



Elevators Design

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Elevators

- The upward and downward movement of people in newly erected multistory buildings is principally achieved by lifts.
- An elevators can be seen in notable buildings across Gaza, including hospitals, hotels, offices, and residences.

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Location of Lifts

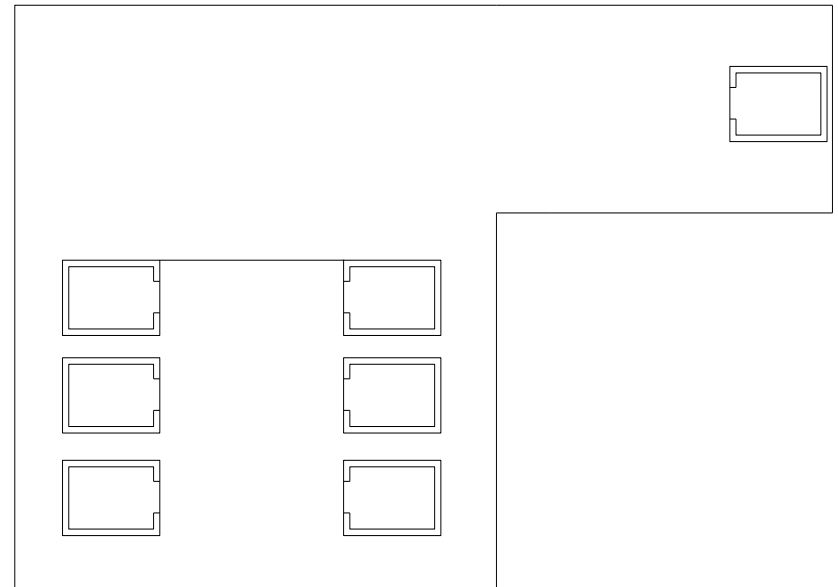
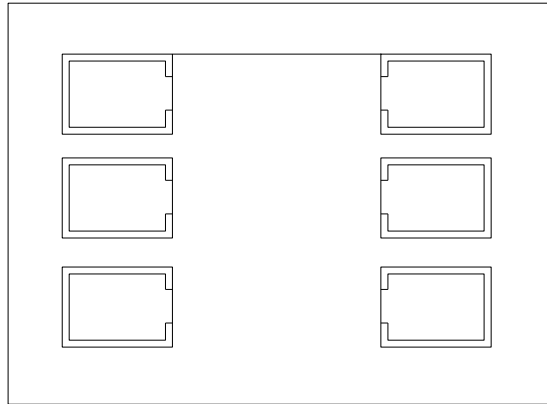
When lifts are arranged in a group it is recommended that all the lifts in that should serve the same floors

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Min. Lobby width twice Car depth

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Designing and Planning Considerations:

- In larger, multistory buildings it is usual to locate the lifts at a central pedestrian circulation point.
- Lobbies in front of lift shaft entrances must be designed and arranged.

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Designing and Planning Considerations:

- For a lobby in front of a single lift, the available min depth between the wall of the lift shaft door and the opposite wall, measured in the direction of the lift car must be at least the same as the depth of the lift car itself.
- The building and its function dictate the basic type of lifts which need to be provided.

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Grouping of Lifts

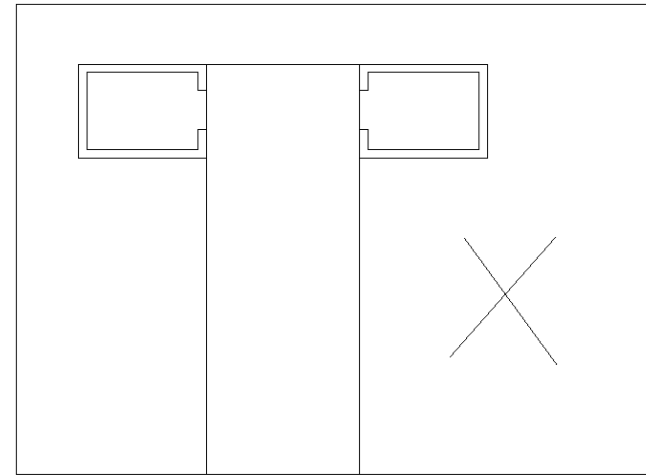
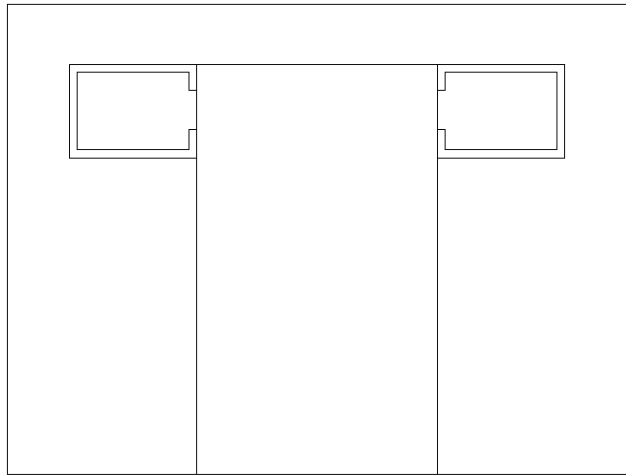
The lifts should be positioned to:
Minimize the walking distance between cars and hence the time taken to load passengers which will then improve overall **quality of service.**

For a two lift group: side by side positioning is the most efficient but also the option having the lifts positioned opposite one another is also an efficient arrangement.

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Designing and Planning Considerations:

- Lifts are mechanical installations which are required to have a long service life.

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Basic Regulations of Choice the kind of Vertical Communication are:

- **Number of Storey.**
- **Distance between floors.**
- **Intensive use of elevator in each floor.**
- **Location of the building.**
- **Number of users in rush hours.**
- **Services in the building.**

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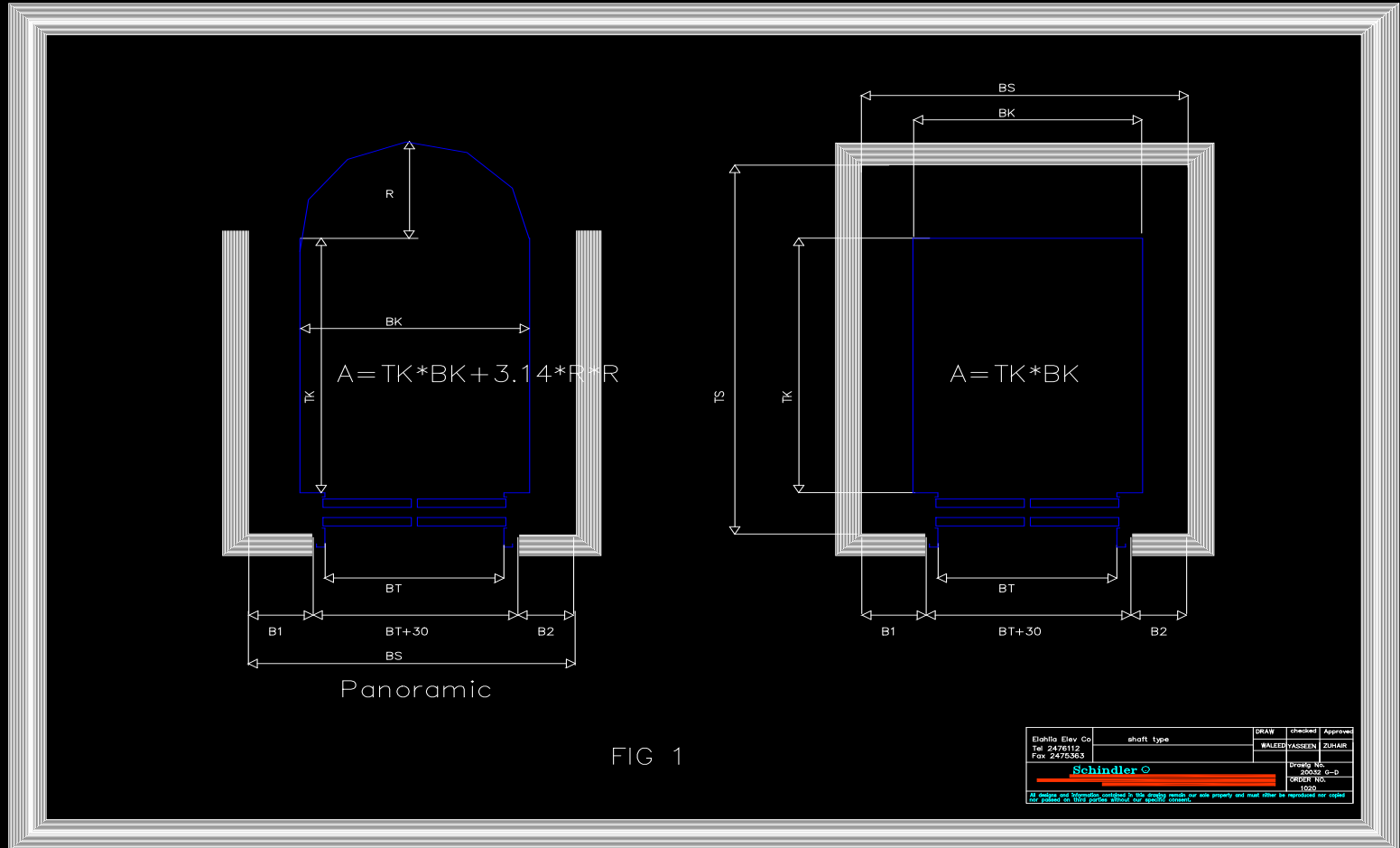
Characteristics controls designing elevator are:

