XOP Travolator

The brochure is printed
in environment-protection paper

OTIS

160 YEARS OTIS

160 years of rich history, the No.1 brand in the elevator industry
Inventor of the world's first safety elevator
Inventor of the world's first escalator
Sales and Service operation located in over 200 countries and a service network covering over 1,700 locations worldwide
Annual escalator and elevator sales of more than 70,000 elevators in 12 of the world's 20 highest buildings

OTIS in CHINA

With 15,000 employees, Otis China offers professional consultancy and installation services and world-class maintenance support, operating 6 manufacturing sites in Tianjin, Hangzhou, Guangzhou, and etc. Otis engineer team located at three sites dedicate to new product development and product quality improvement.

OTIS CHINA FACTORY



Hangzhou Factory

Building Area: 45,754m^2
Capacity:
30,000 units/year 6,000 units/year
CNAS (China National Accreditation Service) Lab

Tianjin Factory

Building Area: 66,673m^2
Capacity:
25,000 units/year
USGBC LEED Gold Certification

Guangzhou Factory

Building Area: 48,900m^2
Capacity:
4,000 units/year
OTIS Escalator Quality Test Center

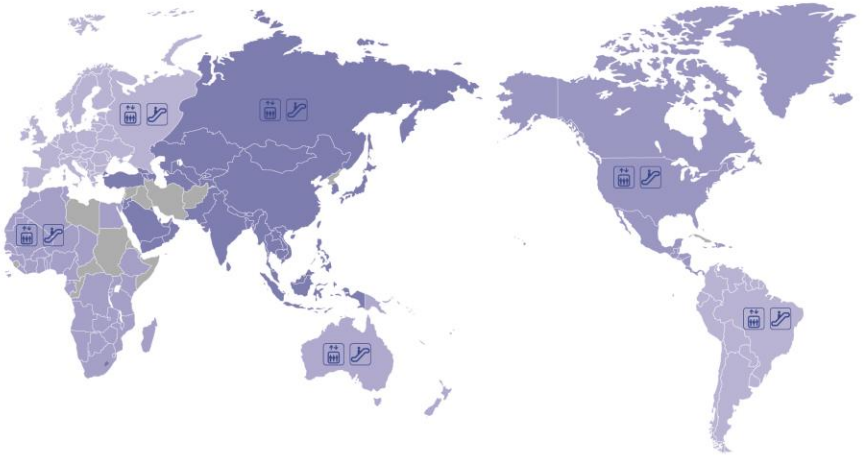
OTIS CHINA INTERNATIONAL BUSINESS

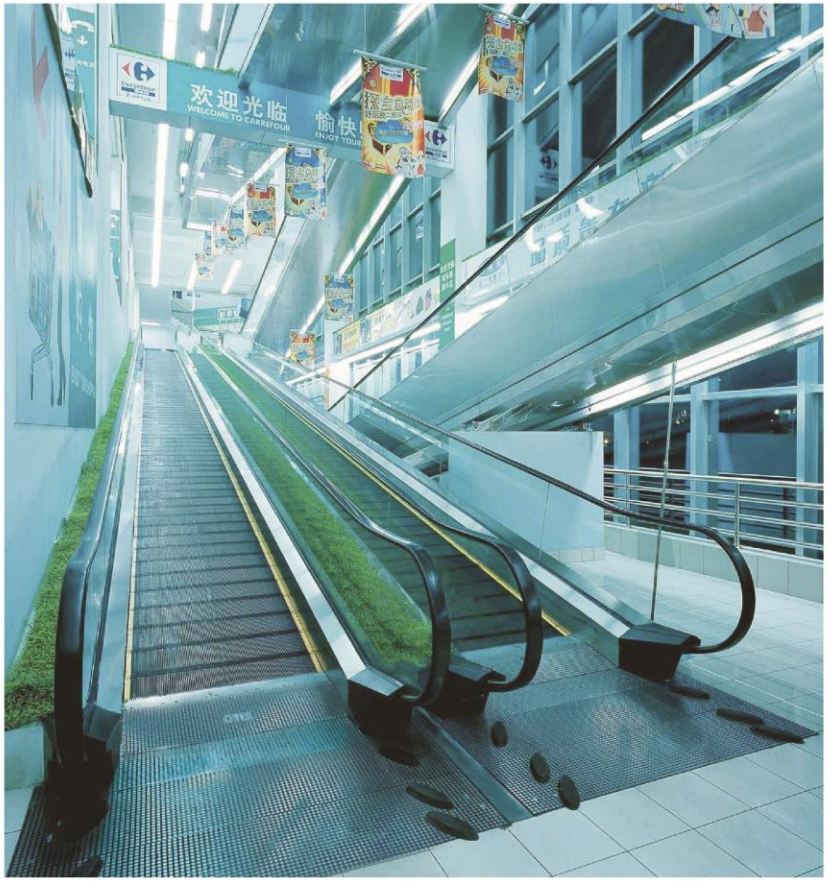
125
Covering more than 125 Countries

80,000
Having provided over 80,000 units of elevator & escalator worldwide

15
Meeting 15 International Codes including EN, JIS, ANSI, AS1735, COP2010, SS550, KC, GB and so on

EN81-2000（Europe）
EN115-2000（Europe）
JIS（Japan）
ANSI（America）
KC(Korea)
AS1735(Australia)
SAA(Australia)
MS2021:2026
GB16899:2011(China)
SS550(Singapore)





XOP

Based on Otis advanced technology, the XOP travolator is designed and produced to apply for supermarket, airport, commercial mall, etc. Through the rigid quality system, it not only fully satisfied the operation practicality, but also bring passenger with humanized design.

XOP characterizes itself as high quality and reliability, safety, flexibility and energy saving.

Quality & Reliability

XOP travolator fully utilizes the Otis' advanced designing process-PDP. It has been proved as the Otis' most matured worldwide moving walkways product.

