THE SOLUTIONS

COMPANY SOLUTIONS

Toshiba Elevator and Building Systems Corporation has built a framework which encompasses all aspects from system development to production, sales to marketing, installation, adjustment, maintenance and services in order to provide clients with the highest quality products and services. Utilizing the comprehensive technological infrastructure developed by Toshiba Group in more than 140 years since its foundation, we aim to enhance the leading edge technology and quality that we used to develop the ultra high speed elevator, harnessing Toshiba’s technological innovations to their fullest extent. To meet clients’ expectations and requirements for safe and pleasant elevators as well as constantly pursuing further innovation and improvement. Furthermore, we are aiming to strengthen system development, production, enhancing sales channel and sales partnership to expand in the global market.

CONCEPT of ELCOSMO-III

Toshiba manufactures elevators by applying the latest technology and improved elevator development skills. ELCOSMO-III, the most recent high-end compact machine room elevator, which incorporates various technologies to save energy and time, contributes to global environment.

Product Lineup

Toshiba offers a wide variety of compact machine room elevators, which include 8-26 passenger elevators as well as single and double entrance elevators. To meet diversification of customer’s demand, sufficient options are also available.

<table>
<thead>
<tr>
<th>Scale of application</th>
<th>Range of application</th>
<th>ELCOSMO-III</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1~3 m/s</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1.79</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>2.5</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: The above scope complies with GB7025.2003 standard.
New Technology

Traction Machine Designed and Manufactured by Toshiba
- Toshiba has manufactured motors for over 100 years since 1895. The motors produced by Toshiba promise better quality assurance and quality control.
- Compact PMSM (Permanent Magnet Synchronous Motor) for space saving.
- Over 30% less power consumption (compared to conventional electric motor).
- Gearless traction without gear oil for low vibration, low noise and better environmental conservation.

Use of Roller Guide
A roller guide is used instead of a conventional sliding guide shoe. Features include:
- Comfort: Using the successful vibration damping solution from the high-end elevator type, riding comfort is further improved after roller guide is mounted on the car.
- High efficiency: Visible improvement of the mechanical efficiency with lower friction and energy consumption.
- Environmental conservation: Lubrication oil and lubrication unit are eliminated and replaced by a long-life rubber roller to reduce environmental pollution.

New Control Systems
A high performance CPU is employed for advanced newly developed control system. This control system enables to reduce standby electricity, automatic shutoff system for lightings and ventilation to contribute furthermore reduction of electricity.

Energy Regeneration System
Note: Applies to specification for models with a capacity of less than 1050kg and fewer 14 persons.
An energy regeneration device feeds energy back to the power grid while the traction machine is under power generation to achieve high-efficiency energy utilization, which results in over 38% energy conservation (with the assumption of 1050kg, 1.75m/s, 12-hour operation per day, 25 days per month).

* This optional system may not be suitable for certain buildings. Please contact us for more information.
Environmental issues

In order to propose safe and secure elevator, ELCOSMO-III focus on environmental issue. The advance technologies for energy consumption and resource saving concept offers high concerns for environmental consciousness.

Energy Saving

ELCOSMO-III employs a newly developed compact gearless PMGSM motor which enables high energy efficiency. Furthermore, by using a gearless motor, gear oil is not needed, which contributes to saving natural resources.

<table>
<thead>
<tr>
<th>6.0kW ELCOSMO-III</th>
<th>Conventional elevators</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0kW Elevators pre-1990</td>
<td>8.5kW Hydraulic elevators 2000</td>
</tr>
</tbody>
</table>

Compared to elevators before 1990’s, energy consumption has decreased 40% and for hydraulic elevators, 80% is saved.

Energy Regeneration System

Toshiba focuses on environmental conservation. The consumption of energy feedback system is different from that of regenerative resistance. An energy regeneration device feeds energy back to the power grid while the traction machine is under power generation to achieve high efficiency energy utilization and suppress a temperature increase in the machine room, which results in over 38% energy conservation (with the assumption of 1050kg, 1.75m/s, 12-hour operation per day, 25 days per month).

Note: Applies to specification for models with a capacity of less than 1050kg and fewer 15 persons.

LED Lighting

Under equal brightness, an LED lighting system only consumes 10% of an incandescent lamp and 50% of an fluorescent lamp. (part of ceiling)

ELCOSMO-III, approved as Toshiba Group’s “Excellent ECP” product.

Toshiba Group seeks to create environmentally conscious products and for all the products created, we set a goal to develop No.1 environmentally suitable products. Within Toshiba group, we approve environmentally high potential products as “Excellent ECP” products and ELCOSMO-III has been approved as an “Excellent ECP.”