- **Speed of the Elevator.**
- **Dimensions of the car**
- **Loads**
- **Number of elevators.**
- **Location of entrances in the building.**
- **Location of the elevator area.**

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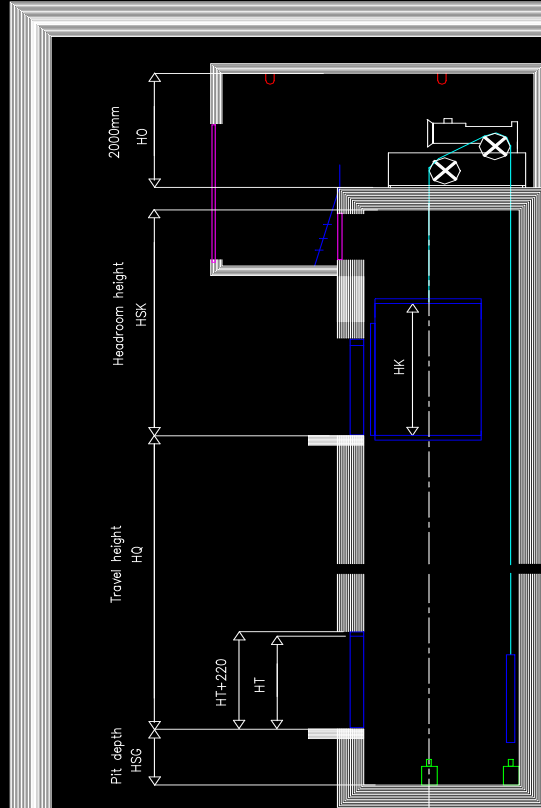
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Vertical plan
FIG 2-A

100mm

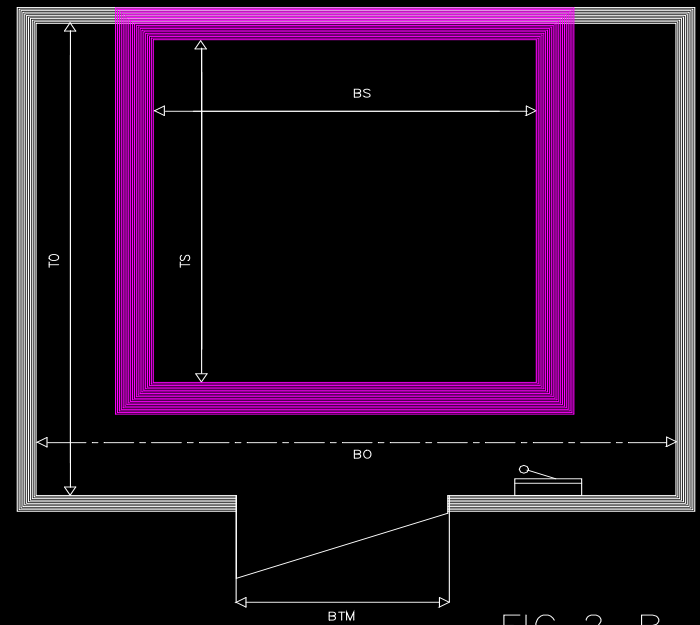


FIG 2-B

Horizontal plan

FIG 2

Elghisha Elev Co Tel 2476112 Fax 2475363	shaft dimensions	DRAW		
		checked	Approved	
		WALIED	YASSEEN	ZUHAR
Schindler ☉ [REDACTED] [REDACTED]		Drawing No. 20032 0-0		
		ORDER No. 1020		
All designs and information contained in this drawing remain our sole property and must either be reproduced or copied in full and on separate sheets without any alterations.				

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The relation between the LOAD and the SHAFT dimensions
(according to the schindler standard)

LOAD	SPEED	CAR			DOOR		HOISTWAY						MACHINE ROOM			
		BK cm	TK cm	HK cm	BT cm	HT cm	BS cm	TS cm	B1 cm	B2 cm	HSG cm	HSK cm	BO cm	TO cm	HO cm	BTM cm
320	1.0	90	100	210	70	200	140	150	27	13	150	400	200	300	200	80
450	1.0	110	120	210	80	200	160	170	35	15	150	400	200	300	200	80
630	1.0	110	140	210	80	200	170	180	40	20	150	400	200	300	200	80
800	1.0	135	140	220	90	200	170	180	35	15						
					80	200	210	200	70	30	150	400	240	350	200	90
1000	1.0	160	140	220	90	200	210	200	65	25						
					80	200	240	200	87.5	42.5	150	400	280	350	200	90
					90	200	240	200	85	35						

TABLE 3

Ehalla Elev Co Tel: 2476112 Fax: 2476363	cabine capacity	DRAW	checked	Approved
		WALEED YASSEEN	ZINHAIR	
Schindler		Drawing No.		
		ORDER NO.		
		1000		
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باب التوماتيكي مع باب داخلي	الحمولة	الأشخاص	4	5	6	8	10	
		Kg	300	375	450	600	750	
المصاعد •		A	1000	1180	1320	1450	1450	
		B	900	330	1000	1100	1350	
		C	700	700	800	800	800	
بئر المصعد		E	1400	1550	1700	1850	1850	
		F	1400	1400	1400	1500	1750	
غرفة التحكم		I	2000	2200	2200	2400	2400	
		L	3000	3000	3000	3300	3600	

ملاحظة :

- * جميع المقاسات بالمليمتر •
- * جدول لاقل مقاسات مطلوبة للأحمال الموضحة •

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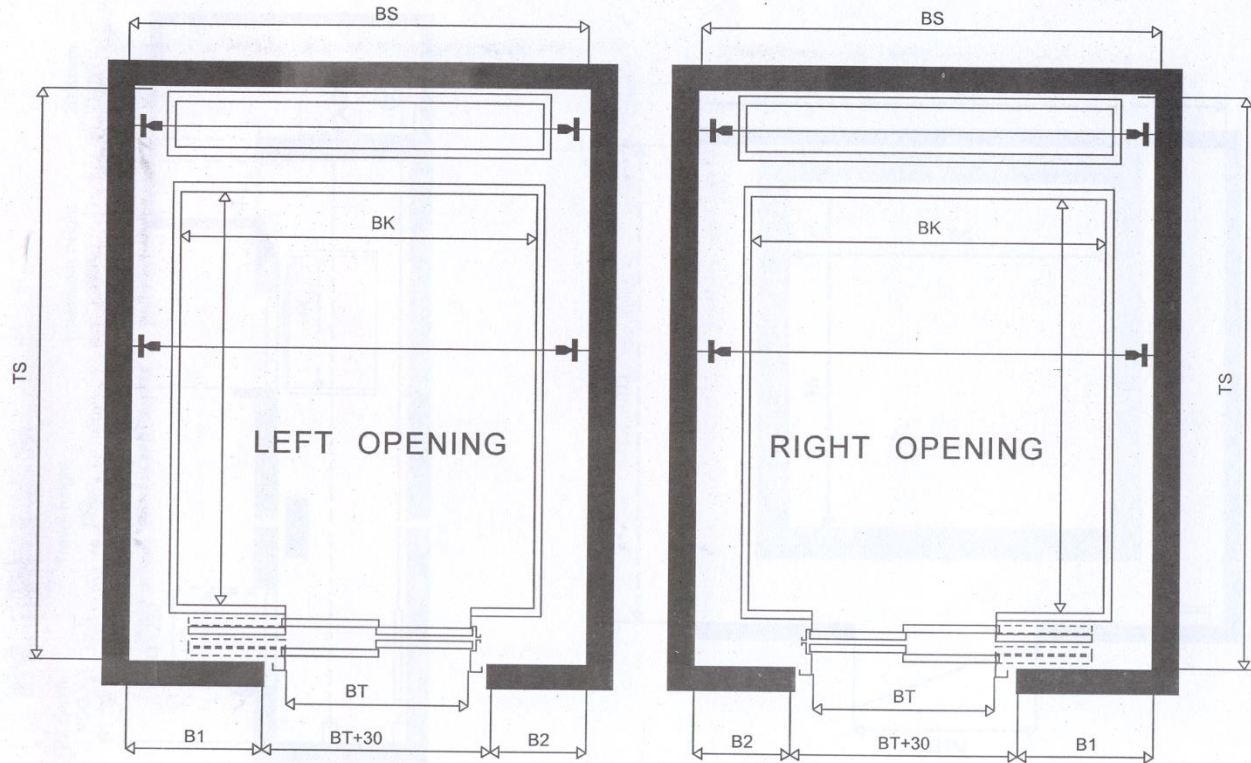
EL-AHLIA ELEVATORS CO.

