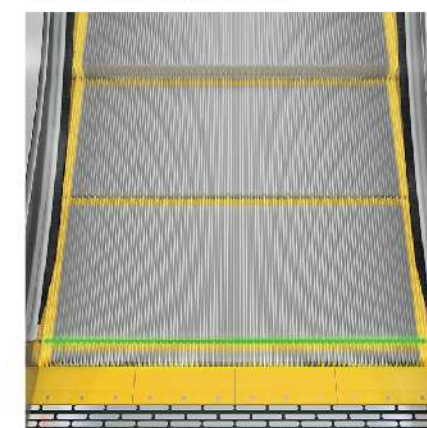
Dot type, and colors can be selected.

**Comb Illumination**



Colors can be selected

**Below Steps Illumination**



Green

**Illumination Colors**

Standard Options:



Non-standard Options:  
(Please contact Shanghai Mitsubishi Elevator Co. Ltd.)



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## Features

## Series K

Feature	Description	Code	Non-frequency Conversion	Frequency Conversion
<b>Control and Security Features</b>				
Phase Dislocation/ Phase Loss Protection	In case of phase dislocation or phase loss of the input power supply, cut the main circuit and control the circuit to stop the escalator.	3E	Ⓢ	Ⓢ
Non-manipulated Reversion Protection	In case of accidental reversion of the escalator, the device will cut down the power supply to the main drive motor and the brake.	ARP	Ⓢ	Ⓢ
Auxiliary Brake	When the escalator reaches 1.4 times of the rated speed or is not operating in the required direction, the auxiliary brake stops the escalator.	AUX-BK *1	Ⓢ	Ⓢ
Auxiliary Brake	When the escalator reaches 1.4 times of the rated speed or is not operating in the required director, the auxiliary brake stops the escalator.	AUX-BK *2	Ⓢ	Ⓢ
Detection of Service Brake Actions	Stop the escalator when the service brake cannot release or brake normally.	BLR	Ⓢ	Ⓢ
Service Brake	The service brake takes action to stop the escalator, and keep it stopped.	BRK	Ⓢ	Ⓢ
Bended Guide rail Safety Device	When any object gets pinched between the pallets of two steps and causes abnormality of the operation, stop the escalator.	CRS	Ⓢ	Ⓢ
Comb Plate Safety Device	When any foreign object falls between the pallets and the comb plate, stop the escalator.	CSS	Ⓢ	Ⓢ
Detection of Contactor Action	In case of any abnormality with the contactor, stop the escalator.	CTD	Ⓢ	Ⓢ
Drive Chain Safety Device	When the drive chain breaks or extends abnormally, stop the escalator.	DCS	Ⓢ	Ⓢ
Cover Plate Safety Device	When the maintenance cover plate is taken out, stop the escalator or prevent it from starting.	DOS	Ⓢ	Ⓢ
Emergency Stop Button	In emergency, use this device to stop the escalator.	E-STOP	Ⓢ	Ⓢ
Detection of Auxiliary Brake Actions	When the auxiliary brake is not in place, prevent the escalator from starting. (When the rise is above 6m)	EBR *3	Ⓢ	Ⓢ
Electric Safety Circuit Protection	When there is any action in the electric safety devices connected in serial, stop the escalator.	ESC	Ⓢ	Ⓢ
Detection of Braking Distance	When the brake distance gets longer than 1.2 times the defined maximum, prevent the escalator from starting.	ESD	Ⓢ	Ⓢ
Water Level Warning Device	When too much water is accumulated in the lower truss, stop the escalator.	FLS *4	Ⓢ	Ⓢ
Handrail Anti-static Device	The device prevents static from occurring on the handrail.	HER	Ⓢ	Ⓢ
Over-speed	Stop the escalator before the operational velocity grows above 1.2 times the nominal velocity.	HGD1	Ⓢ	Ⓢ
Over-speed Limitation Device	Stop the escalator before the operational velocity grows above 1.4 times the nominal velocity. (when the rise is above 6m)	HGD2	Ⓢ	Ⓢ
Handrail Inlet Safety Device	When any foreign object gets pinched into the handrail inlet, stop the escalator.	HGS	Ⓢ	Ⓢ
Handrail Velocity Inspection	When the velocity of the handrail is below the rated value, and the condition lasts for a period of time, stop the escalator.	HSS	Ⓢ	Ⓢ
Under-voltage Protection	When the voltage of the frequency converter is too low, stop the escalator.	LVP	—	Ⓢ
Over-current Protection	When the electric current of the frequency converter is too strong, stop the escalator.	OCP	—	Ⓢ
Motor Overload Protection	When the motor is overloaded, stop the escalator.	OCR	Ⓢ	Ⓢ
Oil Level Warning	When the oil level in the oil feeding device is too low, prevent the escalator from starting.	OILF	Ⓢ	Ⓢ
Over-Temperature Protection	When the voltage of the frequency converter is too high, stop the escalator.	OTP	Ⓢ	Ⓢ
Over-voltage Protection	Stop escalator when over temperature of motor is detected.	OVP	—	Ⓢ
Detection of Power Phase	Automatically inspect the power phase and frequency, and switch to bypass frequency converter in a shock-free manner. Realize self-adaptation control of power factors with the full frequency converter.	PLL	—	Ⓢ
Error of the Passenger Detection Device	Self-diagnosis of error with the passenger detection device. In case of any error, cancel the standby model.	PSD	—	Ⓢ



