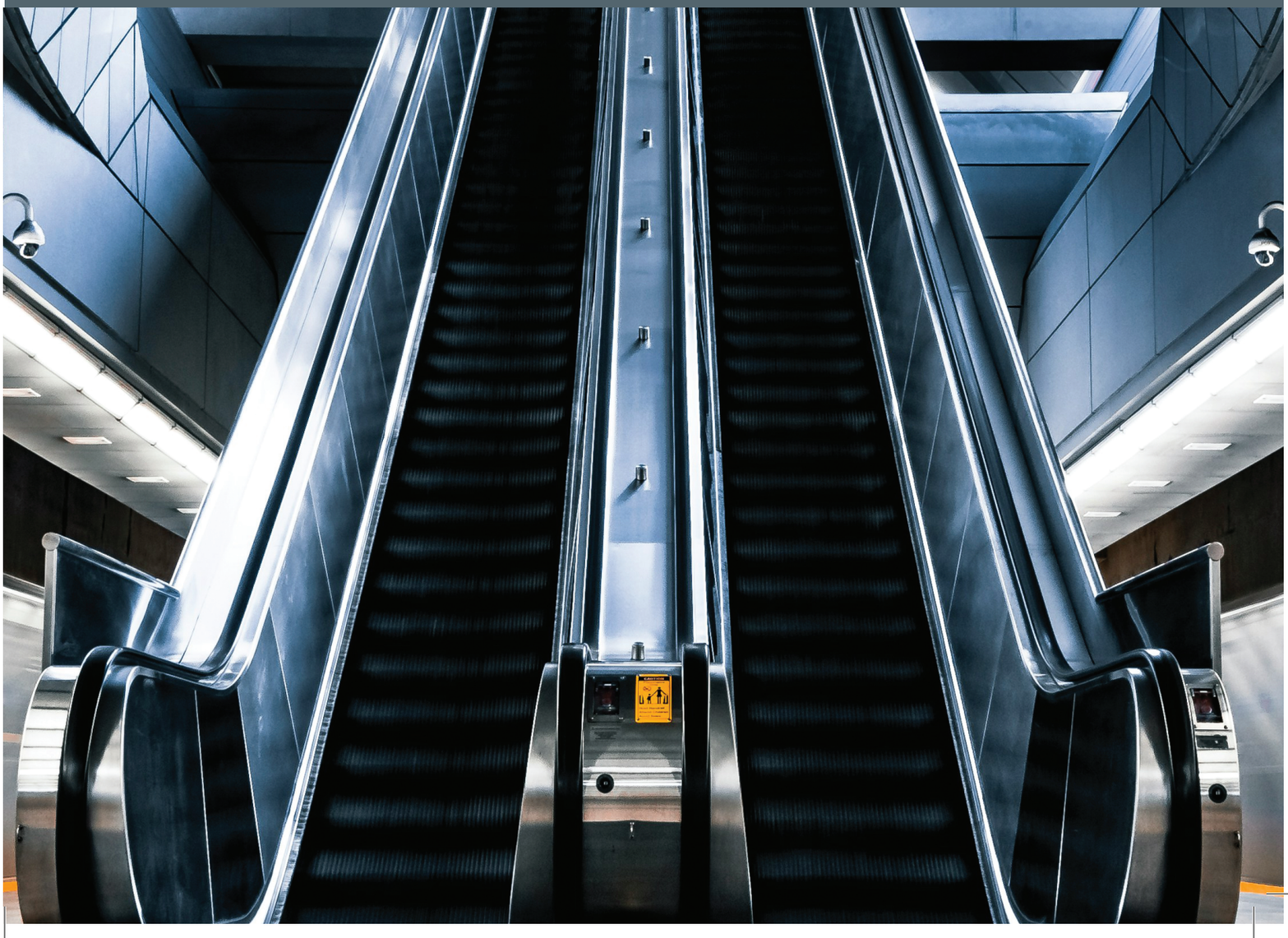
MASHIBA Rhine®

ESCALATOR & MOVING WALK







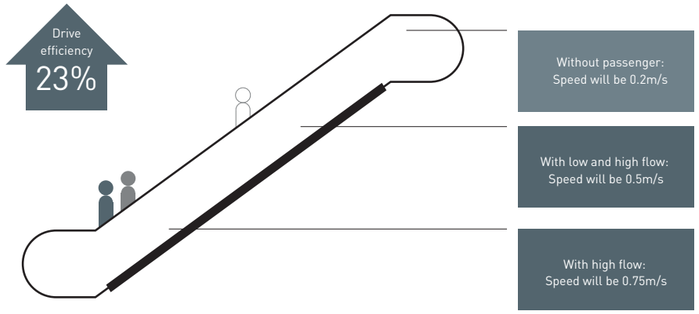
ESCALATOR

The MASHIBA-RHINE Escalator series has the option to be equipped with helical gear decelerators, delivering superior performance in comparison to traditional worm gear decelerators, ensuring optimal energy utilization. Operating in a variable frequency mode, this series offers the capability of detecting multiple passenger flows. When the escalator is not in use, it automatically stops to prevent unnecessary operation, effectively conserving electric power and cost.

INNOVATIVE TECHNOLOGY

INTELLIGENT VARIABLE SPEED CONTROL SYSTEM

Intelligent variable speed control system can seamlessly switch to different speeds, which is highly efficient, energy-saving and environment friendly.