SCHINDLER



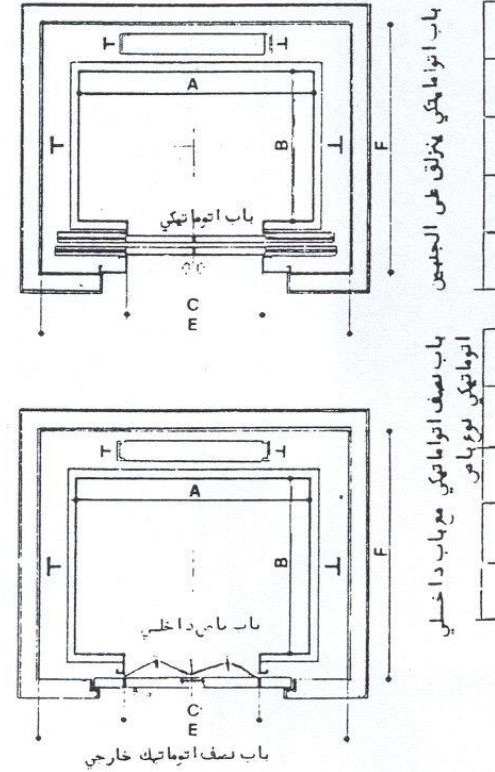
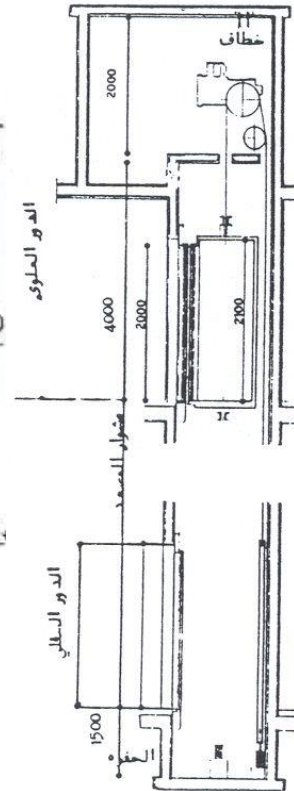
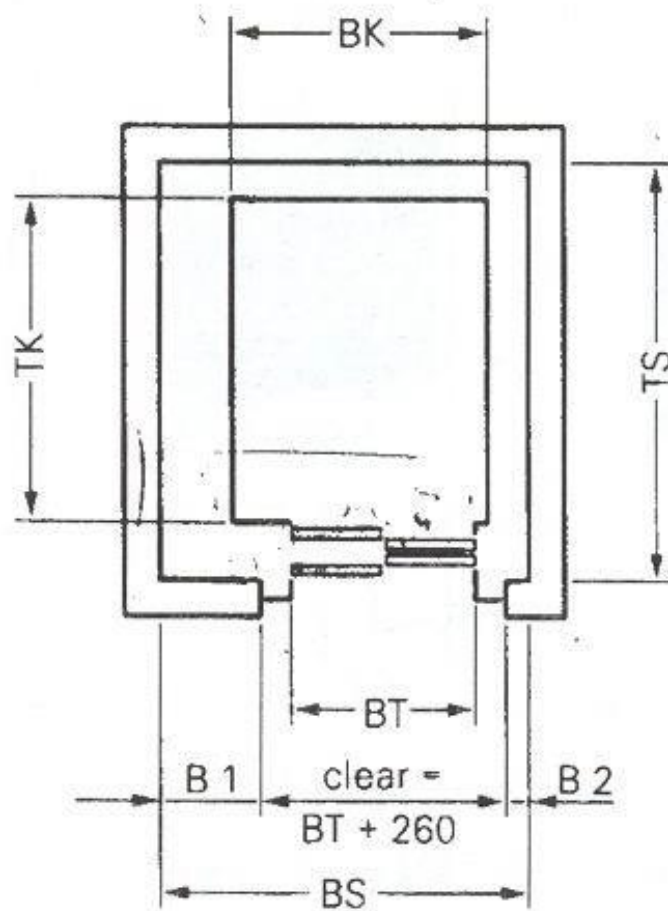
الشركة الأهلية للمصاعد

شندلر



SHAFT DISTRIBUTION

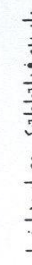
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॥ श्रीगणेशाय नमः ॥



ملاحظه :

- * جميع المقاسات بالطيتر .
- * جدول لأقل مقاسات مطلوبة للأعمال الموضحة .

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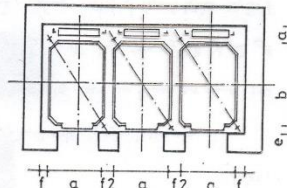
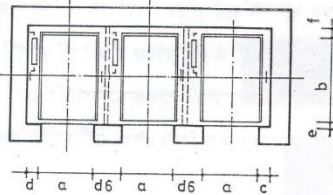
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LIFTS, IN SERIES, COUNTERWEIGHTS, CABINS

مصاعد متعددة

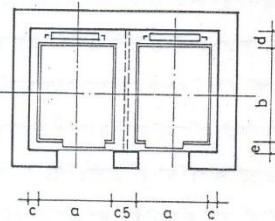
IV LIFTS IN SERIES مصاعد على السلسلة



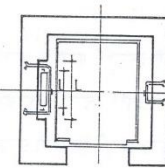
$c5 = 25 \text{ c.m.}$ $d6 = 38 \text{ c.m.}$ $f2 = 15 \text{ c.m.}$

المصاعد يمكن أن تعمل مع بعضها البعض بواسطة المجمع أو تعمل بشكل مستقل عن بعضها البعض

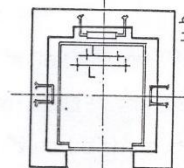
The lifts may work together by the "collectomatic" system or may work inde pendent of each other.



V RECESSES FOR COUNTERWEIGHTS تجاويف الأثقال الموازنة



$H = 820 \text{ to } 10 \text{ c.m.}$
 $H = 1110 \text{ to } 13 \text{ c.m.}$



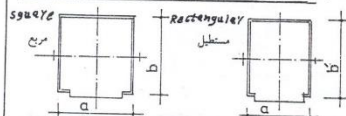
$L = 40 \text{ to } 70 \text{ c.m.}$
 $L = 54 \text{ to } 94 \text{ c.m.}$

النفق الموازن يمكن أن يوضع داخل بئر المصعد في الخلف أو على أحد جانبي الكابينة أو يمكن أن يوضع خارج بئر المصعد، مثلاً في ساحة (ومن الأفضل تجنب ذلك).

تجاويف معمولة في جدران بئر المصعد مثلاً عواميد R. C

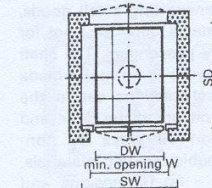
يمكن أن تستخدم لوضع داخلها النفق الموازن في خلف أو على أحد جانبي بئر المصعد.

VI CAR OR CABIN DIMENSIONS أبعاد الكابينة (غرفة المصعد)

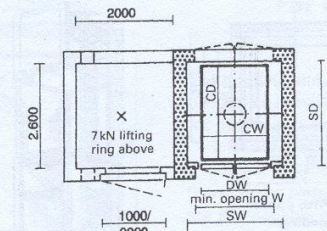


No of Passengers	Load in kgs.	Dimensions a x b in cms.	Dimensions a x b in cms.
2	150	100 x 100	80 x 100
3	225	110 x 110	100 x 110
4	300	130 x 130	110 x 150
6	450	150 x 150	130 x 175
10	750	175 x 175	150 x 200

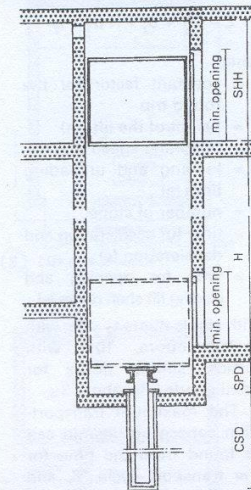
SHAFTS, ESCALATORS AND LIFTS



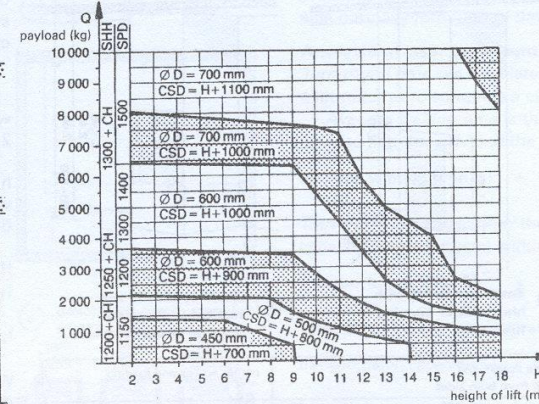
① Plan view of shaft



② Plan view of shaft with lift motor room



③ Vertical section of shaft



④ Graph to determine shaft head height SHH; shaft pit depth SPD; cylinder shaft depth CSD; cylinder shaft diameter D

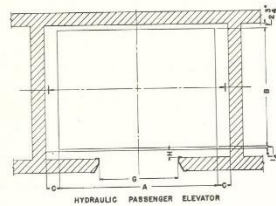
payload	shaft width SW	shaft depth SD	Q = 5000 kg		Q = 10 000 kg	
			CW + 500	CW + 550	CW + 500	CW + 550
approx. measurements for lift motor room (lift motor room should be within 5 m of the shaft but may be further away if absolutely necessary)	width		2000		2200	
	depth		2600		2800	
	height		2200		2700	

⑤ Technical data → ① - ③

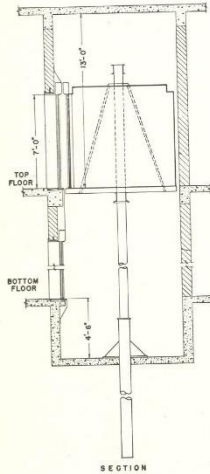
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ELEVATORS—6 Hydraulic