Feature	Description	Code	Non-frequency Conversion	Frequency Conversion
Control and Security Features				
Step Chain Safety Device	When the step chains break or extend abnormally, stop the escalator.	SCS	Ⓢ	Ⓢ
Pinch-proof Device at the Skirting	Device with a rigid base installed on the skirting panels, to prevent foreign objects or feet from falling between the skirting panels and the steps.	SDS	Ⓢ	Ⓢ
Step Anti-static Device	The device prevents static from occurring on the steps.	SER	Ⓢ	Ⓢ
Steps Missing Safety Device	When there is any step missing, the device takes action to stop the escalator.	SMS	Ⓢ	Ⓢ
Steps Sinking Safety Device	If any part of a step sinks and the step cannot mesh with the comb plate, stop the escalator.	SRS	Ⓢ	Ⓢ
Skirting Panel Safety Device	When any foreign object falls between steps and skirting panels, stop the escalator.	SSS	Ⓢ	Ⓢ
Monitoring Cohesion of the Starting Switch	In case of cohesion of the starting switch, prevent the escalator from starting.	SWD	Ⓢ	Ⓢ
Overheating Protection of Frequency Converter	When the frequency converter is overheated, stop the escalator.	THMF	—	Ⓢ
Low Velocity Protection	When the velocity of the escalator is below the rated velocity, stop the escalator.	USP	Ⓢ	Ⓢ
Emergency Operations				
Fire Stop	When a signal of fire-fighting action is received, stop the escalator.	FSS	Ⓢ	Ⓢ
Operations and Service Functions				
Control panel LED operation panel	Configure maintenance parameters, check operation states and error codes via operation panel installed in control panel, use LED tube for display.	CPS-LED *5	Ⓢ	Ⓢ
Control panel LCD operation panel	Configure maintenance parameters, check operation states and error codes via operation panel installed in control panel, use LCD tube for display.	CPS-LCD *5	Ⓢ	Ⓢ
Repair	The escalator can be set to the operation under repair model, to make the installation and commissioning convenient.	HAND	Ⓢ	Ⓢ
Manually Shut Down Illumination	Open or shut down illumination manually with the switch. (When auxiliary illumination below steps and/or at the handrails is equipped)	LO-M *5	Ⓢ	Ⓢ
Automatic Operation	Through the usage of passenger detection devices, the escalator could operate with the nominal speed when there is any passenger, and shift to standby in case of no load.	MDA	—	Ⓢ
Operation with Constant Velocity	The escalator keeps at the nominal velocity.	MDC	Ⓢ	—
Multi-function operation panel	Run escalator, configure parameter, check operation states and error codes via display panel mounted at entrance of escalator.	MFP	Ⓢ	Ⓢ
Automatic Oil Feeding	Add lubricating oil to the chains of the escalator at predetermined time automatically.	OIL	Ⓢ	Ⓢ
Passenger Detection Device: Microwave but not the Column Pattern	Adopt microwave sensors for the passenger detection device.	PSM *6	—	Ⓢ
Passenger Detection Device: Column Pattern	Adopt the photoelectric column for the passenger detection device.	PSP *6	—	Ⓢ
Low Velocity Standby	The escalator operates below the nominal velocity in the condition of no load.	SBLS *7	—	Ⓢ
Stop Standby	The escalator stops in the condition of no load.	SBSP *7	—	Ⓢ
Direct Start-up	Supply power with direct drive with mains at both starting and operation of the escalator, and the frequency converter serves merely as a backup.	SDT	Ⓢ	—
Backup start	Manually set escalator to directly drive by municipal power grid in case frequency converter is error	SBK	—	Ⓢ
Optional Directions of Operation	The direction of escalator operation could be reversed.	UDA	Ⓢ	Ⓢ
Bypass Frequency Converter	Supply power with frequency converter at starting, stop, and low velocity standby, and shift to direct drive with mains during operations with rated velocity.	VFBF	—	Ⓢ

