

**WEBSTAR**

—— 韦伯电梯 ——

# 扶梯维护说明书

WE 系列

2018 年 06 月

**韦伯电梯有限公司**

WEIBO ELEVATOR CO., LTD.



## 目 录

1.一般介绍.....	3
2.安全操作与使用.....	5
3.维修与保养.....	6
4.维保操作项目.....	7
5.备件清单.....	15

注意：由于产品的持续改进和客户差异化需求的影响，实际产品和说明书可能会略有差异，维护时以实物产品为准。

本维护说明书只介绍一般维护，

## 一. 一般介绍 Introduction

## 1.1 WE05 自动扶梯的性能: Performance of WE05series of escalators

自动扶梯是由两台带式输送机和一台链式输送机组成, 带指扶手带系统、链指梯路系统。

WE05 扶梯是我公司最新的自动扶梯产品, 采用两条特殊的滚子链传动, 符合 EN115 及国家标准 GB16899-1997 《自动扶梯与自动人行道的制造与安装安全规范》。它具有结构紧凑、外形美观、运行平稳、噪音低、维修方便等特点。广泛应用于商场、宾馆、写字楼等场所。An escalator is consisted of two belt conveyors and a chain conveyor. The belt conveyor is designed to drive the handrail system, at the same time the chain conveyors are designed to drive the steps. SDA series of escalators are the newest products of our company, which comply with the EN115 rule and National Standard GB16899-1997", Safety rules for the construction and installation of escalators and passenger conveyors". Not only the escalators have compact structures and beautiful outlines, but also they run smoothly with low noise and can be maintained easily. They are widely used on a lot of locations such as department stores, hotels, office buildings and etc.

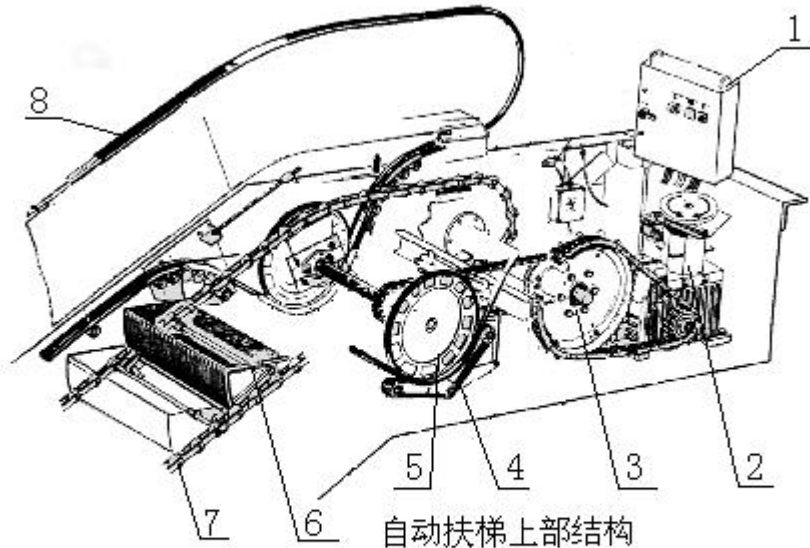
## 1.2 WE05 自动扶梯主要参数: Main Parameters

型 号 Model	WE05		
梯级宽度 Nominal width of step B	1000mm	800mm	600mm
输送能力 Capacity Q	6000persons/h	4800persons/h	3600persons/h
提升高度 Rise of an escalator H	≤6m		
倾斜角度 Angle of inclination $\alpha$	30° 35°		
速 度 Nominal speed V	0.5m/s		

