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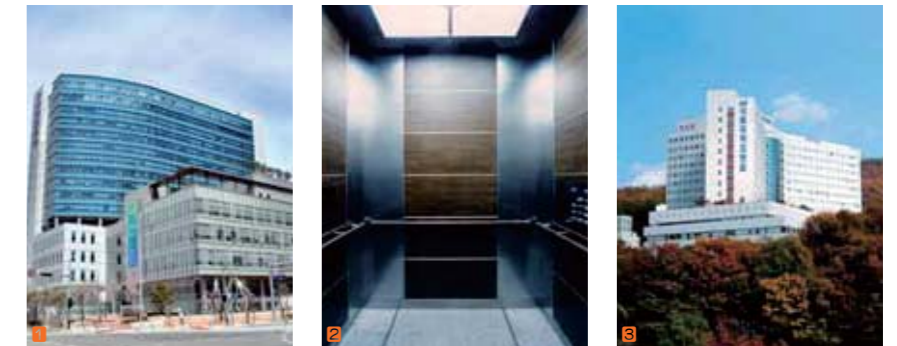
# HOSPITAL BED ELEVATORS

Moving solutions with safety, reliability and efficiency



## Hospital Bed Elevators

Hyundai Hospital Bed Elevators, a right choice for your hospital needs are designed to greatly contribute to provide the most secure and reliable ambience that your hospital requires.



1 Haeundae Paik Hospital, Busan, Korea 2 Asan Medical Center, Seoul, Korea  
3 Seoul National University Bundang Hospital, Gyeonggi-do, Korea

Integrated into the system is such an advanced technology as VVVF (Variable Voltage Variable Frequency) inverter drive which serves the purpose of great cost reduction by innovative energy saving, as well as excellent riding comfort of elevators. Basically, Hyundai Hospital Bed Elevators are planned, designed and manufactured, bearing passengers' security and convenience first in mind. The elegant designs and various features that these elevators show off are the key to enhancing the dignity of hospital facilities in addition to providing the amenities that hospital pursues.

### | Main advantages |

- Superior riding
- Enhanced function of signal fixtures
- Remote monitoring system (optional)
- Self-checking system built in computer
- 50% energy saving (Compared to conventional AC control system)
- 50% reduction in building power requirement (Compared to conventional AC control system)
- Excellent security of door for wheelchair and hospital bed (A gap between car sill and hatch sill is 25mm)



REAR



## CAR DESIGN

Ceiling	CD569A (Aluminium), Acrylic, Sheet, LED Light, Anion air cleaner
Wall	Hairline-Finished Stainless Steel, Hairline-Etched Stainless Steel (SE2302), * Wall Protector (Hairline-Finished Stainless Steel)
Transom	Hairline-Finished Stainless Steel
Car Doors	Hairline-Etched Stainless Steel (SE2302)
Operating Panel	OPP-N241B (Hairline-Finished Stainless Steel)
Indicator	Deluxe Type (PI-D110)
Handrail	Stainless Bar, Hairline
Flooring	Polyvinyl Tile (TN2224C, TN2227C)

Note : 1. Finished product may vary slightly from these prints.  
2. \* means optional feature.



REAR



## CAR DESIGN

Ceiling	CD519D (Aluminium), Indirect Lighting, Convective Air Sterilization System
Wall	Dull Stainless Steel, Mirror-Etched Stainless Steel (SE2308), STS Mirror Trim (30mm)
Transom	Dull Stainless Steel
Car Doors	Dull Stainless Steel
Operating Panel	OPP-N290A (Touchless Button, Return Panel)
Indicator	Deluxe Type (PI-D110)
Handrail	1R (Stainless 1 Pipe)
Flooring	Polyvinyl Tile (TN2224C, TN2211C)

Note : Finished product may vary slightly from these prints.



