THANG MÁY
THIÊN NAM
ELEVATOR
Chuyên chở niềm tin

Elevators for Residential Buildings

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Essential requirements

1. General requirements

- Reliable – stable and safe operation.
- Fulfill traffic flow at pick hours, optimum performance at group control.
- Durable and nice design but simplicity, not sophistication.
- Less noise, especially at apartments under the machine room.
- Reasonable price with common technology, no need high technology

2. The requirements of elevators for residential buildings in Vietnam

- Rushing hours: early in the morning, from 6.30am to 8.00am, the tenants get out the building for jobs hence they need the elevators to go down as fast as possible.
- Low demand hours: it is low demand at the rest of time, the buildings need less elevators running (if the building has more than one elevator). The evening, after working hours, people flow is not concentrate due to shopping at markets, picking up kids/children at schools, involving the another affairs.
- Vietnamese people put high attention on living space, they want to invest big money to buy the apartment with high cost, but they hesitate to pay for monthly expenses because their stable income is low.
- The expense to maintain and service elevator is very important.
- The elevators can help tenants to lift up and down the cargo or the cumbersome family goods.
- The operation of elevators should be optimum performance, raising life-span, and less power consumption.
- The supervision of elevator operation is also one of necessary demand.
- The elevator for garbage is a civilized solution for the residential building to convey garbage.

3. Investors, Consultants and Designers

They need the elevator hoistway which takes minimum space, but the elevator can meet all above mentioned requirements.

4. The management board of residential buildings

The management board needs the service team who is professional, trouble shooting, and able to fix the problems of elevators as soon as possible.

Technical specifications

Operation system

Full Selective Collective operation: during operation, lift serves calls from the landings in moving direction, service calls from the landings in opposite direction afterwards. When lift arrive at landing, illumination of corresponding button will be off

Attendant operation: lift can be changed from normal operation mode to attendant operation mode by an "Priority Switch" located on Car Operating Panel (COP). During this operation, lift only serves calls from car inside

Car door safety device
This device makes doors open automatically while closing to aim preventing passengers or other objects knocked against doors

Automatic door open/close time adjustment
Door open/close times are automatically adjusted depending on numbers of hall or car calls in order to increase operating efficiency

Over load
When car load exceeds rated load, indicator is on, a buzzer sounded and lift is prevented from starting

Arrival announcement
Indicator displays the landing floor, a buzzer sounded

Car fan and light turn-off Automatically
For energy saving, car fan and light turn off automatically in case there is no hall call or car call

Automatic Rescue Device
In case of power failure, lift will be sent to the nearest floor by DC power of battery, door open for passenger getting off

Emergency light
In case of power failure, emergency light on car ceiling turned on automatically

Intercom system
In case of emergency, press the "Emergency button" located on car operating panel to communicate with responsible persons

Option

Down Collective operation
During operation, lift only serves hall calls in down direction, calls from car remain both directions

Group control
Lifts can be programmed in duplex or triplex control to operate more effectively

Supervisory panel
Panel located in guard house or in control room for monitoring lift operation and can control lift in emergency cases

Stop switch
Stop switch equipped in a designated floor for locking lift during unused time

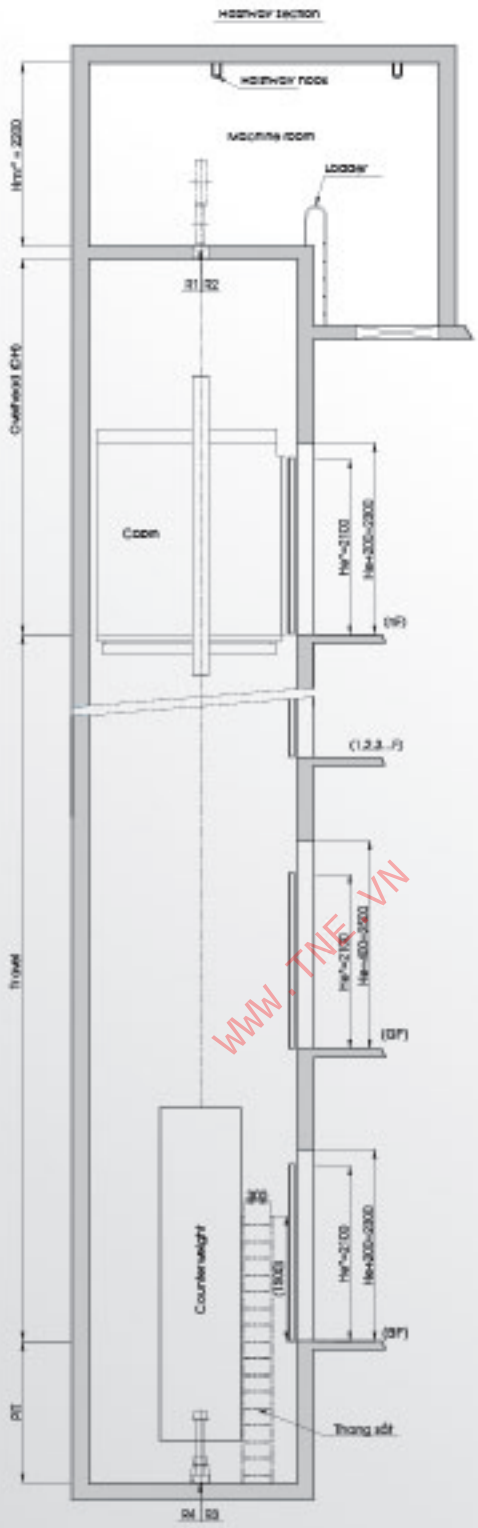
Handicapped COP
COP equipped for the Handicapped to control lift

