It's time to update your elevator by ELEMOTION

Modernization with Smart Technology

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

Our manufacturing sites have acquired ISO 9001 certification for quality management system and ISO 14001 certification for environmental management system from accredited certification bodies as below.

- Mitsubishi Electric Corporation
- Inazawa Works
- Taiwan Mitsubishi Elevator Co., Ltd.
- Mitsubishi Elevator Asia Co., Ltd.

at the Inazawa Works in Japan and 12 global manufacturing factories are utilized in a worldwide network that.

Revised publication, effective May 2020.
Specifications are subject to change without notice.

2020

www.MitsubishiElectric.com/elevator
Even regular maintenance cannot prevent the aging degradation of elevators

Elevators have limited lifecycles.

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

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As of October 2017. Reference number of years based on in-house research.

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Elevators:

20 - 25 years

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Air conditioners: 15 - 16 years

Fire-fighting equipment: Once every 7 - 8 years

Roofing: Once every 10 - 12 years

Ventilation systems (transformer/non-utility generation): Once every 15 - 16 years

Exterior walls: Once every 12 - 13 years

Water supply equipment: 25 to 26 years

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Deterioration over a long period of use leads to increased vibration and reduced safety.

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Deteriorating equipment means more frequent breakdowns. Subsequent repair work could also mean disruption of service for a prolonged time.

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Is your elevator showing any of these signs?

Number of years lapsed

1 2

is the time for modernization!

Now...
ELEMOTION resolves these issues!

Reduce the burden on the building and update to a safer and more comfortable elevator. Instead of replacing the entire system, only replace the equipment that requires updating.

That’s the modernization offered by Mitsubishi Electric ELEMOTION.

Effect 1
Improved sense of security

By replacing with latest equipment, failure rates will be significantly reduced. Repair time is also reduced accordingly.

Effect 2
More economy & ecology

Latest devices offer greater energy efficiency and parts that last longer are retained and reused.

Effect 3
Reduced frustration

By replacing with latest equipment, failure rates will be significantly reduced. Repair time is also reduced accordingly.

Mitsubishi Electric modernization of a Mitsubishi Electric elevator enables updating that utilizes the existing system!

Reliability & Safety

Maximum effects achieved at minimum cost by replacing only those parts necessary instead of replacing the entire elevator, replacing only essential components / equipment helps to maintain renewal expenses at a reasonable level. In addition, by reducing the influence on building operations as much as possible, a shorter installation period can be achieved.

State-of-the-art technologies boost reliability and safety.

Replaceable equipment include all of the latest models, which boast cutting-edge technologies and comply with all the relevant laws and regulations. Additionally, elevator reliability will be enhanced as a result of replacement with latest machinery. The elevator can operate more safely.

Comfortable & Energy Efficient

More user-friendly, comfortable and with higher energy efficiency

State-of-the-art technologies transform aging elevators into a more comfortable, user-friendly moving space. Modernization also achieves substantial energy savings compared to previous systems.

So...

we recommend ELEMOTION!

Scan the barcode to watch our video on Modernization Solutions.
Improved precision of landing alignment

Thanks to leading-edge control technology, the ability of the car to stop precisely flush with the landing has been increased. Misalignment of the car sill with the landing sill is diminished.

Protection against accidental car movement

- **Unintended Car Movement Protection (UCMP) [Optional***1,**2]**
  - Equipped with double brakes, the car is stopped securely in the rare case of a malfunction where the car starts to move with the doors open.

- **Ascending Car Overspeed Protection (ACOP) [Optional***1,**2]**
  - If some sort of malfunction should cause a car to ascend at an abnormally high speed, the overspeeding car stops automatically to prevent it from striking the hoistway ceiling.


distinctive gearless traction machine with state-of-the-art PM motor

(PM: permanent magnet)

The traction machine is the most important component of an elevator. Mitsubishi Electric manufactures high-precision motors by making use of our unique motor and wire winding technologies. Moreover, the traction machine comes with double brakes as standard, which boosts braking performance significantly.