REAR



## CAR DESIGN

Ceiling	CD469B, Painted Steel (P016), Acryl
Wall	Pattern Blast Stainless Steel, Pattern Blast Etched Stainless Steel (SE2306), * Wall Protector (Pattern Blast Stainless Steel)
Transom	Pattern Blast Stainless Steel
Car Doors	Pattern Blast Etched Stainless Steel (SE2306)
Operating Panel	OPP-D290A, OPP-290W (For the disabled) / Pattern Blast Stainless Steel, Touchless Button, Return Panel
Handrail	1DW (Anti-viral 1 Pipe, Wood Pattern)
Flooring	Polyvinyl Tile (TN2423C, TN2426C)

Note : 1. Finished product may vary slightly from these prints.  
2. \* means optional feature.



REAR



## CAR DESIGN

Ceiling	CD291C, Painted Steel (P021), Acryl
Wall	Pattern Blast Stainless Steel, Pattern Blast Etched Stainless Steel (SE2310), * Wall Protector (Pattern Blast Stainless Steel)
Transom	Pattern Blast Stainless Steel
Car Doors	Pattern Blast Etched Stainless Steel (SE2310)
Operating Panel	OPP-N240B, OPP-N240W (For the disabled) / Pattern Blast Stainless Steel
Indicator	Deluxe Type (PI-D110)
Handrail	1C (1 Pipe Hairline-Finished Stainless Steel, Chrome Bracket)
Flooring	Polyvinyl Tile (TN2302C, TN2412C)

Note : 1. Finished product may vary slightly from these prints.  
2. \* means optional feature.



## EB100 ESA

### ENTRANCE

Landing Doors	Hairline-Etched Stainless Steel (SE2302)
Jams	Hairline-Finished Stainless Steel / 100TYPE
Hall Button With Indicator	HIP-D641 / Hairline-Finished Stainless Steel



## EB200 PSA

### ENTRANCE

Landing Doors	Pattern Blast Etched Stainless Steel (SE2306)
Jams	Pattern Blast Stainless Steel / 200TYPE
Hall Button	HPB-290 (Touchless Button) / Pattern Blast Stainless Steel
Indicator	Deluxe Type (PI-D600)



## EB100 DS

### ENTRANCE

Landing Doors	Dull Stainless Steel
Jams	Dull Stainless Steel / 100TYPE
Hall Button With Indicator	HIP-D290 (Touchless Button) / Hairline-Finished Stainless Steel



## EB200 PSC

### ENTRANCE

Landing Doors	Pattern Blast Etched Stainless Steel (SE2310)
Jams	Pattern Blast Stainless Steel / 200TYPE
Hall Button	HPB-640 / Pattern Blast Stainless Steel
Indicator	Deluxe Type (PI-D110)