Through the stringent quality control system, and company's enforcement on all along pursuing the higher quality, XOP is deemed as the most qualified and reliable product; it effectively eliminates the operation failure and shortens the maintenance time.

EM-W1

•SIEMENS gearbox, most mature -reducer in travolator industry.
•High efficient worm gear box.
•Integrated Non Reversal -Device / Motor thermal -device / Motor cover control;
-Optional Control contact for -lifted Brake / Brake lining wear -/Mechanical overspeed governor.
•Compact design and small size.
•Low noise and smooth operation.

Multiple chain designed main drive wheel is with a strong broken strength. Such a compact and vigorous structure strengthens the reliability of the whole driving system, and as well promotes efficiency and riding quality.

Otis initiated tube structure truss with a robust design; it greatly improve the overall running stability and service life. The Otis blue painting renders the whole truss a protection against rustiness and corrosion.

Anti-slip grooves on the pallet surface have excellent slip-proof function to make the ride safe and comfortable. Slightly inclined combs can make the trolleys easily get on and off.

As new generation escalator control system platform, GECS controller with 32 bit microprocessor can be configured for different functional requirement. GECS is used as standard configuration for all the escalators and travolators of Xizi Otis.

Safety

The safety devices, electrical safety devices, structures and all their components are strictly in accordance with EN115. In European Union, we can provide travolators with EN115-2008 which presents the highest performance on safety for travolators. Also, we could supply travolators with EN115-2008 for other districts as option.

Standard Safety Devices

Operational Brake

Integrated within the travolator driving machine and between the motor and reduction gearbox. Travolator safety brake can be activated through electromagnetic braking.

Motor Thermic Protection

The thermal protection switch is located in the motor coil. If the motor temperature exceeds 155 C, the thermal protection sensor will automatically shut down the travolator.

Overspeed Governor

The drive chain broken safety switch is installed on and activated by the chain tension device. Once the chain is prolonged or broken, the safety device will be triggered and make the travolator stop running.