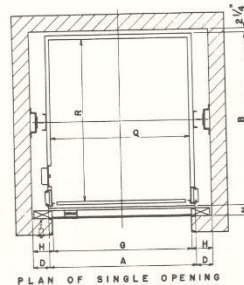
HYDRAULIC PASSENGER ELEVATOR



SECTION

Hydraulic elevators
Above and left: Passenger service
Capacity: 1,500 to 4,000 lbs
Speed: 50 to 100 fpm

Below and right: Freight service
Capacity: 2,000 to 10,000 lbs
Speed: 30 to 75 fpm



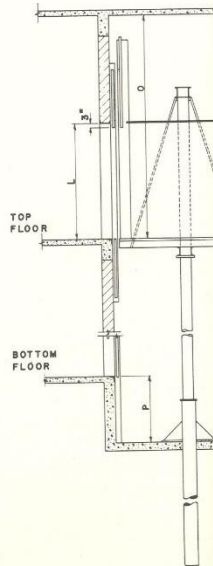
PLAN OF SINGLE OPENING

Capacity Lbs.	A	B	D	Q	R	G	H	L	O	P
2,000	5'-0"	6'-0"	7"	4'-9"	5'-6"	4'-6"	10"	7'-3"	13'-0"	4'-6"
3,000	5'-6"	7'-0"	7"	5'-3"	6'-6"	5'-0"	10"	7'-3"	13'-0"	4'-6"
4,000	6'-6"	8'-0"	8"	6'-3"	7'-6"	6'-0"	11"	7'-3"	13'-0"	4'-6"
5,000	8'-6"	10'-0"	8"	8'-3"	9'-6"	8'-0"	11"	7'-3"	13'-0"	4'-6"
6,000	8'-6"	10'-0"	8"	8'-3"	9'-6"	8'-0"	11"	7'-3"	13'-0"	4'-6"
7,500	9'-6"	12'-0"	9"	9'-3"	11'-6"	8'-0"	12"	9'-3"	15'-0"	5'-0"
10,000	10'-6"	14'-0"	9"	10'-3"	13'-6"	10'-0"	12"	9'-3"	15'-0"	5'-0"

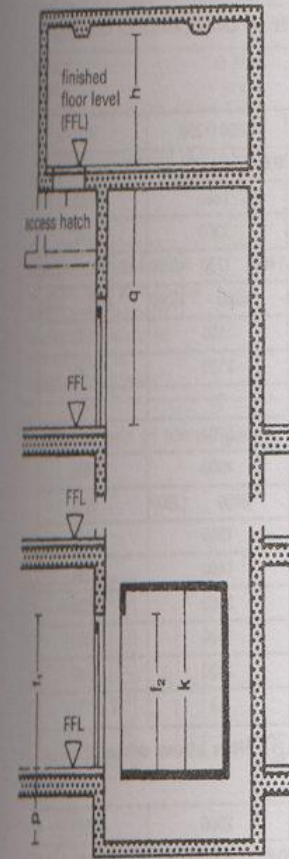
Dimension N = 6" for Regular Type Counter Balanced Hoisting Doors.
Dimension N = 6 1/2" for Pass Type Counter Balanced Hoisting Doors.
Pass Type Hoisting Doors required when floor heights are less than 12'6" for
7'6" high opening and less than 14'6" for 9'6" high opening.

OFFICE BUILDINGS, BANKS, HOTELS, APARTMENT HOUSES, STORES						
LOAD	DIMENSIONS				ENTRANCE	
	A	B	C	G	TYPE	H Approx.
1,500	5'9"	4'0"	7"	2'10"	Single Slide	4 1/2"
2,000	6'4"	4'3"	7"	3'0"	Single Slide or Center Opening	4 1/2"
2,500	7'0"	5'0"	7"	3'6"	Center Opening	4 3/4"
3,000	7'0"	5'6"	7"	3'6"	Center Opening	4 3/4"
3,500	8'0"	5'6"	8"	4'0"	Center Opening	4 3/4"
4,000	8'0"	6'0"	8"	4'0"	Center Opening	4 3/4"

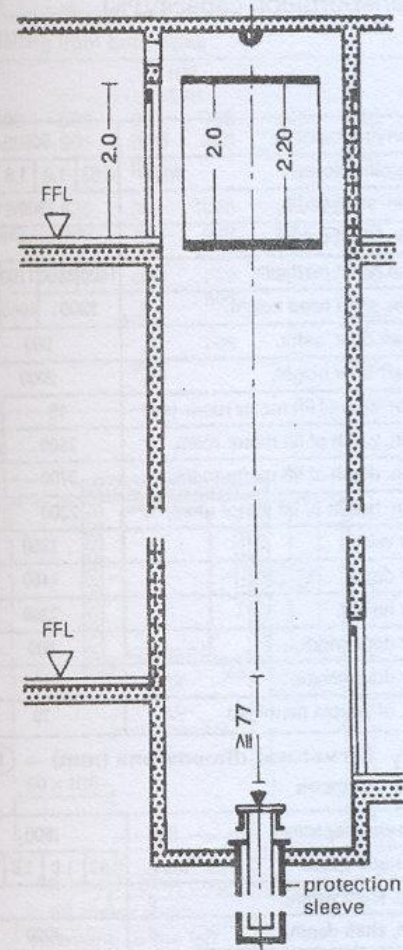
HOSPITALS (Single Entrance)						
3,500	5'4"	8'0"	8"	3'8"	Two Speed	6 1/2"
4,000	5'8"	8'4"	10"	4'0"	Two Speed	6 1/2"
5,000	5'8"	9'4"	10"	4'0"	Two Speed	6 1/2"



TOP FLOOR
BOTTOM FLOOR



⑤ Shaft and lift motor room



⑥ Shaft of hydraulic lift

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Elevators Types

There are main applications for lifts namely

- Residential
- Commercial
- Freight Elevators
- Bed Elevators
- Panoramic Elevators
- Library Elevators
- Food Elevators