## 1.3 WE05 自动扶梯的主要结构: Main parts

Superstructure of an escalator

1. Controller 2. Motor 3. Main shaft 4. Parts of holding belt 5. Friction wheel 6. Step

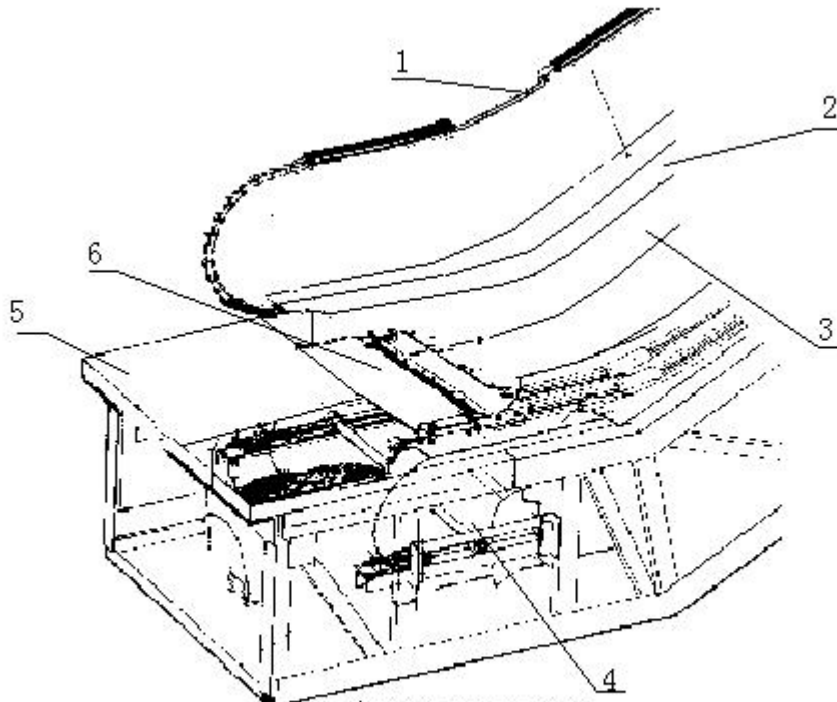


1电控箱 2主机 3驱动主轴 4压带部件 5摩擦轮 6梯级 7梯级链 8扶手带

7. Step chain 8 Handrail

Lower structure of an escalator

1. Balustrade 2. Interior profile and balustrade decking 3. Skirting 4. Guide rails  
5. Front tread 6. Combs



自动扶梯下部结构

1扶手支架 2内外盖板 3围裙板 4导轨系统 5前沿板 6梳齿板

### 1.3.1 驱动系统 Driving system

WE05 自动扶梯的驱动系统位于自动扶梯的上部机房内。驱动机构主要由电机，减速机和制动器组成，减速机是精密蜗轮减速机，采用特殊的尼曼齿形和先进的加工工艺，具有结构紧凑、承载力大、工作平稳和噪音小等优点，电机轴通过弹性联轴器与减速机相连，这对装配和维修带来方便，电机功率按提升高度，斜度和梯级宽度进行配置。The driving system of an escalator, which is consisted of a motor, a reducer and an operational brake, is located at the driving station. The reducer is a nice worm gear reducer adopting the special Niman teeth and the advanced manufacturing techniques, which has the advantage of the compact structure, a heavy carrying capacity, calm operation, low noise and etc. A flexible coupling connects the motor shaft with the reducer, which would benefit assembly and maintenance. The motor capacity is designed according to the rise of the escalator and the step width.

### 1.3.2 桁架 Truss

WE05 自动扶梯的桁架是一个半封闭的金属骨架。它承担扶梯全部载荷，其两端着地处放置在建筑物的承载梁上，为减少扶梯的震动，在桁架的支承点和建筑物之间垫有特殊的橡胶减震部件。整个桁架的挠度小于支承点水平跨度的 1/1000。The truss of a SDA escalator is half closed metal supporting structure, which supports both the escalator's and the passengers' weight. Both its ends contacting the ground are standing on the supporting beam of the building. In order to reduce the vibration of the escalator, a special damping rubber is located between

the building and the supporting points of the truss. The deflection of the whole truss does not exceed 1/1000 of the horizontal distance between the supporting points.

### 1.3.3 导轨系统 Guide rail system

WE05 自动扶梯的整个导轨系统由高强度的导轨型材和导轨支承件及转向壁等零部件组成, 整个导轨系统经安装后牢固地固定在桁架内。The guide rail system of a SDA escalator is composed of high strength guide rail profiled bars, guide rail supporting parts, turning wall and other components. The guide rail system is installed in the truss.

### 1.3.4 梯级 Steps

WE05 自动扶梯的梯级为铝合金整体压铸, 重量轻、尺寸精度高, 踏板和踢板上均有沟槽, 梯级运行时相邻两梯级踏板与踢板上的沟槽啮合, 踏板上的沟槽与梳齿啮合, 可防止异物挤入。梯级上带有黄色安全线、减震泥、梯级副轮和导向块。Steps used in a SDA escalator are extruded and cast as a whole, which are made of aluminum alloy. They have the advantage of lightness and accuracy. There are a lot of grooves in their pallets and risers. When the steps are moving, the grooves of the pallets engage with the comb teeth, which can prevent foreign bodies from dropping into the escalator. There are yellow safety lines on each side of the steps and damping mud inside the steps. Step auxiliary wheels and guide blocks are installed on the steps.

### 1.3.5 梯级链 Step chains

WE05 自动扶梯的梯级链为两条扶梯专用的链。节距为 133.3mm, 主轮的轮毂用聚胺脂制成, 内圈采用双面密封球轴承, 可以减少链条与链轮啮合时的噪音。The step chains are composed of two pairs of chains especially for escalators with a pitch line of 133.3mm. The mail wheel hub is made of polyurethane and the rim is consisted of a double faces sealed ball bearing, which can reduce the noise made by the mesh between chains and wheels.