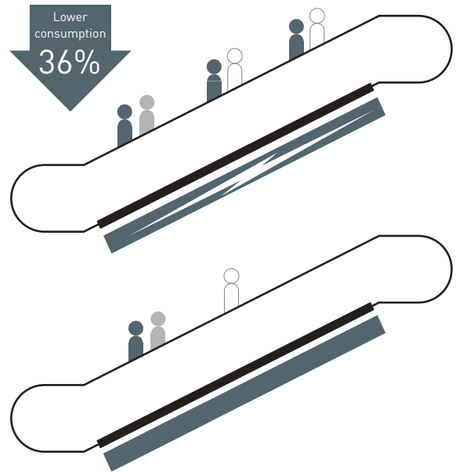


HIGHLY INTEGRATED INTELLECTUAL CONTROL SYSTEM

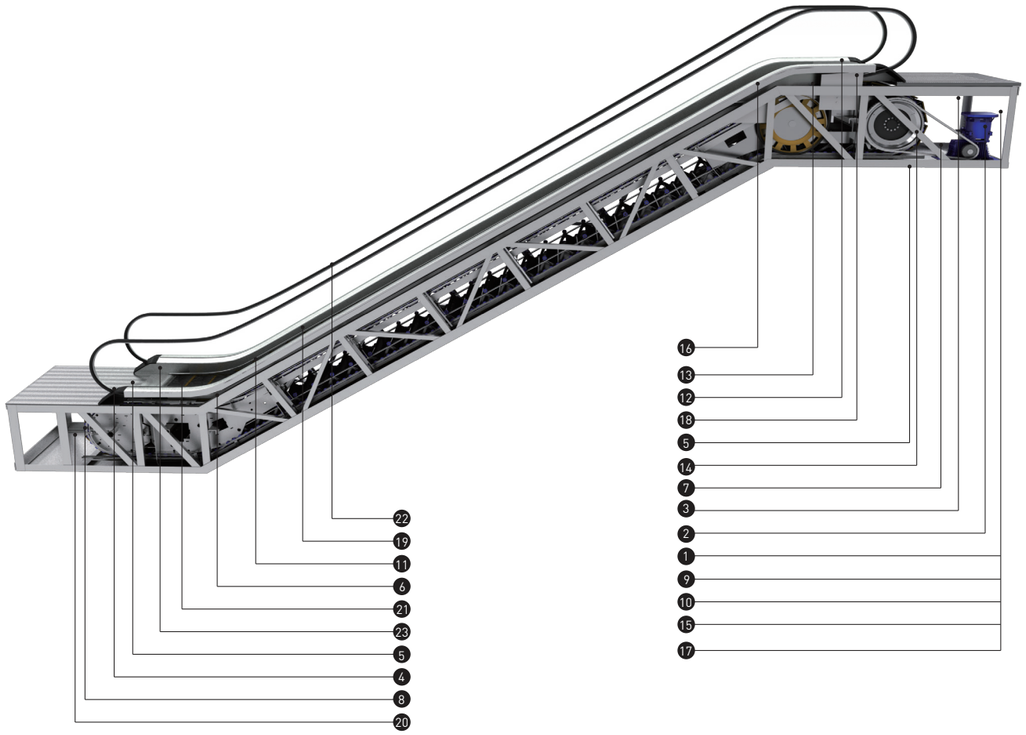
The entire system incorporates a VVVF frequency changer. Under a microcomputer's control, it intelligently adjusts the frequency according to speed and load requirements, resulting in approximately 40% energy savings compared to traditional drive systems.

INTELLECTUAL MAINS MANAGEMENT SYSTEM

The intelligent mains management system guarantees efficient operation with reduced energy loss when passenger numbers are low. This technology can reduce energy loss to only 36% of what traditional escalators and moving walks consume.