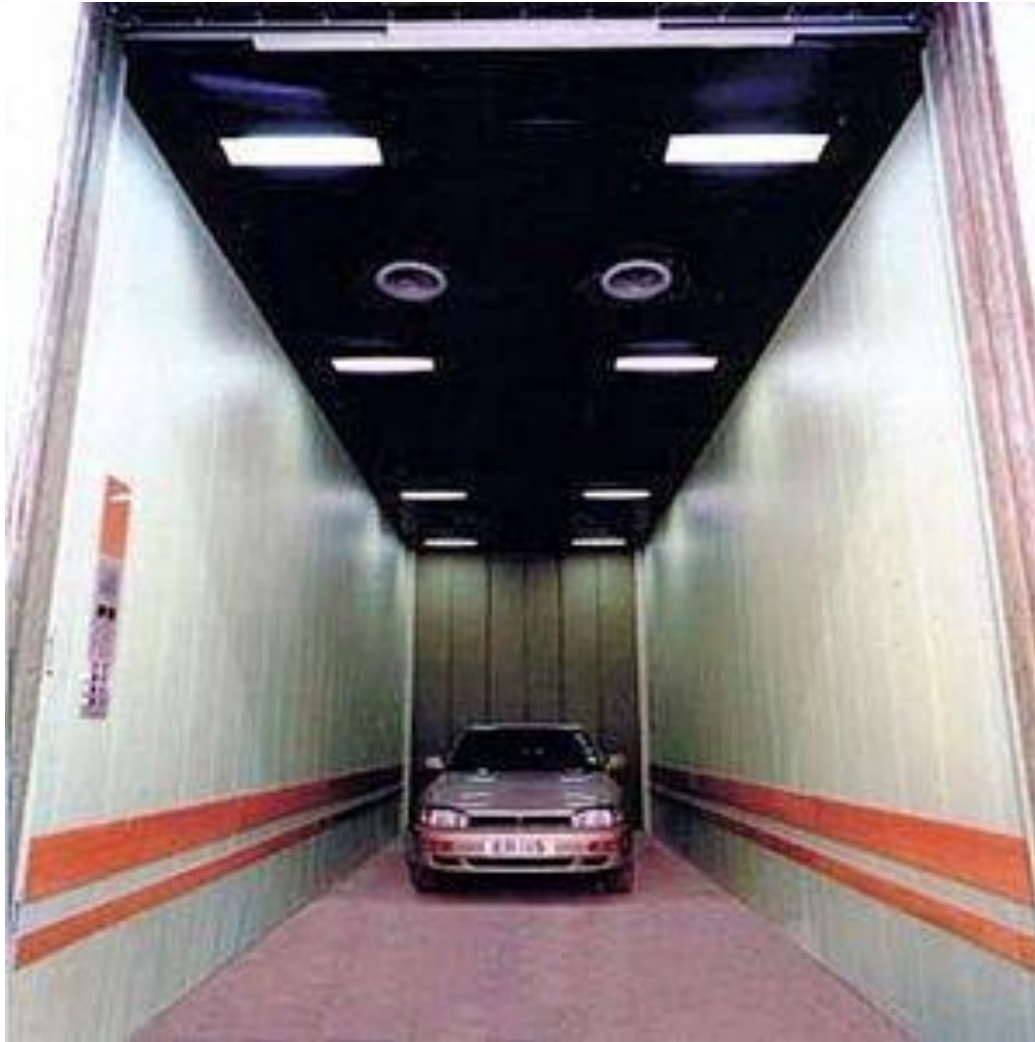
- **Residential**



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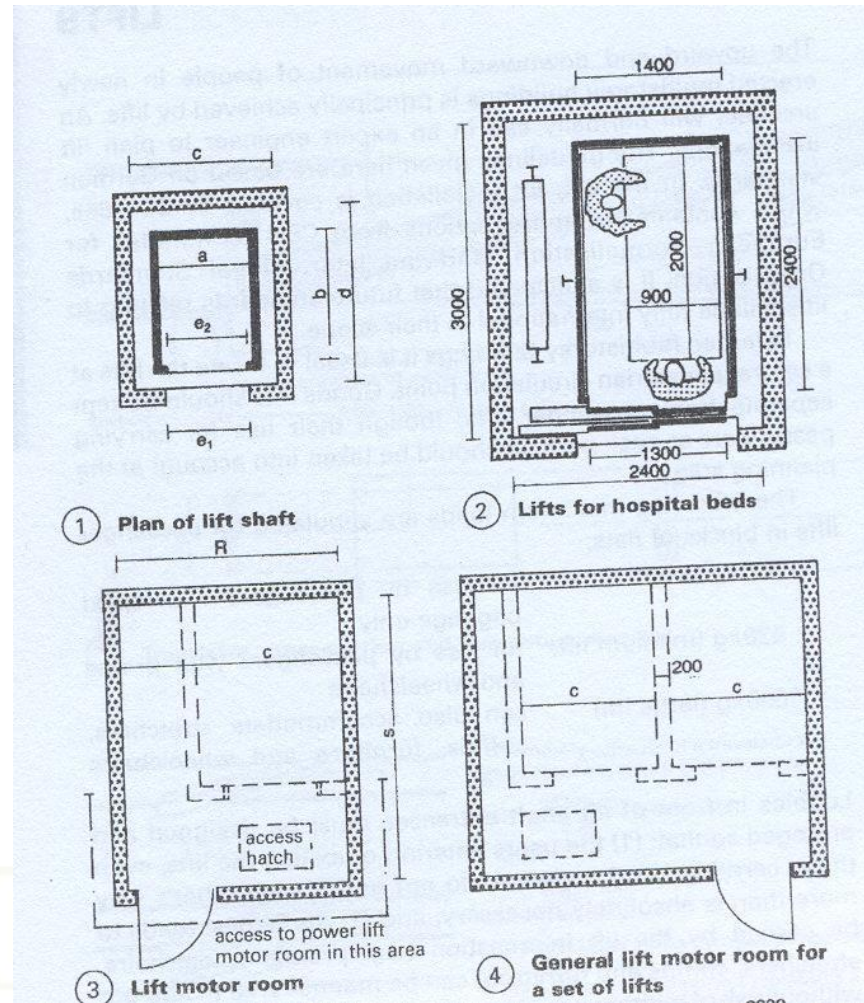


Cars Elevators

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WSY-301



WSY-302



Hospital Elevators

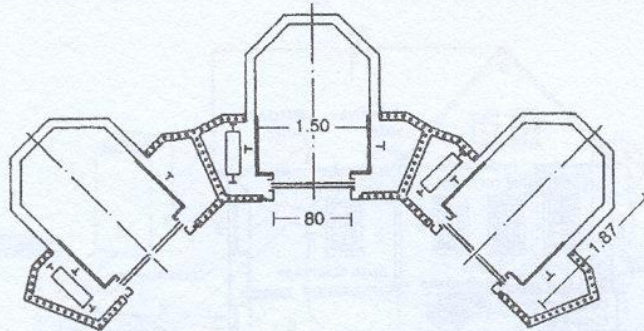
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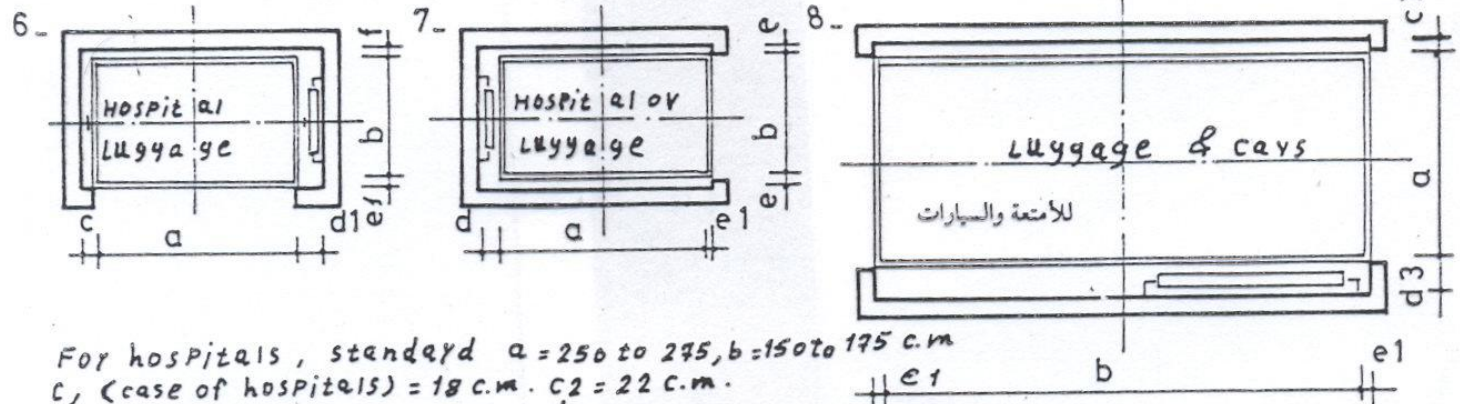
⑨ Group of panoramic glass lifts

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II GOODS LIFTS (Monte charges)

مصاعد لنقل الأمتعة



For hospitals, standard $a = 250$ to 275 , $b = 150$ to 175 c.m.
 c , (case of hospitals) = 18 c.m. $c2 = 22$ c.m.
 $d2$ (=) = 32 c.m. $d3 = 43$ c.m.
 $e1 = 4$ c.m.

For cars, standard $a = 250$ c.m.
 $b = 600$ c.m.

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Commercial Elevators

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Operation types of the lift

- I. Hydraulic Lift
- II. Traction Lift

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Elevators Types

- **Passenger Elevator (Traction)**

If your building has more than G + 5 floors you will probably want to consider an electric traction elevator. Traction elevators are better suited for taller buildings, since they are capable of much greater speeds and heights.

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Passenger (Hydraulic)

Hydraulic elevators are used frequently and have a vast range of applications. Small buildings under G + 5 floors are typically where hydraulic units are found. Hydraulic units are limited by the number of floors that they can serve. Often these limitations are not due to the inability of the equipment, but reflect more on the cost of installation versus the long-term maintenance costs.

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Hydraulic elevators, which serve many floors in high traffic facilities, are not as cost efficient as are traction units, in regard to the units' performance and maintenance cost.

