

SPACEL-III

TOSHIBA **MACHINE-ROOM-LESS** ELEVATORS
STANDARD PASSENGER ELEVATOR

2nd Edition



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

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• The data given in this catalogue are subject to change without notice.

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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 highest quality products and services.

Utilizing the comprehensive technological infrastructure developed by Toshiba Group over more than 135 years since its foundation, we aim to enhance the leading edge technology and quality that enabled us to develop the world's fastest elevator, harnessing the full range of Toshiba's technological innovations. To respond to clients' expectations and requirements for safe and pleasant elevators and 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 SPACEL-III

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

Product Lineup

SPACEL-III is well-suited to office buildings and apartments by the compact designed machine-room-less elevator.

Scope of application	Range of application
Passengers (persons)	8—26 persons
Rated load (kg)	630—2000 kg
Rated speed (m/s)	1—2 m/s

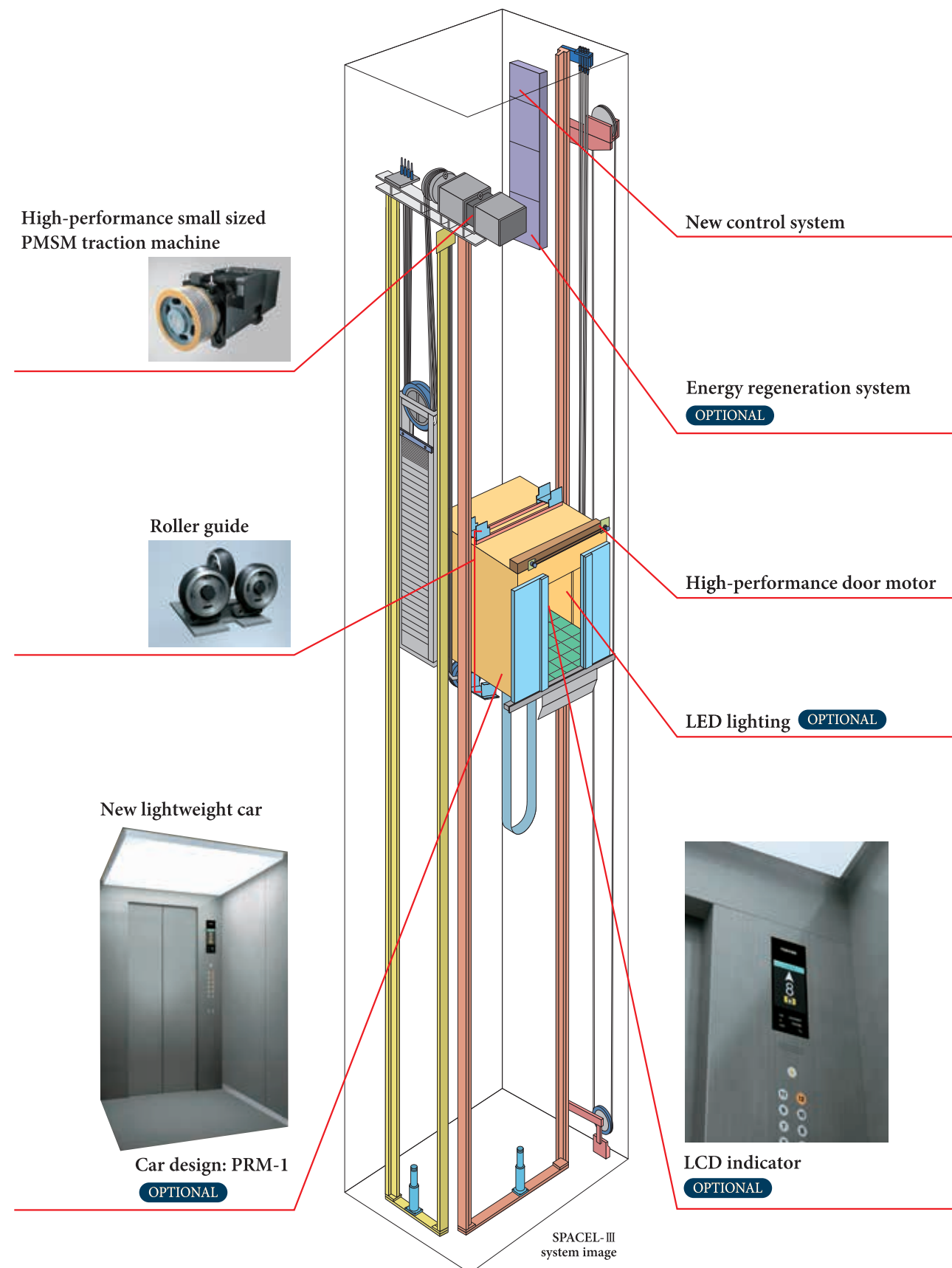
Rated speed (m/s)	2																		
	1.75																		
	1.6																		
	1																		
Rated load (kg)		630	825	1050	1150	1275	1350	1600	1800	2000									
Type		P8	P11	P14	P15	P17	P18	P21	P24	P26									

Note
The above scope complies with GB7588:2003 standard.

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TECHNOLOGY



Actual product colors may vary slightly from the printed colors in this catalogue.

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.