### 1.3.6 围裙板 Skirt panel

WE05 自动扶梯的围裙板位于梯级的两侧, 围裙板表面光滑, 和梯级之间的最大间隙为 4mm, 两边间隙之和不超过 7mm, 其作用是把扶梯的载客部件和传动部件隔离开来, 可防止意外事故的发生。Skirt panels used by SDA series of escalators are located on each side of the steps, which surfaces are smooth. The clearance between skirts panels and steps shall not exceed 4mm at each side, and 7mm for the sum of clearance measured at both sides at two directly opposite points. The skirt panels separate the carrying parts from the driving parts of the system, which can prevent accidents from happening.

### 1.3.7 扶手支架 Balustrade

扶手支架是保证乘客安全的重要部件, SDA 自动扶梯的护壁板为 10mm 的钢化玻璃, 固定在不锈钢扶

手支架内, 扶手带安装在扶手支架上, 结构简单、外形美观。The balustrade is an important part to insure the passengers' safety. The interior paneling of a SDA escalator is made of tempered glass with a thickness of 10mm and fastened in the stainless steel balustrade. It has a compact structure and a beautiful outline.

### 1.3.8 梳齿板 Combs

梳齿板位于自动扶梯的上、下进出口处。梳齿板上覆盖着带有防滑块的不锈钢花纹面板, 梳齿采用 ZL102 压铸成型, 用螺钉固定在梳齿板的前端并与梯级的平行齿槽相啮合, 一旦在梯级与梳齿相啮合的地方被异物卡住, 梳齿板向后移动触及安全开关, 使自动扶梯停止运行, 起安全保护作用。The combs are located at both landings of an escalator. They are covered with textured panels made of stainless steel to prevent sliding. The comb teeth extruded and cast by ZL102, are fastened on the front part of the combs with bolts. They engage with the step's parallel teeth grooves. In case of the teeth being trapped by foreign bodies, the combs move backward to touch the safety switch and the escalator stop to insure passengers' safety.

### 1.3.9 前沿板 Front tread

前沿板安装在自动扶梯的上、下机房上, 是乘客从地面至扶梯梯级的过渡区, 前沿板上覆盖着带有防滑块的不锈钢花纹面板, 并且前沿板均可打开, 供日常清扫积灰和维修保养之用。The front treads are installed on the top of each machine room of an escalator, which is the transition from the steps to the ground. They are covered with textured panels made of stainless steel to prevent sliding. The front treads can be opened when it is necessary to clean or maintain the escalator daily.

### 1.3.10 扶手带 Handrail

扶手带是一种全封闭式外表无接头, 以钢丝与纤维编织, 外层覆有优质橡胶的橡胶制品, 安装在扶手支架上, 其运行速度比梯级运行速度快 0~+2%, 供乘客乘梯扶手之用。The handrail is made of high quality rubber and is completely close without any joint on the surface. Its outer layer is woven by fiber and steel wire and covered with nice rubber. The handrail is installed on the balustrade. It runs faster 0 to 2% than the steps in order that the passengers can hold the handrail.

### 1.3.11 内外盖板 Interior profile and balustrade decking

内外盖板安装在护壁板与围裙板及护壁板与外装饰板之间, 用易于拆卸的发纹不锈钢盖板。The interior profile is installed between the skirting and the balustrade interior, and the balustrade decking between the skirting and the exterior paneling. They are made of striped stainless steel cover plates and easy to be disassembled.



### 1.3.12 电气控制 Electric control

WE05 自动扶梯采用 PLC 控制, 由两个控制箱组成, 控制箱分别安装在扶梯的上机房和下机房内, 上部为主电源箱, 下部为 PLC 控制箱, 为了安全和便于维修, 在上下控制箱上部都有检修插座和急停按钮, 前沿板打开后控制箱可向上提出。The electric control adopts PLC control method in a SDA escalator, which is consisted of two control boxes. One is a power box that is fitted in the driving station, and the other is a PLC control box that is fitted in the return station. Considering safety and convenience of maintenances, there are an inspection socket and an emergency stopping button on both control boxes. The control box can be taken out when the front tread is open.

## 1.4 安全保护: Safety protection

### 1.4.1 梯级链断裂或伸长保护装置 Protection devices for ruptured or extended step chains

安装在涨紧导轨涨紧弹簧盖处, 当任何一根梯级曳引链断裂或伸长时立即动作, 切断机电源并制动, 显示相应故障号码。The protection devices are fitted on the return station. In the case of rupture or extension of any piece of traction chain, the safety devices take effect. The power is cut and the steps stop at the same time. And the corresponding failure number is also displayed.

### 1.4.2 梯级下陷安全保护装置 Safety protection device for sagging steps

当梯级发生下陷时, 梯级的踢板或梯级轴触动碰杆带动打块转动使开关动作, 切断机电源并制动, 显示相应故障号码。In case the steps are sagging, the steps pallet or the steps shaft touch a stick, and then the stick turns on the switch to cut the machine power and the steps stop. At the same time, the corresponding failure number is also displayed.