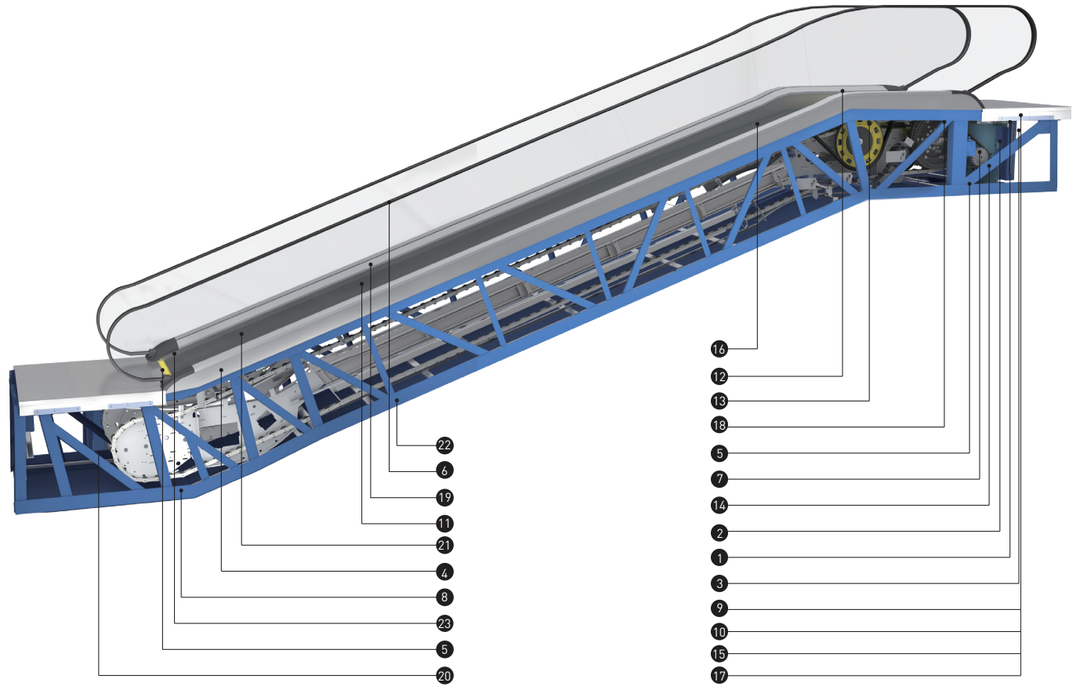
SAFETY DEVICES



SAFETY DEVICES OF ESCALATOR

Standard Safety Device	Description of Functions
1. Lack of phase, error phase protection:	If lack of phase the escalator (auto-walk) will automatically stop the operation.
2. Motor over-load protection:	When the current exceeds 15% of the current rating, the escalator will automaically stop the operation.
3. Electrical appliance loop protection:	It offers the automatic circuit disconnecling device to protect the circuit and mains components of the escalator (auto-walk).
4. Handrail inlet protection:	When some foreign substance has been clipped in the handrail inlet, the escalator (auto-walk) will automatically stop the operation.
5. Comb plate safety device:	When some foreign substance has been clipped in or between the combs, the escalator (auto-walk) wil automaticaly stop the operation.
6. Step sagging protection device:	When there is abnormal step bending, the escalator (auto-walk) will stop the operation before the step entering into the comb plate.
7. Broken drive-chain safety device:	When the drive-chain has been over-stretched or it is broken, the escalator (auto-walk) will automaticaly stop the operation.
8. Broken step chain protection:	When the step (plate) chain has been over-stretched or it is broken, the escalator (auto-walk) will automatically stop the operation.
9. Over-speed protection:	When there is over-speed of the escalator (auto-walk), it will automatically stop the operation.
10. Direction reversal protection:	When it comes the unintentional reversal of the direction of travel, the escalator (auto-walk) will automaticaly stop the operation,
11. Security line:	The yellow synthetic resin security line is located in the front position and two sides of the escalator tread so that the passengers will not tread in-between the edge of the adjacent step and the it group lengthened skirt panel. The security ine on both sides of the step is higher than the tread surface. (The auto-walk offers the selective yellowspray-painted security line.)
12. Emergency stop button:	When the button has been pressed down, the escalator (auto-walk) will stop the operation.
13. Skirt panel protection:	When some foreign substance has been clipped in between the skirt panel and the step, the escalator (auto-walk) will automatically stop the operation.

MASHIBA Rhine



SAFETY DEVICES OF MOVING WALK

14. Brake Protection:	When the electric force falls short of supply or it acts any of the safety device, the brake function goes into effect by the safety device through the spring resilience action. In this way, the escalator (auto-walk) stops the operation.
15. Safety inspection switch:	It is a safety device to prevent from the escalator starting during the inspection and maintenance.
16. Step illumination:	Illumination exists in the upper and lower ends of the escalator,in the lower part of the step in order to remind the passengers of the security matters.
17. Alarm bell starting device:	The alarm ringing when it starts the escalator in order to remind the passengers of the security maters.
18. Control device for handrail breakage:	When the handrail is broken, the escalator will automaticaly stop the operation
19. Skirt panal brush:	The brush that has been installed between the skirt panel and the step will prevent the passengers from touching the skirt panel.

Optional Safety Device	Description of Functions
20. VVVF variable frequency energy-saving system:	When chooses the VVVF variable frequency can effectively reduce the energy consumpion.
21. Comb illumination:	The illumination has been installed in the skirt panel near the comb plate. It offers the lighting for the step and the comb plate. It is more convenient for the passengers to up and down of the escalator.
22. Handrail illumnation:	The handrail illumination has been installed in the handrail frame. The gentle light adds charm on the running escalator.
23. Automaic start/stop:	The infrared ray sensor which is near the floor plate can detect the passenger that enter into the floor plate. Then it will automatically start the operation. Afer all the passengers leave, it will automatically stop the operation again in order to save the energy loss.



MOVING WALK

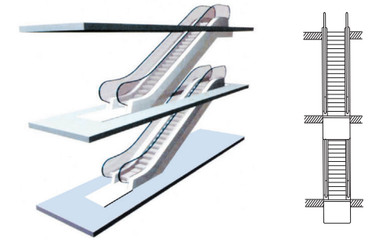
The MASHIBA-RHINE Moving Walk series offers a tranquil and low-noise experience. Its seamless operation guarantees not only safety but also an exceptionally comfortable and enduring journey for passengers, making each trip a delightful and enjoyable experience.



LAYOUT ARRANGEMENT

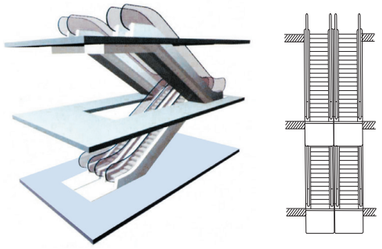
INTERRUPT LAYOUT

This layout is flexible and occupies a small space. It can fulfill one-way intermittent passenger flow. Suitable for small shopping centers and supermarkets.



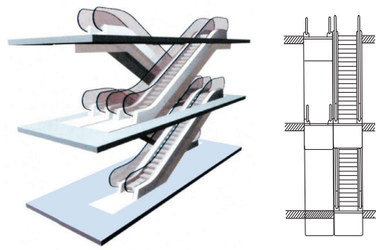
PARALLEL & CONTINUOUS LAYOUT

This layout is commonly used in large shopping malls and public areas with a higher two-way passenger flow. During peak passenger flow hours, the direction of the separate escalators can be adjusted, saving energy as well.



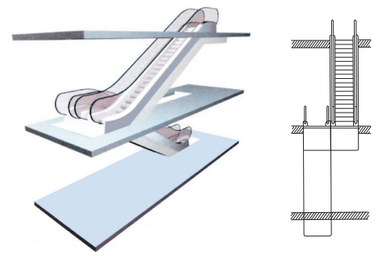
CROSS & CONTINUOUS LAYOUT

This layout is used in large shopping malls and public buildings. It is designed to minimize running time as much as possible.



CONTINUOUS LAYOUT

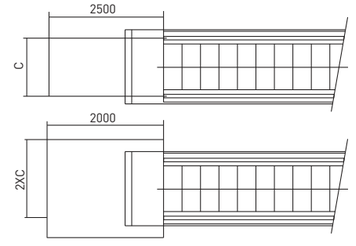
Saves more space compared to the cross layout. It can fulfill one-way continuous passenger flow. Primarily used in medium and small department stores and shopping malls.



INSTALLATION GUIDANCE

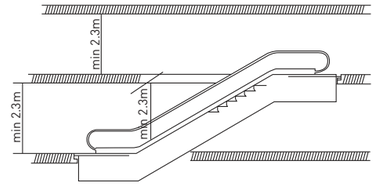
Other than construction drawing dimensions and requirements specified in the sales contract, compliance of guidelines listed below is also required.