Auxiliary brake, wedge type (Rise＞6m)

The auxiliary brake is located at the upper landing, it could stop the travolator via brake disc installed at main drive, and is the standard configuration for travolator rise above 6m. Optional configuration: Rise≤6m.

Pallet Broken Protection Device

The pallet broken protection device is located at both landings.
The device is activated if either a pallet or its roller breaks or if a pallet is lowered due to rupture.

Comb Plate Contact

The comb panel protection switches are located on two sides of each comb panel. If foreign matter lodges between the comb and pallets, the comb panel will automatically lift upwards initiating the safety switch and stopping travolator operation.

Floorplate Safety Contact

A safety switch is installed under the floorplate to ensure proper floorplate positioning. If the floorplate is not properly closed, the safety switch will initiate, stopping travolator operation until the floorplate is properly closed.

Safety Grounding

All electrical components on the travolator are safely grounded, and directly connected to the ground via the travolator truss.

Non-reversal Device

A rotation sensor is located on the machine that monitors motor rotation speed and direction. If the motor rotates in reverse, the sensor will send a corresponding signal to the main controller to activate the travolator brake.

Emergency Stop

Located on the upper and lower landing and close to the handrail entrance. The safety stop can be manually activated by pressing a red emergency stop button in case of emergency.

Missing Pallet Monitoring Device

Two metal acquisition sensors are located at the turning position of the upper and lower pallets. If the pallet is missing or installed incorrectly, the sensor will send a signal to the control system, to shut down the travolator.

Handrail Entry Safety Guard

The handrail entry safety guard is in the handrail entry box of the upper and lower landing, and meets the standard requirements. If foreign matter is inserted in the handrail or rubber head, the safety switch installed behind the rubber head will automat.

Broken chain protection device

The safety switch is located on the tensioning carriage of the lower landing. If the pallet chain breaks or stretches abnormally, the safety switch will initiate stopping the travolator.

The XOP complies with EN115. Any requirement, please firstly confirm with local OTIS.

Optional Safety Devices

Option	Description
5 Dry Contact	5 Dry Contact, provide contact for up/down/emergency stop/fault/running signal to monitor system.
Control Contact For Brake Lining Wear	When the brake linings are worn, the controlling switch is activated ,and it prevents the machine from starting. If this happens, a maintenance job is necessarily carried out for the brake, and the brake lining must be replaced immediately.
The Brake Lifting Monitor	The operational brake control switches prevent starting the machine in case the operational brake is closed. (Standard for EN115-2008)
Loose Or Broken Handrail Protection Device	If the handrail stretches or breaks, the safety switch will initiate to stop the travolator.
Handrail Speed Monitoring Device	When the handrail running speed becomes abnormally (too fast or too slow), the sensor for monitoring handrail speed will send a signal to the control system to stop the travolator. (Standard for EN115-2008)
Skirt Panel Safety Protect Device	The safety switches located at upper and lower landing. If an object is blocked between the skirt panel and pallets at the position where safety switch located, and causing skirt panel deflection exceed the limit, then the skirt panel safety switch will initiate stopping travolator.
Skirt Panel Brush	Located on both sides of the skirt panel, the skirt panel brush protects passenger's clothing from getting snagged between the skirt panel and side plate.
Sprinkler System (Non-Standard)	Installed within the travolator body. In case of fire, the sprinkler system automatically initiates within the travolator or building.

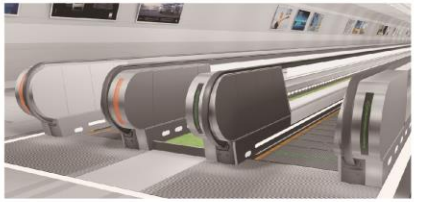
Flexibility

XOP can be operated at temperature +4℃～+40℃, and with humidity ＜85%. It has a great flexibility to cater for different occasions.

