

New ELBRIGHT

TOSHIBA HIGH SPEED ELEVATORS



Safety Cautions

- Observance of relevant laws / regulations are required.
- Read the entire “Instruction Manual” carefully before use, for important information about safety, handling and operation.

TOSHIBA

TOSHIBA ELEVATOR AND BUILDING SYSTEMS CORPORATION

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• The data given in this catalog are subject to change without notice.
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TOSHIBA ELEVATOR AND BUILDING SYSTEMS CORPORATION

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.



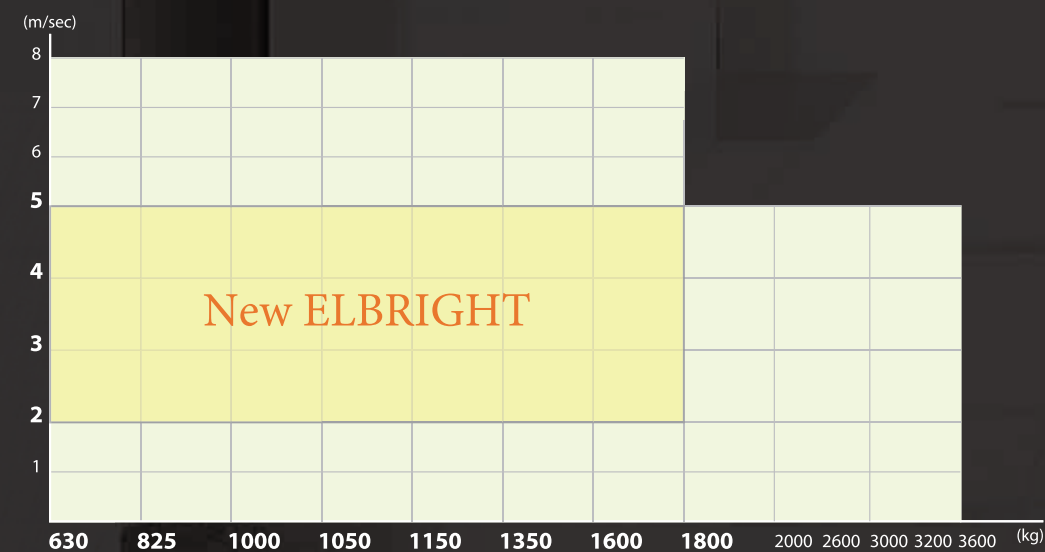
New ELBRIGHT

TOSHIBA HIGH SPEED ELEVATORS

A new concept in high-speed elevators.

Toshiba never stops introducing the latest technologies and refining its high-speed elevator expertise.

Toshiba proves this again with the New ELBRIGHT : a new elevator for a new age. Toshiba engineering has combined to produce the world's first inverter drive controlled high-speed elevator, with the high-efficiency control, energy efficiency, and quiet operation today's society demands.





Technology

Toshiba's leading technology has developed a high-speed elevator with a slimline control panel and a compact and lightweight traction machine. We will provide rapid, high performance, high-quality elevator products saving labor, space and power.

Safety

We will offer safety, security, and comfort with customer's needs by providing optional functions for safety control devices such as door open running prevention and door sensors, and optional control operation in the event of a power outage and emergency at earthquakes and fires.

Energy Saving & Environment

Reducing standby power by a new control device, commercializing the regenerative power function, and suppressing the power consumption by the adopting of LED lighting.
We are promoting environmentally friendly products such as eliminating lead and mercury and other hazardous substances from the product and equipment.

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TOSHIBA ELEVATOR R&D TOWER

Technology

A high-efficiency traction machine and advanced inverter drive controlled are expanding the potential of New ELBRIGHT

The New ELBRIGHT was developed to be the best an possible elevator, both for the buildings in which it is installed and for those who ride it. Every part of the elevator uses Toshiba's leading technologies; from the traction machine and control system to the cars, doors, and drive system. The New ELBRIGHT will boost the value of the high-speed elevator immensely.

Compact and energy-efficiency via the Permanent Magnet Synchronous Motor

The New ELBRIGHT employs a gearless traction machine using a permanent magnet synchronous motor (PMSM), in place of the conventional induction motor. The PMSM uses a permanent magnet with a high magnetic flux density. This allows a more compact and lightweight traction machine. Furthermore, establishing a permanent magnetic flux eliminates the need to release magnetizing current. This and other advantages pave the way for highly efficient control, which helps to save energy.

A compact slimline control panel realizes space-saving in machine room

The New ELBRIGHT's control system use small inverter unit. It also incorporates peripheral equipment, integrated multifunctional digital line, a compact control panel device and efficiently implemented layout for a slimline control panel. The well thought-out control panel design also reduces working space for maintenance, which frees up space for the machine room.

New control systems

A high performance CPU is employed for the advanced and newly developed control system. This control system cuts the level of standby electricity required and promotes an automatic shutoff system for lighting and ventilation to further boost power savings.

Safety

Unintended Car Movement Protection (Optional)

A traction drive elevator shall include means to prevent uncontrolled movement of the elevator away from the landing with neither the landing nor the car doors in the locked position. The Elevator shall detect uncontrolled movement of the car away from the landing and stop no more than 1200mm after as measured from the landing floor sill. Before operation, the uncontrolled car movement protection system means for an ascending elevator, the clearance between the landing door floor sill and the apron of the stopped elevator shall not exceed 200mm. In additional, uncontrolled movement protection means the horizontal distance between the sill or entrance frame of the stopped elevator and the wall of the well, from the landing floor sill to 1200mm downward for a descending elevator.

Car Door Lock (Optional)

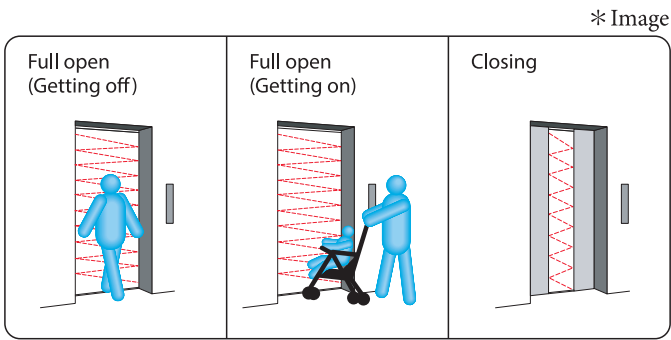
Every car door shall be mechanically locked by at least 7mm such that it can only be opened in the unlocking zone of a landing. The lift operation shall automechanically depend on the locking of the car door. This locking shall be proved by an electrical safety device to confirm the horizontal distance between the well wall and the sill or entrance frame of the car is within150mm.

Ascending Car Overspeed Protection

A device to prevents an elevator ascending to the elevator shaft top beyond the rated speed due to a device like an electromagnetic brake or control unit. It monitors the speed of the upper direction mechanically by a governor, then cut off the power supply and safety circuit by an overspeed detecting switch when the speed exceeds the rated speed more than 1.3 times. The elevator shall be stopped by triggering the double brake when overspeed occurred.

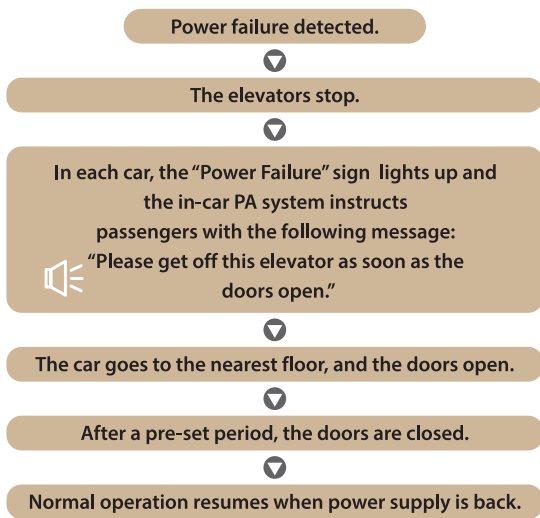
Multi-beam Door Safety (Optional)

The photoelectric cell detects passengers in the doorway and reopens closing doors.