### 1.4.3 梯级与围裙间隙安全开关 Safety switch for Clearance between steps and skirting

在自动扶梯上、下水平段, 分别装有 2 只安全开关 (左、右), 当裙板受到梯级或异物进入梯级与裙板间隙内, 使裙板受力变形, 引起安全开关动作, 切断机电源并制动, 显示相应故障号码。There are two safety switches on each horizontal part of an escalator respectively. The skirting panel is deformed because of extrusion when it collides with steps or when foreign bodies are trapped in the clearance between steps and skirting. And this make the safety switches take effect. The machine power is cut and the steps stop. At the same time, the corresponding failure number is also displayed.

#### 1.4.4 梳齿异常安全保护装置 Safety protection device for combs

在上、下梳齿板的后面各有两个安全开关（左、右），当梳齿板受到 750N 的推力时，梳齿板向后移动，使安全开关动作，切断电机电源并制动，显示相应故障号码。There are two safety switches behind each combs respectively, one is on the right and another on the left. The combs move backward when a single push force of 750N is exerted on the combs, which makes the safety switches take effect. Then the machine power is cut and the steps stop. At the same time, the corresponding failure number is also displayed.

#### 1.4.5 手指保护装置 Protection device for fingers

在扶手带的四个进出口都有安全保护装置，如有乘客的手或异物进入进出口，触使进出口安全装置动作，切断电机电源并制动，显示相应故障号码。There are safety protection devices at each of the four entrances. In the case of foreign bodies or passengers' fingers trapped at the entrances, the safety devices take effect. The machine power is cut and the steps stop. At the same time, the corresponding failure number is also displayed.

#### 1.4.6 驱动链保护装置 Protection device for driving chain

当驱动链过分伸长或断裂，触动安全保护开关，切断电机电源并制动，显示相应故障号码。In case of rupture or extension of the driving chain, the safety devices take effect. The machine power is cut and the steps stop. At the same time, the number is also displayed corresponding to this failure.

#### 1.4.7 扶梯转速监控 Monitoring for the speed of an escalator.

在扶梯曳引机输出链轮下有一电子测速装置，在扶梯运行时，**如果运行速度高于或低于额定转速的 50%时（此数据有问题，请确认）**，控制器发出停车信号，扶梯停止运转。An electronic tachogenerator is fitted under the output chain wheel of the drive machine. **If the speed inspected by the equipment is less than or exceed 50% of the rated speed**, the controller sends a signal to stop the machine.

#### 1.4.8 梯级照明 Step lighting

在扶梯的上下水平段梯级下面各有一个绿色照明灯管，使乘客在踏上梯级时很容易看清梯级的边缘，以免发生危险。A green lighting bulb is fitted under each horizontal part of steps of an escalator, and then passengers are able to see the edge of steps clearly. It can prevent a danger.

#### 1.4.9 故障显示器 Failure display

为了便于维修，SDA 自动扶梯配备了故障显示器，该装置安装于下部控制屏或围裙板上，如果扶梯发生故障，检修人员可根据故障显示器的信息查阅故障代码表，确定故障的情况，故障代码表请参见电气维护说明书。Considering the convenience of maintenance, SDA series of escalators

are equipped with a failure display, which is fitted on the down part of the controller or on the skirting. In case any malfunction of the escalator occurs, the inspector can consult the failure code table according to the information supplied by the display and confirm what is wrong with the escalator. You can get the details about the failure code table from “Electric Maintenance Instruction.”

#### 1.4.10 加油装置 Lubricating device

加油装置为扶梯润滑提供了保障,为此设置了自动和手动方式,具体操作方法参见电气维护说明书. The device ensures lubricating driving chains and step chains of an escalator. You can choose automatic or manual way to lubricate. The details about this operation can be gotten from “Electric Maintenance Instruction”.

## 二. 安全操作与使用 Safety operation and usage

### 2.1 安全使用规则: Safety requirements for use

- a) 乘客乘梯时,应手扶扶手带,乘客面朝运行方向,双脚站在黄色标记线以内; Passengers should hold the handrail, stand facing the direction of travel and keep feet within the yellow marking lines.
- b) 小孩、老人乘梯时,必须有大人搀扶; Small children or elders must be held firmly when they take an escalator.
- c) 带宠物乘梯时,必须抱在怀中; Pets must be carried.
- d) 不准运送笨重物体,赤足者不准进入自动扶梯; Transportation of bulky and heavy loads not permitted; Use is permitted only with footwear.
- e) 不准在自动扶梯上运输手推车。Transportation of pushcart is not permitted

