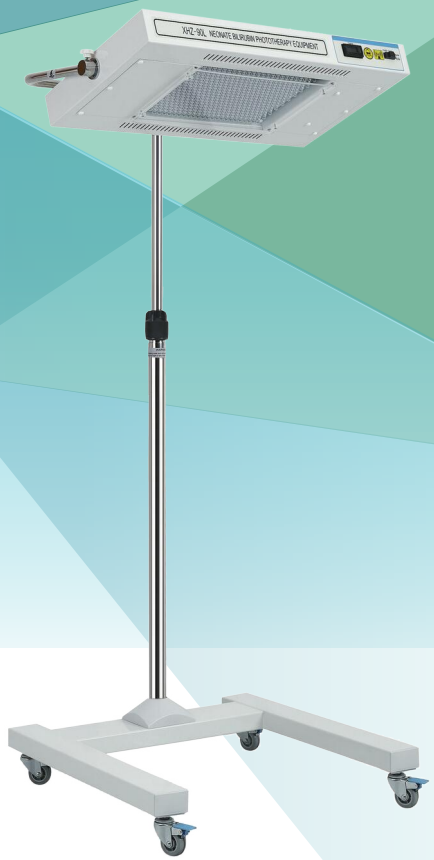


XHZ-90L (mobil type)



XHZ-90 (mobil type)

XHZ-90 SERIES

NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT

Service Manual

www.chinadavid.cn

DAVID

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SEASONAL SAFETY CHECK

1. Please clean the plug of power cord at least once a year. Too much dust on plug may cause the fire.
2. The following safety checks should be performed at least every 12 months by a qualified person who has adequate training, knowledge, and practical experience to perform these tests. The data should be recorded in an equipment log. If the device is not functioning properly or fails any of the above tests, the device has to be repaired.
   ① Inspect the equipment and accessories for mechanical and functional damage.
   ② Inspect the safety relevant labels for legibility.
   ③ Inspect the fuse to verify compliance with rated current and breaking characteristics.
   ④ Verify that the device functions properly as described in the instructions for use.
   ⑤ Test the protection earth resistance according IEC 60601-1:2005: Limit 0.1Ω.
   ⑥ Test the earth leakage current according IEC 60601-1:2005: Limit: NC 5mA, SFC: 10mA.
   ⑦ Test the enclosure leakage current according to IEC 60601-1:2005: Limit: NC 100μA, SFC:500uA.

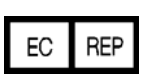
NOTE: A note is inserted in text to point out procedures or conditions, which may otherwise be misinterpreted or overlooked. A note may also be used to clarify apparently contradictory or confusing situations.

IMPORTANT: Similar to a Note but be used where greater emphasis is required.

CAUTION: A caution is inserted in text to call attention of a procedure which, It not followed exactly, can lead to damage or destruction of the equipment.

WARNING: A warning is inserted in text to call attention to dangerous or hazardous conditions inherent to the operation, cleaning, and maintenance of the equipment which may result in personal Injury or death of the operator or patient.

SYMBOLS

	Refer to instruction manual		Protective Earth (Ground)
CLASS I	Class I Equipment		Caution: DO NOT catch your finger
220-230V~ 50Hz	Input Power	**F 1AL/250V**	Type F Fuse 1AL/250V（for XHZ-90）
	Power on	**T 1.6AL/250V**	Type T Fuse 1.6AL/250V（for XHZ-90L）
	Serial Number	**T 1.6AH/250V**	Type T Fuse 1.6AH/250V (for XHZ-90, XHZ-90L）
	Date of Manufacture		Non-ionizing radiation
	CE Marking		Eye mask mark
	Manufacturer		Power off
	Authorised representative in the European community		

COMPLEMENTARY NOTICE

This manual provides instructions for installation and maintenance of NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT Series XHZ-90, XHZ-90L. And the main difference is the light source. So the contect of this manual is based on XHZ-90, and the difference between these models is explained in this manual.