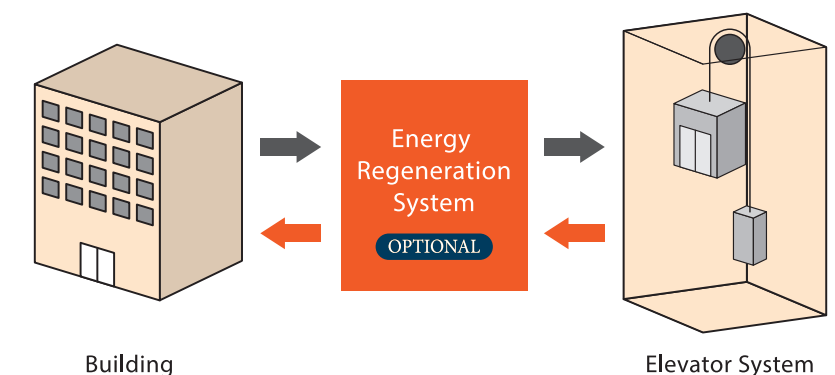


New Control Systems

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 OPTIONAL

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.

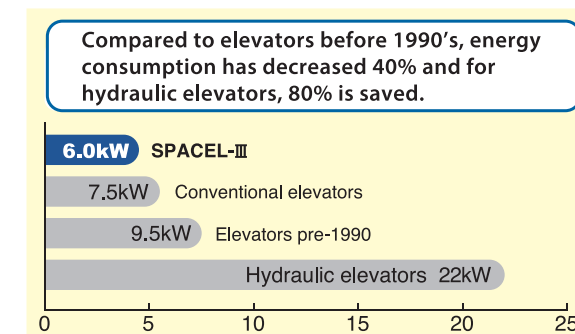
TECHNOLOGY

Environmental issues

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

Energy Saving

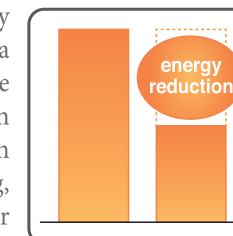
SPACEL-III employs a newly developed compact gearless PMSM motor which enables high energy efficiency. Furthermore, by using a gearless motor, gear oil is not needed, which contributes to saving natural resources.



*Comparison with "SPACEL-III" (capacity:1050kg speed:60m/min) and "TOSHIBA STANDARD PASSENGER ELEVATOR", "Cellebellum VFW" (capacity:1000kg speed:60m/min)

Energy Regeneration System OPTIONAL

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).



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)



Car design: TL-1 OPTIONAL

Resource Saving

Machine room less elevator

By eliminating machine room, various constructing procedure and materials will not be necessary.

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 Base Plate, 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.

SPACEL-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 SPACEL-III has been approved as an "Excellent ECP".

STYLISH and COMFORTABLE

New Ceiling Design

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 life.

The electric consumption fall about 85% and the product life time will be increased 20 times.

Therefore LED lighting reduces CO₂ emissions.

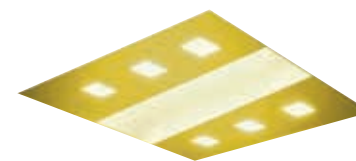
Note 1: Applied in car design SL-V1, SL-V2, TL-1, DLX-21, DLX-22, DLX-23, DLX-24, DLX-25, PRM-1, PRM-2.