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Operation types of the lift

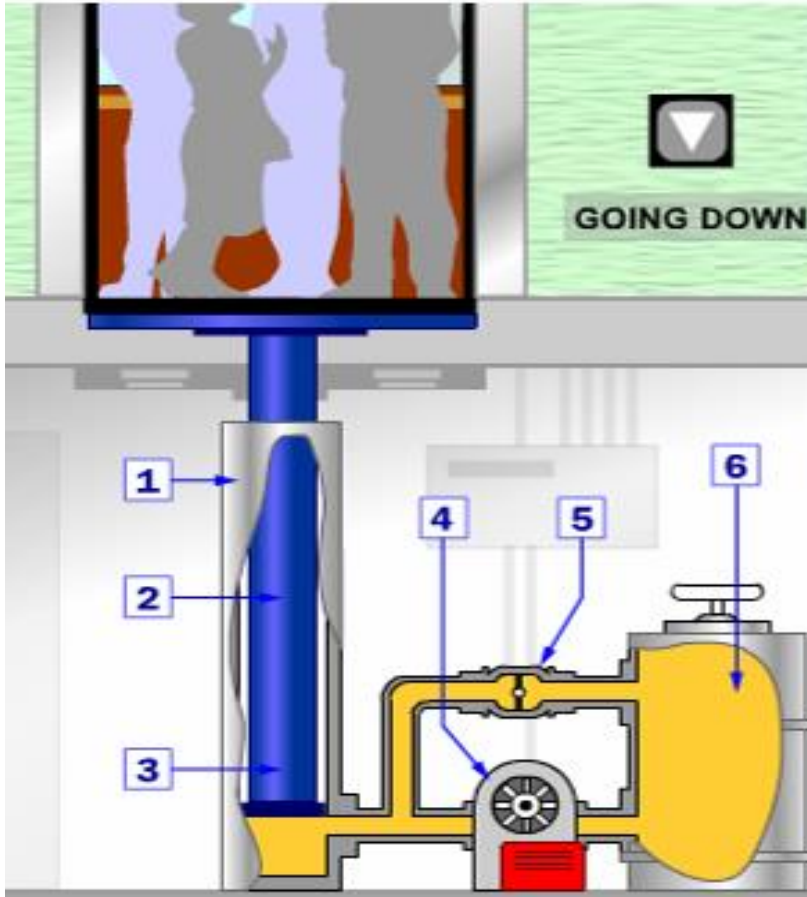
- I. Hydraulic Lift
- II. Traction Lift

DESIGN

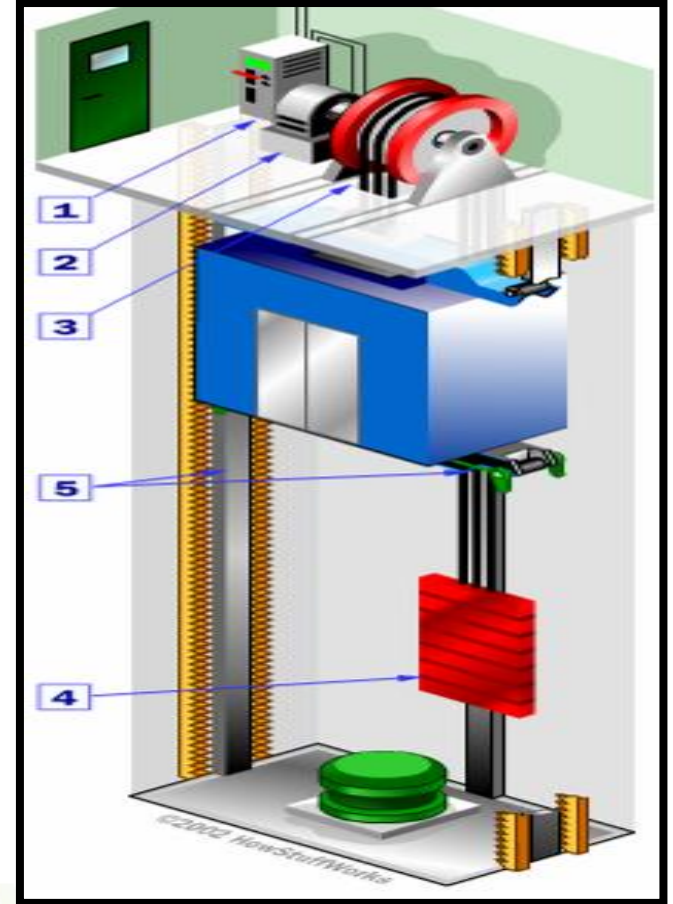
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Hydraulic Lift



Traction Lift

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Drive Unit:

- **Electro Mechanical Drive.**
- **Electro Hydraulic Drive.**

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Hydraulic Lifts

- Hydraulic Lifts Hydraulic lifts work by the action of a **pumped fluid**, normally oil. Within a cylinder **driving a piston** which-is attached to the lift car.
- The hydraulic lift is used in applications where the maximum travel distance is about **20m**.

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- The maximum traveling speed of commercially available hydraulic lifts is limited to about 0.75m/s.
- This type of lift is suited to **low intensity** usage and is limited to around a maximum of **50 starts** per hour.
- The hydraulic lift has the advantage of **lower capital cost** when compared with a traction lift

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Elevator & Escalator Design

Traction Lifts

- This type of lift is driven by **Wire ropes** passing over a driving wheel or **sheave** and connected to the **lift car** and a **counterweight**.
- **The speed** of these lifts can range from **0.5 m/s** up to a maximum of **10 m/s**.

DESIGN

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Basic Lift Components

Machine Room
Elevators Shaft
Cabin
Landing & Cabin Door
Elevators Pit

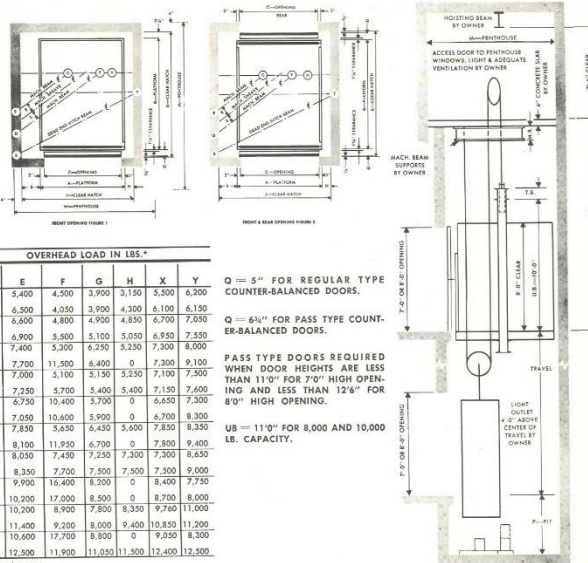
- Entrances
- Brakes
- Lift Cars
- Indicators
- Guides
- Counterweights
- Shaft
- Lift motor room

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

ELEVATORS—4 Freight

Electric traction elevator
Freight service
Geared machine; 2:1 roping
Capacity: 4,000 to 10,000 lbs
Speed: 50 to 200 fpm



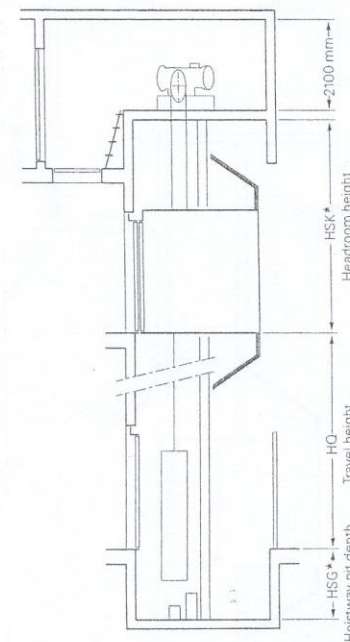
CAPACITY IN LBS.	SPEED FPM	OVERHEAD LOAD IN LBS.*							
		D	E	F	G	H	X	Y	
4,000	75	8,650	5,400	4,500	3,900	3,150	5,500	6,200	
	100	10,250	6,500	4,050	3,900	4,300	6,100	6,150	
	150	11,000	6,600	4,800	4,900	4,850	6,700	7,050	
5,000	75	11,350	6,900	5,500	5,100	5,050	6,950	7,550	
	100	14,250	7,400	5,300	5,350	5,350	7,300	8,000	
	150	14,400	7,700	11,900	6,400	0	7,200	9,100	
6,000	75	11,550	7,000	5,100	5,150	5,250	7,100	7,500	
	100	11,650	7,250	5,700	5,400	5,400	7,150	7,600	
	150	12,900	6,750	10,400	5,700	0	6,650	7,300	
8,000	75	13,150	7,050	10,600	5,900	0	6,700	8,300	
	100	14,700	7,850	5,650	6,450	5,600	7,850	8,350	
	150	15,050	8,100	11,950	6,700	0	7,800	9,400	
10,000	75	15,200	8,350	7,250	7,500	7,500	7,300	9,000	
	100	19,450	9,900	16,400	8,200	0	8,400	7,750	
	150	20,150	10,200	17,000	8,500	0	8,700	8,000	
12,000	75	13,310	10,200	8,900	7,800	8,350	9,760	11,000	
	100	17,350	11,400	9,200	8,000	9,400	10,850	11,200	
	150	20,950	10,600	17,700	8,800	0	9,200	8,300	
14,000	75	21,000	12,500	11,900	11,850	11,500	12,400	12,500	
	100								
	150								

* Including allowance for impact.

CAPACITY IN LBS.	SPEED FPM	DIMENSIONS																	
		A	B	C*	J	K—FIG. 1	O—FIG. 2	Q—FIG. 3	S	N	P	R	S	U	M	W	MB	TS	
4,000	75	6' 4"	8' 0"	8' 0"	8' 3"	8' 7 1/4"	8' 9 1/2"	8' 11"	9' 2 1/2"	9' 0 1/2"	17'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	100	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	150	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
5,000	75	6' 4"	8' 0"	8' 0"	8' 3"	8' 7 1/4"	8' 9 1/2"	8' 11"	9' 2 1/2"	9' 0 1/2"	17'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	100	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	150	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
6,000	75	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	100	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	150	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
8,000	75	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	100	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	150	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
10,000	75	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	100	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'
	150	8' 4"	10' 0"	8' 0"	10' 3"	10' 7 1/4"	10' 9 1/2"	10' 11"	11' 2 1/2"	11' 0 1/2"	18'	8'	5' 0"	3'	5'	15' 9"	13' 9"	11' 1"	10'

* Vertical rising bi-parting counterbalanced hoistway doors; vertical rising car gate.

Machine room at top
above hoistway



Drive type and
elevator speed possible

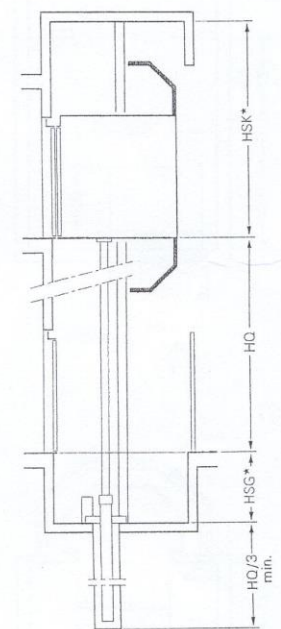
Electro-mechanical

1.0 m/s

1.6 m/s

Machine room: position optional
Distance max. 10 m

Central jack



Electro-hydraulic

0.63 m/s

Travel heights of up to approx.

30 m

45 m

18 m

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Elevator Consist of:

- Gear (with speed 0.62-2.5m/s).
- Gearless (with speed 2.5-12m/s).
- Control Board.
- Doors: (manual-half-automatic-full auto.).
- Safety.