Safe door operation ensured by refined features

Door-related features, renowned for their safety and reliability, have been even further improved.

- **Multi-beam Door Sensor (Optional***2)**
  - If the sensor detects a person or object between closing doors, the doors immediately reverse to open to prevent anyone or anything from being caught.

- **Door Load Detector (DLD) [Standard]**
  - If an obstacle has been caught between the doors and an abnormal door load is detected when opening or closing, the doors immediately reverse to prevent an accident or malfunction.

Notes:

1: Replacement of the entire traction machine is required for compatibility with this safety system.

2: The safety system is an optional feature, but may be required in accordance with relevant laws, regulations or other requirements.

3: The feature may be installed in the elevator which is currently in use. Please refer to pages 15 to 17 for other features.
AI-2200C Performance

• Strategic Overall Spotting [SOHS] * (Standard)
  Cars that have finished service are dispersed to stand by at floors where they can respond to predicted future hall calls as quickly as possible so as not to keep passengers waiting for long.

• Main Floor Parking [MFP] * (Optional)
  One of the available cars in a group stands by for a hall call at the lobby (main) floor.

• Elevator Group Control Systems [Σ AI-22 and Σ AI-2200C]
  Our group control systems use the latest artificial intelligence (AI) technologies to evaluate not only actual waiting time, but also psychological waiting time through assessment of the probability of full-load bypass, prediction errors, etc. for the lobby (main) floor.

Improve operational efficiency

Our ingenious features minimize door open time and reduce passenger waiting time, elevating traffic performance and mitigating passenger frustration.

Smooth control using high-speed CPU

The introduction of high-density, integrated LSI digital control circuitry resulted in a significant increase in computer processing speed, enabling precise control of the traction motor for acceleration and deceleration. This innovation delivers a quality ride with minimal noise and vibration.

Increase usability

A large variety of convenient features makes our elevators truly easy to use for everyone.

• False Call Cancelling — Call Button Type [FCC-P] * (Optional)
  If a passenger has pressed a wrong button in the car, it can be cancelled by double-pressing the button.

Energy conservation through LED indicators

Choosing a signal fixture with LED indicator to replace an incandescent light indicator is one way to reduce energy consumption.

Conserve energy

• Car Fan Shut Off — Automatic [CFO-A] * (standard)
  The car ventilation fan or lighting is automatically turned off if there are no calls for a specified period.

• Door Motor with VVVF Inverter Control
  A control panel with VVVF inverter control, using advanced power electronics, exerts remarkable effects: reduction in energy consumption and traveling time and increased riding comfort during acceleration and deceleration.

• Regenerative Converter [PCNV] (Optional)
  The Regenerative Converter transmits the power regenerated by the traction machine via the distribution transformer to the electrical network for use in lights, air conditioners and other building facilities.
Other Major Features

In addition to features already described, a wide variety of convenient features is available.

Standard Features

For increasing security
• Power-On Releveling [PORL]
  Before the car parking at a door zone due to power failure resumes the operation and opens the doors, the level difference between the car floor and the landing is automatically adjusted to prevent the passengers from stumbling and falling.
• Safe Landing [SFL]**
  If a car has stopped between floors due to some equipment malfunction, the controller checks the cause, and if it is considered safe to move the car, the car will move to the nearest floor at a low speed and the doors will open.

For safer door operation
• Next Landing [NXL]**
  If the elevator doors do not open fully at a destination floor, the doors close, and the car automatically moves to the next or nearest floor where the doors open.
• Door Sensor Self-diagnosis [DDDA]
  Failure of non-contact door sensors is checked automatically, and if a problem is diagnosed, the door-close timing is delayed and the closing speed is reduced to maintain elevator service and ensure passenger safety.
• Automatic Door Speed Control [DSAC]
  Door load on each floor, which can depend on the type of hall doors, is monitored to adjust the door speed, thereby making the door speed consistent throughout all floors. (Cannot be used with some doors.)
• Door Nudging Feature – With Buzzer [NDG]**
  A buzzer sounds and the doors slowly close when they have remained open for longer than the preset period.