Feature	Description	Code	Non-frequency Conversion	Frequency Conversion
Operations and Service Functions				
Heating Device	Monitor the escalator with temperature sensors in a real-time manner. When the temperature in the escalator is lower than the rated value, prevent the escalator from starting. The device can automatically start or stop heating as per the actual temperature.	HEAT *8	Ⓢ	Ⓢ
Information and Display				
Voice Announce Device	Voice announce device (Chinese) informs the passengers of related elevator information.	AAN-S01 *9	Ⓢ	Ⓢ
Voice Announce Device	Voice announce device (Chinese and English in turn) informs the passengers of related elevator information.	AAN-S02 *9	Ⓢ	Ⓢ
Voice Announce Device	Voice announce device (English) informs the passengers of related elevator information.	AAN-S03 *9	Ⓢ	Ⓢ
Displaying Safety Device Codes	Carry out one-on-one inspection on safety devices, and display response error codes if there is any error.	ASD	Ⓢ	Ⓢ
BA Interface	Use passive dry contact to output signals indicating basic status of the escalator.	BA	Ⓢ	Ⓢ
Buzzer	Remind the passengers of escalator starting, error, reversion, and etc.	BUZ	Ⓢ	Ⓢ
Operational Direction Indication	Indicate the passengers the operational direction, stop, no entry, or other conditions of the escalator.	DI *10	Ⓢ	Ⓢ
Theft-proof buzzer for inspection cover	In case inspection cover opens accidentally, the buzzer shall keep ringing for alarm.	DOA	Ⓢ	Ⓢ
Reminder of Fire-protection Stop	When the escalator stops for fire-protection reasons, release the signal of fire-protection stop.	FE-CP	Ⓢ	Ⓢ
Handrail Illumination	Illumination at the lower edge of the handrail.	L-BAL *11	Ⓢ	Ⓢ
Illumination Below Steps	Illumination at the inlet and outlet of the staircase, highlighting the edge of the staircase.	L-STP	Ⓢ	Ⓢ
LED Lighting	Use LED as lighting power source.	LED	Ⓢ	Ⓢ
The Monitoring System	The system monitors the status of the escalator with computers, and gives orders of starting or stop when necessary.	SMOS-II	Ⓢ	Ⓢ
Skirting Illumination	Illumination on the skirting panels at both sides of the staircase.	L-SKT *12	Ⓢ	Ⓢ
Comb Illumination	Illumination on the skirting panels at the inlet and outlet of the staircase or pallets.	L-COMB *13	Ⓢ	Ⓢ

Note:

\*1 Standard component when the rise is above 6 meters.

\*2 Non-standard component when the rise is 6 meters or below.

\*3 Standard component when auxiliary brakes are equipped.

\*4 Standard component only when the escalator is installed outdoor or half-outdoor.

\*5 CPS-LED or CPS-LCD (CPS-LED is the recommended option)

\*6 PSM or PSP (PSP is non-standard configuration.)

\*7 SBLS or SBSP (SBSP is recommended indoor option)

\*8 Non-standard only when the escalator is installed outdoor.

\*9 Non-standard

\*10 Standard for frequency conversion escalators, Non-standard for non-frequency conversion escalators.

\*11 Only for indoor KS-LB/KS-L BF.