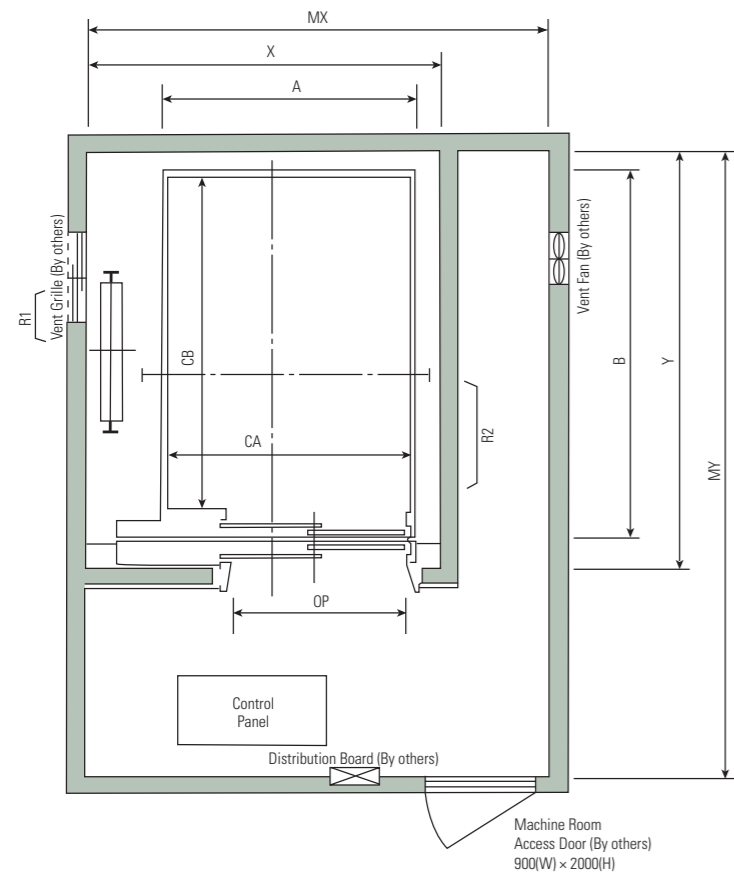
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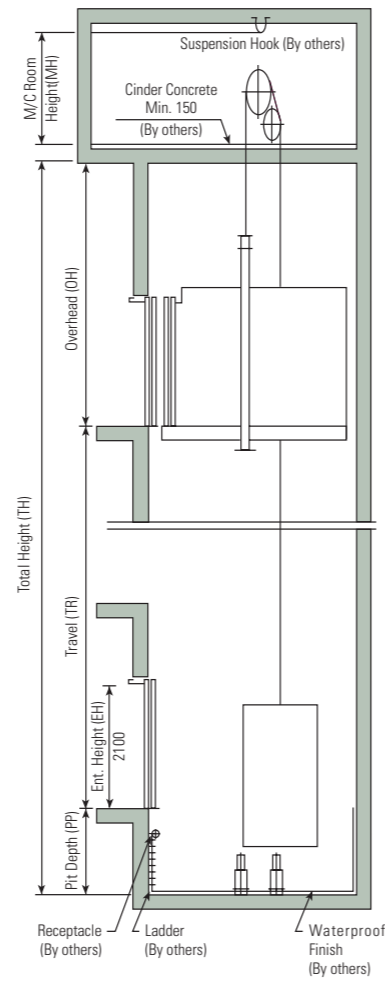
# Installation Layout Plan

## General Traction Type

### Plan of Hoistway & Machine Room



### Section of Hoistway



### Standard Dimensions & Reactions

(Unit : mm)

Type	Model	Clear Opening OP	Car		Hoistway X × Y	M/C Room MX × MY	M/C Room Reaction(kg)	
			Internal CA × CB	External A × B			R1	R2
Standard Type	B1350-2S30, 45	1100	1300 × 2300	1400 × 2507	2100 × 2850	2300 × 3500	10500	8500
	B1350-2S60							
	B1600-2S30, 45	1200	1500 × 2300	1600 × 2507	2300 × 2850	2750 × 4000	11500	9500
	B1600-2S60							
B1750-2S30-60	1200	1600 × 2300	1700 × 2507	2400 × 2850	2850 × 4000			
Double Entrance Type	B1350-2SD30, 45	1100	1300 × 2300	1400 × 2634	2300 × 3000	2300 × 3500	10500	8500
	B1350-2SD60							
	B1600-2SD30, 45	1200	1500 × 2300	1600 × 2634	2500 × 3000	2750 × 4000	11500	9500
	B1600-2SD60							
	B1750-2SD30-60	1200	1600 × 2300	1700 × 2634	2600 × 3000	2850 × 4000		

- Notes :**
- When non-standard capacities and dimensions are required, consult Hyundai.
  - Above dimension are applied in case the door is standard. In case fire protection door is applied, hoistway size for 1 car should be applied above X dimension plus 100mm.
  - Consult Hyundai in case the code applied.

(Unit : mm)

Speed (m/min)	Overhead (OH)	Pit (PP)	M/C Room Height (MH)
30/45	4400	1200	2400
60	4600	1500	
90	4800	1800	
105	5000	2100	

- Notes :**
- Above is minimum size.
  - In case of special hoistway, machine room height may be higher than above size.
  - The minimum machine room height should be 2800mm in case of the traction machine with double isolation pad.