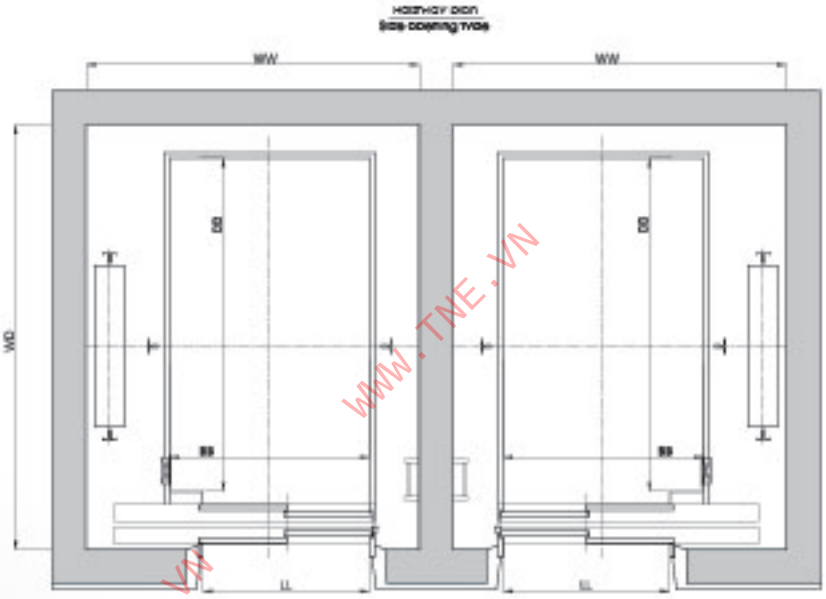
Car Call Cancel
Calls from car inside can be cancelled by pressing button second time

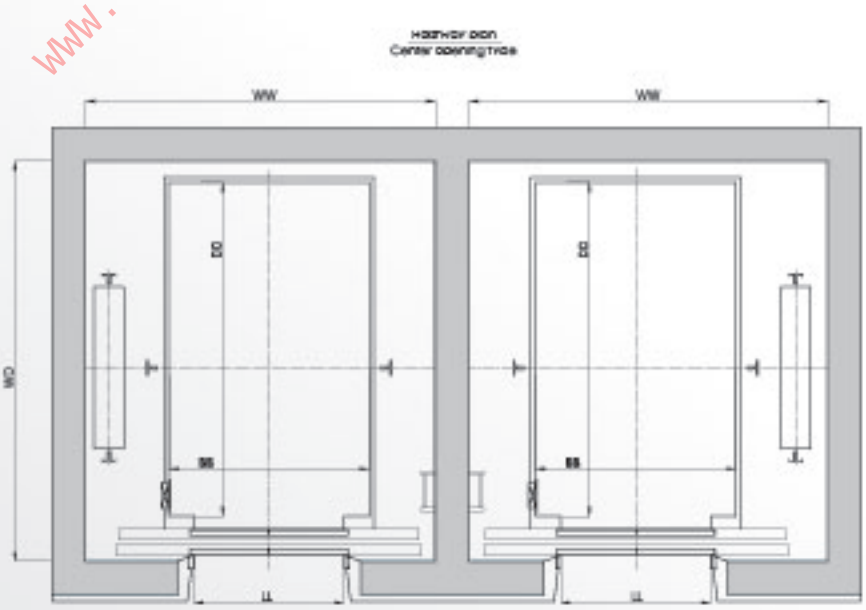
Voice Announcement
Passenger can get guiding information by Voice Announcement through a loudspeaker

Fire return
On receiving a fire signal, lift automatically return to a designated floor, doors open for passengers getting off