- To ensure the safe operation of escalators and moving walks, it is essential to maintain adequate space at each landing area (please refer to the drawings for guidance).
- C = Handrail belt width



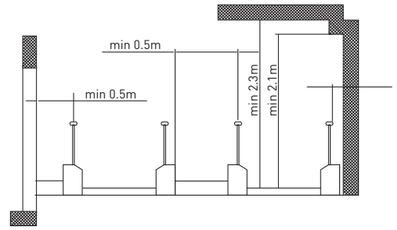
Vertical safety distance

- There should be at least 2.3m safety distance from any obstacles at any point on the step/pallet.
- Notice: if the vertical rise of one escalator, which is installed above another one, is less than 3.3m, the upside safety distance can not reach 2.3m.

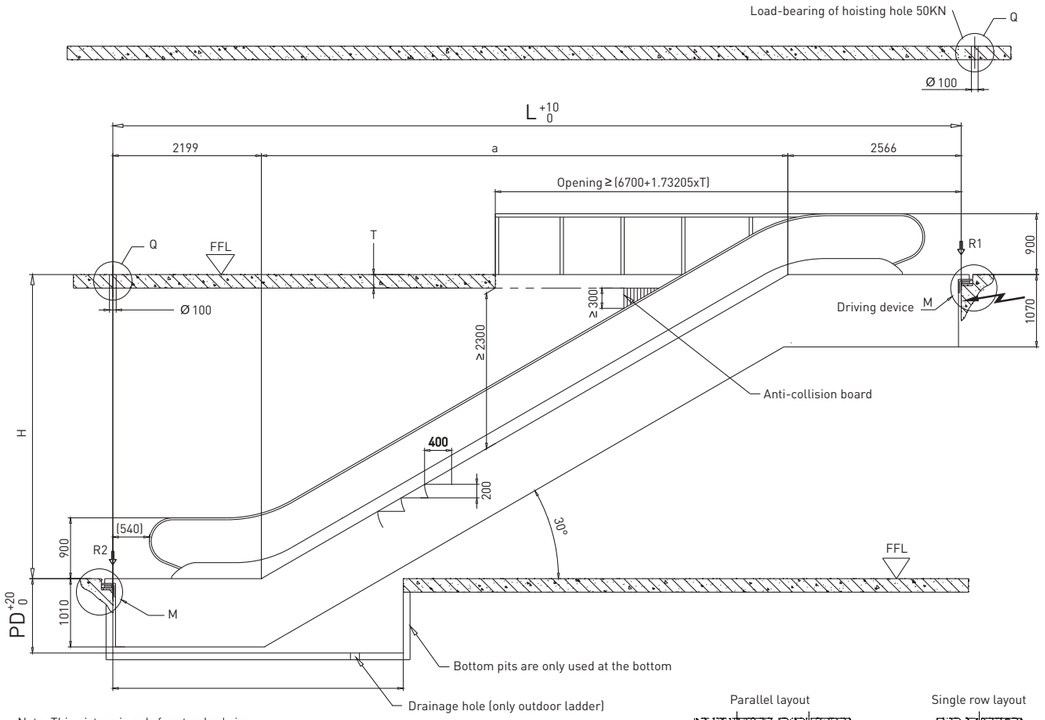


Escalators and moving walk horizontal safety distance

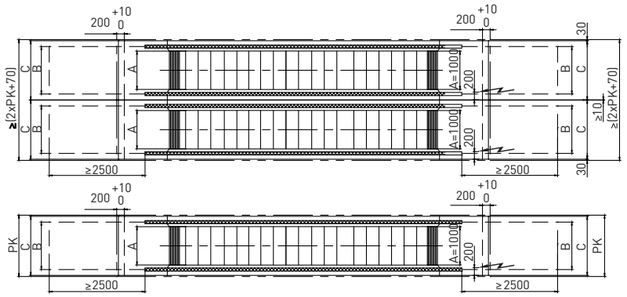
- Horizontal safe distance from the outside edge of the handrail to the wall or other obstacles must be more than 80mm.
- The vertical safe distance above the step/pallet should be more than 2.3m.
- The vertical safe distance above the handrail space should be more than 2.1m.
- In case of floor spaces or the cross layout of escalators and moving walk, the horizontal safe distance between the handrail center and the object should be more than 0.5m.
- If the above-mentioned requirements cannot be met, a special protective device and a collision-proof baffle should be set.
- For special protective device and collision-proof baffle, please contact with MASHIBA-RHINE Elevators.

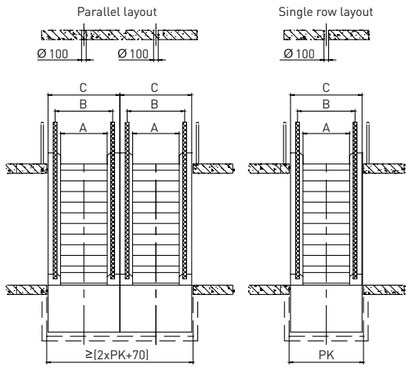


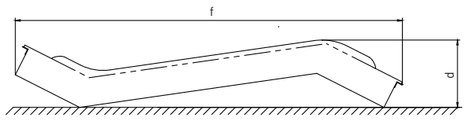
30° COMMERCIAL ESCALATOR CONSTRUCTION LAYOUT