The Microcomputer Control System, robust machine, a unique rectangular steel tube frame and the use of automatic refueling system, that makes XOP more suitable for real way station, supermarkets, airports and tourism channel, etc.

Overbridge

Shopping mall



Airport

Supermarket

Plaza

Standard Specification for Incline

Angle	10°/ 11°/ 12°
Rise	1.5-10m
Pallet Width	800/1000mm
Speed	0.5m/s
Arrangement	Single/ Side by Side/ Scissors

Standard Specification for Horizontal (contract based option)

Angle	0°
Length	15-100m
Pallet Width	800/1000/1200/1400mm
Speed	0.5m/s, 0.65m/s
Arrangement	Single/ Side by Side

Running Mode–
Classical Green Technology

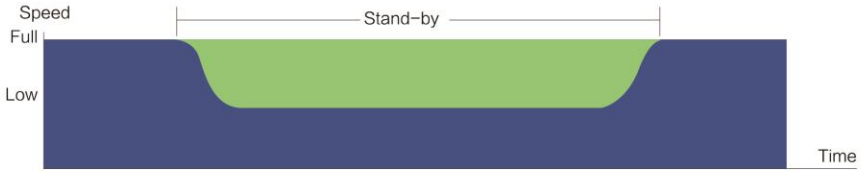
Don't save on the system. Let the system save for you. The various kinds of running mode's high reliability and integrated energy saving performance are economic factors that pay dividends.

ETA-Plus Running Mode

The ETA-Plus Running Mode is standard mode of operation used under normal circumstances, which is suitable for most of the applications.
In ETA-Plus Mode, machine operates in the Star connection when there is no passenger or small number of passengers on escalator. When the number of passenger exceeds the scope of the Star connection, machine will switch to Delta connection automatically.

VF Running Mode (Slow to Full)

The VF Running Mode (Continuous) is generally applicable for low traffic flow locations. In "Continuous" Mode, the escalator will slow down while no passenger on it.



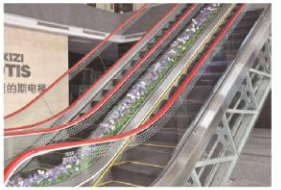
VF Running Mode (Stop to Start)

In "Auto-Start" mode, once the escalator sense that there is no passenger it, it will sow down. And moments later, the escalator will stop. VF mode cuts down on noise levels and can save considerable energy depending on passenger flow.

Intermittent Running Mode

In the "Intermittent Running Mode", the escalator will slow down and stop while there is no passenger on it.

Green Lubrication System



The oil lubrication system is electronically controlled. It is a complete system with consistent pressure; it reliably supplies exact amounts of oil to lubrication points. Each lubrication point can be supplied with a different amount of oil.

- Better protection against corrosion and contamination with less wear

- Up to 75% reduction of oil consumption

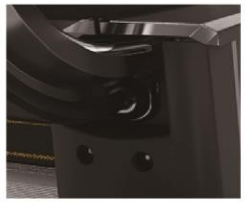
- Less down-time

- Active contribution to environmental protection and work-place safety

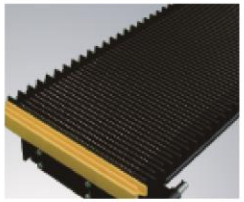
Stylish Design

To satisfy the customization from different users, XOP is offering many options to choose.
With these stylish designs, while satisfying customer's requirement, it can reach a perfect harmonious combination with the building environment in vicinity. Thus besides bringing passenger a safe and quiet riding, it renders a graceful aesthetical appreciation as well.