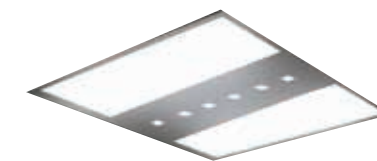
PRM-1



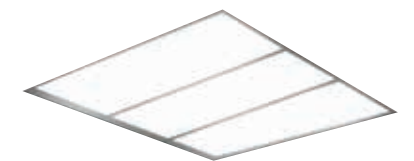
PRM-2



DLX-25 / DX-25



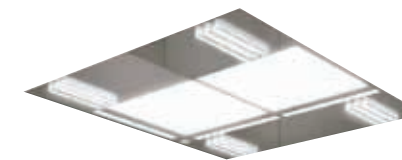
DLX-24 / DX-24



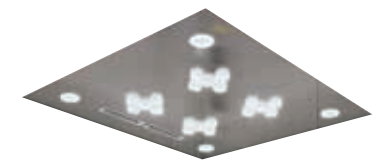
DLX-23 / DX-23



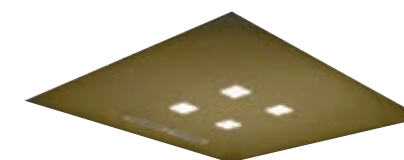
DLX-22 / DX-22



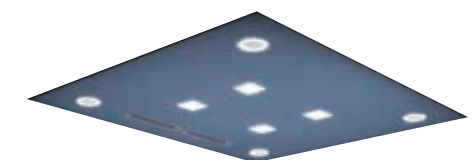
DLX-21 / DX-21



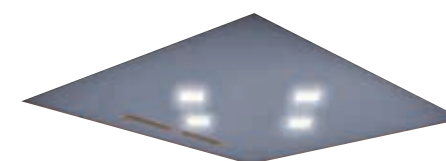
TL-1



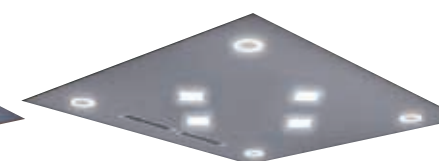
SL-V1



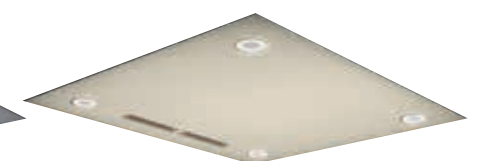
SL-1



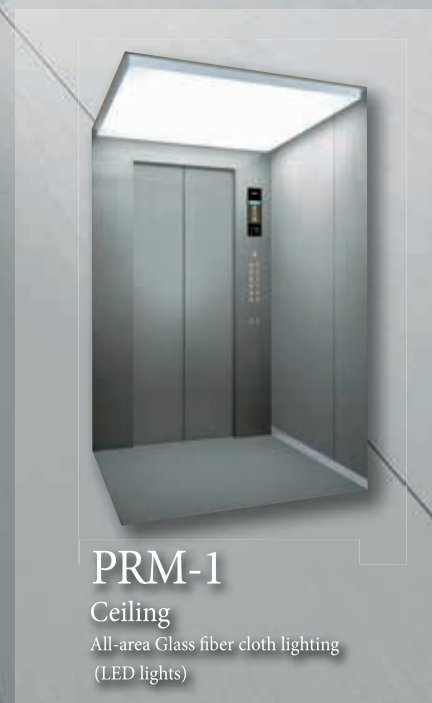
SL-V2



SL-2



SL-3



PRM-1

Ceiling
All-area Glass fiber cloth lighting
(LED lights)

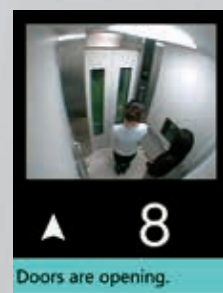
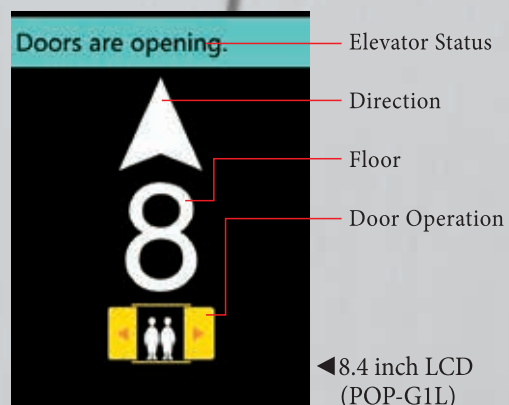
Actual product colors may vary slightly from the printed colors in this catalogue.

STYLISH and COMFORTABLE

Large LCD indicator for car operation panel

These 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.

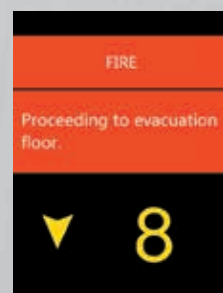
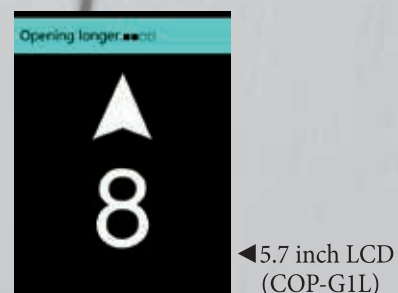
OPTIONAL



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.

Actual product colors may vary slightly from the printed colors in this catalogue.



STYLISH and COMFORTABLE



Hall Design



Hall design 1

STANDARD



Hall design 2

OPTIONAL



Hall design 3

OPTIONAL



Hall design 4

OPTIONAL



Hall design 5

OPTIONAL

*Note: Provided hall design specifications with the Wide type jamb and Transoms, when need to Fireproof specifications adaped.

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Functions

● STANDARD ○ OPTIONAL

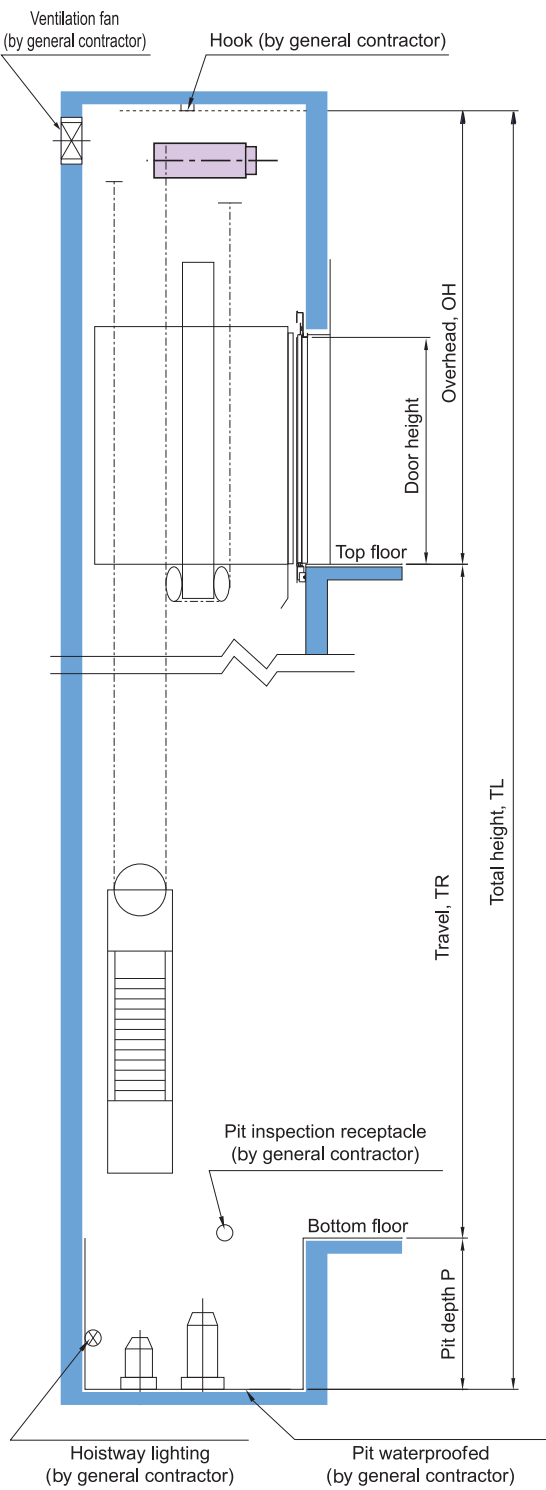
Functions	Notes	Descriptions	
Operations	Simplex selective-collective fully automatic operation	Fully automatic operation by hall and car calls for single car	●
	Duplex selective collective fully automatic operation (Note 1)	Fully automatic operation for 2 cars in the same group	○
	3 or 4-car group supervisory control system (Note 1)	Fully automatic operation for 3 or 4 cars in the same group	○
	Group supervisory control system	For supervisory operation of groups of more than 4 cars, please contact us	○
	Independent operation	Lift car separated from group control operation and responde 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 failes	When system failure occurs, the lift will automatically land at the nearest floor and door will open for passengers to exit	●
	Car inspection operation (INS)	During car inspection operation, lift car will run at slow speed without responding to hall call	●
	Overload protection	Car overload buzzer will sound to prevent overloading and doors will remain open	●
	Door open when lift car is overloaded	Door will re-open when overload is detected even though it is closing	●
	Fireman's operation	In the event of fire, when 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 earthquake, elevator detects 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 emergency call when they are trapped inside the lift	●
	Emergency operation indication at COP	In the event of emergency, emergency operation status will be displayed at COP	●
	Mechanical door safety	When mechanical door safety touched a passenger, door will open	●
	Multi-beam door safety sensor (or light curtain door safety sensor)	When multi-beam door safety sensed a passenger, 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	○
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	Disables the designated floor service	○