# Standard & Optional Features

## Standard

	Items	Descriptions
Efficient	Simplex Selective Collective	The whole operation process is automatically carried out by the calls registered.
	Car Call Cancellation	Allows cancellation of an incorrectly registered car call. If you push a wrong floor button in the car, you can cancel it by pressing the registered button one more time.
	Door Open/Close Time Adjustment	Door open and close are automatically adjusted depending on whether the car is a hall call or a car call to increase the operating efficient.
	Automatic Car Light & Fan Turn-off	Car illumination and fan are turned off automatically in case there is no hall call or car call to save energy.
Safety	Car Door Safety Edge	Extending the full height of the car door, this device causes the doors to return to the fully open position should the door encounter a person or obstacle while closing.
	Landing Door Interlock Switch	In case on opening the door, the switch installed at the door operator is activated and keeps the car from moving. During the operation of car, it locks the door completely so as not to open the door from out side.
	Overload Holding Stop	When the load of passengers exceeds the maximum capacity, a buzzer sounds and the remains stopped at that floor. When the passengers get off, the buzzer will stop. Consequently elevator doors will close and operation continues.
	Emergency Lighting Feature	In case of main power failure, the emergency light will turn on automatically and maintain a period of time.
	Interphone(Intercom)	Provide emergency communication between passengers in the car, the machine room or building personnel in security or maintenance room.
	Micro Leveling	An automatic two-way leveling device is provided to maintain the elevator car level with the landing, regardless of elevator load or direction travel.
	Safety Drive Operation	During the normal operation, If the car stops between floors and safety device doesn't work, the car automatically moves to the nearest floor with the low speed. Then, it opens the door to allow the passengers to exit off.

## Option

	Items	Descriptions
Efficient	Duplex Selective Collective	Two units of elevator provide the effective service for the common hall calls.
	N-PLEX Operation (Group control)	3~8 units of elevator provide the effective service for the common or dual hall calls by combining each other systematically.
	DSS(Destination Selection System)	Register destination floor before entering car, allowed elevator will be displayed. Passengers could reach their destination floor in shortest time without pushing button in control operation panel.

	Items	Descriptions
Efficient	Attendant Operation	The operating mode of an elevator can be changed from the normal automatic operation to the attendant service by an attendant switch on COP.
	Voice Synthesizer	Provide to riding passengers with audio information about car operation such as direction of ride, landing floor, emergency, etc.
	Anti-nuisance Operation	In case of substantial difference between the number of calls registered on the car operating panel and actual load in the elevator, the elevator prevents unnecessary operation by canceling all registered calls when it arrives at the nearest floor.
	Hold Door Closing	In case of register the door holder button, the car wait with opened door during the time that the program.
	Parking Operation	The elevator can be automatically parked at the predetermined floor with its doors closed, and the lights and ventilation will be turned off as well.
	VIP Operation	A specified car can be withdrawn from group control and carries out independent operation in accordance with the hall call for VIP.
	Air-cleaning System On Ceiling	Something in the air of dust and bacteria to clean the air filter out of the system to provide a more comfortable environment for service.
Safety	Multi-beam Device For Car Door	Multi-beam from the top of the door to the bottom of the door senses any obstruction caught in the door. It makes the door re-open, or keep open/close before the door touches such obstruction.
	Supervisory Monitoring & Control With Computer	To monitor and control the elevator operation such as including floor, running direction, door opening, over load, fire alarm, fault and all elevator status by PC system.
	ELD (Emergency Landing Device)	In case of power failure, when the building has no emergency power supply, the elevator is sent to the nearest floor by power of rechargeable battery to prevent passengers from being trapped in the car.
	Emergency Fire Operation	In case of fire, every car should be returned to the specified floor in order to evacuate passengers to safety.
	Emergency Fireman Service	In case of fire, fireman can use the elevator which is stopped at the specified floor in order to support fireman of fire-fighting.
	Emergency Power Operation	When power off, receive power from buildings generator, and operate according to procedure of generator.
	Emergency Earthquake Operation	The earthquake sensor detects whether the earthquakes occur or not, When earthquakes occur, the device forces the elevator to stop at the nearest floor with door fully open, and the elevator can't operate any more.
Touch-less Button	Button without touching the surface of the hand action button and the button to be registered, the infection is sensitive to reassure passengers can use.	