Optional Features

For safety in case of emergency
• Mitsubishi Emergency Landing Device [MELD]**
  Upon power failure, a car equipped with this function automatically moves and stops at the nearest floor using a rechargeable battery, and the doors open to facilitate the safe evacuation of passengers.
• Earthquake Emergency Return [EER-S/P]**
  Upon activation of primary and/or secondary wave seismic sensors, all cars stop at the nearest floor, and park there with the doors open to facilitate the safe evacuation of passengers.
• Fire Emergency Return [FER] (FER operation Signal Lamp in Car [FERC]**)
  Upon activation of a key switch or a building’s fire alarm, all calls are canceled, all cars immediately return to a specified evacuation floor and the doors open to facilitate the safe evacuation of passengers. The indicator, when incorporated in the car operating panel, illuminates to show that the car is in fire emergency operation. [FERC] (Optional)
• Overload Holding Stop [OLH] & Overload Holding Stop Light (Car) [OLHL]**
  A buzzer sounds to alert the passengers that the car is overloaded. The doors remain open and the car will not leave that floor until enough passengers exit the car. [OLH] The indicator, when incorporated in the car operating panel, illuminates to show that the car is overloaded. [OLHL]

For further convenience
• Mitsubishi Elevators & Escalators Monitoring and Control System – MelEye [WP-W]
  Each elevator’s status and operation can be monitored and controlled using an advanced Web-based technology which provides an interface through personal computers. Special optional features such as preparation of traffic statistics and analysis are also available.
• Non-service Temporary Release for Car Call (Card Reader Type) [NSCR-C]
  Non-Service to Specific Floors can be temporarily released by swiping a card through the car operating panel.

Notes:
**1: The feature may be installed in the elevator which is currently in use. Please refer to pages 15 to 17 for other features.
**2: The feature becomes a standard feature when EN81-20/50 applies.
Mounting operating panel on side wall

Some latest codes and regulations demand that a car operating panel be mounted on the car side wall. We offer panels for side-wall mount as well as those for front-return-panel mount. However, some conditions apply, including additional side-wall installation. Please consult our local agents.

Buttons accented with LED illumination

Tactile and flat buttons (stainless-steel with non-directional hairline-finish) are available in three halo illumination colors: yellow-orange, white and blue.

<table>
<thead>
<tr>
<th>Halo Illumination Color</th>
<th>Tactile Buttons</th>
<th>Flat Buttons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow-orange</td>
<td>■ 4 : 1</td>
<td>■ 4 : 2, 4, 6</td>
</tr>
<tr>
<td>Blue</td>
<td>■ 4 : 5</td>
<td>■ 4 : 6</td>
</tr>
<tr>
<td>White</td>
<td>■ 4 : 3</td>
<td>■ 4 : 4</td>
</tr>
</tbody>
</table>

Square buttons are also available as optional for some car and hall signal fixtures. However, some conditions apply. Please consult our local agents for details. The entire button, excluding the characters, is illuminated yellow-orange, white or blue.

Replacement of Signal Fixtures

Car operating panels in front return panel

Short panels

Panels with cabinet

Indicator for EN81-20/50

Notes:

*1: These car operating panels are applicable when the number of floors is 22 or less.

*2: Not applicable to EN81-20/50 compliant elevators.

*3: Segment LED indicators cannot display some letters of the alphabet. Please consult our local agents for details.

*4: Please select a button type, and enter the number in ■.

*5: The type in parentheses () shows an auxiliary car operating panel (optional). The design is slightly different from the above images. Please consult our local agents for further information such as installation location.