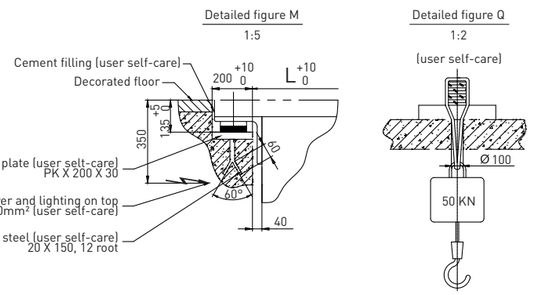


Note: This picture is only for standard size









MASHIBA Rhine

30° COMMERCIAL ESCALATOR SPECIFICATION

Type	Rise	Weight	Support loads		Transport size	
			R1	R2		
	H	KN	KN	KN	d	f
LE-600	3000	57	46	41	2172	11177
	3500	60	49	44	2217	12165
	4000	63	52	47	2254	13155
	4500	67	56	50	2284	14146
	5000	70	59	53	2309	15138
	5500	74	62	56	2330	16131
	6000	77	65	59	2348	17125
LE-800	3000	59	62	47	2066	10788
	3500	63	66	50	2101	11788
	4000	67	60	59	2130	12769
	4500	70	64	59	2153	13762
	5000	74	68	60	2172	14755
	5500	78	74	66	2188	15750
	6000	81	78	69	2201	16745
LE-1000	3000	63	59	53	2066	10788
	3500	67	64	57	2101	11788
	4000	71	68	61	2130	12769
	4500	75	73	65	2153	13762
	5000	79	79	71	2172	14755
	5500	82	84	75	2188	15750
	6000	86	88	79	2201	16745

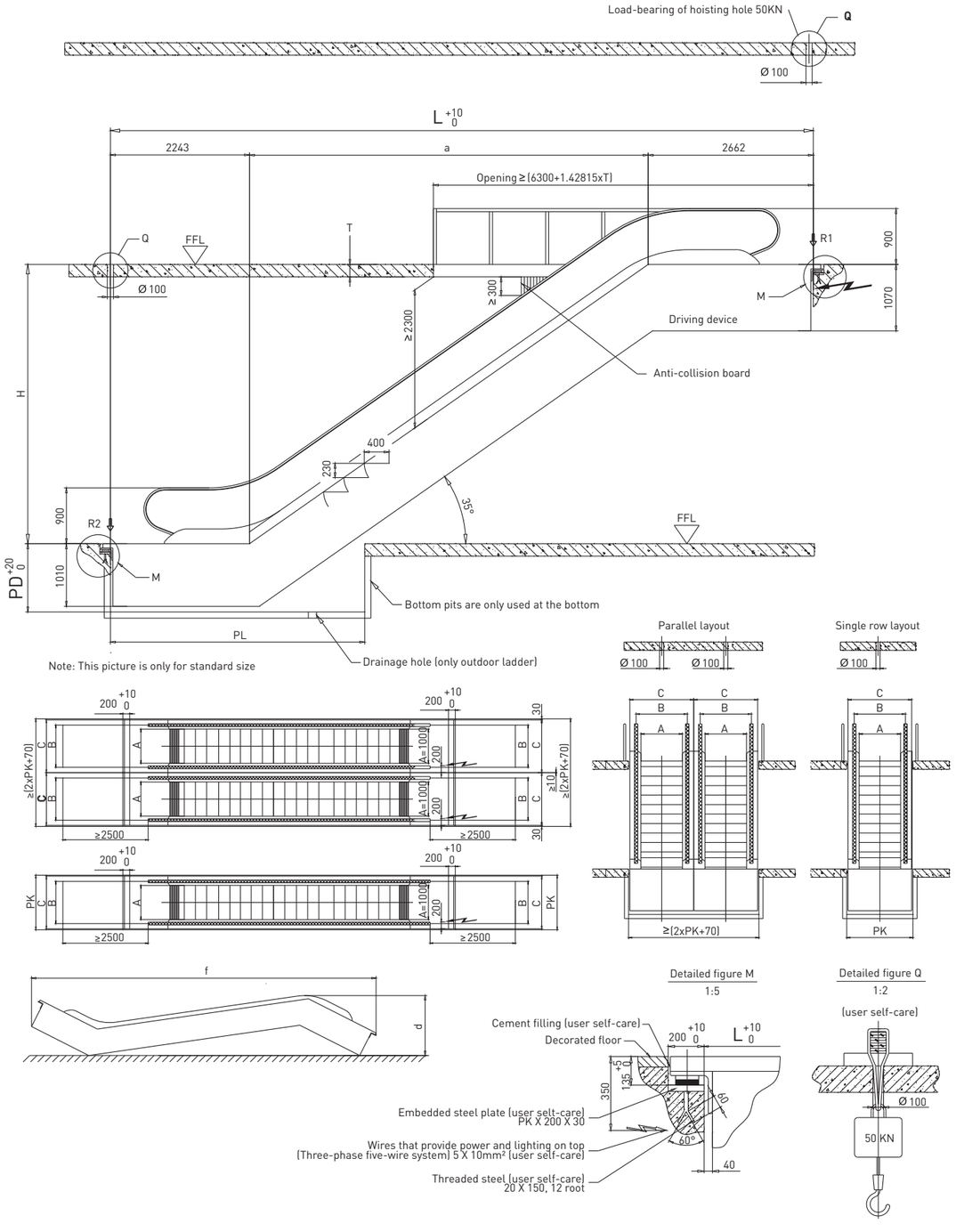
Note: The weight data value is for reference only

Type	A (Step width)	B (Handrail center distance)	C (Width of escalator)	PK (Width of shaft)
LE-600	600	838	1140	1200
LE-800	800	1038	1340	1400
LE-1000	1000	1238	1540	1600

Remarks:

1. If L > 15.2m, an intermediate support is required. Intermediate Support Beams or Column shall be provided by others;
2. If step width is 600mm, upper landing shall be increase 417mm