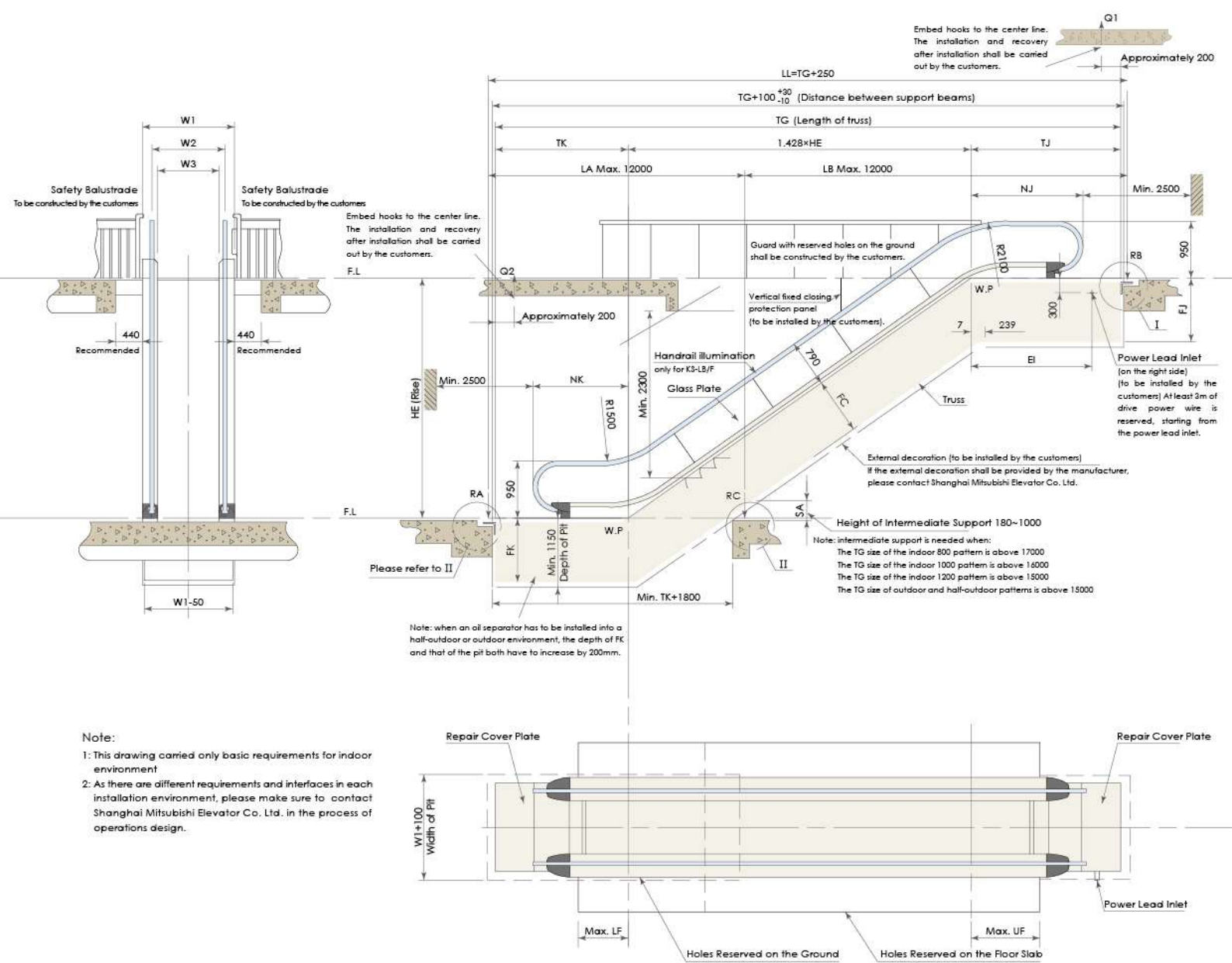
\*12 Only for indoor KS-SB/KS-LB/KS-SBF/KS-LBF.