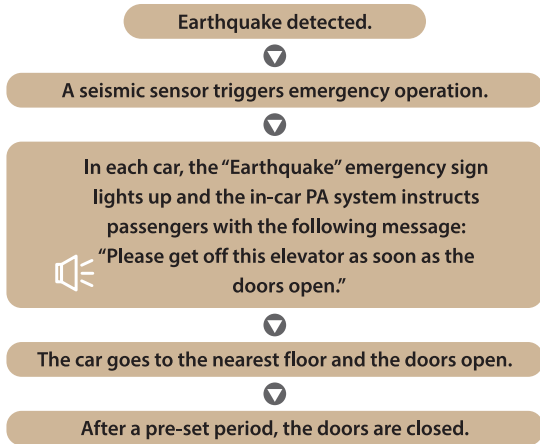
Automatic Landing in Power Failure (Optional)

In case of a power failure, backup lamps are automatically lighted up in the cars, while the system's operation is switched to the elevator system's own battery powered inverter. Cars stranded between floors are taken to the nearest floor; otherwise, doors are opened and passengers are let out. The doors automatically open in case the car stops at any point that is not between floors but where the doors can be opened. (Note: Overridden by any similar backup or safety systems installed in compliance with safety codes.)



Earthquake Emergency Operation (Optional)

When the system's seismic sensor installed in the elevator shaft detects an S-wave (the secondary seismic wave and the main shock of an earthquake) that exceeds the pre-set threshold, the system takes control with emergency procedures. "Earthquake" emergency signs lighted up in all cars, all cars are taken immediately to the nearest floor, doors are opened and passengers are instructed to alight.



Fire Emergency Operation (Optional)

This emergency operation is automatically triggered in case of a fire, when a fire alarm button is actuated, or when a Fire/Smoke Detector detects an abnormality. All hall calls and floor selections are cancelled, passengers are informed of the emergency procedure with a "Fire" sign and a voice announcement and all cars are sent directly to the emergency exit floor. Doors open at the emergency floor and passengers are guided to safety.





Energy Saving & Environment

Products and functions adopted to reduce power consumption

Suppress power consumption by reducing standby power, commercialization of the regenerative power function, adoption of LED lighting.

LED Lightings

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



PRM-1

Providing environmentally conscious products

Toshiba elevator group is promoting the development of environmentally conscious products, which involves environmentally conscious product design, assessing the environmental impact of products and disclosing the environmental performance of products. Products are developed in compliance with the updated voluntary environmental performance standards.

Product assessment and voluntary environmental standards for products

In developing products, we assess them across their life cycles from manufacturing, logistics and use to disposal and recycling to conduct product development and reduce the environmental impacts on the global environment. Whereas product assessment is used to confirm the minimum necessary environmentally conscious requirements for product development, Voluntary Environmental Standards for Products have been established in the Toshiba elevator group to create highly environmentally friendly products and products complying with the same are released as environmentally conscious products.

Reducing hazardous materials

[Reduction of lead use]

By changing the method of tying rope, the use of lead can be eliminated or reduced.

[Employing LED lightings]

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

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

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



Car Design

Please select according to the image and the feature of the building.

It features a design pursuing comfort and functionality.



RESIDENCE



OFFICE



HOTEL



SHOP

Car Design



RESIDENCE

Design variations

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

OPTIONAL

DLX-22 / DX-22



OPTIONAL

TL-1



OPTIONAL

DLX-21 / DX-21



OPTIONAL

SL-V2

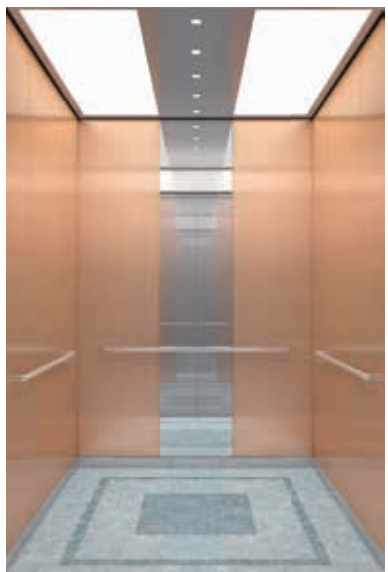


OPTIONAL

DLX-24 / DX-24



Front side view



Back side view

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

Car Design



OFFICE

Design variations

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

OPTIONAL

PRM-2



OPTIONAL

DLX-22 / DX-22



OPTIONAL

DLX-23 / DX-23



OPTIONAL

DLX-24 / DX-24

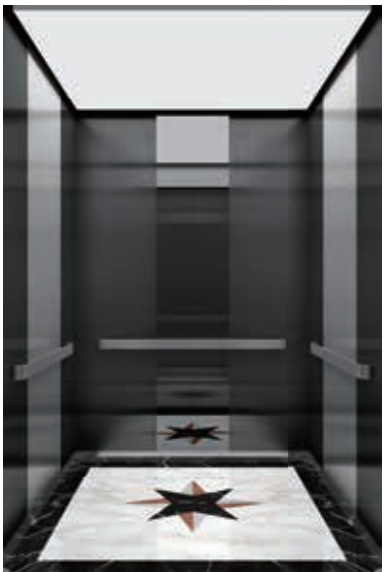


OPTIONAL

PRM-1



Front side view



Back side view

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HOTEL

Design variations

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Please refer to the “DESIGN SELECTION” catalog for each the condition
and other designs.

OPTIONAL

PRM-1



OPTIONAL

DLX-25 / DX-25



OPTIONAL

PRM-2



STANDARD

SL-1

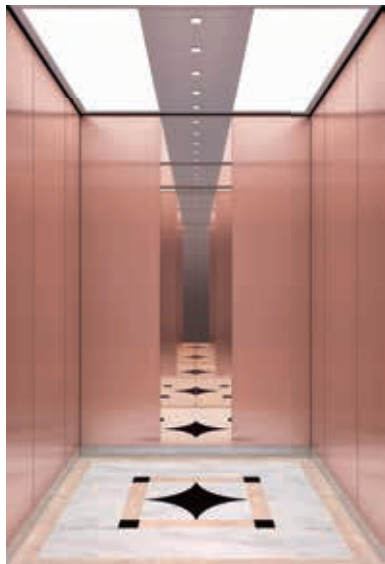


OPTIONAL

DLX-24 / DX-24



Front side view



Back side view

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



SHOP

Design variations

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Please refer to the “DESIGN SELECTION” catalog for each the condition
and other designs.

OPTIONAL

DLX-24 / DX-24



OPTIONAL

TL-1



OPTIONAL

PRM-1



STANDARD

SL-1



OPTIONAL

DLX-23 / DX-23



Front side view



Back side view

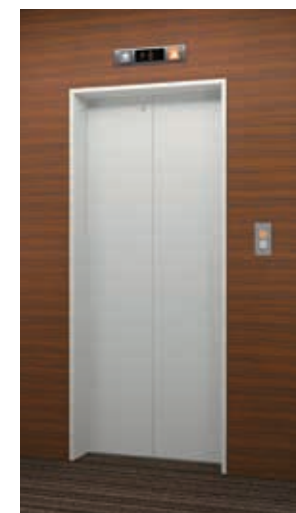
The actual product colors may vary slightly from those printed colors in this catalog.