Notes : Consult Hyundai if you need the specific features except the above items.

The followings are based on the general type, consult Hyundai for the MRL(Machine-Room-Less) elevators.

## Car Operating Panels



OPP-D241B

OPP-N241B



OPP-N240W  
For the disabled

## Position Indicators



PI-D600  
Dot Matrix Type, No Face Plate



PI-D110  
Dot Matrix Type, No Face Plate



PI-D400

## Hall Buttons

- For the disabled



HIP-D241



HIP-D641  
Boxless Type



HPB-241



HPB-641  
Boxless Type

Note : 90 type button is not available for boxless type.

## Type of Buttons



40 Type



41 Type



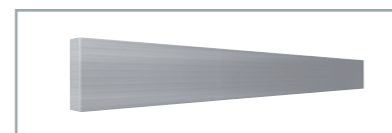
\* 90 Type  
Touchless Button

## Handrail



1C

1 Pipe Hairline-Finished Stainless Steel, Chrome Bracket



\*\* FL

Hairline-Finished Stainless Steel Flat Bar



1DV

Anti-viral 1 Pipe, Ivory

- Notes : 1. Finished product may vary slightly from these prints.  
2. \* means optional feature.  
3. \*\* means not applicable for the disabled.

## Electric Power Requirements (By Others)

(60Hz, 380V)

Capacity (kg)	Speed (m/min)	Motor (kW)	N.F.B Rated Current (A)		Transformer Capacity (kVA)		Power Feeder (mm <sup>2</sup> )		Earth Wire (mm <sup>2</sup> )	
			1Car	2Cars	1Car	2Cars	1Car	2Cars	1Car	2Cars
1350	30	11	30	60	11	19	6	16	6	10
	45	11	30	60	11	20	6	16	6	10
	60	15	30	60	12	21	6	16	6	10
	90	18.5	50	100	17	31	16	25	10	16
	105	22	60	100	20	37	16	25	10	16
1600	30	15	40	75	13	23	10	25	6	10
	45	15	40	75	13	24	10	25	6	10
	60	15	40	75	14	25	16	25	10	16
	90	22	60	100	21	37	16	35	16	25
	105	22	60	125	24	43	16	35	16	25

Notes : 1. The above power feeder sizes are based on its maximum length 50m. In case the feeder length from the transformer to the elevator machine room exceeds 50m, apply the following formular.

$$\text{Power feeder size(mm}^2\text{)} = \frac{\text{Feeder length(m)}}{50} \times \text{size shown above}$$

2. The feeder sizes are based on using copper conductors and metallic conduit.  
3. For power requirement of 3 cars or more, consult Hyundai.  
4. Consult Hyundai if you need electric power requirements for 220V.

The following works are not included in the contract, and shall be done by other contractors in accordance with the Hyundai Elevator's drawings and the applicable codes and regulations. The reference rules shown are from Code ANSI.