*6: Applicability may vary depending on conditions.
New Hall Design

Effectively conceals existing mounting holes

We cater to the need of replacing hall signal fixtures without leaving a trace of the previous installation, even when the fixtures are different sizes.

Replacement of Signal Fixtures

Hall position indicators and buttons

All fixtures shown, even standard type have the faceplate made of hairline-finished stainless steel.

Segment LED indicator** with plastic case

Segment LED indicator**

Dot LED indicator

LCD indicator

Hall buttons (Optional) with plastic case

Hall position indicators (Optional)

LCD position indicator (Optional)

Hall lanterns (Optional)

Hall position indicator with lantern (Optional)

Cross-section of surface-mount fixtures

These hall signal fixtures can be easily mounted on the wall surface without having to cut into the wall to embed the back box.

Notes:
1. Segment LED indicators cannot display some letters of the alphabet. Please consult our local agents for details.
2. Dot LED indicators are available (optional). Please consult our local agents for details.
3. Please select a button type on page 12, and enter the number in □.
4. Faceplates with stainless-steel, mirror-finish are also available (optional). Please consult our local agents for details.
5. Please consult our local agents for the production terms, etc.
6. Dot LED indicator is available in PH-D424A.
7. Segment LED indicator is available as PH-D424A.
8. Only elevators status messages are available.
9. Depending on the conditions, incandescent lights may be used instead of LED.

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## OPERATIONAL AND SERVICE FEATURES (Continued from the previous page)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Light Shut-Off — Automatic</td>
<td>CLD-A</td>
<td>If there are no calls for a specified period, the car lighting will automatically turn off to conserve energy.</td>
</tr>
<tr>
<td>Continuity of Service</td>
<td>COG</td>
<td>A car which is experiencing trouble is automatically withdrawn from group control operation to maintain overall group performance.</td>
</tr>
<tr>
<td>False Call Cancelling — Automatic</td>
<td>FCC-A</td>
<td>If the number of registered call cards does not correspond to the car load, all calls are canceled to avoid unnecessary stops.</td>
</tr>
<tr>
<td>False Call Cancelling — Car Button Type</td>
<td>FCC-P</td>
<td>If a wrong car button is pressed, it can be canceled by quickly pressing the same button again twice.</td>
</tr>
<tr>
<td>Going-out Service</td>
<td>GOO</td>
<td>When passengers press the down button in the hall of the floor they're on, the car that answers the call automatically travels down to a predetermined floor with any buttons in the car being pressed. (The Going-out Service is not applicable to some elevators. Please consult our local agents for details.)</td>
</tr>
<tr>
<td>Independent Service</td>
<td>IND</td>
<td>Exclusive operation where a car is withdrawn from group control operation independent use, such as maintenance or repair, and responds only to car calls.</td>
</tr>
<tr>
<td>Next Landing</td>
<td>NLL</td>
<td>If the elevator doors do not open fully at a destination floor, the doors close, and the car automatically moves to the nearest or next floor where the doors close.</td>
</tr>
<tr>
<td>Non-service to Specific Floors — Car Button Type</td>
<td>NS-CB</td>
<td>To enhance security, service to specific floors can be disabled using the car operating panel. This function is automatically deactivated during emergency operation.</td>
</tr>
<tr>
<td>Non-service Temporary to Specific Floors — Switch/Timer Type</td>
<td>NS-T</td>
<td>To enhance security, service to specific floors can be disabled using a manual or timer switch. This function is automatically deactivated during emergency operation.</td>
</tr>
<tr>
<td>Out-of-service — Manual</td>
<td>OSS</td>
<td>For maintenance or energy-saving measures, a car can be taken out of service temporarily with a key switch (both or without a timer) mounted in a specified hall.</td>
</tr>
<tr>
<td>Out-of-service — Remote</td>
<td>ORS</td>
<td>With a key switch on the supervisory panel, etc., a car can be called to a specified floor after responding to all car calls, and then automatically taken out of service.</td>
</tr>
<tr>
<td>Overload Holding Stop</td>
<td>OHU</td>
<td>A buzzer sounds to alert the passengers that the car is overloaded. The doors remain open and the car will not leave until there is enough space for the remaining passengers to enter.</td>
</tr>
<tr>
<td>Regenerative Converter</td>
<td>PCOV</td>
<td>For energy conservation, power regenerated by a traction machine can be used by other electrical systems in the building.</td>
</tr>
<tr>
<td>Power Releasing</td>
<td>PORL</td>
<td>In case the car stops in the door zone after stopping suddenly due to power failure, when power is supplied again, the doors will lock after the program has been executed and the car will move to the nearest floor to park there with the doors open.</td>
</tr>
<tr>
<td>Return Operation</td>
<td>RET</td>
<td>Using a key switch on the supervisory panel, a car can be withdrawn from group control operation and called for a specified floor. The car controller is automatically activated to be located in the same level as a landing floor to prevent passengers from tumbling.</td>
</tr>
<tr>
<td>Safe Landing</td>
<td>SP</td>
<td>If a car has stopped between floors due to some equipment malfunction, the controller checks the cause, and if it is considered safe to move the car, the car will move to the nearest floor at a slow speed and the doors will open.</td>
</tr>
<tr>
<td>Secret Call Service</td>
<td>SCS-B</td>
<td>To enhance security, cars for desired floors can be registered only by entering secret codes using the car buttons on the car operating panel. This function is automatically deactivated during emergency operation.</td>
</tr>
</tbody>
</table>