Hall Design

Design variations

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and other designs.



Hall Design

OPTIONAL

Design plan 1

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Please refer to the “DESIGN SELECTION” catalog for each the condition
and other designs.



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.

OPTIONAL

Design plan 2

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and other designs.



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.

Hall Design

OPTIONAL

Design plan 3

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and other designs.



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.

OPTIONAL

Design plan 4

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and other designs.



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.

Hall Design

OPTIONAL

Design plan 5

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Please refer to the “DESIGN SELECTION” catalog for each the condition
and other designs.



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.

STANDARD

Design plan 6

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Please refer to the “DESIGN SELECTION” catalog for each the condition
and other designs.



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

Functions

○ : STANDARD △ : OPTIONAL

Functions	Notes	Descriptions	
Operations	Simplex selective-collective fully automatic operation	Fully automatic operation by hall and car calls for single car	○
	Duplex selective collective fully automatic operation (Note 1)	Fully automatic operation for 2 cars in the same group	△
	Group supervisory control system	For supervisory operation of groups of more than 4 cars	△
	Independent operation	Lift car separated from group control operation and responding to car call only	△
	Attendant operation	Operation by attendant by switch & button provided at service cabinet in COP	△
Safety Functions	Automatic landing function when system fails	When system failure occurs, the lift will automatically land at the nearest floor and the door will open for passengers to exit	○
	Automatic withdrawal from group control	If an elevator under a group supervisory operation fails to run for some reason, the elevator is cut out of the group and the other elevators automatically back up the faulty one to continue the group supervisory operation.	○
	Car inspection operation (INS)	During car inspection operation, the lift car will run at slowly without responding to hall call	○
	Overload protection	The car overload buzzer will sound to prevent overloading and the doors will remain open	○
	Door open when the lift car is overloaded	The door will re-open when overload is detected even if though it is closing	○
	Fireman's operation	In the event of fire, when the Fireman's switch is activated, the designated lift will be ready for firemen to use	△
	Fire emergency operation	In the event of fire, all lifts will return to the designated floor and stop operation to allow passengers to exit	△
	Power failure emergency operation	In the event of power failure, all lifts will return to the designated floor by emergency power supply from the building to allow passengers to exit	△
	Automatic landing during power failure (TOSLANDER)	In the event of power failure, the lift will land at the nearest floor by emergency battery	△
	Earthquake emergency operation	In the event of an earthquake, the elevator will detect the seismic signal and land at the nearest floor	△
	In-car emergency lamp (self-charging)	In the event of power failure, the in-car emergency lamp will be activated	○
	Emergency call button	A button for passenger to make an emergency call when they are trapped inside the lift	○
	Emergency operation indication at COP	In the event of an emergency, the emergency operation status will be displayed at COP	○
	Mechanical door safety	When the mechanical door safety device is touched by a passenger, the door will open	○
	Multi-beam door safety sensor (or light curtain door safety sensor)	When the multi-beam door safety device senses a passenger, the door will open	△
	2-in-1 door safety (multi-beam door safety + mechanical door safety)	A combination of multi-beam door safety and mechanical door safety	△
	Door nudging feature with buzzer	A buzzer sounds and the doors slowly close when they have remained open beyond the preset period	△
Service Functions	Home landing	To reduce passenger waiting time, the lift will return to the designated floor and stand by	△
	Service floor cut-off selection	Installing a switch or a timer on the supervisory panel, disables registration of car calls or hall calls for a basement floor's or an intermediate floors or intermediate floors thus engaging in non-stop (bypass) without servicing there.	△
	Service floor cut-off selection (Soft setting type)	This is of the free setting type, where the elevator superintendent for every building is free to set and modify service cut-off floors even after start in use. This is the most appropriate type for such office buildings as their tenants are not yet fixed before completion.	△

Note 1 : Not applicable to lift car with through door
2 : >5 floors and car weight <150kg
3 : For details of interface for building management system, please consult our local distributor.

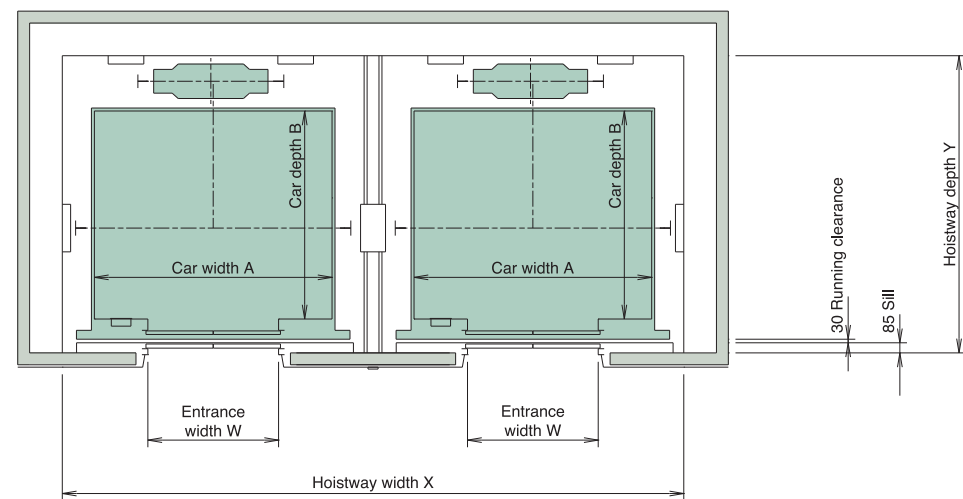
○ : STANDARD △ : OPTIONAL

Functions	Notes	Descriptions	
Service Functions	Full car bypass (Note 2)	When the lift car is full, the lift will bypass all hall calls and go straight to the designated floor	△
	Car call cancellation	The floor call can be cancelled from the COP by pressing the floor button twice within 3 second	○
	Nuisance call cancellation	Incorrect or nuisance floor calls can be cancelled to eliminate unnecessary operation	○
	Repeated door opening	When an obstacle is detected, the door will repeatedly open and close repeatedly pending removal of the obstacle	○
	Door nudging	Push and hold the door close button for 2 seconds or keep the door completely opened for 15 seconds rectify the situation when the electric door safety malfunctions.	△
	Adjustable door opening time	Adjusts the door opening time to reflect building usage	○
	Door open extension button	Extends the door opening time	△
	Car chime	A chime installed in the car ceiling will sound when the lift arrives	△
	Hall chime for 1car or 2car	A chime installed in the lift lobby will sound when the lift arrives	△
	Hall chime for group control		○
	Hall lantern	The hall lantern will light up when the lift arrived	△
	Sub-car operating panel for single entrance	Additional car operating panel	△
	Sub-car operating panel for double entrance		○
	Car full load indicator	Full Load will display on the hall indicator when the lift car is full	△
	Out of service indicator	Out of Service will display on the hall indicator when the lift car is faulty	○
	Parking operation (manual)	Parks the lift at the designated floor by the key-switch	△
	Parking operation (automatic)	Parks the lift at the designated floor automatically	△
	Car lighting automatic cut-off	When the lift is not in operation after a pre-determined period of time, the car light will turn off automatically	○
	Ventilation fan automatic cut-off	When the lift is not in operation after a pre-determined period of time, the ventilation fan will turn off automatically	○
	Door Open button lamp (for automatically cut-off car lighting)	The "Door Open" button will remain lit when the lift car light is turned off automatically	○
	Nuisance call cancellation at reversal	Cancel intentionally registered nuisance calls automatically in the reversal travel direction	○
	Multi-channel intercom	The intercom system can communicate with multi-stations simultaneously	○
	Designated floor stop operation	Automatically stops the lift at the designated floor for crime prevention purposes	△
	Card access system	Allows activation of the designated floor call by IC card ※ Card Access System by others	△
	Speech synthesizer	Announces car operations	△
	Supervisory panel (Note 3)	Located in the building control room, etc. to monitor the status and control of each lift	△