S type Handrail Entry

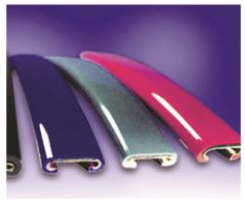


G type Handrail Entry
(Can be configured with handrail lighting)

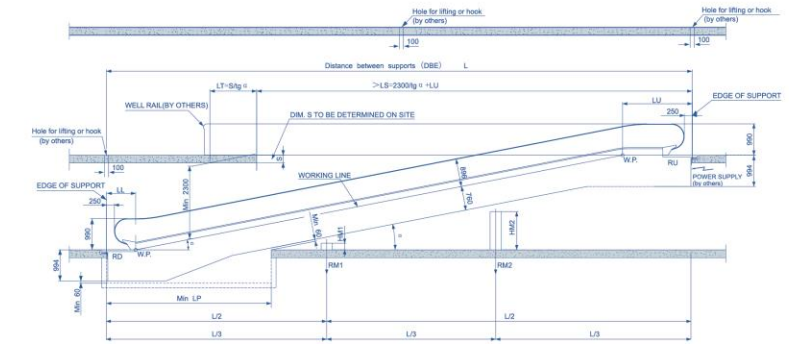


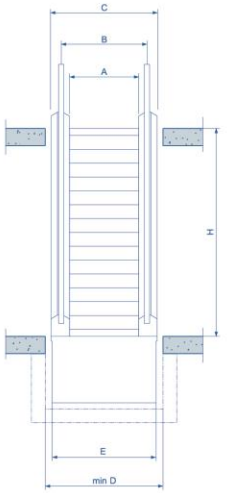
Stainless steel is the standard material for pallet;
Die-cast aluminum is the optional material for pallet.

Friendly design for supermarket trolly.



Various handrail colors meet different environment.





Done by the Owner & Builder

1.This drawing is fit for the escalator which rise H:1.5m～6m, the permitted tolerance is -15mm～ +15mm; permitted tolerance of span L is 0 ～ +15mm.

2. When horizontal span L>13000, add 1 intermediate support, the position is in middle of span.

3.When horizontal span L>30000, add 2 intermediate supports, being positioned proportionally.

4.Safety protection barrier with enough strength which is not less than 1.2m in height should be placed around all the holes of escalator before installation.

5.The pit should be impervious to infiltration of water. And the drainage hole should be in the corner of the pit.

6.According to the requirement of the technical parameter sheet, the power supply should be placed in the machine room with protection switch and locked off. The fluctuation of the power supply should be less than ±7%. The neutral conductor and the protection conductor should always be separate, and the ground resistance should be no more than 4 Ω.

7.When the distance between the centerline of the handrail and any obstacle is less than 0.5m, a vertical obstruction of not less than 0.3m in height, not presenting any sharp cutting edges should be placed above the balustrade decking.

8.Adopt 10mm² soft wire cable as the power supply cab. (by others)

9.The corresponding parameter of machine should refer to SEB.

10.The drawing is only for EM-W1 or EC-H2.

11.The drawing is only for NC type.

12.Any special requirement, please contact XOEC before signing contract.

MEMO: MID support beam by local,formula: (mm)

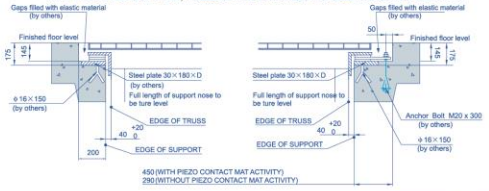
HM1=(L1-LL)Xtg α -(760/cos α +250)

HM2=(L1+L2-LL)Xtg α -(760/cos α +250)

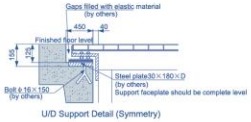
STANDARD SUPPORT WITH STEEL PLATE

U/D Support Detail (Symmetry)

ANTI VIBRATION SUPPORT, FIXED UPPER LANDING AND SLIDING LOWER LANDING

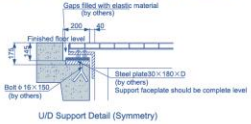


ARRANGEMENT WITH PIEZO CONTACT MAT

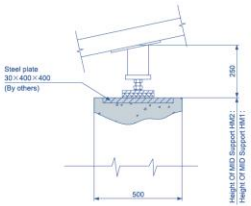


U/D Support Detail (Symmetry)