35° COMMERCIAL ESCALATOR CONSTRUCTION LAYOUT



35° COMMERCIAL ESCALATOR SPECIFICATION

Type	Rise	Weight	Support loads		Transport size	
			R1	R2		
	H	KN	KN	KN	d	f
LE-600	3000	54	43	39	2291	10458
	3500	57	46	41	2345	11309
	4000	60	49	44	2389	12163
	4500	64	52	46	2425	13019
	5000	67	54	49	2456	13877
	5500	70	57	51	2481	14737
	6000	73	60	54	2503	15598
LE-800	3000	56	49	44	2177	10073
	3500	60	52	47	2219	10926
	4000	63	56	50	2253	11782
	4500	66	59	53	2281	12640
	5000	70	62	56	2304	13500
	5500	73	65	59	2324	14362
	6000	76	69	61	2340	15224
LE-1000	3000	60	56	50	2177	10073
	3500	64	60	53	2219	10926
	4000	67	64	57	2253	11782
	4500	71	67	60	2281	12640
	5000	74	71	67	2304	13500
	5500	78	77	69	2324	14362
	6000	82	81	72	2340	15224

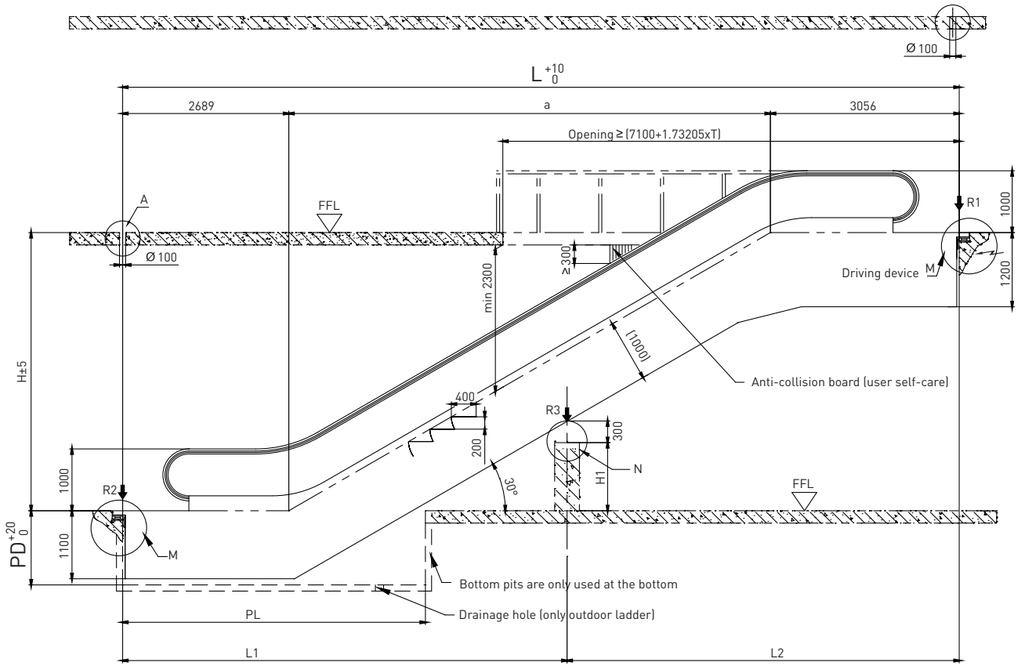
Note: The weight data value is for reference only

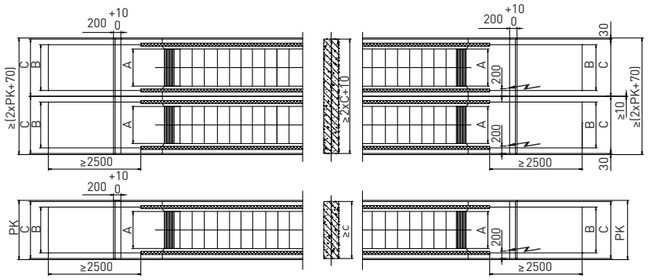
Type	A (Step width)	B (Handrail center distance)	C (Width of escalator)	PK (Width of shaft)
LE-600	600	838	1140	1200
LE-800	800	1038	1340	1400
LE-1000	1000	1238	1540	1600

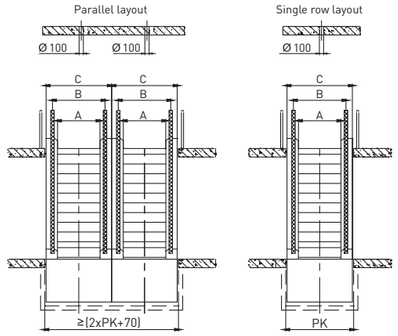
Remarks:

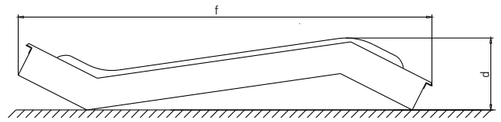
1. If L > 15.2m, an intermediate support is required. Intermediate Support Beams or Column shall be provided by others;
2. If step width is 600mm, upper landing shall be increase 417mm

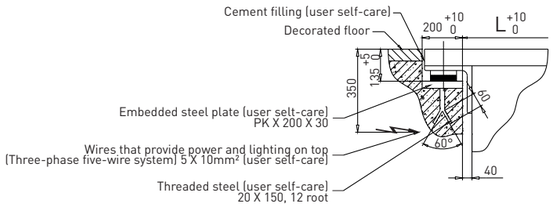
30° PUBLIC TRAFFIC ESCALATOR CONSTRUCTION LAYOUT

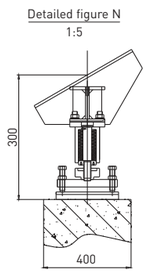


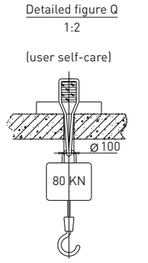












MASHIBA Rhine

30° PUBLIC TRAFFIC ESCALATOR SPECIFICATION

Type	Rise	Weight
	H	KN
LE-600	3000	73
	3500	76
	4000	80
	4500	84
	5000	88
	5500	92
	6000	96
	6500	100
	7000	103
	7500	107
	8000	112
	8500	115
	9000	120
	9500	123
	10000	127
	10500	130
	11000	135
	11500	139
	12000	142