Installation plan / Power source plan

■ Installation plan An installation diagram for 8 to 24 passenger

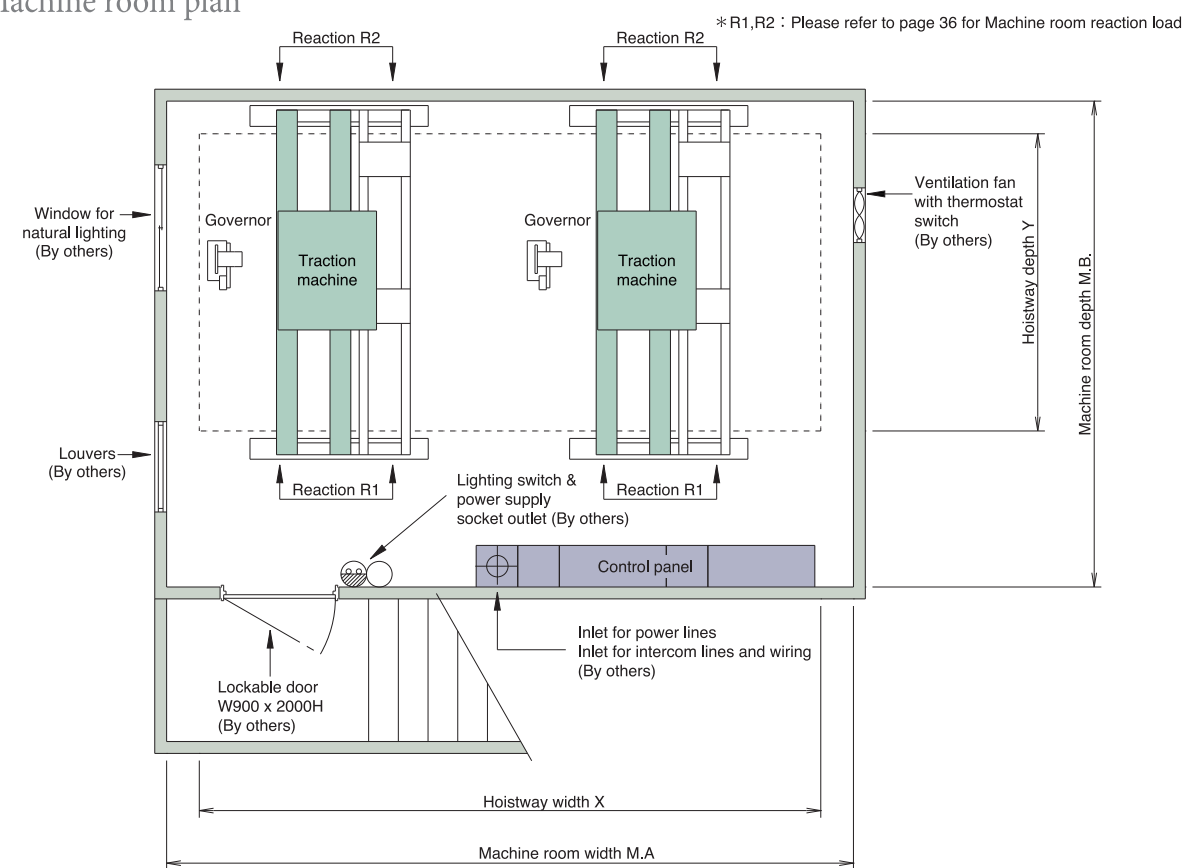
► Hoistway plan



► Hoistway shaft and machine room dimensions

Application model	Rated speed (m/min)	Capacity (persons)	Loading capacity (kg)	Entrance (mm)		Internal car dimensions (mm) A × B	Hoistway shaft (mm)		Machine room (mm)	
				Width	Height		Single shaft* X × Y	Dual shaft** X × Y	Single shaft* MA × MB	Dual shaft** MA × MB
P8	120 150 180 210 240 300	8	630	800	2100	1400×1100	1940×1925	4030×1925	2350×3400	4500×3400
P12		12	900	900	2100	1600×1350	2100×2175	4350×2175	2500×3650	4800×3650
P13		13	1000	900	2100	1600×1500	2100×2325	4350×2325	2500×3800	4800×3800
P15		15	1150	1000	2100	1800×1500	2300×2325	4750×2325	2700×3800	5200×3800
P18		18	1350	1100	2100	2000×1500	2500×2325	5150×2325	2900×3800	5600×3800
P21		21	1600	1100	2100	2000×1700	2540×2525	5230×2525	2900×4000	5600×4000
P24		24	1800	1200	2100	2100×1750	2640×2575	5430×2575	3050×4050	5900×4050

► Machine room plan



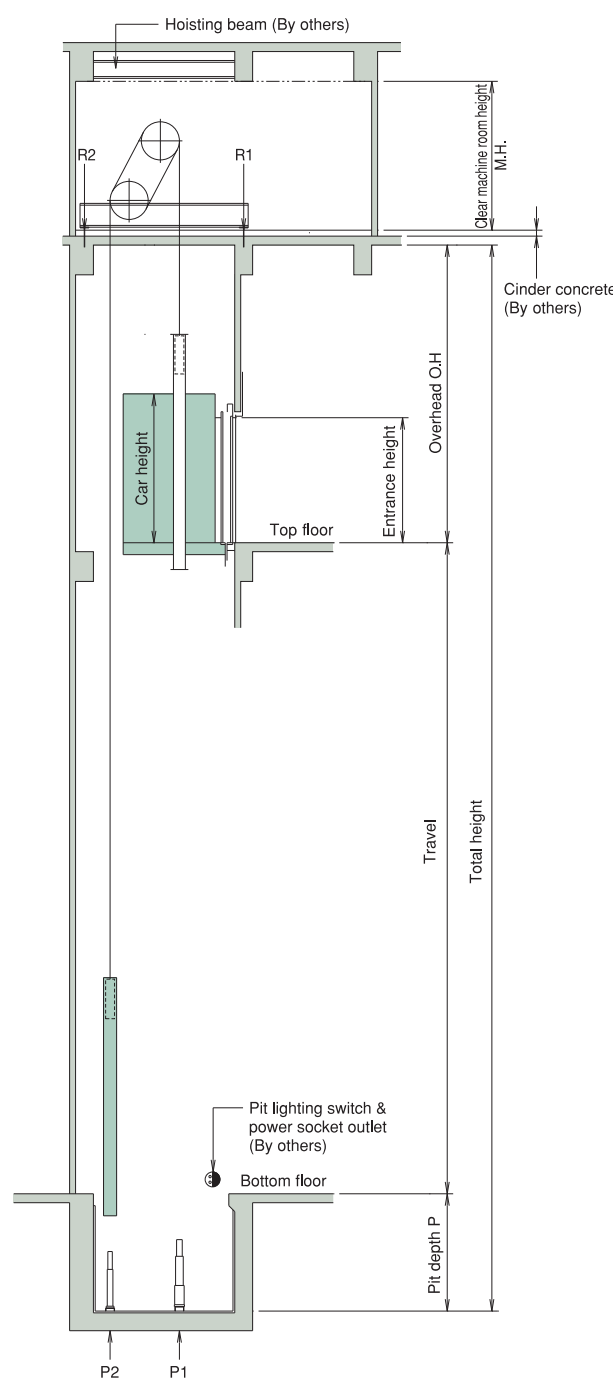
► Basic specifications

Item	Contents	Remarks
Application	For passenger	
Control system	Variable voltage variable frequency control system (Gearless)	
Operation function	Selective-collective full automatic operation	
Power supply	For powers: Three phase AC. 380V-50Hz 415V-50Hz	
	For lightings: Single phase AC. 220V-50Hz 240V-50Hz	
Roping	2:1D (Two to one double wrap)	
Maximum number of floors	64stops	In case of a double entrance elevator, 128 stops.
Maximum travel	200m	
Landing accuracy	±10mm	
Entrance direction	Single entrance	Double entrance applicable
Machine room location	Hoistway top	
Control panel type	CL600	
Door type	CO, 2S (DBL-5, 6)	
Minimum floor height	Entrance height +Height of door panel extension +450mm	