## GROUP CONTROL FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base-peak Operation</td>
<td>BBO</td>
<td>Hall buttons and the cars called by each button can be divided into several groups for independent group control operation to serve special needs or different floors.</td>
</tr>
<tr>
<td>Car Allocation Tuning</td>
<td>CAT</td>
<td>The number of cars allocated or parked on crowded floors is controlled not just according to the conditions on those crowded floors but also the operational status of each car and the traffic on each floor.</td>
</tr>
<tr>
<td>Car Travel Time</td>
<td>CTTT</td>
<td>Cars are allocated to hall calls by considering the number of car calls that will reduce passenger waiting time in each hall and the travel time of each car.</td>
</tr>
<tr>
<td>Closest-car Priority</td>
<td>CPP</td>
<td>A function to give priority allocation to the car closest to the floor where a hall call button has been pressed, or to reestablish the closest cars for the closest to the pressed hall call button on that floor. (Cannot be combined with hall position indicators.)</td>
</tr>
<tr>
<td>Congested-Floor Service</td>
<td>CSFS</td>
<td>The timing of car allocation and the number of cars to be allocated to floors where meeting rooms or balconies exist and the traffic intensities for short periods of time are controlled according to the detected traffic density data for those floors.</td>
</tr>
<tr>
<td>Cooperative Optimization Assignment</td>
<td>COA</td>
<td>The system predicts a potential hall call which could cause longer waiting time. Car assignment is performed considering not only current and next calls but also those already scheduled.</td>
</tr>
<tr>
<td>Destination-Operated Allocation System</td>
<td>DOAS</td>
<td>When a passenger enters a destination floor at a hall, the car operating panels indicate which car will serve the floor. The passenger does not need to press a button in the car. Dispersing passengers by destination prevents congestion of the cars and minimum waiting time. (Cannot be combined with some features. Please consult our local agents for details.)</td>
</tr>
<tr>
<td>Distinction of Traffic flows with Neural Networks</td>
<td>DN</td>
<td>Traffic flows in a building are constantly monitored using neural network technology, and the optimum operation pattern for the LTS, UPS feature, etc. is selected or canceled accordingly at the appropriate time.</td>
</tr>
</tbody>
</table>
GROUP CONTROL FEATURES (Continued from the previous page.)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Rule-set Optimizer</td>
<td>DRO</td>
<td>Traffic flows in a building are constantly predicted using neural network technology, and an optimum rule-set for group control operations is selected through real-time simulations based on prediction results.</td>
</tr>
<tr>
<td>Energy-saving Operation — Allocation Center</td>
<td>ES-O-W</td>
<td>The system selects the elevator that best balances operational efficiency and energy consumption according to each elevator’s current location and passenger load as well as predicted congestion levels throughout the day.</td>
</tr>
<tr>
<td>Operation TFS</td>
<td>TFS</td>
<td>Elevators in banks automatically stop at a predetermined floor on every trip without being called.</td>
</tr>
<tr>
<td>Over Peak Service UPS</td>
<td>UPS</td>
<td>Service SCPS</td>
</tr>
</tbody>
</table>