Notes
1: Not applicable to lift car with through door.
2: Standard function for Duplex or 3-car group operation.
3: > 5 floors and car weight < 150kg.
4: This function is optional.
5: For details of interface for building management system, please consult our local distributor.
6: Hand rail and car operating panel are included.
7: Overhead (OH) has to be increased, please consult our local distributor for details.

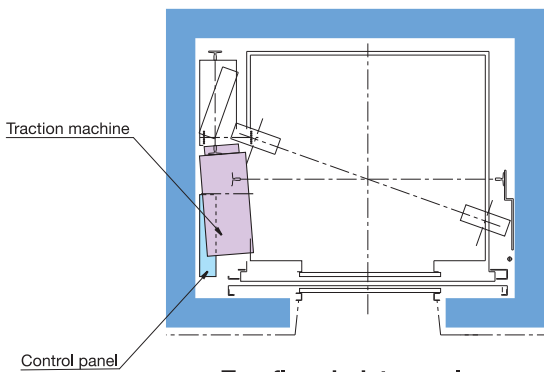
● STANDARD ○ OPTIONAL

Functions	Notes	Descriptions	
Service Functions	Full car bypass (Note 3)	When 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 (Note 4)	Incorrect or nuisance floor calls can be cancelled to eliminate unnecessary operation	●
	Door repeated opening	When an obstacle is detected, the door will repeatedly open and close until the obstacle is removed	●
	Adjustable door opening time	Adjusts door opening time to reflect building usage	●
	Door open extension button	Extends door opening time	○
	Car chime	Chime installed in car ceiling will sound when lift arrives	○
	Hall chime	Chime installed in lift lobby will sound when lift arrives	○
	Hall lantern	Hall lantern will be lighted when lift arrived	○
	Sub-car operating panel	Additional car operating panel	○
	Car full load indicator	"Full Load" will display on hall indicator when lift car is full	○
	Out of service indicator	"Out of Service" will display on hall indicator when lift car is faulty	●
	Parking operation (manual)	Parks the lift at designated floor by key-switch	●
	Parking operation (automatic)	Parks the lift at designated floor auotmatically	○
	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 reversal travel direction	●
	Multi-channel intercom	Intercom system is able to communicate with multi-stations simultaneously	●
	Designated floor stop operation	Automatically stops the lift at designated floor for crime prevention purposes	○
	Card access system	Able to activate the designate floor call by IC card * Card Access System by others	○
	Speech synthesizer	Announces car operations	○
	Supervisory panel	Located in building control room, etc. for monitoring the status and control of each lift	○

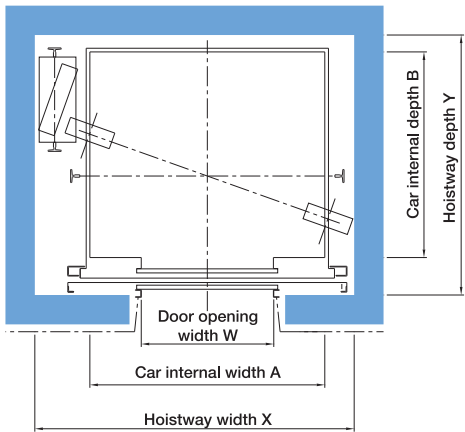
Hoistway Layout



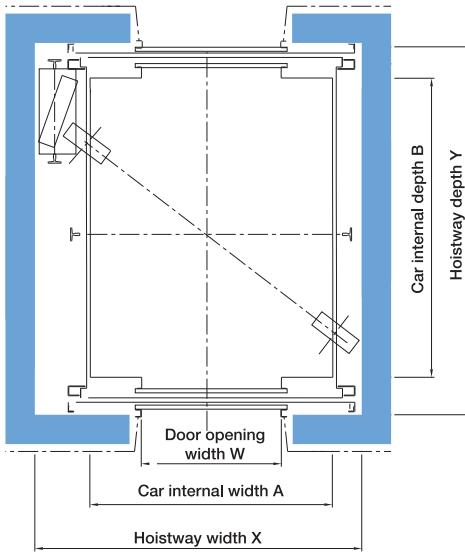
Hoistway section



Top floor hoistway plan



Typical floor hoistway plan (W, D)