## Building Work

### Hoistway

- Clear, plumb hoistway with fire resistant hatch walls as required by the applicable code. (Rule 100.1a)
- 75° bevel guards on all projections, recesses, or setbacks over 50mm except on side used for loading or unloading. (Rule 100.6)
- Venting of the hoistway as required by the applicable code or responsible authority. (Rule 100.4)
- Supports for rail brackets at each floor, roof, and machine room. (Rule 200.9)  
Maximum allowable vertical spacing of rail supports without backing. (Rule 200.4 and 301.1)  
Divider beams 100mm between hoistway at each floor and roof, for guide rail bracket supports. (Rule 200.4, 200.9 and 301.1)
- Recesses supports and patching as required to accommodate hall button boxes, signal fixtures, etc.
- All barricades either outside elevator hoistways or between inside hoistways as required.
- Dry pit reinforced to sustain normal vertical forces from rails and buffers. (Rule 106.1b and 109) Consult Hyundai Elevator Company for rail forces and buffer impacts. Where there is space below the pit floor that can be occupied, consult Hyundai Elevator Company for special requirements. (Rule 300.4) Cylinder hole, casings under the pit as required, and backfilling around the cylinder casings when direct plunger type is to be installed.
- Where access to the pit is by means of the lowest hoistway entrance, vertical iron ladder extending 1060mm minimum above sill of access door. (Rule 106.1d)
- Entrance walls and finished floor are not to be constructed until after door frames and sills are in place. Door frames are to be anchored to walls and properly grouted in place to maintain legal fire rating.
- For application as indoor or outdoor observation elevator, a glass enclosure of at least 3.6m in height at the bottom landing is recommended for safety. For use as an outdoor observation elevator, a full-height glass enclosure is required.

### Machine Room

- Enclosed and protected machine room. (Rule 101.1)
- Access to the machine room and machinery space as required by the applicable code or responsible authority. (Rule 101.3)
- Reinforced concrete machine room floor slab or grating, as specified, which must not be placed over the hoistway until elevator machinery is set in position. (Rule 100.3 for Traction Elevator)  
Clear access above ceiling or trench in floor, for oil line and wiring duct from machine room, if machine room is remote from elevator hoistway. (For Hydraulic Elevator)  
Cutout through machine room wall, for oil line and wiring duct as required by Hyundai Elevator's shop drawings. (For Hydraulic Elevator)
- Hoisting beams, trap doors, and other means of access to machine room for maintenance and equipment removal purposes. (Rule 101.3d)
- Cable guards in the machine room or secondary level. (Rule 104.1)
- Supports for machine and sheave beams and reactions including wall pockets and patching after beams are set in place. (Rule 105.1 to 105.5)

## Electrical Work

### Hoistway

- Light outlet for each elevator, in center of hoistway (or in machine room) as indicated by Hyundai Elevator Company.
- Convenience outlet and light fixture in pit with switch located adjacent to the access door. (Rule 106.1e)
- Wiring and piping work of emergency bell, interphone, etc. outside the hoistway and the machine room.

### Machine Room

- Lighting, convenience outlets, ventilation, heating of machine room, and machinery space. (Rule 101.5)
- Temperature should be maintained below 40°C by a ventilating fan and/or air conditioner, if necessary, and humidity below 90%.
- A fused disconnect switch or circuit breaker for each elevator and light switch located per the applicable code and where practicable located adjacent to the door of the machine room. (Rule 210.5 and 306.7)
- Feeder and branch wiring to the controller, including main-line switch and convenience outlets.
- Suitable power feeder and branch wiring circuits as required for elevators with power-operated doors, including disconnect switch or circuit breaker.

### Emergency Provisions

- Elevator fireman's and other emergency services wiring and interconnections to automatic sprinkler systems or heat and smoke sensing devices furnished by others and installed to terminal points on the elevator controllers.
- When emergency power operation of elevators is required, the electrical contractor should coordinate with Hyundai Elevator Company or local distributor for operation requirements.
- Elevator fireman's and other emergency service requirements may differ from each country. Consult Hyundai Elevator Company or local distributor for other local requirements.
- When provisions for earthquake protection are required, consult Hyundai Elevator Company for special requirements.

## Heat Emission of Machine Room

$$Q(\text{kcal/H}) = W \times V \times F \times N$$

W : Capacity(kg)  
V : Speed(m/min)  
F : Factor; 1/40(VVVF)  
N : Number of Cars