Since our company, conducts a continuous product improvement program, circuit and component improvements are sometimes incorporated into equipment before they can be incorporated into the printed manuals. This manual contains proprietary information, repairs and authorized modifications.

Should be performed only by qualified service personnel to maintain your warranty and to avoid creating safety hazards. We cannot assume responsibility for any conditions affecting the proper operation of this equipment which may result from unauthorized repair modification. Therefore, some parts used in your equipment may be different than those which appear in the parts list of this manual. This sometimes occurs due to difficulty in parts procurement, but does not alter the function of the equipment.

The device, accessories and the packaging have to be disposed of waste correctly at the end of the usage. Please follow Local Ordinances or Regulations for disposal.

TABLE OF DEFINITIONS AND SYMBOLS

TECHNICAL DEFINITIONS

EFFECTIVE RADIATION AREA: An area which receives the radiation of the NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT, as for its standatd size, please refer to the instruction in operator's manual.

TOTAL IRRADIANCE FOR BILIRUBIN E_{bi}: Irradiance equal to the evaluated irradiance in the range between 400 nm and 550nm.

UNIFORMITY G_2 OF THE TOTAL IRRADIANCE FOR BILIRUBIN: Ratio of the lowest TOTAL IRRADIANCE FOR BILIRUBIN $E_{bi\ min}$ to the highest TOTAL IRRADIANCE FOR BILIRUBIN $E_{bi\ max}$ at the effective radiation area.

LIFETIME OF NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT: the period from sell-by date to the date of discarding as useless.

LED'S Lifetime： The total time of the light source has been in use continuously.

LED Effective Service Time： Sum of the service time when the total bilirubin irradiance Ebi is attenuated by 25% of the claimed value.

WARRANTY

The product being described in this manual is warranted against defects in materials or workmanship for one year from the date of shipment, with the following exceptions.

1. All consumable and disposable products are guaranteed to be free from defects upon shipment only.

2. Calibrations are considered normal maintenance and are not included in the 1-year warranty.

During the warranty period any defective parts other than those listed above will be replaced at no charge to the customer. This warranty is rendered void and our company cannot be held liable for conditions resultant therefrom if:

1. Damage to the unit is incurred as a result of mishandling.

2. The customer fails to maintain the unit in a proper manner.

3. The customer uses any parts, accessories, or fittings not specified or sold by our company.

4. Sale or service is performed by the non-certified service/dealer agency.

This warranty is in lieu of all other warranties, expressed or implied, and our company shall in no event be liable for incidental or consequential damages including loss of use, property damage, or personal injury resulting from breach of warranty.

The Accreditation Manual for Hospitals requires each piece of equipment to be tested prior to initial use and at least annually thereafter. To comply with this standard, we recommend that you participate in our accreditation Testing compliance Program during the warranty period. This service can be performed through our company and authorized dealers.

SERVICE

For optimal performance, product service should be performed only by qualified service personnel. Technical Services representatives can be reached for fixations and are dispatched for required maintenance by calling +86-574-87800008, 87800007. Customers outside China should contact their local factory-authorized distributor for service.

1. GENERAL INTRODUCTION

This manual provides instructions for installation and maintenance of NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT XHZ-90 and XHZ-90L (be short for PHOTOTHERAPY UNIT). Both of these models has two types: mobile type and incubator mounted type, and the latter is used together with our infant incubator.

This manual provides the guidance for the qualified service personnel. As for the instruction, please refer to the user's manual.