Other information

Components Replaced

BLEMOTION offers replacement of major components (page 4) and their subsidiary components as shown in the right table.

- Mechanical
- Electrical

Modernization Menu

Regarding traction machine in particular, replacement components within budget can be chosen from the three options in the modernization menu shown in the table below.

<table>
<thead>
<tr>
<th>Application (The scope of application varies depending on the specifications of the elevator currently in use.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most recommended proposal [CM2]</strong> Replacing the entire traction machine</td>
</tr>
<tr>
<td><strong>Other proposals [CM1]</strong> Replacing electrical components (motor, encoder, etc.) of the traction machine</td>
</tr>
<tr>
<td><strong>[CM0]</strong> Retaining the traction machine (replacing only some components (encoder, etc.))</td>
</tr>
</tbody>
</table>

Work Not Included in Basic Elevator Contract

The following items are excluded from Mitsubishi Electric’s elevator modernization work, and are therefore the responsibility of the building owner or general contractor.

- Elevator Halls and Holsways
  - 1. Finishing of walls and floors of elevator halls after installation of elevator hall fittings.
  - 2. Hoistway repair work.
  - 3. Flammable materials are used during the installation period.
  - 4. Security guards should be deployed throughout the installation period.
  - 5. Access to the elevator machine room sufficient to allow passage for transporting machinery from outside the building.

- Machine Rooms
  - 1. Removing the machine-room floor (breaking up cinder concrete).
  - 2. Laying conduits in the machine-room floor before laying and finishing cinder concrete.
  - 3. Drilling holes for jambs and transom panels, hall indicators, hall buttons, etc., in the entrance halls on each floor where steel-frame construction is used.
  - 4. Installing fasteners for the mounting of rail brackets on floors where steel-frame construction is used.

- Cautions Regarding Installation Work
  - 1. Temporary hall enclosures should be provided.
  - 2. A certain amount of vibration and noise is inevitable during the installation period.
  - 3. Flammable materials are used during the installation period.
  - 4. Security guards should be deployed throughout the installation period.

Notes:

- 1C-2BC (1-car selective collection) — Standard, 2C-2BC (2-car group control system) — Optional
- * Work responsibilities in installations and constructions shall be determined according to the local laws. Please consult our local agents for details.
State-of-the-Art Factories... For the Environment. For Product Quality.

Mitsubishi Electric 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 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

Our manufacturing sites have acquired ISO 9001 certification for quality management system and ISO 14001 certification for environmental management system from accredited certification bodies as below.

Mitsubishi Electric Corporation
Inazawa Works
ISO 9001
BUREAU VERITAS
Certification

Taiwan Mitsubishi Elevator Co., Ltd.
ISO 9001
BSMI
Certification

Mitsubishi Elevator Asia Co., Ltd.
ISO 9001
BUREAU VERITAS
Certification

Eco Changes is the Mitsubishi Electric Group’s environmental statement, and expresses the Group’s stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

MITSUBISHI ELECTRIC CORPORATION
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www.MitsubishiElectric.com/elevator

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