Installation plan / Power source plan

■ Hoistway section

► Hoistway section <Standard type>



► Hoistway shaft & Machine room dimensions

Rated speed (m/min)	Overhead O.H (mm)		Pit depth P (mm)	Clear machine room height M.H(mm)
	P8,P12	Other		
120	5950	5350	2150	2250
150	6150	5550	2450	
180	6450	5850	2750	
210	6850	6250	3250	
240	7450	6850	3850	
300	8400	7800	4050	

Note : The above data table of "O.H" dimensions is based
Cage height : 2500mm.
*Please contact our local distributor to check for
other conditions.

► Reaction and load

Type	Rated speed (m/min)	Machine room reaction load (kN)		Pit reaction load (kN)	
		R1 (Cage)	R2 (C/W)	P1 (Cage)	P2 (C/W)
P8-CO	120	63.3	110.06	113.9	107.6
	150			117.4	111.1
	180				
	210	66.08	107.28	126.9	120.7
	240			126.9	120.7
	300				
P12-CO	120	66.32	118	128.4	117
	150			132.3	120.9
	180				
	210	68.94	115.4	141.8	130.5
	240			142.2	130.9
	300				
P13-CO	120	69.38	126.08	134.3	120.9
	150			137.8	124.5
	180				
	210	72	123.44	147.7	134.4
	240			148.1	134.8
	300				
P15-CO	120	71.64	129.52	142.9	126.4
	150			146.8	130.3
	180				
	210	74.32	126.84	156.7	140.3
	240			157.1	140.7
	300				
P18-CO	120	75.2	135.36	153.9	133.5
	150			157.4	137
	180				
	210	78	132.56	168.1	147.7
	240			168.5	148.1
	300				
P21-CO	120	67.18	135.16	168.3	143.2
	150			172.6	147.5
	180				
	210	69.76	132.58	181.8	156.7
	240			182.2	157.1
	300				
P24-CO	120	83.16	153.2	178.9	149.9
	150			182.8	153.8
	180				
	210	86.02	150.34	192	163
	240			192.4	163.4
	300				

Note : The condition of the above data calculation are Travel : 120m,
additional : 200kg of optional cage weight.

Installation plan / Power source plan

■ Power source plan Power facility plan for 8 to 24 passenger

► Single elevator use (1 line per elevator) 380v-50Hz

Type	Rated speed (m/min)	Motor capacity (kW)	Motor source capacity (kVA)	Non-fuse circuit breaker (A)	Total applicable length of the power source line (m)						Grounding line size (mm ²)	Heat generation (W)
					5.5 (mm ²)	8 (mm ²)	14 (mm ²)	22 (mm ²)	38 (mm ²)	60 (mm ²)		
P8-CO	120	8	13	40	69	107	191	299	—	—	3.5	2000
	150	10	15	40	54	85	151	236	399	—	3.5	2450
	180	12	18	40	45	70	124	195	329	—	3.5	2950
	210	14	20	50	38	58	104	163	276	444	3.5	3450
	240	16	22	50	32	50	90	141	238	383	3.5	3950
	300	20	27	60	—	37	71	111	188	303	5.5	4900
P12-CO	120	12	17	40	57	88	157	245	415	—	3.5	2800
	150	14	20	50	45	70	124	195	329	—	3.5	3500
	180	18	24	50	37	58	103	161	273	438	3.5	4200
	210	20	27	60	—	45	86	135	228	366	5.5	4900
	240	22	30	60	—	38	74	115	195	314	5.5	5600
	300	28	37	100	—	—	54	91	154	248	5.5	7000
P13-CO	120	12	18	50	54	85	151	236	399	—	3.5	3150
	150	16	22	50	43	67	119	186	314	—	3.5	3900
	180	18	26	60	35	55	98	153	259	417	5.5	4700
	210	22	29	60	—	43	82	129	218	351	5.5	5450
	240	24	33	75	—	—	66	111	188	303	5.5	6250
	300	30	40	100	—	—	52	87	148	238	5.5	7800
P15-CO	120	14	21	50	51	80	143	223	377	—	3.5	3600
	150	18	25	60	40	63	112	175	296	476	5.5	4500
	180	22	29	60	—	47	91	142	241	387	5.5	5350
	210	26	33	75	—	—	71	120	203	327	5.5	6250
	240	28	37	100	—	—	58	99	167	269	5.5	7150
	300	36	46	125	—	—	46	78	132	212	8	8950
P18-CO	120	18	24	50	46	71	126	198	334	—	3.5	4200
	150	22	28	60	—	52	99	155	262	422	5.5	5250
	180	26	33	75	—	—	76	128	216	347	5.5	6300
	210	30	38	100	—	—	63	106	180	290	5.5	7350
	240	34	43	100	—	—	54	91	154	248	5.5	8400
	300	42	53	125	—	—	—	67	122	196	8	10500
P21-CO	120	20	27	60	—	61	117	183	309	497	5.5	5000
	150	24	33	75	—	—	84	142	241	387	5.5	6250
	180	30	39	100	—	—	69	117	197	317	5.5	7450
	210	34	44	100	—	—	58	98	166	266	5.5	8700
	240	40	50	125	—	—	50	84	142	228	8	9950
	300	48	62	150	—	—	—	61	112	180	8	12450
P24-CO	120	22	30	60	—	57	109	170	288	463	5.5	5600
	150	28	37	100	—	—	79	133	225	362	5.5	7000
	180	34	43	100	—	—	65	109	185	297	5.5	8400
	210	38	50	125	—	—	54	92	156	250	8	9800
	240	44	56	125	—	—	—	70	128	207	8	11200
	300	54	69	150	—	—	—	—	97	169	8	14000

Note : The condition of the above data calculation are Travel : 120m, additional : 200kg of optional cage weight.

■ Works by others Works below are not included in the installation works of the elevator:

► Hoistways

1. Hoistway construction and fire-proofing work, and opening work for jambs, indicators and push-buttons, etc.
Please note that chipping or padding work is performed as required, in case the structural error is 30 mm or more.
2. Installation work of separating beams, intermediate beam, back beam and lateral beams (as required).
3. Installation work of the base plate for each floor and of bed steel for furnishing the equipments related to landing entrance, in case of hoistways of steel structure of PC structure.
4. Fire-proofing work for the steel frame material in steel structured hoistways, and fire-proofing work around landing entrances (as required).
5. Finishing works of walls and floors, etc., around entrances, after furnishing equipments related to landing entrances.
6. Furnishing work of base steel or others for furnishing rail brackets, particularly for elevated floor heights (as required).
7. Installation work of the entrance or the gangway for pit inspection (as required).
8. Water-proofing work of the pit (including drainage if necessary).
9. Re-arrangement of the building body in case of usable space under the pit.
10. Installation work of emergency exits for rescue purposes when there are floors at which the elevator does not stop and installation of a fascia plate.
11. Shelter equipments from rain at landing entrances directly exposed to the air in the place like roof.
12. Installation work of hooks or beams on top of the elevator shaft.
13. Installation work of lighting in hoistway (as required).
14. Installation work of vent opening at the top of shaft (as required).
15. Installation work of a net or wall to prevent falling into the pit (in case of the pit level is different.)
16. All works related to the building structure other than those above.