### 2.2 运行操作原则: Safety requirements for operation

- a) 使用自动扶梯之前,必须清除自动扶梯上下梳齿和梯级上的异物; Before an escalator is put into operation, foreign bodies on the combs and steps must be cleared.
- b) 自动扶梯必须是经过培训的司机操作,扶梯必须是空载启动; Only a trained person is permitted to operate an escalator. An escalator cannot be started with a load.
- c) 若需改变自动扶梯的运行方向时,应当在自动扶梯完全停止后,才能操作转换运行方向。An intended reversal of the direction of travel shall be possible only if the escalator stands still

#### 2.2.1 正常运行: Normal condition

- a) 合上总电源开关, 接通 380V 动力电源, 220V 控制电源; Turn on the electric power including 380V power for the machine and 220V power for the control system.
- b) 用专用钥匙按需要的运行方向接通开关, 此时梯级照明灯亮同时听到启动铃声, 梯级和扶手带立即运行。启动后, 必须把钥匙回复到中间位置后拔出, 操作者方可离开扶梯; Turn the switch on according to the required direction of travel by a special key, then the step lighting bulb is on and the startup bell rings. At the same time the escalator set out to move. After starting the escalator, the operator is not permitted to leave the escalator without turning the key back to the middle or without drawing it out.
- c) 按下停止按钮, 扶梯立即停止运行。As soon as the stop button is pressed down, the escalator stops immediately.

### 2.2.2 故障: Failure

- a) 用钥匙开关启动自动扶梯后, 若扶梯不能运行, 则应检查一下电源总开关是否合上, 以及扶梯控制箱上主开关、维修控制开关是否合上, 若此时还是不能启动, 则有必要检查以下自动扶梯故障显示的显示代码, 故障代码请参见 SDA 自动扶梯电气维护说明书。If an escalator can't run after it is started with a special key, the power switch and the switch of control boxes and the inspection control switch should be checked whether they have been turned on. If all these switches are on and the escalator still fails to start, it is necessary to check the failure display of the escalator for the failure code. You can get the details about the failure code from "SDA Escalator Electric Maintenance Instruction".
- b) 当发生安全设施范围内的故障时, 均能自动切断电机电源, 扶梯自动停止, 维修人员查明故障。If a failure occurs which is permitted by the safety rules, the machine power should be cut off automatically to stop the escalator. Then the maintenance men can find out the failure.
- c) 当出现异常故障时, 如人员摔倒, 工作人员应迅速按下停止按钮或切断电源。If extra incidents happen such as people falling, the operator should press down the stop button or cut off the power supply as quickly as possible.

## 三. 维修与保养 Maintenance and repair

### 3.1 自动扶梯维修保养安全预防措施 Safety protection measures during maintenance and repair

- a) 在维护、修理期间应采取预防措施, 以确保未经专职人员同意, 不能启动自动扶梯; During maintenance and repair, precautions should be taken so that escalators cannot be started without the consent of the person performing such work.
- b) 自动扶应由称职的人员进行定期维修保养。Escalators should be regularly maintained and

repaired by competent personnel.

3.2 在任何修保养工作开始之前, 应做下列准备: Before maintenance and repair, the following things should be prepared first.

- a) 设置围栏, 竖起“例行保养、闲人免进”的标牌; Set up an enclosure and notes with the inscription “Routine Repair, No Access”
- b) 将主开关定于“关”位置上并上锁; Turn the main switch off and lock it.
- c) 将检修开关盒插接于自动扶梯上或下机房中电控柜接口上 Inspection switch boxes shall be connected with the electrical controller in both driving and return stations in an escalator.

3.3 在维保过程中应遵循下列规则 The following regulations should be complied with during maintenance and repair

- a) 试运行只能使用检修开关盒, 将检修插头插入上或下机房控制柜检修插座内 (检修完毕后拔下); Only the inspection switch boxes should be used during test operations. At the same time, the inspection plugs should be put into the inspection outlets of the controller in either of driving and return stations. Pull the inspection plugs out after inspection.
- b) 不要启动带有负载的自动扶梯; Do not start an escalator with a load.
- c) 进入梯路内进行任何维修, 应将检修开关盒或上下机房内的急停按钮处于断开状态; Before entering into an escalator for maintenance and repair, the emergency stop button on the inspection switch boxes or in either of driving and return stations should keep in operation.
- d) 对超过安全电压的系统进行维修时, 应防止触电危险; Avoid the risk of getting an electric shock when repairing the system with the higher voltage than safety.
- e) 将不正常的现象记录。Record the abnormal phenomena.

3.4 维保周期的确定: Period of maintenance and repair

3.4.1 定期维保对维护自动扶梯, 防止损坏、延长其使用寿命至关重要。Periodical maintenance and repair are vital to prevent an escalator to be damaged and to extend the length of its life.