Type	Rise	Weight
	H	KN
LE-800	3000	76
	3500	79
	4000	83
	4500	87
	5000	92
	5500	96
	6000	100
	6500	104
	7000	107
	7500	112
	8000	116
	8500	120
	9000	124
	9500	128
	10000	132
	10500	141
	11000	145
	11500	149
	12000	154

Type	Rise	Weight
	H	KN
LE-1000	3000	79
	3500	83
	4000	87
	4500	92
	5000	96
	5500	100
	6000	104
	6500	108
	7000	113
	7500	117
	8000	121
	8500	130
	9000	135
	9500	139
	10000	143
	10500	147
	11000	151
	11500	156
	12000	160

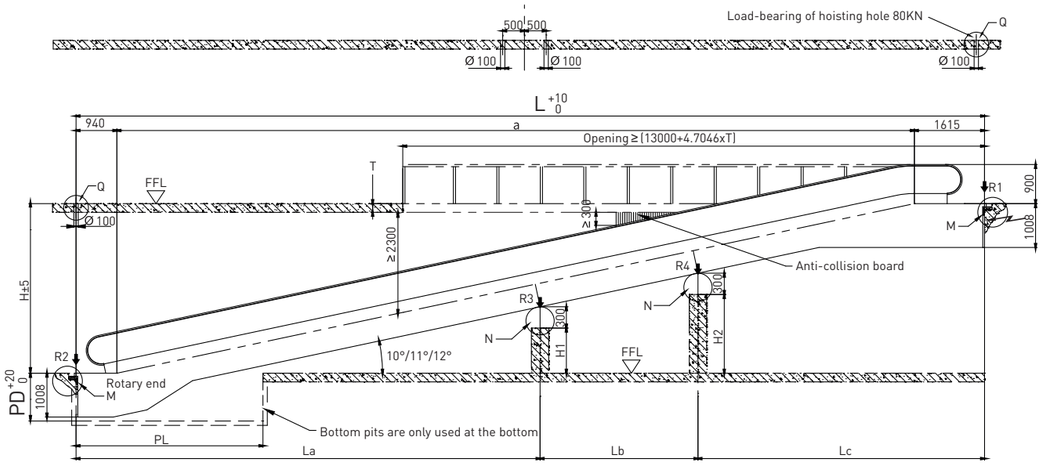
Note: The weight data value is for reference only

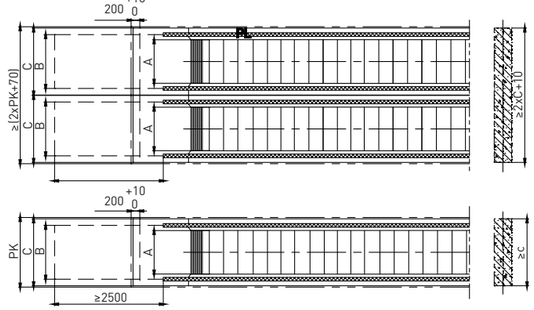
Type	A (Step width)	B (Handrail center distance)	C (Width of escalator)	PK (Width of shaft)
LE-600	600	910	1200	1260
LE-800	800	1110	1400	1460
LE-1000	1000	1310	1600	1660

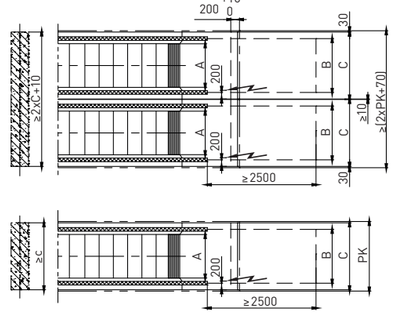
Remarks:

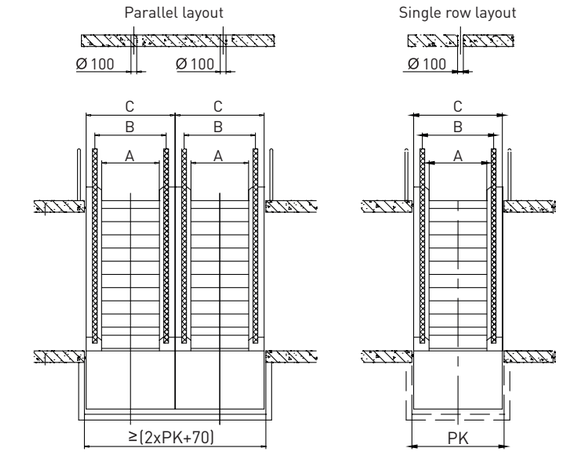
1. If L > 15.2m, an intermediate support is required. Intermediate Support Beams or Column shall be provided by others;
2. If step width is 600mm, upper landing shall be increase 417mm

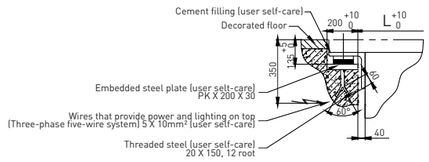
TILTED MOVING WALK CONSTRUCTION LAYOUT

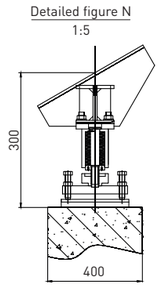


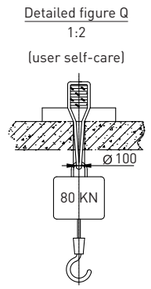


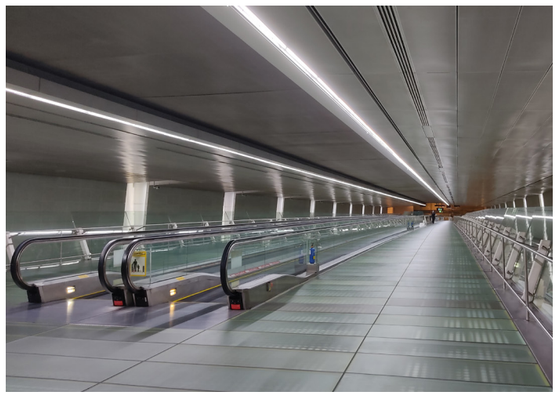












TILTED MOVING WALK SPECIFICATION PARAMETERS

Support		
Without mid-support	Single mid-support	Double mid-support
R1=L*q+M	R1=Lb*q+M	R1=Lb*q+M
	R2=La*q+N	R2=La*q+N
R2=L*q+M	R3=(La+Lb)*q*1.3	R3=(La+Lc)*q*1.3
		R4=(Lb+Lc)*q*1.3