► Machine rooms

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

► Works for Equipments

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

► Temporary Works

The following matters must be arranged:

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.
4. Security to ensure sufficient passage for carrying heavy goods.
5. Regarding the use of the elevator for the building construction work, a contract with a separate written estimate is required.

Note

When planning elevator equipments, please take the following items into consideration:

1. Provide the power facility so that the voltage regulation of power supply at the receiving terminals in the hoistway is kept within ±10% for motor, and ±2% for lighting equipments.
2. In the hoistways, please ensure the temperature does not exceed 40 °C and humidity 90% (monthly mean) and 95% (daily mean).
3. Please do not allow ingress of chemically toxic gas or excess amount of dust enter into the hoistways, that makes the metal or electrical contacts corrode.

For the estimate inquiry, 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.



TOSHIBA ELEVATOR GROUP CONTROL SYSTEMS “GAseries”

The elevator analyzes the “now” of the building !
We will predict “future traffic conditions within the building” and provide the optimum elevator.

Real-Time Scheduling System

We will always analyze the very latest elevator operating conditions and predict future elevator service situation that will occur from now. We pick out the most suitable elevator from it and deliver it to the point of use.
Toshiba Elevator Group Control System: The Real-time scheduling system (RTS) not only shortens the waiting time of the elevator but also allows us to provide various environmentally friendly driving functions such as “power saving function” and “power saving allocation function”.

TOSHIBA ELEVATOR GROUP CONTROL SYSTEMS “GAseries”

- GA-2000

“Real time scheduling system(RTS)” can be applied to 12 elevators maximum with the latest features such as “Power saving function” and “Power saving distribution function”. This is a group control system suitable for large and medium sized buildings.
- GA-200

“It is a group control system applicable for medium and small buildings capable of up to six units, taking over the design concept of the top product “GA-2000” product. We respond with various specifications such as priority service function and peak correspondence functions for specific floors etc.
- GA-20

This is a group control system for medium-sized and small-scale buildings that meet the specifications of basic functions such as “fuzzy control” and high-sensitivity allocation to shorten elevator latency.

○ : STANDARD △ : OPTIONAL × : Inapplicable specifications

Number of elevator application	Number of the maximum application floors (Note 1)	System		
		GA-2000	GA-200	GA-20
3 to 12 units	128 stops	○		
3 to 6 units	64 stops		○	
3 and 4 units	40 stops			○

*Note 1 : An express zone is not included. The actual number of applications is based on each elevator models.

Function	Explanation	System		
		GA-2000	GA-200	GA-20
Real time scheduling system (RTS)	A new hall calls assignment procedure that can assign a car for a hall call efficiently by estimating the arrival of time to each the floor considering the future occurrence of passenger.	○	×	×
Self-learning system	Analyzes and stores traffic demand by time period, and automatically tunes the control parameters used for fuzzy control and similar.	○	×	×
High sensitivity car assignment (Fuzzy control)	A hall calls assignment procedure using the fuzzy control method.	×	○	○
Expert system	Specialized experience and expertise are coded into rules, and the optimum rules selected to offer service that best meets humans’ psychological needs.	○	○	○

Specification Table for “GAseries”

○ : STANDARD △ : OPTIONAL × : Inapplicable specifications

Function	Explanation	System		
		GA-2000	GA-200	GA-20
Stand by with car spacing	The car goes to the floor where higher traffic demand is estimated when there is no other call to attend.	○	○	○
Stand by with car spacing (By specific floor)	The car goes to the floors specified by the system configuration when there is no other call to attend.	○	○	○
Power saving operation	Automatically reduce the number of cars operating during the low traffic period to conserve energy.	○	○	○
Delayed car cut out	Remove failed cars from the group control, whereupon the group controls operation proceeds on for the remaining cars.	○	○	○
System back-up	When failures are detected in some units, other normal units assume the basic group control functions.	○	○	○
Up peak operation	During the morning rush, returns cars to the main departure floor and automatically spaces departures for optimum volume-handling efficiency.	○	○	○
Up peak split-zone operation	Splits the group into cars serving the upper floors and lower floors exclusively, limiting the destinations into zones to handle the morning peak volume more efficiently.	△	△	×
Next start indication during Up peak operation	At the main floor during Up peak operation, the hall lantern of the next start car is illuminated to show waiting passengers that the car will be the first start car in the next place.	△	△	△
Car door close button effective during Up peak operation	Close the door instantly at the main floor when the passenger presses a door close button in the first start car in the Up peak operation.	○	○	○
Automatic registration of upward call at the main floor during Up peak operation	Turns on the upward hall call at the main floor automatically without pressing a hall call button at the elevator hall in the Up peak operation.	△	△	△
Lunchtime operation	Increase service for passengers going to the restaurant floors during the Lunchtime operation.	△	△	△
Lunchtime split-zone operation	Splits the group into cars serving the upper floors and lower floors exclusively, limiting the destinations into zones to handle the lunchtime peak volume more efficiently.	△	△	×
Group control coordination for wheelchair cars (Wheelchair car : 1/group)	Cars for Wheelchair can operate as a part of the group control. (This function is categorized by the number of wheelchair cars in a group control system ; one or all)	△	△	△
Group control coordination for wheelchair cars (Wheelchair car : all cars)		△	△	△
Down peak operation	Automatically deploys stand by cars to upper floors to respond to evening down peak demand more efficiently.	○	○	○
Specific floor operation	Prioritizes the specified floor when the demand is larger than usual there.	△	△	△
Check-in service	Reserve a car with open door stand by at the front desk floor during check-in hours.	○	○	○
Check-out service	Automatically deploys stand by cars to upper floors to respond more efficiently to the check-out time down peak.	○	○	△
Enhances comfort operation	In hotels where guest comfort is a major priority, least crowded cars are assigned to hall calls in order to avoid the discomfort of overcrowded cars.	○	○	○
Banquet hall floor service	Concentrated service for banquet hall floor in accordance with event schedule.	△	△	×
Open door waiting on lobby floor	Reserve a car with open door stand by at the lobby floor.	△	△	×
Going out service	In residential building, more cars are sent for standby to upper floors to respond more efficiently to the morning down peak demand.	○	○	○
Coming back service	In residential buildings, a car is sent to the entrance floor with an open door for home coming residents.	○	○	△
Morning peak operation	In hospitals, there are many cars that the main floor is congested with incoming staffs during morning hours. Such up peak demands cars are effectively treated like those in office buildings.	○	○	○
Evening peak operation	Traffic demands may rise in the evening during visiting hours in hospitals due to coming visitors and family caretakers. Such peak demands can be effectively treated.	○	○	△
VIP service	When a VIP hall call button is operated, a car is separated from the group control system, then responds to that VIP hall call exclusively.	△	△	△