3.4.2 决定维保周期的因素如下: The key factors determining the period of maintenance and repair as follows:

- a) 安装环境 (室内或室外, 室外带遮蓬); Running conditions (indoor, outdoor or outdoor with a roof)
- b) 每周运行时间; Running time per week
- c) 使用频率。Frequency of operations

### 3.4.3 维保工作可分为三类: Three types of maintenance and repair

- a) 日常维保: 对自动扶梯的外观、卫生和润滑进行维护; Daily: Include maintaining appearance, sanitation and lubrication of an escalator.
- b) 小维保: 包括检修主要功能, 基本清洁工作, 润滑; Light: include inspecting main function, basic cleaning work and lubrication.
- c) 大维保: 包括检修全部功能, 装置以及与运行性能相关的清洁和润滑。Heavy: include inspecting all function, all equipments and doing some cleaning and lubrication work relevant to the running performance.

### 3.4.4 维保周期太长, 会影响安全运行: The too long period of maintenance and repair will influence an escalator to operate safely.

- a) 当每周运行时间少于80小时, 每年4次, 大小维保各2次; If the total running time is less than 80 hours per week, an escalator needs the maintenance and repair 4 times annually, 2 light and 2 heavy.
- b) 当每周运行时间80-120小时, 每年6次, 小维保4次, 大维保2次; If the total running time is up to 80 hours but less than 120 hours per week, an escalator needs the maintenance and repair 6 times annually, 4 light and 2 heavy.
- c) 当每周运行时间超过120小时, 每年8次, 小维保6次, 大维保2次。If the total running time is more than 120 hours per week, an escalator needs the maintenance and repair 8 times, 4 light and 4 heavy.

### 3.4.5 首次维保: First maintenance and repair.

自动扶梯运行 250 小时后, 应进行首次维保。包括所有链条彻底充足润滑, 机房的清洁, 螺钉的紧固, 扶手带和链条张紧程度调整。If the total running time is more than 250 hours after a new escalator is put in operation, it needs the first maintenance and repair. And the first maintenance and repair comprises: lubricating all chains completely, cleaning the machine room, fastening the bolts and adjusting the tension of handrails.

### 3.4.6 具体电气维保请参见电气维护说明书: Detailed electrical maintenance and repair can be referred to the "Electrical Maintenance and Repair Instruction".

#### 四 维保操作项目 Items for maintenance and repair

序号 No	类别 Sort	项 目 Item	保养类型 Type of maintena nce and repair			要 求 Requirements
			A	B	C	
1	功 能 检 查 func tion al insp ecti on	保护栏杆 Balustrades	▲	▲		安全可靠 Safety and reliability
2		安全标志 Safety notices	▲	▲		上下端出入口玻璃上应张贴乘梯安全标志 Safety notices for the users should be stuck to the glass of the access to an escalator.
3		三相电源开关 Three phase power switches	▲	▲		功能可靠 Reliability
4		断、错相保护装置 Protection equipments against phase loss	▲	▲		功能可靠 Reliability
5		钥匙开关 Key switches	▲	▲		功能可靠 Reliability
6		急停按钮 Emergency stopping button	▲	▲		功能可靠 Reliability
7		★ 检测乘客光栅 Detecting passengers optical grating	▲	▲		清洁探头表面, 保证功能可靠 Clean the lens of the detector to insure the reliability.
8		故障、运行方向显示器 Failure and direction display	▲	▲		显示清晰, 准确 Display clearly and correctly
9		检修盒 Inspection boxes	▲	▲		功能可靠 Reliability
10		上端停止按钮 Upper stop button	▲	▲		功能可靠 Reliability
11		下端停止按钮 Lower stop button	▲	▲		功能可靠 Reliability
12						
14	机 房 mach ine room	控制柜 Controller		▲		清洁, 紧固所有螺栓 Clear and fasten all bolts
15		电机速度传感器 Motor tachogenerator	▲	▲		功能可靠 Reliability
16		制动触点 Brake contact	▲	▲		功能可靠 Reliability
17		★附加制动器 Auxiliary brakes		▲		功能可靠 Reliability

18		制 动 距 离 Stopping distances		▲		向下运行,扶梯的制动距离为 0.2-1m 通过制动带上的弹簧压缩量 The stopping distances for unloaded and downward moving loaded escalators shall be between 0.2-1m
19		制 动 装 置 Stopping equipments		▲		功能可靠,制动时闸带应紧贴制动轮表面,松闸时闸带与制动轮之间的最大间隙为 2mm,当制动带厚度磨损 1/4 时,应更换,制动电机温升不应超过 105k Reliability. Firstly, the braking belt should firmly stick to the surface of the brake wheel during stopping. Then when the brake is Releasing, the gap between the belt of the brake and the brake wheel should be less than 2mm. The belt should be replaced by a new one when the thickness of the belt is less than three-fourths of the original because of friction. The rising temperature of the brake motor should not exceed 105k.
20						
21	内 外 盖 板 Interior profile and balu stra de deck ing	外 盖 板 Balustrade decking	▲	▲	▲	表面清洁,连接缝平滑牢固 Clean surface, firm and smooth splices
22		内 盖 板 Interior profile	▲	▲	▲	表面清洁,连接缝隙平滑牢固 Clean surface, firm and smooth splices
23	围 裙 板 Skirting	围裙板安全开关 Safety switches of skirting	▲		▲	功能可靠 Reliability
24		围裙板拼接 Skirting splices	▲	▲		连接表面光滑 Smooth splices
25		围裙板 Skirting		▲	▲	表面清洁 Clean surface
26						
27	梯 Steps	间隙照明 Step lightning		▲	▲	清洁,检查 Clean and inspect
28		导轨 Guide rail	▲	▲		检查工况,清洁,润滑 Inspect working conditions, clean and lubricate