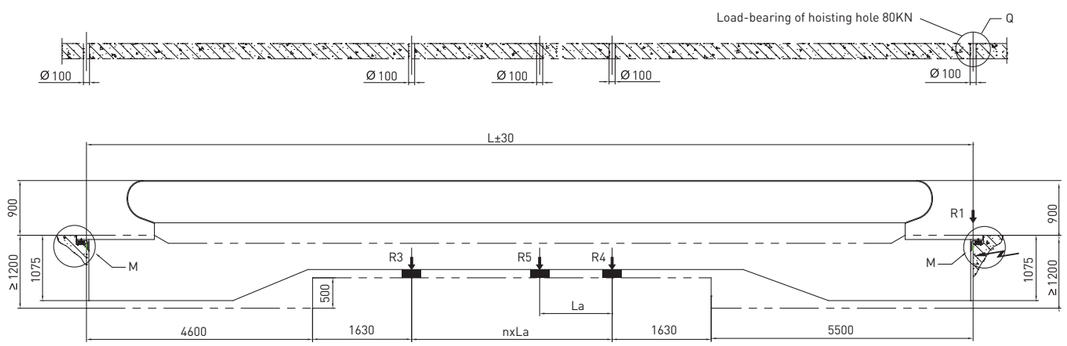
Support force data			
Without mid-support	q	M	M
800	0.0039	9.5	4.5
1000	0.0045	11	5

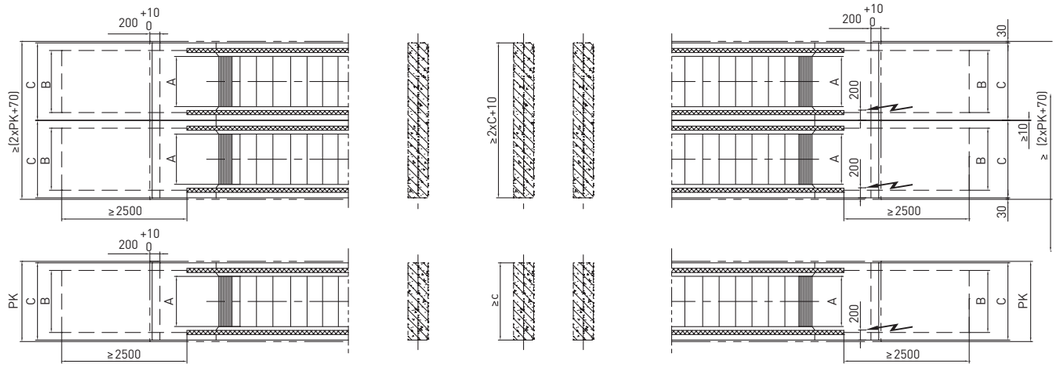
Type	A (Step width)	B (Handrail center distance)	C (Width of escalator)	PK (Width of shaft)
LC-800	800	1038	1340	1400
LC-1000	1000	1238	1540	1600
LC-1200	1200	1438	1740	1800
LC-1400	1400	1638	1940	2000

Remarks:

1. If L > 15.2m, an intermediate support is required. Intermediate Support Beams or Column shall be provided by others.

HORIZONTAL MOVING WALK CONSTRUCTION LAYOUT





HORIZONTAL MOVING WALK PARAMETERS

Type	A (Step width)	B (Handrail center distance)	C (Width of escalator)	PK (Width of shaft)
LC-800	800	1038	1340	1400
LC-1000	1000	1238	1540	1600
LC-1200	1200	1438	1740	1800
LC-1400	1400	1638	1940	2000

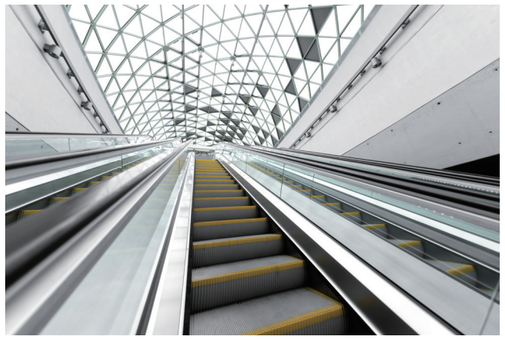
Remarks:

1. If L > 15.2m, an intermediate support is required. Intermediate Support Beams or Column shall be provided by others;
2. If step width is 600mm, upper landing shall be increase 417mm

WORK NOT INCLUDED IN SUPPLY SCOPE

1. Any structural work, such as opening on floors to accommodate the escalators or moving walks or the installation of necessary supporting bases or beams.
2. Finishes to peripheral architecture after installation.
3. Pit water proofing work.
4. Installation of handrails fences or other safety features around the escalators or moving walks.
5. Escalator truss exterior cladding work; bottom illumination work. These items are not included in the supply scope, but can be supplied with additional cost at the request of the customer.
6. Installation of fire protection system and other building safety features.
7. Building electrical work (Electrical power supply source for escalator or moving walk operation, maintenance and lighting must be provided by others / or building owner to the electric panel at escalator machine room, earthing cable must also be provided by others / or building owner).
8. Other wiring work, such as interlocking with fire protection system, other building safety system etc.
9. Any other architectural work, such as the installation of partitions or fences around landings or modification of existing architectural and building work to facilitate installation of the escalator or moving walk.
10. Installation of wedge guard plate where the escalator or moving walk intersects with ceiling/building structure or wherever escalators or moving walks intersect.
11. Installation of barriers or safety railings in between paired escalators or moving walks.







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