○ : STANDARD △ : OPTIONAL × : Inapplicable specifications

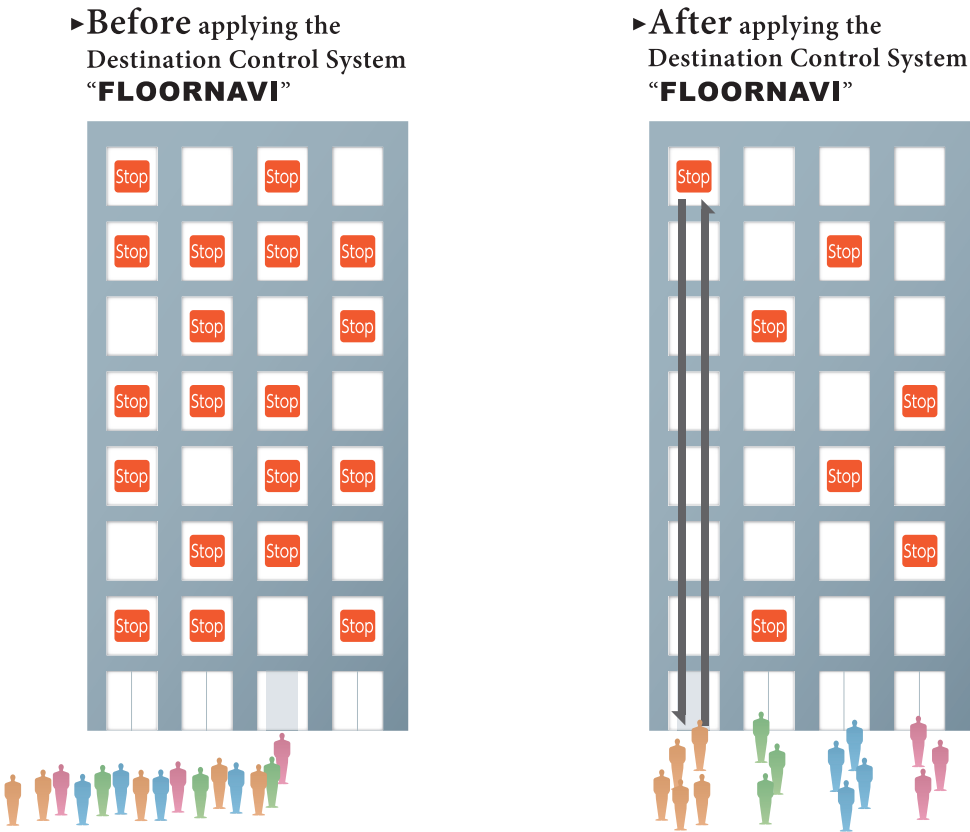
Function	Explanation	System		
		GA-2000	GA-200	GA-20
Measures against indicator	Apply this function if cars have floor indicators, Moreover, apply this function if passengers in the elevator hall can observe the position of each car. (Observation elevator, atrium, etc.)	×	△	△
Different rated load elevator in a group	Place cars with differing load capacities into a group control system.	○	○	○
Preassignment indicator	Responds to hall button call by lighting a hall lantern at an assigned car 4 to 5 seconds in advance.	○	△	×
Arrival information indicator	Flickering hall lantern and ringing chime twice at an arriving car 4 to 5 seconds in advance.	○	○	○
Auto-announce system (Speech synthesizer)	Automatically announces the floor, direction and door closing by voice synthesis device.	△	△	△
Automatic door open time control	Automatically adjusts the door opening duration according to the call type.	○	○	○
Door open extension button	A button that keeps the door opens for a specified period. Unlike the door open button, the door keeps opens for a specified period after this button is released.	○	○	○
Door reopening	Opens the closing door if the hall call button is pressed.	○	△	△
Nuisance call cancellation	Cancels obvious nuisance floor destination registration, such as when the system computer detects multiple calls made simultaneously by a single passenger.	○	○	○
Independent operation	Removes a car from group control to operate independently in response to calls.	○	○	○
Overload detection	Rings the alarm and keeps the door open while the load in the car exceed the specified weight limit.	○	○	○
Automatic bypass	Full cars automatically pass any hall call in its way.	○	○	○
Every floor stop operation	When a car responds to a destination floor call in the car, it stops at every floor and fully opens the doors until it reaches the destination floor.	○	○	○
Emergency landing on closest floor	In case of system failures or other emergencies, cars are directed to move to the closest floor if it is safe.	○	○	○
Supervisory panel (In house production)	Monitoring and controls the entire elevator system operation.	△	△	△
Supervisory panel (other company production)		△	△	△
Seismic emergency operation with P-wave detection	Forces all cars to move to the closest floors automatically in response to a precautionary alarm from the primary wave seismic detector.	△	△	△
Fire emergency operation	Forces all cars to move to the evacuation floor by key switch.	△	△	△
Fireman's lift operation	When the fireman's switch is activated, the car is cut out from group operations and is immediately sent to the evacuation floor for exclusive use by the firefighting crew.	△	△	△
Power failure emergency operation	In case of black-out, elevator operation continues powered by an emergency generator for as many cars as the generator capacity allows.	△	△	△
Automatic rescue device for power failure	Moves cars to the closest floor and opens the door by using an emergency battery when the power supply is cut off.	△	△	△
Pit flood emergency operation	When the bottom of the hoistway is flooded with water, hall call and car call of the bottom floor are canceled until the water has left the hoistway.	△	△	△
Parking function	Switch to park the car.	○	○	○
Traffic harmonizer	An external terminal unit that can modify the configuration of the group control system, such as up peak operation, service floor cut-off operation, and transport demand of a bank.	△	×	×
Maintenance stop switch	A switch located on maintenance floor that is to cut out the car from the group control system, and to bring the car to the maintenance floor.	△	△	△
Irregular service floor operation	Applies a group control system to the buildings where some cars cannot go to specific floors, such as the highest floor or the lowest floor. To choose an elevator which can serve irregular service floors and to make it answer, a hall call button for handicapped other than a normal hall call button is installed.	○	○	○

Destination Control System “FLOORNAVI”

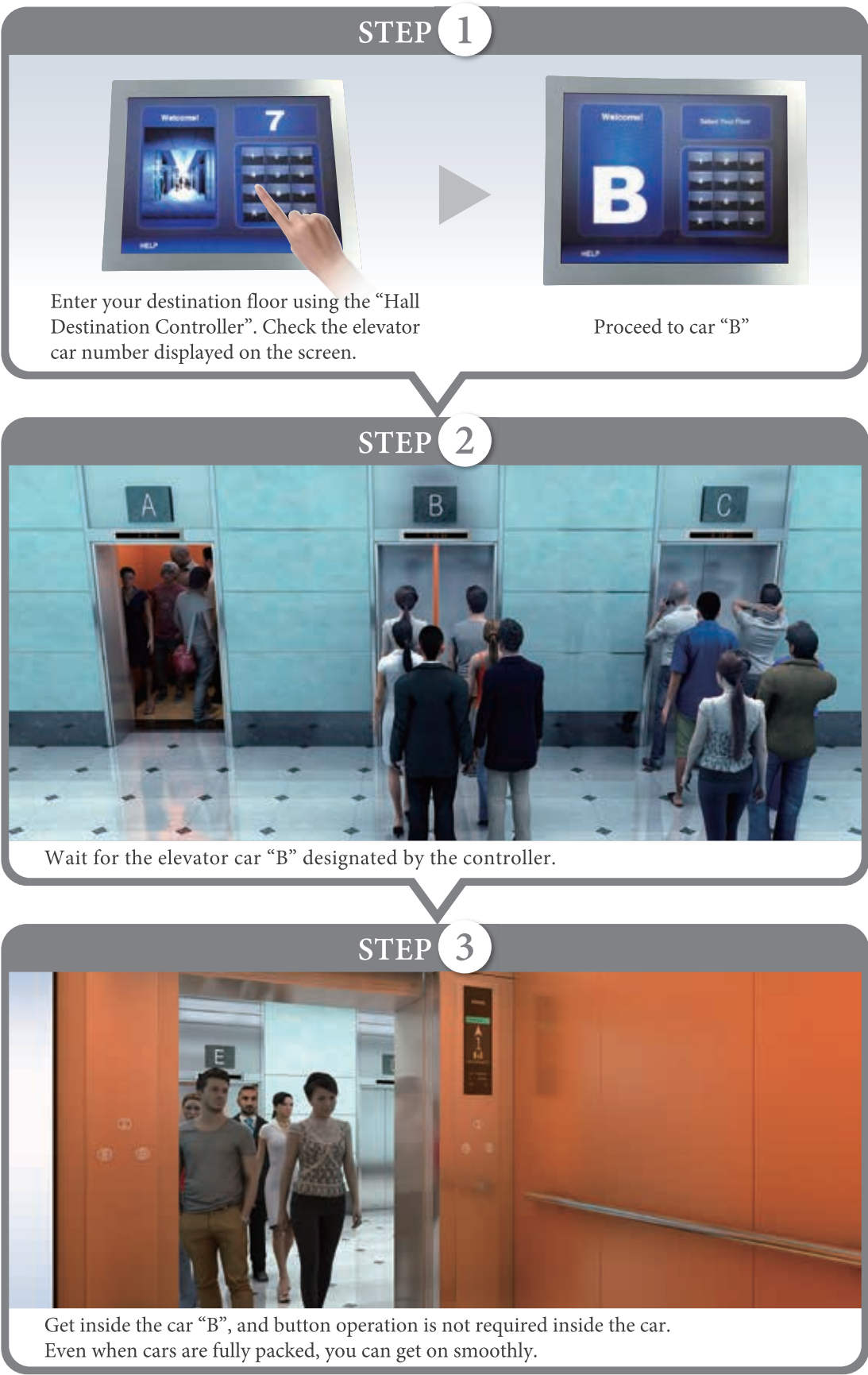
CONCEPT of “FLOORNAVI”