The drawing of hoistway







Hei: Entrance height
Hmr: Machine room height

Works by builder
- Ventilation
- Power & lighting supply
- Machine room lighting
- Machine room entrance
- Ladder
- Hoisting hook
- Machine room opening
- Finished after the installation

CENTER OPENING TYPE

Speed (m/min)	Type	Capacity (kG)	Entrance width LL (mm)	Car size BB x DD (mm x mm)	Hoistway size WW x Wd (mm x mm)	Pit Depth PIT (mm)	Overhead OH (mm)	Machine room size WW x (WD + 1700) (mm x mm)	Reactions			
									R1	R2	R3	R4
	P15 - CO60	1000		1200 x 2100	2200 x 2500	1450	4200	2200 x 4200	5450	4300	7500	6000
60	P17 - CO60	1150	1000	1300 x 2100	2300 x 2500			2300 x 4200	8000	5200	9500	7800
	P18 - CO60	1250		1400 x 2100	2400 x 2500	1550	4250	2400 x 4200	8450	5600	10150	8300
	P20 - CO60	1350		1500 x 2100	2500 x 2500			2500 x 4200	8900	6000	10800	8800
	P15 - CO90 (105)	1000		1200 x 2100	2250 x 2550			2250 x 4250	6150	4600	8200	7100
90 & 105	P17 - CO90 (105)	1150	1000	1300 x 2100	2350 x 2550	1600 (1700)	4400 (4600)	2350 x 4250	9400	7750	10900	9200
	P18 - CO90 (105)	1250		1400 x 2100	2450 x 2550			2450 x 4250	9700	8000	11500	9600
	P20 - CO90 (105)	1350		1500 x 2100	2550 x 2550			2550 x 4250	10000	8250	12000	10000
	P15 - CO120	1000		1200 x 2100	2300 x 2600			2300 x 4300	11650	7850	13950	10650
120	P17 - CO120	1150	1000	1300 x 2100	2400 x 2600	2100	5200	2400 x 4300	12300	8250	16600	12650
	P18 - CO120	1250		1400 x 2100	2400 x 2600			2500 x 4300	12700	8550	17325	13100
	P20 - CO120	1350		1500 x 2100	2500 x 2600			2600 x 4300	13100	8850	18060	13550

SIDE OPENING TYPE

Speed (m/min)	Type	Capacity (kG)	Entrance width LL (mm)	Car size BB x DD (mm x mm)	Hoistway size WW x Wd (mm x mm)	Pit Depth PIT (mm)	Overhead OH (mm)	Machine room size WW x (WD + 1700) (mm x mm)	Reactions			
									R1	R2	R3	R4
	P15 - SO60	1000		1200 x 2100	1900 x 2600	1450	4200	1900 x 4300	5450	4300	7500	6000
60	P17 - SO60	1150	1000	1300 x 2100	2000 x 2600			2000 x 4300	8000	5200	9600	7800
	P18 - SO60	1250		1400 x 2100	2100 x 2600	1550	4250	2100 x 4300	8450	5600	10150	8300
	P20 - SO60	1350		1500 x 2100	2200 x 2600			2200 x 4300	8900	6000	10800	8800
	P15 - SO90 (105)	1000		1200 x 2100	1950 x 2650			1950 x 4350	6150	4600	8200	7100
90 & 105	P17 - SO90 (105)	1150	1000	1300 x 2100	2050 x 2650	1600 (1700)	4400 (4600)	2050 x 4350	9400	7750	10900	9200
	P18 - SO90 (105)	1250		1400 x 2100	2150 x 2650			2150 x 4350	9700	8000	11500	9600
	P20 - SO90 (105)	1350		1500 x 2100	2250 x 2650			2250 x 4350	10000	8250	12000	10000
	P15 - SO120	1000		1200 x 2100	2000 x 2700			2000 x 4400	11650	7850	13950	10650
120	P17 - SO120	1150	1000	1300 x 2100	2100 x 2700	2100	5200	2100 x 4400	12300	8250	16600	12650
	P18 - SO120	1250		1400 x 2100	2200 x 2700			2200 x 4400	12700	8550	17325	13100
	P20 - SO120	1350		1500 x 2100	2300 x 2700			2300 x 4400	13100	8850	18060	13550