Typical floor hoistway plan (D2)

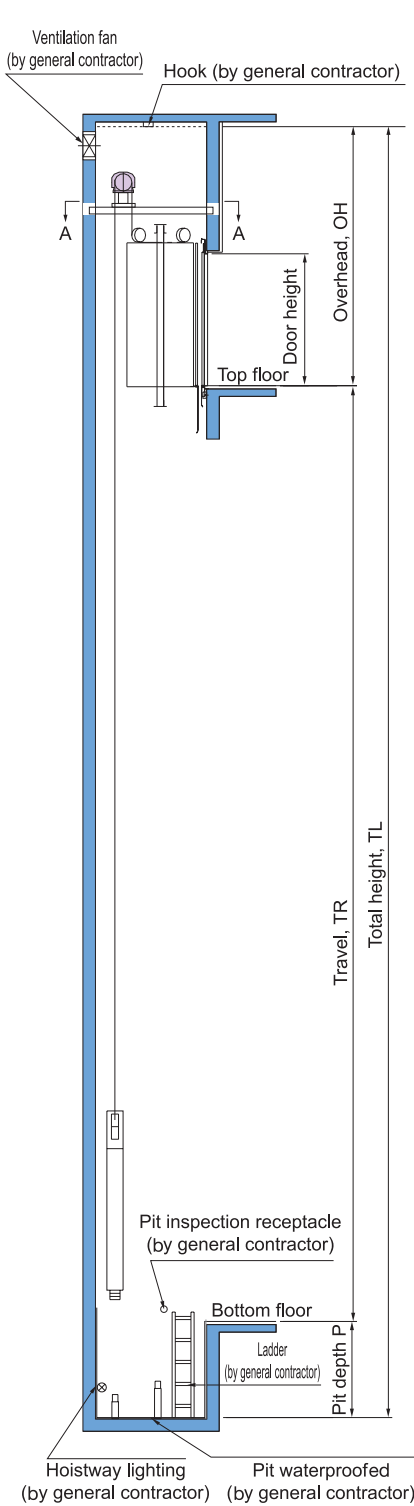
Specifications

Type		Nos.of Person	Capacity (kg)	Speed (m/s)	Cage size Internal(A×B) (mm)	Door with W (mm)	Hoistway size(mm)			Motor Capacity (kW)	Max.Service Stops(s)	Max.Travel (m)			
							X×Y	OH	P						
P8-CO60	W	8	630	1	1400×1100	800	2085×1660	3700	1300	3.6	40	80			
	D				1100×1400	900	2245×1660								
P8-CO96	W			1.6	1400×1100	800	2085×1660	3900	1400	5.8	40		100		
	D				1100×1400	900	2245×1660								
P8-CO105	W			1.75	1400×1100	800	1935×1775	3950	1450	6.3	40				
	D				1100×1400	900	2120×1775								
P8-CO120	W			2	1400×1100	800	2085×1660	4050	1650	7.2	40				
	D				1100×1400	900	2120×1775								
P11-CO60	W	11	825	1	1400×1350	800	2100×1770	3700	1300	4.7	40	80			
	D				1100×1700	900	2200×1770				※				
	D2				1100×1700	800	1950×2150				3900		1400	7.5	40
					1100×1700	900	2120×2150								※
P11-CO96	W			1.6	1400×1350	800	2100×1770	3950	1450	8.3	40	100			
	D				1100×1700	800	1950×2050				※				
	D2				1100×1700	900	2120×2150								
P11-CO105	W			1.75	1400×1350	800	2100×1770	3950	1450	8.3	40				
	D				1100×1700	800	1950×2050				※				
	D2				1100×1700	900	2120×2150								
P11-CO120	W			2	1400×1350	800	2100×1770	4050	1650	9.5	40				
	D				1100×1700	800	1950×2050				※				
	D2	1100×1700	900		2120×2150										
P14-CO60	W	14	1050	1	1600×1400	900	2300×1820	3700	1300	6.0	40	80			
	D				1100×2100	1000	2400×1820				※				
	D2				1100×2100	1100	2500×1820				3900		1400	9.7	40
					1100×2100	900	2120×2550								※
P14-CO96	W			1.6	1600×1400	900	2300×1820	3950	1450	10.5	40	100			
	D				1100×2100	1000	2400×1820				※				
	D2				1100×2100	1100	2500×1820				※				
P14-CO105	W			1.75	1600×1400	900	2300×1820	3950	1450	10.5	40				
	D				1100×2100	1000	2400×1820				※				
	D2				1100×2100	1100	2500×1820				※				
P14-CO120	W			2	1600×1400	900	2300×1820	4050	1650	12.0	40				
	D				1100×2100	1000	2400×1820				※				
	D2	1100×2100	1100		2500×1820	※									