29		梯级链滚轮 Step chain roller	▲	▲		检查工况, 清洁, 润滑 Inspect working conditions, clean and lubricate
30		梯级轴衬 Step bearing sleeves		▲	▲	润滑 Lubricate
31		梯级链 Step chains	▲	▲	▲	采用 68#或 100#润滑油, 加油量与周期具体情况而定 No. 68 or No. 100 oil is used. The lubricating frequency and the amount of oil are determined according to running conditions.
32		梯级与围裙间隙 Clearance between step chains and skirting		▲	▲	单边: ≤4mm; 双边之和: ≤7mm at each side: ≤4mm sum at both sides: ≤7mm
33		切向导轨 Horizontal guide rail		▲		检查工况, 拧紧固定螺钉 Inspect working conditions and screw the fastened bolt firmly.
34		梯级尼龙挡块 Step nylon shield		▲	▲	检查工况, 清洁, 润滑 Inspect the working condition, clean and lubricate
35		梯级 Steps		▲	▲	表面完整无损伤, 踏面筋条良好清洁 Its surface is not damaged and ribs on its tread surface is very clean.
36		梯级链安全开关 Step chains safety switches	▲	▲		功能可靠, 开关间隙为 2mm Reliability. And the switch clearance is 2mm wide.
37		梯级入口 Step entrances		▲		检查梯级位置 (直线段/斜线段) 工况 Inspect working conditions of the steps position (both the horizontal part and the inclining part)
38		梯级驱动链张紧 Step drive chain tension	▲	▲		适当调整弹簧压缩程度, 使梯左右同步 Adjust the compression of the spring to synchronize the right of the steps with the left
39		梯级下陷触点 Step sagging contact		▲		静止时人为动作, 扶梯应不能启动 A still escalator should not be started in case the contact is turned off.
40	Combs Front tread	梳齿 Comb teeth		▲	▲	应完好无损伤, 若连续有两齿断裂, 则及时更换该块梳齿 If two continuous teeth are broken, the combs should be replaced.
41	梳齿	十字沉头螺钉 Crossing-head screw			▲	防锈: 松开所有梳齿螺钉, 润滑 Rustproof: Release and lubricate all screws in the combs

42		梳齿与梯级啮合 mesh between the comb teeth and the steps.	▲	▲	▲	自由通过,无碰擦齿槽间隙:3-4mm Pass freely without collision, the gap between the teeth and the grooves is 3-4mm
43		梳齿踏板 Pallets	▲	▲		检查是否能移动,表面清洁,纹路须对齐 Inspect if the pallets can move, and if its surface is clean and its teeth are aligned. 折下梳齿,通过调整压缩弹簧,用螺丝刀放置在梯级与梳齿踏板之间,手动盘车直至梳齿板能向后移动为止. Bend down the combs and adjust the compressing spring, then place a screw wrench between the steps and the pallets. And hand wind until the pallets can move backward.
44		梳齿踏板侧向导轨 Pallets side guide rail		▲		清洁、润滑 Clean and lubricate
45		梳齿踏板安全开关 Pallets safety switch	▲	▲	▲	功能可靠, Reliability
46		前沿板 Front tread	▲	▲	▲	检查纹路是否对齐,表面清洁, Inspect if the edges are aligned and the surface is clean.
47	扶手系数	扶手带 Handrail	▲	▲	▲	表面光洁、不碰异物、张紧适当 It runs normally with a smooth and clean surface and a appropriate tension.
48	Hand rail coefficient	扶手滑轮群 Handrail pulley group.		▲	▲	检查工况并清洁 Inspect working conditions and clean
49		扶手带内侧 Interior part of handrail		▲		检查滑动面是否磨损 Inspect if the sliding surface is worn.
50		扶手带支承滚轮 Handrail bearing roller		▲		表面清洁,检查工况 Inspect working conditions and clean the surface.
51		扶手带张紧装置 Handrail tension device	▲	▲		张紧适当,并检查滑轮工况 The handrail has an appropriate tension. And its pulley is in a good working condition.
52		扶手带入口触点 Handrail entrance contact	▲	▲		运行时,人为动作,扶梯应立即停止 A running escalator should be stopped at once in case of touching the contact
53		扶手栏板(玻璃) Handrail fence(glass)	▲	▲		表面清洁,检查拼缝是否均匀 It is clean with a symmetric gap.