\*13 Indoor

\*14 Non-frequency conversion versions: KS-SB, KS-LB, KP-B; frequency conversion versions: KS-SBF, KS-LBF, KP-BF

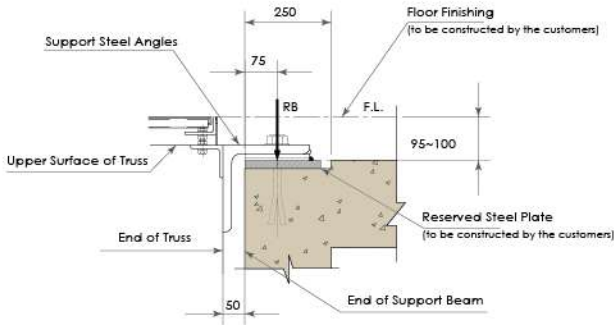
\*15 Ⓢ Standard functions, Ⓢ optional functions



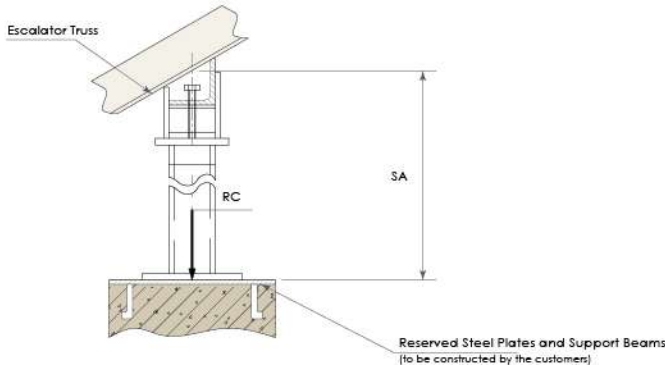


Note:  
1: This drawing carried only basic requirements for indoor environment  
2: As there are different requirements and interfaces in each installation environment, please make sure to contact Shanghai Mitsubishi Elevator Co. Ltd. in the process of operations design.

End Support Drawing



Intermediate Support Drawing



Item	Standard	Optional	Note
Length of the Upper Truss TJ (mm)	2437 *1	2438~5137	Angle of inclination 30° / Level 2 steps / Rise ≤ 6000mm / Handrail nominal width 1000 or 1200
	2937	2938~5137	Angle of inclination 30° / Level 2 steps / Rise ≤ 6000mm / Handrail nominal width 800
	2842 *2	2843~5542	Angle of inclination 30° / Level 3 steps / Rise ≤ 6000mm / Handrail nominal width 1000 or 1200
	3342	3343~5542	Angle of inclination 30° / Level 3 steps / Rise ≤ 6000mm / Handrail nominal width 800
	2842	2843~5542	Angle of inclination 30° / Level 3 steps / 6000mm< Rise ≤ 7000mm / Handrail nominal width 1200
	3142	3143~5542	Angle of inclination 30° / Level 3 steps / 7000mm< Rise ≤ 10000mm / Handrail nominal width 1200
	3142	3143~5542	Angle of inclination 30° / Level 3 steps / 6000mm< Rise ≤ 10000mm / Handrail nominal width 1000
	3342	3343~5542	Angle of inclination 30° / Level 3 steps / 6000mm< Rise ≤ 10000mm / Handrail nominal width 800
	2497 *3	2498~5197	Angle of inclination 35° / Level 2 steps / Handrail nominal width 1000 or 1200
	2997	2998~5197	Angle of inclination 35° / Level 2 steps / Handrail nominal width 800
Length of the Lower Truss TK (mm)	2210	2211~4910	Angle of inclination 30° / Level 2 steps
	2615	2616~5315	Angle of inclination 30° / Level 3 steps
	2245	2246~4945	Angle of inclination 35° / Level 2 steps
	2650	2651~5350	Angle of inclination 35° / Level 3 steps
Depth of the Upper Truss FJ (mm)	1060		FJ is distance from upper F.L (decoration plane) to lower beam angle steel outer surface, please add 15mm for sleeve and other component while calculating truss contour.
Depth of the Lower Truss FK (mm)	1060		
Depth of the Middle Truss FC (mm)	918		Angle of inclination 30°
	938		Angle of inclination 35°
Width of the Escalator W1 (mm)	1550		Handrail nominal width 1200
	1350		Handrail nominal width 1000
	1150		Handrail nominal width 800
Distance Between Intermediate Supports LA	(TK+250) ~12000		1 or 2 intermediate supports, angle of inclination 30°, (LA) between (TK+250) and 12000
	(TK+370) ~12000		1 or 2 intermediate supports, angle of inclination 35°, (LA) between (TK+370) and 12000
Distance Between Intermediate Supports LB	(TJ+240) ~12000		1 or 2 intermediate supports, angle of inclination 30°, (LB) between (TJ+240) and 12000
	(TJ+110) ~12000		1 or 2 intermediate supports, angle of inclination 35°, (LB) between (TJ+110) and 12000
Distance Between Intermediate Supports LC	500~12000		2 or more intermediate supports