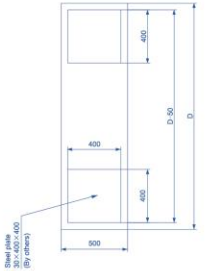
ARRANGEMENT WITH ANTI-VIBRATION SUPPORT



U/D Support Detail (Symmetry)



MID Support Detail



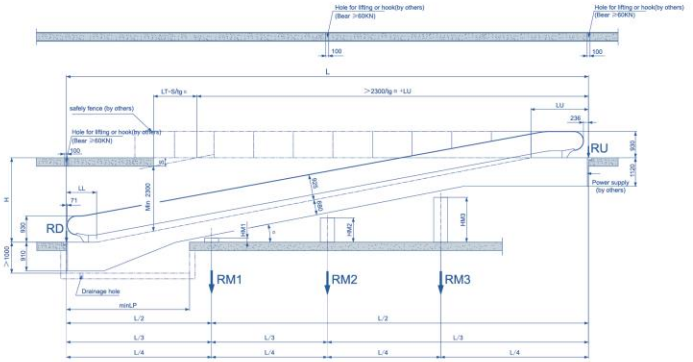
MID Support Detail (Planform)

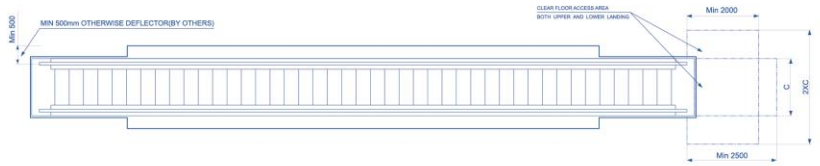
Angle α	SPEED (m/s)	Step width A(mm)	SPAN L(mm)	min LP	LU	LL	LS	B	C	min D	E
10°	0.5	1000	5.6713H+3446	5744	2426	1020	2300/tg α +LU	1237	1530	1630	1500
		800						1037	1330	1430	1300
11°		1000	5.1446H+3136	5225	2208	928		1237	1530	1630	1500
		800						1037	1330	1430	1300
12°		1000	4.7046H+2878	4797	2026	852		1237	1530	1630	1500
		800						1037	1330	1430	1300

Reaction to support in KN (L in m) (1KN=100kg)

Step width (mm)	1000				800			
Number of Supports	RD	RU	RM1	RM2	RD	RU	RM1	RM2
2	4.9L+6.2	4.9L+14	--	--	4.25L+8.2	4.25L+18	--	--
3	2.2L+5	2.2L+14	6.1L+4.2	--	1.9L+8	1.9L+17	5.2L+8.2	--
4	1.5L+6	1.5L+15	3.45L+5	3.45L+5.2	1.3L+9	1.3L+17	3.1L+9.2	3.1L+10

NOTE:DO NOT SACALE THIS DRAWING,UNLESS OTHERWISE STATED.

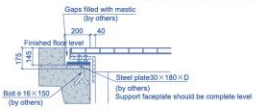




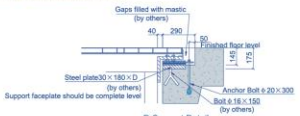
STANDARD SUPPORT WITH STEEL PLATE

U/D Support Detail (Symmetry)

ARRANGEMENT WITH TEFLON SLIDING PADS

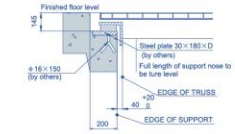


D Support Detail



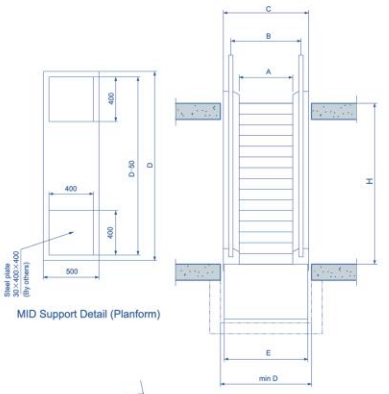
D Support Detail

ARRANGEMENT WITH ANTI-VIBRATION SUPPORT

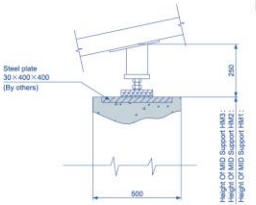


ARRANGEMENT WITH PIEZO CONTACT MAT

D Support Detail U Support Detail



MID Support Detail (Planform)