In buildings, elevators are a key means of transportation.
For elevators passengers, length of waiting time and service time on the elevator is essential parameters for the building service.
The Destination Control System “**FLOORNAVI**” is a group control system that makes it possible to optimize more optimum elevator operation by recognizing passenger's destinations beforehand.
Human within the building is comprehensively optimized in order to provide efficient travel.

The group control system offers the best operating schedule based on the destination information entered.




Utilization procedure for the Destination Control System “FLOORNAVI”



Specification item for “FLOORNAVI”


1. Type of Hall Destination Controller Devices

HDC-T <Optional>




Display of HDC-T

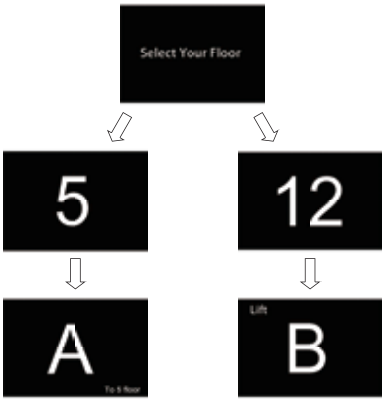
※ 15inch large display




HDC-B1 <Standard> HDC-B2 <Optional>



Display of HDC-B1,B2



Indication pattern for car location



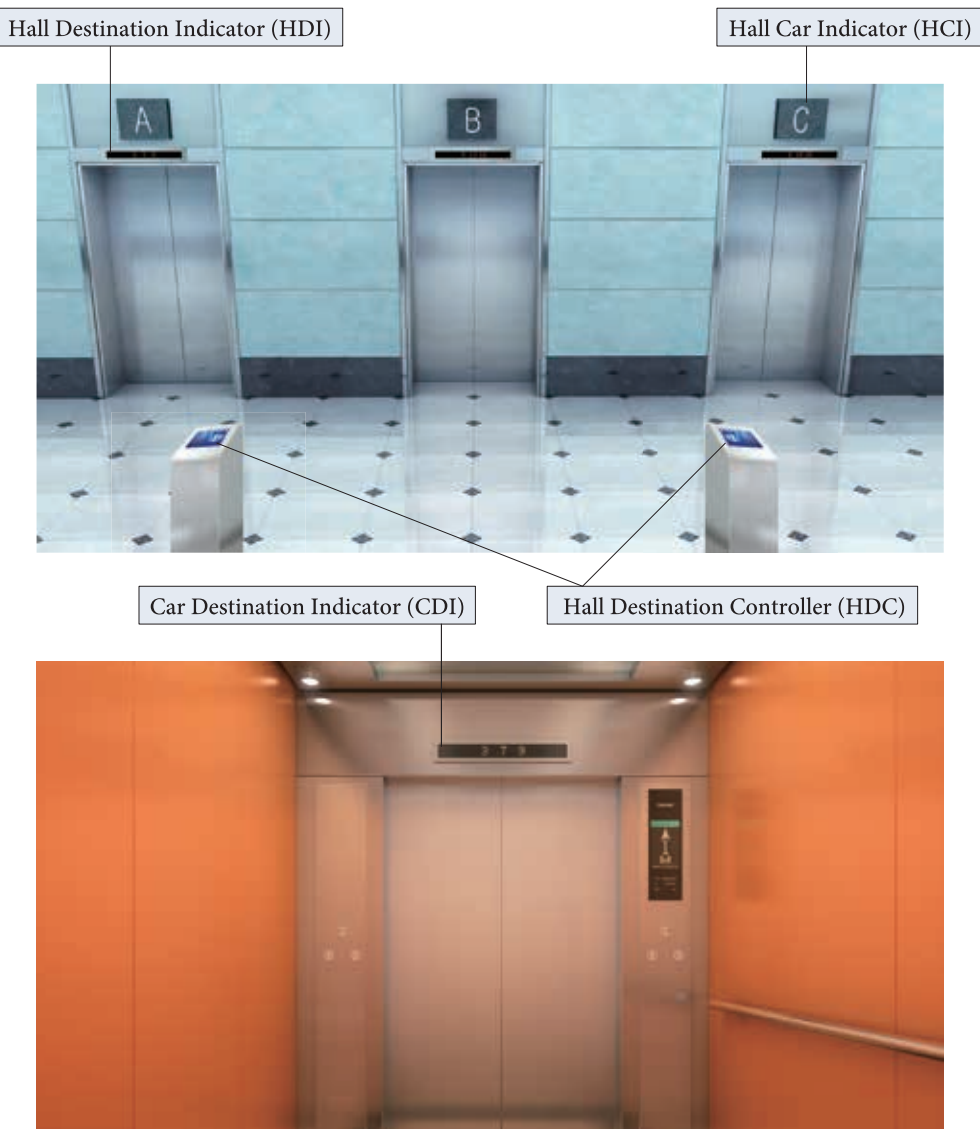
After the destination floor is entered, the assigned car number is indicated.

※ 3.5inch TFT Display

※ Above are examples of the display.

※ Corner Round type
※ 10 key panel type

※ Flat Face plate type
※ 10 key panel type



2. Hall/Car Destination Indicator



3. Hall Car Indicator

(Works by others)



Range of Application

The application for passenger elevators satisfies the requirement of table as follows.

Specification items	Range of Application
Type of Destination Control System	FULL type
Number of applicable Elevators	3~8 cars
Max. service floors	40 floors / car
Numbers of car entrance	Only for single entrance (not applicable for double entrance)
Max. applicable number of HDC	88 units
Max. Distance From HDC to elevator's door	18m
Fireman operation	Applicable
Security (ID card, flapper gate) connection	Not applicable

Global Network

- Head office/Manufacturing base
- Head office

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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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