DESIGN

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

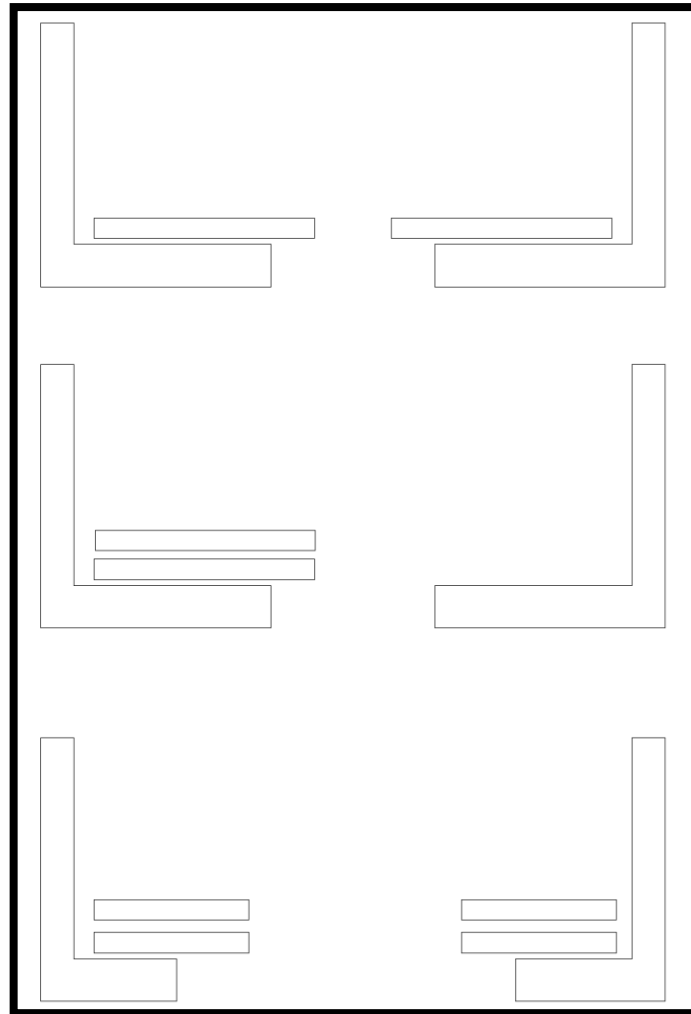
Entrances:

- 1- Two Panel center opening : This is considered the most **efficient door** configuration as passengers can pass through the entrance before the doors **are fully**.
- 2- Two panel side opening: This method is more space efficient but **slower** for passenger transfer and is used ,on **non intensive applications**.
- 3- Four panel centre opening: This arrangement is used on entrances of **1400mm** wide and above.

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Escalator Design



تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Lift Cars

Lift cars are made up of **Two Main** component parts :

- The **car itself** and **the sling** which holds the car.
- The sling includes the **guide shoes** and **safety gear**.

DESIGN

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Escalator Design

- The internal height within the car must be at least 1980mm.
- On very **high speed lifts** the car requires special design to reduce noise levels and this is achieved by providing noise insulation to the car and streamlining the car to make the airflow around the car Smoother.

DESIGN

تصميم المصاعد والسلالم Elevator & Escalator Design

Escalator Design

Traction Lifts

- The sheave is connected to an electric motor.
- When the motor turns one way, the sheave raises the elevator; when the motor turns the other way, the sheave lowers the elevator.
- In **gearless elevators** ,the motor rotates the sheaves directly.

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

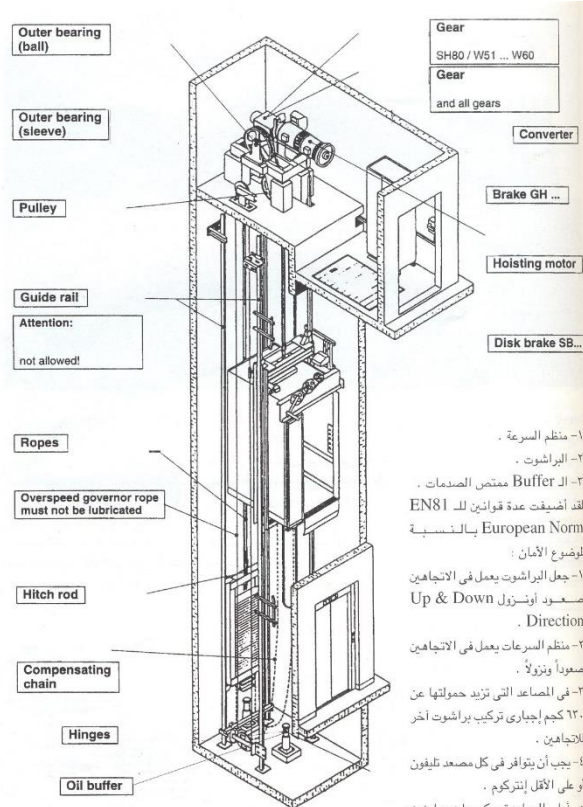
In geared elevators, the motor turns a gear train that rotates the sheave.

- Typically, the sheave, the motor and the control system are all housed in a machine room above the elevator shaft.
- The **counterweight** weights about the same as the car filled to **40-percent** capacity.
- Basically, the motor only has to overcome friction the weight on the other side does most of the work.

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Escalator Design



- ١- منظم السرعة .
- ٢- البراشوت .
- ٣- Buffer ممتص الصدمات .
- لقد أضيفت عدة قوانين للـ EN81 European Norm بالنسبة لموضوع الأمان :
- ١- جعل البراشوت يعمل في الاتجاهين Up & Down صعوداً ونزولاً .
- ٢- منظم السرعات يعمل في الاتجاهين صعوداً ونزولاً .
- ٣- في المصاعد التي تزيد حمولتها عن ٦٣٠ كجم إجباري تركيب براشوت آخر للاتجاهين .
- ٤- يجب أن يتوافر في كل مصعد تليفون أو على الأقل إنتركوم .
- ٥- أعلى المصاعدة يركب عليه درابزين من الحديد لا يقل ارتفاعه عن ٨٠ سم .
- ٦- طارة الحركة Traction Sheave في غرفة الماكينات والكابلات عليها غطاء وقائي .
- * المصاعدة مزودة بمزودة بباب أوتوماتيكي

- السدادار Miconic 10 -
Machine roomless elevator -
(Schindler Mobil)
وسيتم استعراض هذه التقنيات تباعاً في باب الجديد في البناء .

* وزن تقل الموازنة يساوي وزن العربة + نصف الحمولة داخل العربة .

التقنيات الحديثة في تصميم المصاعد :

- المسطرة الضوئية (تفتتح الأبواب أوتوماتيكياً)

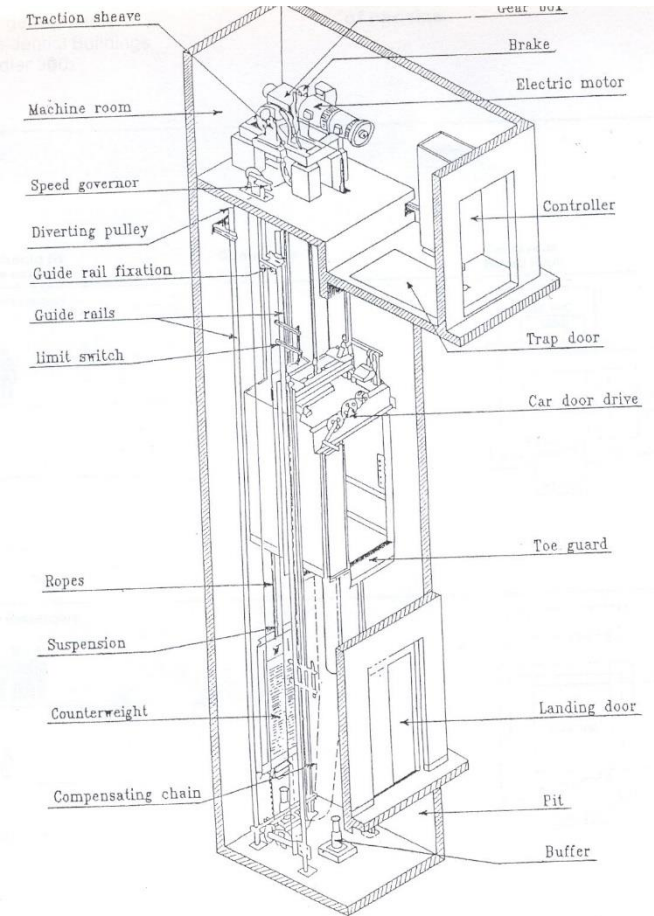


Illustration 1 Electric lift equipment

تصميم المصاعد والسلالم الكهربائية Elevator & Escalator Design

Escalator Design

Stair lifts:

Stair lifts allows people with impaired mobility to move between floors with ease. They can be used on straight or curved stairways, and traverse landings.