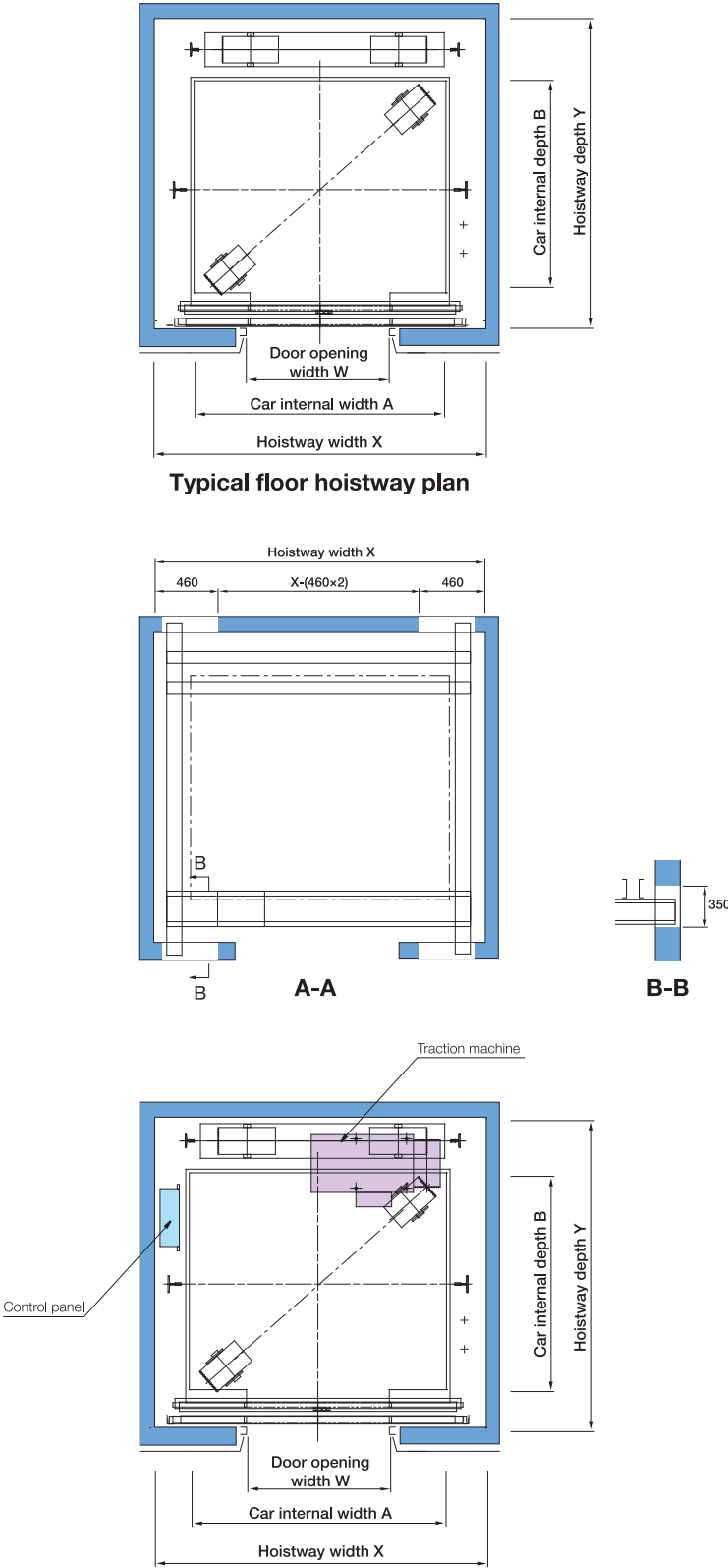
※ : Please consult our local distributor.

- Note:**
- The above table complies with GB7588:2003 standards.
 - In case of travel is 40m or more, add 150mm to OH dimension and TC dimension at the above-stated dimension.
 - Please contact to 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 150mm thick or more.
 - Piping, wiring and cables which is not relevant to elevator are prohibited inside the hoistway.
 - OH value in the chart is for standard ceiling. As for the non-standard cars, please consult our local distributor.
 - 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 D2: Front and rear opening door