MID Support Detail

Done by the Owner & Builder

1.This drawing is fit for the escalator which rise H:6m～10m, the permitted tolerance is -15mm～+15mm; permitted tolerance of span L is 0～+15mm.

2.When horizontal span L>K1, add 1 intermediate support the position is in middle of span.

3.When horizontal spanL>K2, add 2 intermediate supports, being positioned proportionally.

4.When horizontal span L>K3, add 3 intermediate supports, being positioned proportionally.

5.Safety protection barrier with enough strength which is not less than 1.2m in height should be placed around all the holes of escalator before installation.

6.The pit should be impervious to infiltration of water. And the drainage hole should be in the corner of the pit.

7.According to the requirement of the technical parameter sheet, the power supply should be placed in the machine room with protection switch and locked off. The fluctuation of the power supply should be less than ±7%. The neutral conductor and the protection conductor should always be separate, and the ground resistance should be no more than 4 Ω.

8.When the distance between the centerline of the handrail and any obstacle is less than 0.5m, a vertical obstruction of not less than 0.3m in height, not presenting any sharp cutting edges should be placed above the balustrade decking.

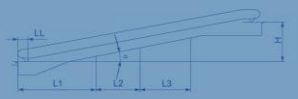
9.The corresponding parameter of machine should refer to SEB.

10.The drawing is only for EM-W1 or EC-H2.

11.The drawing is only for NPC type.

12.Any special requirement, please contact XOEC before signing contract.

MEMO: MID support beam by local,formula: (mm)
HM1=(L1-LL)Xtg α -(680/cos α +250)
HM2=(L1+L2-LL)Xtg α -(680/cos α +250)
HM2=(L1+L2+L3-LL)Xtg α -(680/cos α +250)



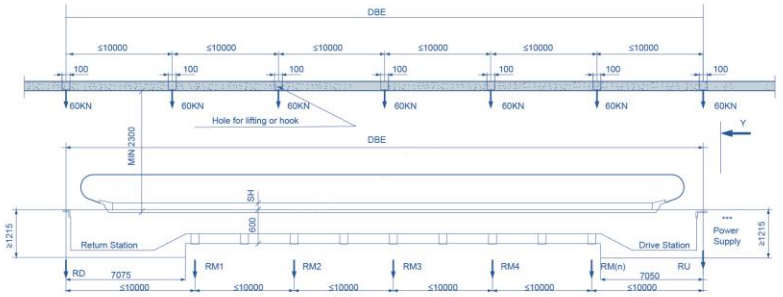
Angle α	SPEED (m/s)	Step width A(mm)	SPAN L(mm)	min LP	LU	LL	LS	B	C	min D	E	K1	K2	K3
12°	0.5	1000	4.7046H+3210	4650	2135	1075	2300/tg α +LU	1237	1590	1700	1560	15000	30000	45000
		800						1037	1390	1500	1360	16300	32600	48900

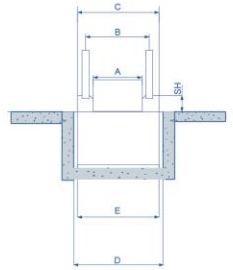
Reaction to support in KN (L in m) (1KN=100kg)

Step width (mm)	1000					800				
Number of Supports	RD	RU	RM1	RM2	RM3	RD	RU	RM1	RM2	RM3
3	--	--	--	--	--	2.0L+3.5	2.0L+11.5	5.3L+2.7	--	--
4	1.6L+3.5	1.6L+11	3.55L+3.2	3.55L+3.5	--	1.4L+3.5	1.4L+11	3.1L+3.2	3.1L+3.5	--
5	1.1L+3.5	1.1L+11	2.8L+2	2.8L+3.2	2.8L+4.2	1.0L+3.5	1.0L+11	2.6L+2	2.6L+3.2	2.6L+4.4

NOTE:DO NOT SACALE THIS DRAWING,UNLESS OTHERWISE STATED.