Resource Saving

Eliminating lubricant oil for guide rail

By employing roller guide for both car and counter weight, lubricant oil will not be necessary which guide shoe required.

Reducing Hazardous Materials

Reduction of lead use

By changing method to tie rope, lead is not necessary in order to tie rope resulting to reduce lead use.

Employing LED lightings

By employing LED light, various materials used for light became mercury free.

Lead-free Design of Circuit Board, RoHS Compliance and Elimination of Specific Chemical Substances (15 Classifications)

Continuous concern on the RoHS compliance, eliminating 15 classifications of specific chemical substances, and using the lead-free technique for main circuit boards.
New Ceiling Design

The publication of this page is an example of design. Please refer to the “DESIGN SELECTION” catalog for each condition and other designs.

Wide variety of newly developed LED lighting available. *Note 1

*Development of environmentally conscious LED lighting.

LED lighting is mercury-free, energy-saving, and long-lasting. The electric consumption fall about 85% and the product lifetime will be increased 20 times. Therefore LED lighting reduces CO2 emissions.

Note 2: Our design SL-1, SL-2 has four square shaped lights at the center, and round LED light at corners.

The actual product colors may vary slightly from those printed colors in this catalog.
Large LCD indicator for car operation panel

These 10.4, 8.4 and 5.7 inch LCD indicators are capable of displaying the elevator’s various conditions (emergency operations, maintenance status) in large icons and letters in highly visible colors.

- Elevator Status
- Direction
- Floor
- Door Operation

- 8.4 inch LCD (PSP-G1L)
- 5.7 inch LCD (GCP-G1L)

Optional

Coordination with car operation panel indicator display and car security camera.

Large LCD indicator is capable of displaying visuals linked from car security camera. There is no necessity to provide an extra monitor to display security camera’s image.

Display examples for car indicator display

- Fire emergency operation
  - During emergency operation, the display will announce the message in red.
  - Capable of displaying optional operations such as fire emergency operation.

The actual product colors may vary slightly from those printed colors in this catalog.
Hall Design

The publication of this page is an example of design. Please refer to the "DESIGN SELECTION" catalog for each condition and other designs.

Hall design 1  Optional

Hall design 2  Optional

Hall design 3  Optional

Hall design 4  Optional

Hall design 5  Optional

Hall design 6  Standard

*Note: Provided hall design specifications with the wide type jamb and transoms, when there is a need to adapt to fireproof specifications.

*The actual product colors may vary slightly from those printed colors in this catalog.
## Functions

<table>
<thead>
<tr>
<th>Operations</th>
<th>Notes</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simplex selective/collective fully automatic operation</td>
<td>Fully automatic operation by hall and car calls for single car</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Duplex selective/collective fully automatic operation (Note 1)</td>
<td>Fully automatic operation for 2 cars in the same group</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>3 or 4-car group supervisory control system</td>
<td>Fully automatic operation for 3 or 4 cars in the same group</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Group supervisory control system</td>
<td>For supervisory operation of groups of more than 4 cars, please contact us</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Independent operation</td>
<td>Lift car separated from group control operation and respond to car call only</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Attendant operation</td>
<td>Operation by attendant by switch &amp; button provided at service cabinet in COP</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Automatic landing function when system fails</td>
<td>When system failure occurs, the lift will automatically land at the nearest floor and the door will open for passengers to exit</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Car inspection operation (INS)</td>
<td>During car inspection operation, the lift will run at slow speed without responding to hall call</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Overload protection</td>
<td>The car overload buzzer will sound to prevent overloading and the doors will remain open</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Door open when the lift car is overloaded</td>
<td>The doors will open when over load is detected, even during the closing of doors,</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Fireman's operation</td>
<td>In the event of fire, when the Fireman's switch is activated, the designated lift will be ready for fireman to use</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Fire emergency operation</td>
<td>In the event of fire, all lifts will return to the designated floor and stop operation to allow passengers to exit</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Power failure emergency operation</td>
<td>In the event of power failure, all lifts will stop at the designated floor if emergency power supply from the building to allow passengers to exit</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Automatic landing during power failure (TOSILANCE)</td>
<td>In the event of power failure, the lift will land at the nearest floor by emergency battery</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Earthquake emergency operation</td>
<td>In the event of an earthquake, the elevator will detect the seismic signal and land at the nearest floor</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>1-car emergency lamp (well-charging)</td>
<td>In the event of power failure, the 1-car emergency lamp will be activated</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Emergency call button</td>
<td>A button for passenger to make an emergency call when they are trapped inside the lift</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Emergency operation indication at COP</td>
<td>In the event of an emergency, the emergency operation status will be displayed at COP</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Mechanical door safety</td>
<td>When the mechanical door safety device is touched by a passenger, the door will open</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Multi-beam door safety sensor (or light curtain door safety sensor)</td>
<td>When the multi-beam door safety device senses a passenger, the door will open</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>2-door door safety (multi-beam door safety + mechanical door safety)</td>
<td>A combination of multi-beam door safety and mechanical door safety</td>
<td><img src="" alt=" " /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service Functions</th>
<th>Notes</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home landing</td>
<td>To reduce passenger waiting time, the lift will return to the designated floor and stand by</td>
<td><img src="" alt=" " /></td>
</tr>
<tr>
<td>Service floor cut-off selection</td>
<td>Disables the designated floor service</td>
<td><img src="" alt=" " /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Not applicable to lift car with through door, 2: &gt; 5 floors and car weight &lt; 150kg,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hoistway Layout

Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated Power (kW)</th>
<th>Capacity (ton)</th>
<th>Speed (m/min)</th>
<th>Cage Nominal</th>
<th>Load Capacity (kg)</th>
<th>Overload Capacity (kg)</th>
<th>Service Elevator (kg)</th>
<th>Max. Overload Capacity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH-C300 W</td>
<td>1</td>
<td>1.0</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>5.0</td>
<td>90</td>
</tr>
<tr>
<td>PH-C306 W</td>
<td>6</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>5.4</td>
<td>103</td>
</tr>
<tr>
<td>PH-C105 W</td>
<td>1.75</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>7.2</td>
<td>123</td>
</tr>
<tr>
<td>PH-C100 W</td>
<td>2</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>4.7</td>
<td>90</td>
</tr>
<tr>
<td>PT-C006 W</td>
<td>1</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>7.5</td>
<td>103</td>
</tr>
<tr>
<td>PT-C011 W</td>
<td>1.75</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>6.0</td>
<td>90</td>
</tr>
<tr>
<td>PT-C012 W</td>
<td>2</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>5.0</td>
<td>123</td>
</tr>
<tr>
<td>PT-C016 W</td>
<td>2.0</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>11.0</td>
<td>123</td>
</tr>
<tr>
<td>PT-C006 W</td>
<td>1</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>6.0</td>
<td>90</td>
</tr>
<tr>
<td>PT-C016 W</td>
<td>1.75</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>9.7</td>
<td>103</td>
</tr>
<tr>
<td>PT-C012 W</td>
<td>2</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>10.0</td>
<td>123</td>
</tr>
<tr>
<td>PT-C016 W</td>
<td>2.0</td>
<td>1</td>
<td>1600×1500</td>
<td>3700</td>
<td>1600×1500</td>
<td>1600×1500</td>
<td>11.0</td>
<td>123</td>
</tr>
</tbody>
</table>

Note:
- The above table complies with GB7588-2003 standards.
- In case of travel is 45m or more, add 120mm to OH dimension and TC dimension at the above stated dimension.
- Please contact our local distributor to check for other standards.
- Hoistway dimensions are the minimum dimension after the construction work.
- The hoistway dimensions in chart are the minimum requirement.
- The hoistway structure wall must be 180mm thick or more.
- Piping, wiring and cables which is not relevant to elevator are prohibited inside the hoistway.
- The above data table of "OH" dimension is based on height 2300mm. Please consult our local distributor for other conditions.
- If the size of the hoistway is greater than the above sizes, OH will be larger. Please consult our local distributor.
- If the location of Power source panel, Control panel and Electric power supply are changed, Please consult our local distributor.
- W: Wide car  D: Deep car  F2: Front and rear opening door
Hoistway Layout

Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of lift(s)</th>
<th>Capacity (ppl)</th>
<th>Speed (m/s)</th>
<th>Hoistway section</th>
<th>Machine room size</th>
<th>Machine room size</th>
<th>Power source</th>
<th>Lift height</th>
<th>Machine room size</th>
<th>Lift height</th>
</tr>
</thead>
<tbody>
<tr>
<td>HWC060</td>
<td>8</td>
<td>630</td>
<td>1</td>
<td>500</td>
<td>1500x1200</td>
<td>3000</td>
<td>500</td>
<td>1500</td>
<td>3000</td>
<td>1200</td>
</tr>
<tr>
<td>HWC090</td>
<td>2</td>
<td>900</td>
<td>1</td>
<td>1000x1000</td>
<td>3000</td>
<td>3000</td>
<td>500</td>
<td>1500</td>
<td>3000</td>
<td>1200</td>
</tr>
<tr>
<td>HWC120</td>
<td>1</td>
<td>1200</td>
<td>1</td>
<td>1500x1200</td>
<td>3000</td>
<td>3000</td>
<td>500</td>
<td>1500</td>
<td>3000</td>
<td>1200</td>
</tr>
</tbody>
</table>