Hoistway Layout



Hoistway section



Top floor hoistway plan

Specifications

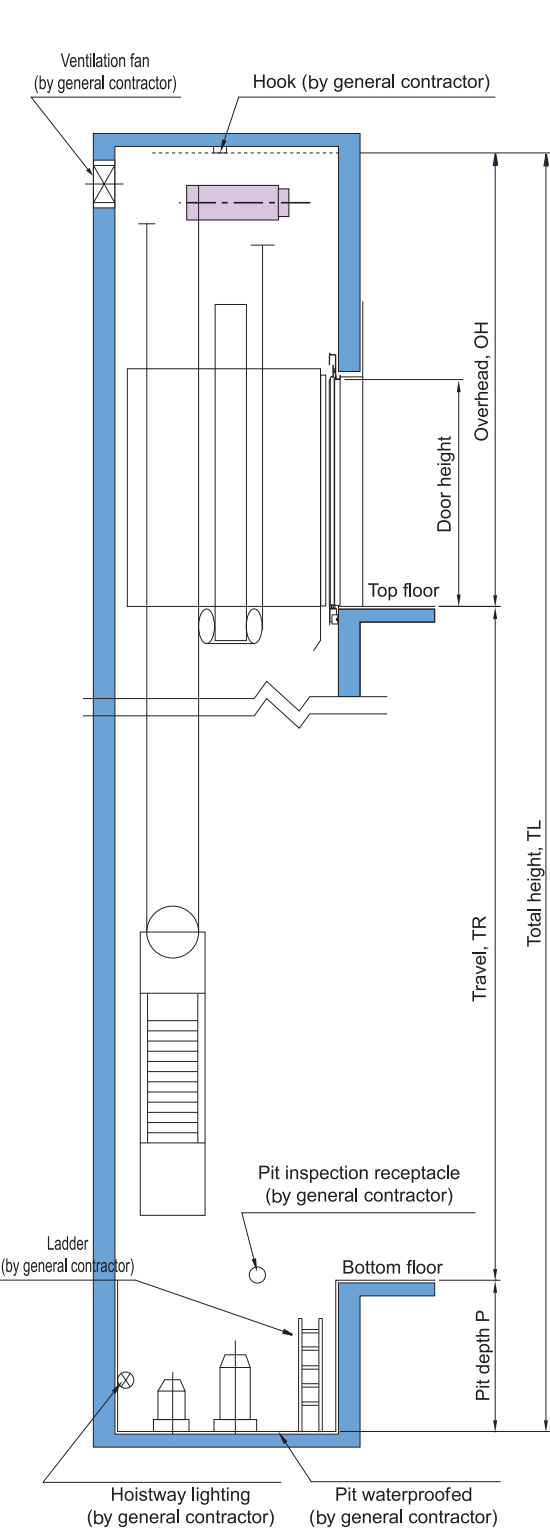
Type	Nos. of Person	Capacity (kg)	Speed (m/s)	Cage size Internal(A×B) (mm)	Door with W (mm)	Hoistway size(mm)			Motor Capacity (kW)	Max. Service Stops(s)	Max. Travel (m)
						X×Y	OH	P			
P15-CO60	15	1150	1	1800×1500	1000	2400×2150	4100	1300	7.0	48	80
P15-CO96			1.6		1100		4300	1400	12.0		100
P15-CO105			1.75		1100		4350	1450	12.0		
P15-CO120			2		1100		4600	1600	14.0		
P18-CO60	18	1350	1	2000×1500	1100	2600×2150	4100	1300	8.0		80
P18-CO96			1.6		1100		4300	1400	14.0		100
P18-CO105			1.75		1100		4350	1450	14.0		
P18-CO120			2		1100		4600	1600	16.0		
P21-CO60	21	1600	1	2000×1700	1100	2650×2350	4100	1300	10.0		80
P21-CO96			1.6		1200		4300	1400	16.0		100
P21-CO105			1.75		1200		4350	1450	18.0		
P21-CO120			2		1200		4600	1600	20.0		
P24-CO60	24	1800	1	2100×1750	1200	2750×2400	4100	1300	12.0		80
P24-CO96			1.6		1200		4300	1400	18.0		100
P24-CO105			1.75		1200		4350	1450	20.0		
P24-CO120			2		1200		4600	1600	22.0		
P26-CO60	26	2000	1	2100×1950	1200	2750×2600	4100	1300	12.0		80
P26-CO96			1.6		1200		4300	1400	20.0		100
P26-CO105			1.75		1200		4350	1450	22.0		
P26-CO120			2		1200		4600	1600	24.0		

Note:

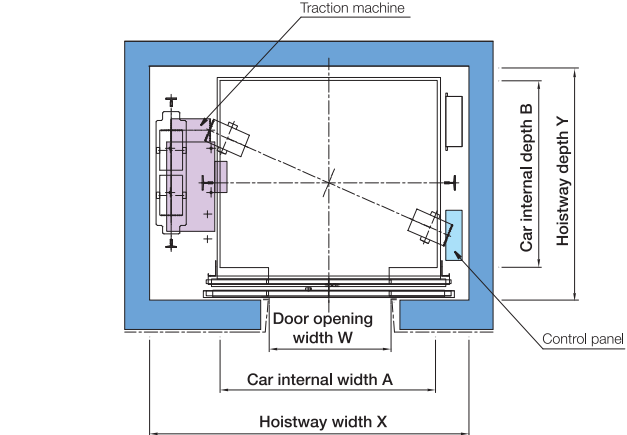
- The above table complies with GB7588:2003 standards.
- In case of travel is 40m or more, add 150mm to OH dimension and TC dimension at the above-stated dimension.
- Please contact to our local distributor to check for other standards.
- Hoistway dimensions are the minimum dimension after the construction work.
- The hoistway dimensions in chart are the minimum requirement.
- The hoistway structure wall must be 150mm thick or more.
- Piping, wiring and cables which is not relevant to elevator are prohibited inside the hoistway.
- OH value in the chart is for standard ceiling. As for the non-standard cars, please consult our local distributor.
- 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