DESIGN

تصميم المصاعد والسلالم الكهربائية Elevator & Escalator Design

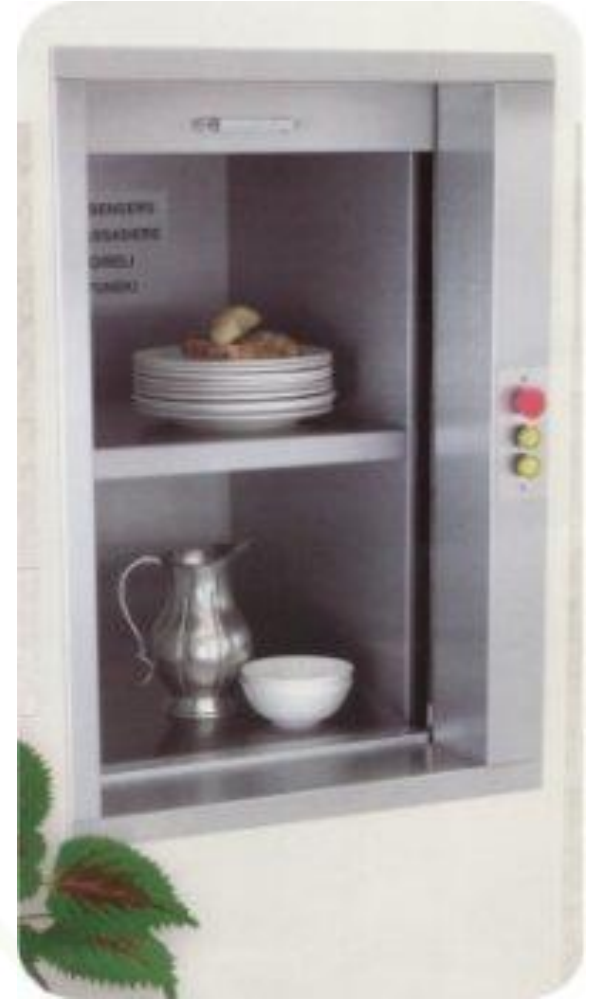
Escalator Design



تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Escalator Design



نظام المصاعد والسلالم Elevator & Escalator Design

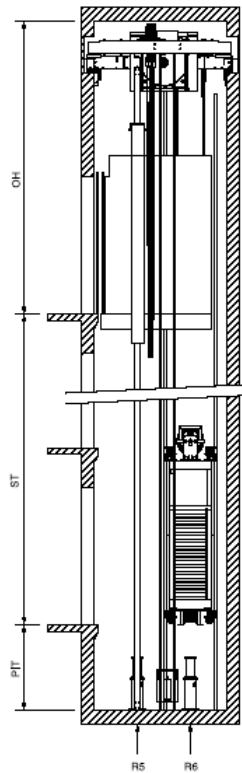
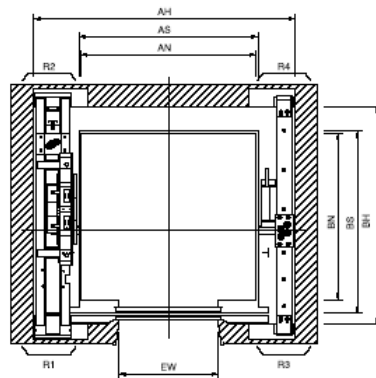
Escalator Design

Technical Data

Machine Roomless



Passenger Elevator Layouts



DN



ELEVATOR SECTION & PLAN

تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

Escalator Design

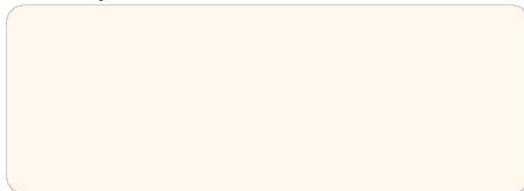
 SIGMA Elevator



SIGMA Elevator
DI SERIES - HOSPITAL



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SIGMA constantly endeavors to improve products so that information in this catalog is subject to change without notice.

 SIGMA

Hospital Elevator

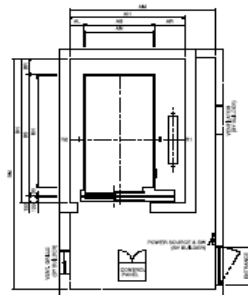
تصميم المصاعد والسلالم الكهربائية

Elevator & Escalator Design

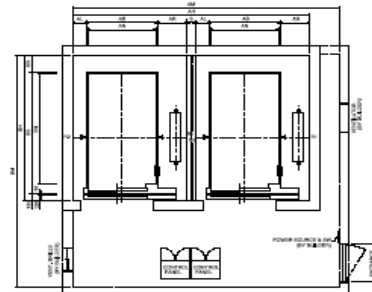
Distributed Inverter Elevator 17 | 18

ELEVATOR LAYOUT

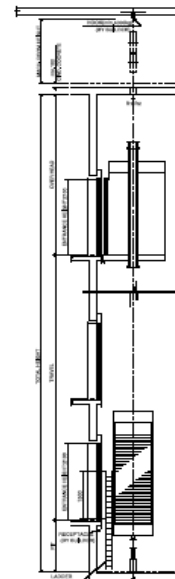
Hoistway and Machine Room Plan(Simplex)



Hoistway and Machine Room Plan(Duplex)



Hoistway Section



Planning guide for Dimensions

(unit:mm)

Persons	Load (kg)	Speed (m/min)	Spring (GV)	Car Size		Dimensions in Hoistway				Hoistway Size		Machine Room		Reactions			
				Inside		Outside		Simplex		Duplex		Simplex		Duplex		R1	
				AN	BN	AS	BS	AL	AR	S	BR	AH	BH	AH	BH	R1	R2
11	750	30														5700	5450
		45														5850	5500
		60	1100	1300	2500	1350	2500	225	575	150	230	2150	2600	4450	2000	2600	4000
		90														5900	5750
		105														6000	5800
15	1000	30														6500	5700
		45	1100	1500	2500	1550	2500	225	575	150	230	2350	2600	4850	2000	2800	4200
		60														6600	5800
		90														6800	6000
		105														6800	6100

Electrical Design Guide

(220V/400V)

Persons	Load kg	Speed (m/min)	FFB Capacity of Building (kVA)		Transformer of Building (kVA)		Lead-in Wire Size (mm ²)		Earth Size Wire(mm ²)	Starting (kVA)
			Simplex	Duplex	Simplex	Duplex	Simplex	Duplex		
11	750	30	50/50	100/50	6	12	85.5	145.5	5.5/5.5	21
		45	75/50	150/100	7	14	145.5	228	5.5	28
		60	75/50	150/100	10	20	225.5	391.4	8.5/5	35
		90	75/50	150/100	10	20	225.5	391.4	5.5	29
		105	75/50	150/100	11	22	225.5	391.4	5.5	34
15	1000	30	50/50	100/50	6	12	85.5	145.5	5.5/5.5	21
		45	75/50	150/100	7	14	145.5	228	5.5	28
		60	75/50	150/100	10	20	225.5	391.4	8.5/5	35
		90	75/50	150/100	12	24	225.5	391.4	14.5/5	36
		105	100/50	150/100	13	26	228	692.2	14.5/5	43

Overhead, Pit Depth & Machine Room Height

Item	Speed (m/min)	Dimension (mm)
Overhead (mm)	30	4600
	45	4600
	60	4900
	90	4800
Pit depth (mm)	105	5000
	30	1200
	45	1200
	60	1500
Machine Room Height (mm)	90	1800
	105	2100
		2300

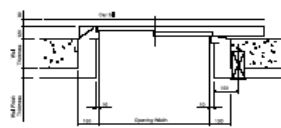
نظام المصاعد والسلالم الكهربائية Elevator & Escalator Design

Distributed Inverter Elevator 15 | 16

Entrance Details

Narrow Jamb without Transom Panel

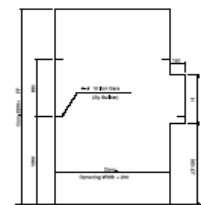
Entrance elevation and plan



< Section B-B >

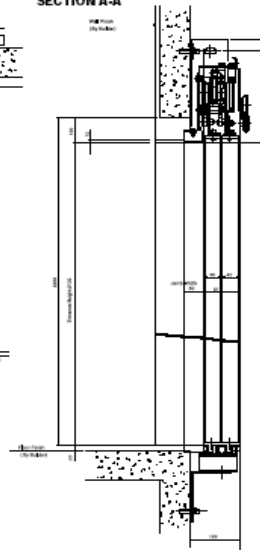


< Front View of Entrance >



< Building Structure Plan >

SECTION A-A



< Section A-A >

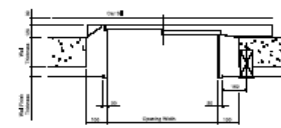
Note

1. The lift size in building structure plan should be decided according to the approved drawings because it depends upon the hall indicator type or the hall button type.

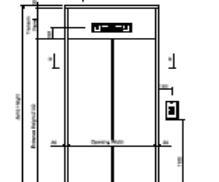
2. Unit : mm

S-Type Wide Jamb with Transom Panel(with accentric line)

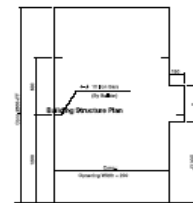
Entrance elevation and plan



< Section B-B >

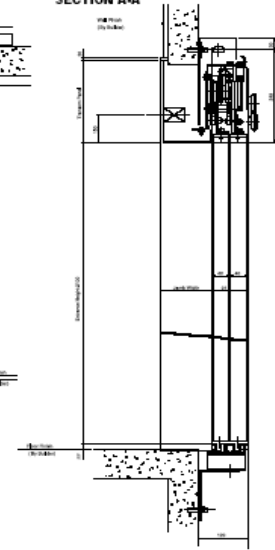


< Front View of Entrance >



< Building Structure Plan >

SECTION A-A



< Section A-A >

Note

1. The lift size in building structure plan should be decided according to the approved drawings because it depends upon the hall indicator type or the hall button type.

2. Unit : mm