POWER SUPPLY

Speed (m/min)	Capacity		Motor (kW)	MCCB (Ampe)		Power suppy (KVA)		Lead - in wire (mm2)		Ground wire (mm2)	
	Persons	kG		Simplex	Duplex	Simplex	Duplex	Simplex	Duplex	Simplex	Duplex
	15	1000	11	40	75	13.8	27.6	10	22		
60	17-18	1150-1250	13			16.8	31.6	14	22	4	6
	20	1350	15	50	80	17.8	35.6	16	25		
90	15-18	1000-1250	15	50	80	17.8	35.6	16	25	4	6
	20	1350	18.5	50	100	21.1	42.2	22	35	6	10
	15	1000	15	50	80	17.8	35.6	16	25	4	6
105	17-18	1150-1250	18.5	50	100	21.1	42.2	22	35	6	10
	20	1350	22	60	120	26.3	52.6	25	50		
120	15	1000	18.5	50	100	21.1	42.2	22	35	6	10
	17-20	1150-1350	22	60	120	26.3	52.6	25	50		

Design samples

1. Car

Ceiling	Stainless steel or painted steel
Light	Flourescent hided on the ceiling
Ventilation	Block fan
Walls	Hair - line stainless steel
Hand rails	Stainless steel, round shape
Hall doors	Hair - line stainless steel
Floor	Granite

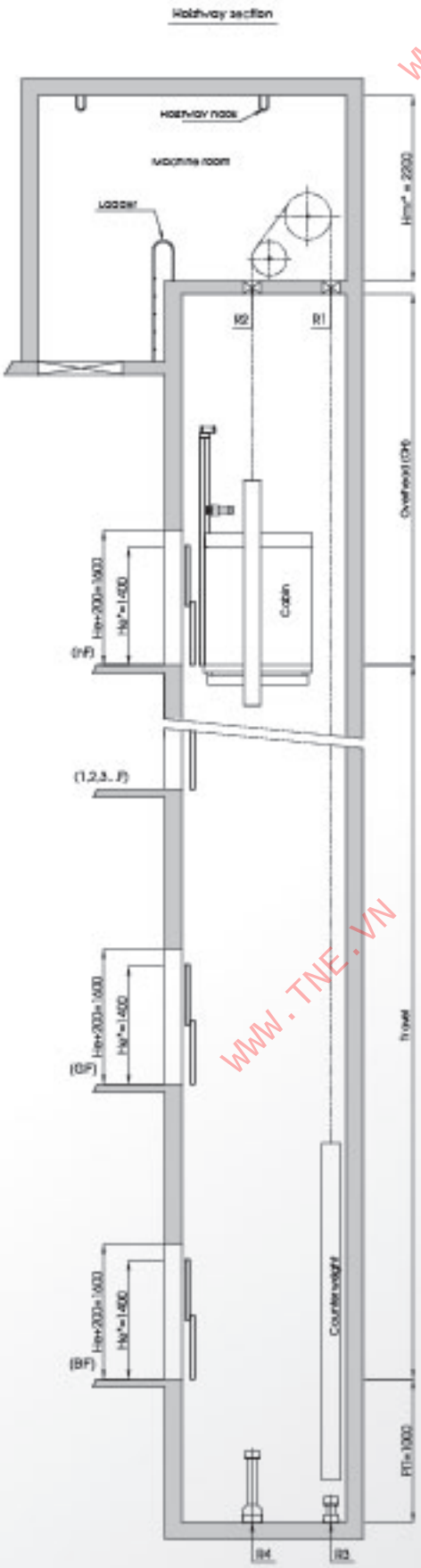
Type 1

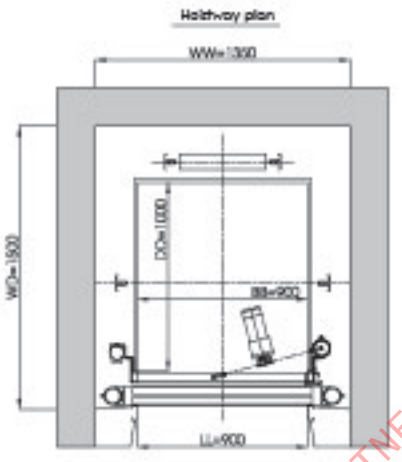
Type 2

2. Hall doors

Center opening type

Side opening type





Capacity : 300kG
Speed : 30 - 45m/min

Hs: Enhance height
Hm: Machine room height

Works by builder
- Ventilation
- Power & lighting suply
- Machine room lighting
- Machine room entrance
- Ladder
- Hoisting hook
- Machine room opening
- Finished after the installation

Solution

- Garbage is collected by wheel tanks with top covers, the wheel tanks will be put at each floor, the wheel tank is called garbage tank.
- Everyday, the garbage elevator will lift down the garbage tanks to the ground floor, then lift up back the garbage tank (empty garbage) to each floor.

Technical specifications

- Garbage elevator will be designed to meet the requirement of convey garbage.
- The garbage elevator will be operated by the service employee who is hired to collect and convey garbage.
- The car door will be opened/closed automatically, but the hall doors will be opened/closed by hands.
- The door lock and electrical cam device are not allowed to open the hall door when elevator is not parking at the floor

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