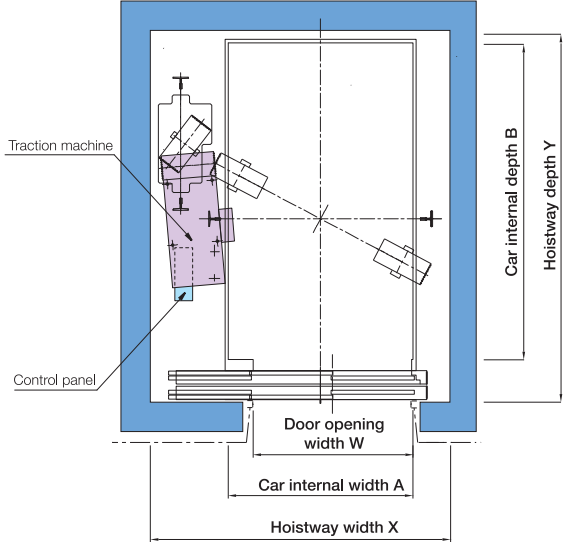
Hoistway Layout



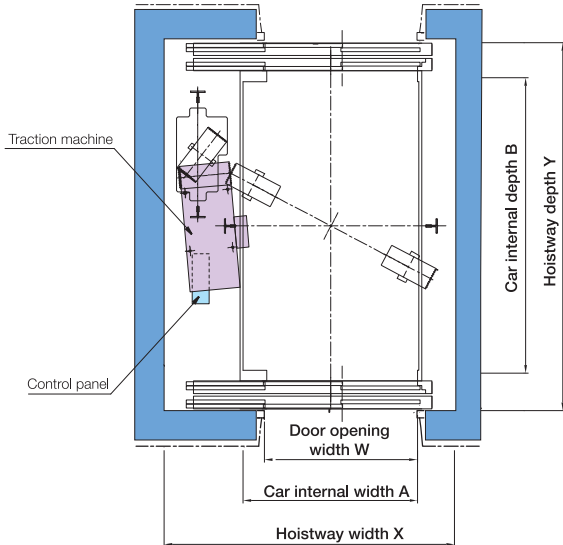
Hoistway section



Typical floor hoistway plan (W)



Typical floor hoistway plan (D)



Typical floor hoistway plan (D2)

Specifications

Type		Nos.of Person	Capacity (kg)	Speed (m/s)	Cage size Internal(A×B) (mm)	Door with W (mm)	Hoistway size(mm)			Motor Capacity (kW)	Max.Service Stops(s)	Max.Travel (m)
							X×Y	OH	P			
P15-CO60	W	15	1150	1	1800×1500	1000	2650×1880	3700	1350	7.0	48	80
	W					1100	2700×1880					
P15-CO96	W			1.6		1000	2650×1880	3850	1450	12.0		100
	W					1100	2700×1880					
P15-CO105	W			1.75		1000	2650×1880	3950	1500	12.0		
	W					1100	2700×1880					
P15-CO120	W			2		1000	2650×1880	4100	1650	14.0		
	W					1100	2700×1880					
P17-CO60	W	17	1275	1	2000×1400	1100	2850×1840	3700	1350	8.0	80	
P17-CO96	W							3850	1450	12.0		
P17-CO105	W							3950	1500	14.0		
P17-CO120	W							4100	1650	16.0		
P17-2S60	D	17	1275	1	1200×2300	1100	2100×2750	3700	1350	8.0	80	
P17-2S96	D							3850	1450	12.0		100
P17-2S105	D							3950	1500	14.0		
P17-2S120	D							4100	1650	16.0		
P17-2S60	D2	17	1275	1	1200×2200	1100	2100×2870	3700	1350	8.0	※	
P17-2S96	D2							3850	1450	12.0		
P17-2S105	D2							3950	1500	14.0		
P17-2S120	D2							4100	1650	16.0		
P18-CO60	W	18	1350	1	2000×1500	1100	2850×1880	3700	1350	8.0	80	
P18-CO96	W							3850	1450	14.0		100
P18-CO105	W							3950	1500	14.0		
P18-CO120	W							4100	1650	16.0		
P21-CO60	W	21	1600	1	2000×1700	1100	2850×2090	3700	1400	10.0	48	80
	W					1200	2900×2090					
P21-CO96	W			1.6		1100	2850×2090	3850	1500	16.0		100
	W					1200	2900×2090					
P21-CO105	W			1.75		1100	2850×2090	3950	1550	18.0		
	W					1200	2900×2090					
P21-CO120	W			2		1100	2850×2090	4100	1700	20.0		
	W					1200	2900×2090					
P21-2S60	D	21	1600	1	1400×2400	1200	2300×2850	3700	1400	10.0	80	
P21-2S96	D							3850	1500	16.0		100
P21-2S105	D							3950	1550	18.0		
P21-2S120	D							4100	1700	20.0		
P21-2S60	D2	21	1600	1	1400×2300	1200	2300×2970	3700	1400	10.0	※	
P21-2S96	D2							3850	1500	16.0		
P21-2S105	D2							3950	1550	18.0		
P21-2S120	D2							4100	1700	20.0		
P24-CO60	W	24	1800	1	2100×1750	1200	2950×2140	3700	1400	12.0	80	
P24-CO96	W							3850	1500	18.0		100
P24-CO105	W							3950	1550	20.0		
P24-CO120	W							4100	1700	22.0		
P26-CO60	W	26	2000	1	2100×1950	1200	2900×2340	3700	1400	12.0	48	80
P26-CO96	W							3850	1500	20.0		
P26-CO105	W							3950	1550	22.0		
P26-CO120	W							4100	1700	24.0		

※ : Please consult our local distributor.

- Note:**
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 - 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 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 jamps, indicators and push-buttons, etc.
Please note that chipping or padding work is required according to the necessity, in case the error of the structure is 30 mm or over.
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 PC structure.
4. Fire-proofing of steel frame material in steel structured hoistways, and fire-proofing around landing entrances (if necessary).
5. Finishing of walls and floors, etc., around entrances, after furnishing equipment related to landing entrances.
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. Water-proofing 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 fascia 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 vent 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.

► Works for Equipment

1. Wiring of the power supply for motors and that 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

It is required to arrange the following matters:

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 of enough passage for carrying heavy goods.
5. On use of elevator for the construction work of the building, It is required to make contract with a separate written estimate.

Note

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

1. Provide power facility so that voltage regulation of the power supply at the receiving terminals in the hoistway is kept within $\pm 10\%$ for the motor, and $\pm 2\%$ for the lighting equipments.
2. In the hoistways, please prevent the temperature from exceeding 40°C and humidity from exceeding 90% (monthly mean) and 95% (daily mean).
3. Please do not allow any chemically toxic gas or an excessive amount of dust to enter into the hoistways, as these can corrode the metal or electrical contacts.

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.

Memo