TRAVALATOR XOP-NPC 6000＜H≤10000mm LAYOUT

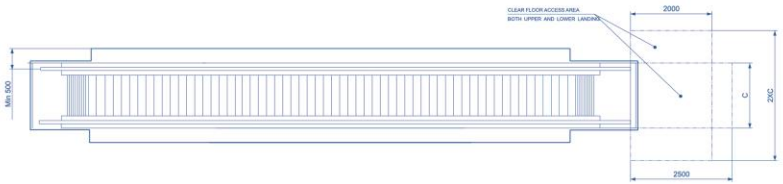


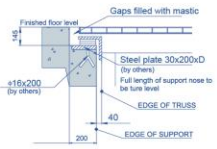


Y View

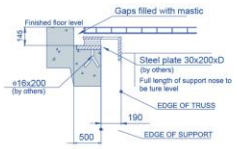
Done by the Owner & Builder

1.The permitted tolerance is ±15mm, the permitted tolerance span L is 0~15mm.
2.Before installed, all holes have to be enveloped with the safety guard which height is not less than 1.2m and guarantee the strength is enough.
3.After installation, the safety protection for the building around the travolator should be necessary. The users should provide the protection and other guard.
4.There should be water proof inside pit. The location of plash should be at the basement.
5.The pit drain should connect with drainage system.（By main contractor）
6.According to requirement of the technical parameter sheet, the power should be lined to the machine room with protection switch and in lock. The fluctuation of the power should be less than ±7%. The N wire and earth wire should be separated and the ground resistance is not more than 4Ω.
7.Use 10mm² multi-strands flexible wire for main power supply input. (By main contractor)
8.Any special requirement of customer should be agreed by the company technology before contracting.
9.When the distance between the central line of the handrail and any barrier is less than 500mm, the users should provide an anti-collision board without sharp edge on the top of the external cover board of the escalator, the height of the board should not be less than 300mm.





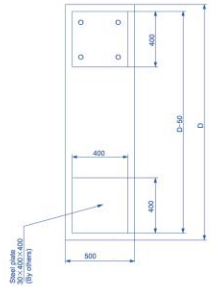
Upper and Lower Support (Normal)

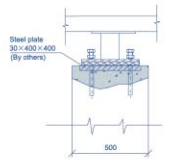


Upper and Lower Support (Seismic Design)

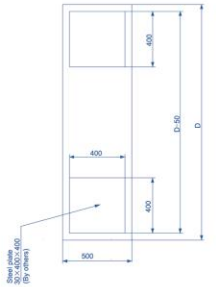
Handrail Type	Step Width	A	B	C	D	E	SH
G	800	800	1014	1356	1550	1306	315
	1000	1000	1214	1556	1750	1506	
	1200	1200	1414	1756	1950	1706	
	1400	1400	1614	1956	2150	1906	
S	800	800	1048	1390	1550	1340	185
	1000	1000	1248	1590	1750	1540	
	1200	1200	1448	1790	1950	1740	
	1400	1400	1648	1990	2150	1940	

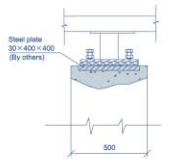
Reaction force of RM, RD, RU, please contact CLC.





MID Support Detail (FIXED)





MID Support Detail (SLIDING)

NOTE:DO NOT SACALE THIS DRAWING,UNLESS OTHERWISE STATED.

TRAVOLATOR XOP-H HORIZONTAL LAYOUT