Note:
- The above table complies with G3758A-2003 standards.
- In case of travel is 40m or more, add 150mms to OH dimension and TC dimension at the above-stated dimension.
- Please contact our local distributor to check for other standards.
- Hoistway dimensions are the minimum dimension after the construction work.
- The hoistway dimensions stated are the minimum requirement.
- The hoistway structure wall must be 150mm thick, or more.
- Piping, wiring and cables which is not relevant to elevator are prohibited inside the hoistway.
- The above data table of "OH" dimensions is based on height 2300mm. Please contact our local distributor.
- If the size of the hoistway is larger than the above sizes, "OH" will be larger. Please consult our local distributor.
- If the location of Power source panel, Control panel and Electric power supply are changed, Please consult our local distributor.
- W: Wide car  D: Deep car  D2: Front and rear opening door
Works by Others

Works below are not included in elevator installation works:

- **Hoistways**
  1. Hoistway construction and fire-proofing, and opening for jams, indicators and push buttons, etc.
  2. Installation of separating beams, intermediate beam, back beam and lateral beams (if necessary).
  3. Installation of the base plate for each floor and of bed steel for furnishing the equipment related to landing entrance, in case of hoistways of steel structure of FG structure.
  4. Fire-proofing of steel frame material in steel structured hoistways, and fire-proofing around loading entrances (if necessary).
  5. Finishing of walls and floors, etc., around entrances, after furnishing equipment related to landing entrance.
  6. Furnishing of base steel or others for furnishing rail brackets, especially where the floor height is high (if necessary).
  7. Installation of the entrance or the gangway for pit inspection (if necessary).
  8. Waterproofing of the pit (including drainage if necessary).
  9. Rearrangement of the building body in case that there are some spaces to be used under the pit.
  10. Installation of emergency exits for rescue purposes in the event there are floors at which the elevator does not stop and installation of a fusing plate.
  11. Shelter equipment from rain at landing entrances directly contacting to the air in the place like roof.
  12. Installation of hooks or beams on top of the elevator shaft.
  13. Installation of lighting in hoistway (if necessary).
  14. Installation of went opening at the top of shaft (if necessary).
  15. Installation of a net or wall to prevent falling into the pit in cases where the pit level is different.
  16. All related to the building structure other than works above.

- **Machine rooms**
  1. Construction of machine rooms and installation works of their entrances (including soundproofing work if necessary)
  2. Fire-proofing for machine rooms and opening work for machine room floors.
  3. Installation of machine beam supports and spaces.
  4. Cinder concreting and finishing after floor piping in machine rooms.
  5. Installation of hooks or beams on ceilings in machine rooms.
  6. Installation of stairs leading to machine rooms and stairs in machine rooms (if necessary).
  7. Installation of lighting and windows.
  8. Dustproofing of floors.

- **Works for Equipment**
  1. Wiring of the power supply for motors and for lighting equipment, and of grounding to power source panels of elevators in the elevator shaft.
  2. Wiring of the power supply to the supervisory panels.
  3. Piping and wiring of intercoms outside hoistway and of others necessary for elevators.
  4. Supply and installation of switching devices for emergency power supply in case of power failure and two pairs of relay contacts for normal / emergency power identification, and their piping and wiring (if necessary).
  5. Piping and wiring of supervisory panels, alarm panels and inter-communication systems, etc., outside hoistways.
  6. Furnishing of receptacles for inspection in pits.

- **Temporary Works**
  1. To secure the site office for installation work and the stock yard for materials without charge.
  2. Enclosure to be used during the installation work.
  3. Supply of electric power for installation work and the trial operation for adjustment.
  5. On use of elevator for the construction work of the building, it is required to make contract with a separate written estimate.

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**Note**

During equipment planning of elevators, please take the following items into consideration:

1. Provide power feeding so that voltage regulation of the power supply at the receiving terminals in the hoistway is kept within ±5% for the motors, and ±2% for the lighting equipments.
2. In the hoistways, please prevent the temperature from exceeding 40 °C and humidity from exceeding 98% (monthly mean) and 95% (daily mean).
3. Please do not allow any chemical toxic gas or an excessive amount of dust to enter into the hoistways, as these can corrode the metal or electrical contacts.

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When asking for an estimate, please inform us of the following:

1. Building name and address.
2. Desired type and number of set.
3. Number of stops.
4. Floor height.
5. Voltage and frequency of main power supply.
6. Desired completion date.
Together with our global partners, we connect with Asia and then the world, through our technology and our spirit. This planet is our shared heritage. We must live together, grow together and delight in one another.

[For more information]
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