Basic Specifications

Item	Specification			Note
Nominal Width Between Handrails (mm)	1200	1000	800	
Distance Between Center Lines of Handrails (mm)	1228	1028	828	
Nominal Width of Steps (mm)	1004	804	604	
Maximum Load (Person/Hour)	6000	4800	3600	
Serial No.	KS-SB/KS-SBF, KS-LB/KS-LBF, KP-B/KP-BF			KS-LB/KS-LBF cannot be applied to outdoor or half-outdoor environment
Drive System	Direct Drive			KS-SB, KS-LB, KP-B
	VVVF Drive			KS-SBF, KS-LBF, KP-BF
Drive Power Supply	380V50Hz three-phase and five-wire			
Illumination Power Supply	220V50Hz single phase			
Angle of Inclination (Degree)	30, 35			
Velocity (m/s)	0.5			
Escalator Rise (mm)	1400~10000			When the angle of inclination is 30°
	1606~6000			When the angle of inclination is 35°
Horizontal Movement Distance of Steps (mm)	800			Level 2 steps, Rise ≤ 6000mm.
	1200			Level 3 steps, Rise ≤ 6000mm.
	1200			Level 3 steps, Rise > 6000mm.
Applicable Environment	Indoor			Please contact the Shanghai Mitsubishi Elevator Co. Ltd. to confirm if the escalator could be used indoor.
	Outdoor, half-outdoor			Please contact the Shanghai Mitsubishi Elevator Co. Ltd. to confirm if the escalator could be used outdoor and/or half-outdoor.

Power Supply Data

Driving Power (three phase AC 380V, 50Hz)

Driving Power Capacity (kVA)	8.0	The motor power capacity is 5.5kW, without heater.		
	10.4	The motor power capacity is 7.5kW, without heater.		
	13.2	The motor power capacity is 9kW, without heater.		
	15.4	The motor power capacity is 11kW, without heater.		
	18.0	The motor power capacity is 13kW, without heater.		
	10	Heater at 30 degrees, Rise ≤ 3500mm.		
	13	Heater at 30 degrees, 3500mm < Rise ≤ 5300mm.		
	16	Heater at 30 degrees, 5300mm < Rise ≤ 8300mm.		
	19	Heater at 30 degrees, 8300mm < Rise ≤ 1000mm.		
	10	Heater at 35 degrees, Rise ≤ 4000mm.		
	13	Heater at 35 degrees, 4000mm < Rise ≤ 6000mm.		

Illumination Power (single phase AC 220V, 50Hz)

Serial No.	KS-LB/KS-LBF	KP-B/KP-BF	KS-SB/KS-SBF	
Illumination Power Capacity (kVA)	2.2	2.2	2.2	Rise ≤ 6000mm, with handrail or skirting illumination.
	2.6	2.6	2.6	6000mm < Rise ≤ 10000mm, with handrail or skirting illumination
	—	1.3	1.3	No handrail or skirting illumination

Motor Capacity

Handrail Nominal Width (mm)	1200	1000	800	
Motor Capacity (kW)	5.5	5.5	5.5	Rise ≤ 4000mm
	7.5	5.5	5.5	4000mm < Rise ≤ 5000mm
	7.5	7.5	5.5	5000mm < Rise ≤ 6000mm
	9	7.5	5.5	6000mm < Rise ≤ 7000mm
	11	9	7.5	7000mm < Rise ≤ 8500mm
	13	11	7.5	8500mm < Rise ≤ 10000mm

Note: if the items do not match with the standards provided here, please contact the Shanghai Mitsubishi Elevator Co. Ltd.