54		扶手带驱动链张紧 Tension of handrail drive chain	▲	▲		涨紧适当, 松边下垂量为 10mm The handrail has an appropriate tension with a 10mm sag at its loose side.
55		多楔压带 Multi-wedge pressing belt		▲		涨紧适当, 手动 70kg 力对扶手带阻停 测试. It has an appropriate tension. Make a stop test to the handrail with a hand force of 70kg.
56		扶手带速度 Speed of the handrail		▲		不低于梯级速度 Not less than the speed of the steps.
57	主 驱 动 链 Main driv e chai ns	主驱动驱动链 Main drive chains	▲	▲		润滑良好, 涨紧适当, 松边下垂量为 8mm. It has a good lubrication and an appropriate tension. The sag of the loose side of the handrail is 8mm.
58		主驱动链保护装置 Protection device for main drive chains	▲	▲		功能可靠, 转动灵活, 开关间隙为 10mm Work reliably and turn agilely. Its switch gap is 10mm.
59	其	★自动润滑系统 Automatic lubricating system	▲	▲	▲	功能可靠(使用方法见电气说明书) Reliability(referring to "Electrical Instruction" for its detailed usage)
60		★自动润滑系统—油位 Oil level of the automatic lubricating system	▲	▲	▲	检查/注油 Inspect the oil level and fuel
61	它	★油刷 Oil brush		▲	▲	检查工况及安装位置, 再调节 Inspect its working conditions and its installing position, then make some adjustment.
62	othe rs	电缆 Cable		▲	▲	电缆无破损, 固定可靠 The cable is not worn and fixed firmly

63	电动机 Motor		▲	▲	电动机应防止水和油浸入内部, 电机温升应小于 105k。两端轴承正常工作, 温度不应超过 80℃, 运转时只允许有轻微的声音, 否则, 停机检查. Water and oil should be prevented form entering the inside of the motor. The rising temperature of the motor should be less than 105k. Its temperature should not be more than 80℃ when the bearings on both sides are working normally. The motor is allowed to give off the slight noise as it is running, or we should stop and examine it.
64	减速箱油位及换油周期 Oil level of the gear box and Period of replacing oil		▲	▲	润滑油应清洁, 油温升不超过 85k 油量在油标尺上下极限位置之中, 无渗漏, 新梯运行一个 340 小时后换油, 之后每 680 小时换一次, 齿轮油为极压工业齿轮油 460# The lubricant should be clean and the rising temperature should not exceed 85k. The oil level should locate between the upper and lower limit of the oil level gauge. There is no oil leak. The lubricant should be replaced after 340 hours' operation in the first-running escalator, and then be replaced per 680 hours. The lubricant type is No.460 industrial gear oil.
65	扶梯上下机房卫生 Sanitation of both machine rooms in an escalator.	▲	▲		清洁, 无油污、杂物 Clean without oil waste and sundries
66	扶梯底坑 .Pit of an escalator		▲	▲	无油污、杂物、水 Without oil waste, sundries and water
67	扶梯外观 Appearance of an escalator	▲	▲	▲	清洁 Clean

备注

注: ① 保养类型: A 小保养 (一个月) B 大保养 (室内安装: 六个月、室外安装: 三个月) C 周期不定 (根据运行时间或状态); Types of maintenance and repair: A Light (per month); B Heavy (per six month indoor, per three month outdoor); C Changeable period (according to the running time and working conditions.)

② 打“★”项目为合同选择项, 打“▲”项目为要求维保项; The item marked “★” is optional according to contracts and the one marked “▲” is required.

③ 表中未列出的项目也应根据实际情况进行维护。The items, which are not in the list, should be maintained according to the practical working conditions.

## 五. 备件清单 List of spare parts

No.	名称 Name	规格及型号 Type	数量 Quantity
1	梳 齿 Comb teeth	G51600-5	4
2	梳齿垫板 Combs mat	G51600-6	2
3	梯级装饰条 Step decorative strip		5
4	行程开关 Trip switch	Z1R236-11ZR-1816	1
5	行程开关 Trip switch	Z1R236-11Z	1
6	行程开关 Trip switch	ZR236-11Z	1
7	行 灯 Trip lighter	36V100W	1
8	挡 块 Stopper	G51000-2	10
9	梯级间隙照明灯管 steps gap lighting bulb	AC220V15W	1

需要购买备品备件时, 请与公司联系, 并请提供购买自动扶梯时的合同号, 以便我们及时提供准确的零件。If you want to buy some spare parts, please contact our company and provide us with the contract serial number. So we can supply you with the exact parts in time.