2. DESCRIPTION

1. Please find the following main ports for Mobile PHOTOTHERAPY UNIT (based on XHZ-90)

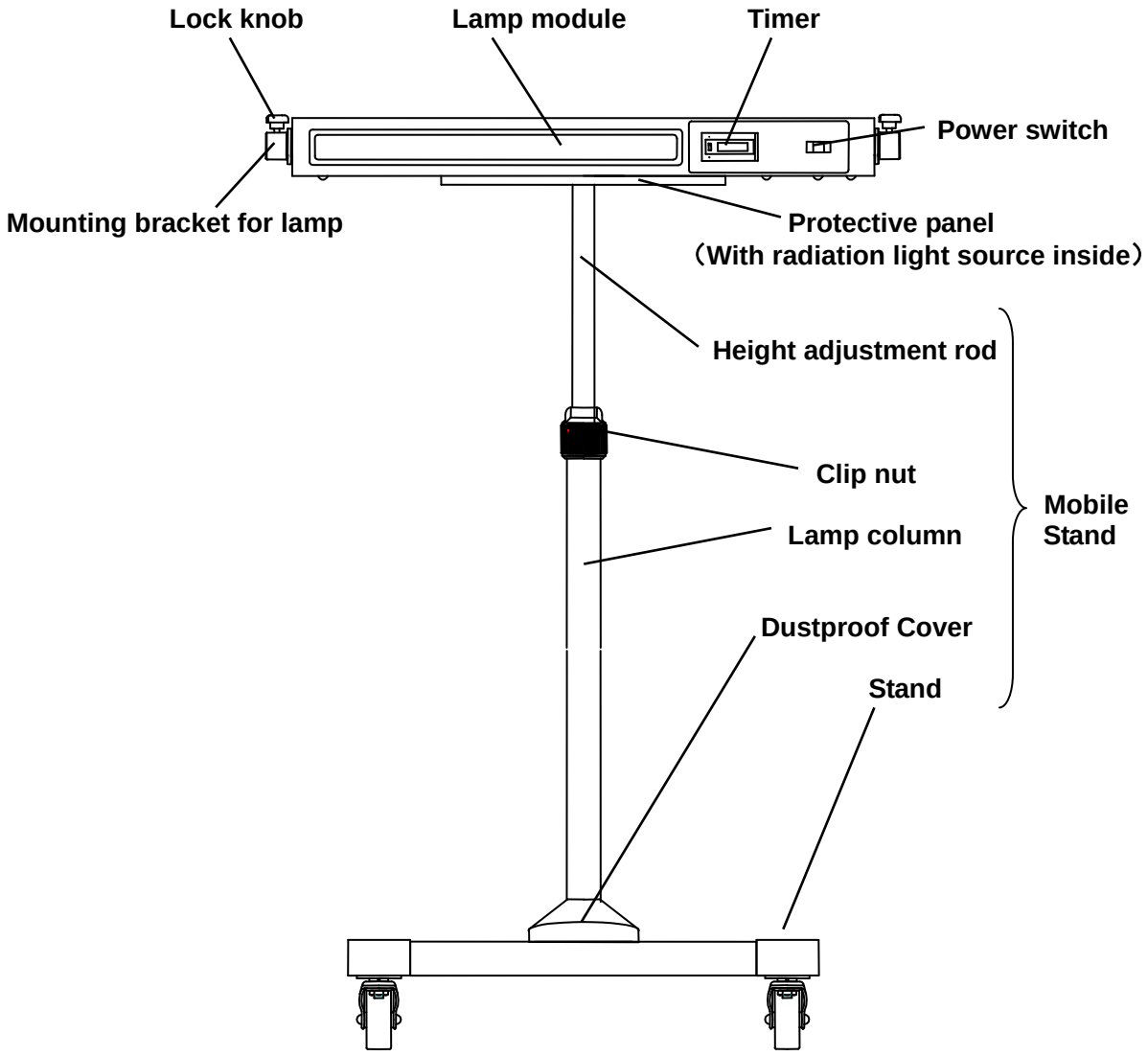


FIGURE 1

2. Please find the following main ports for Incubator Mounted PHOTOTHERAPY UNIT (based on XHZ-90)

DESCRIPTION OF PART	EXPLANATION
Lamp module	This main part is composed of radiation light source, protective panel, built-in timer and so on, and it is the core for NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT.
Mounting bracket for lamp, lock knob	For adjusting the radiation angle of lamp module.
Height adjustment rod, clip nut, Lamp column	For adjusting the height of NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT.
Stand	For moving the NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT. With 4pcs casters with brakes.

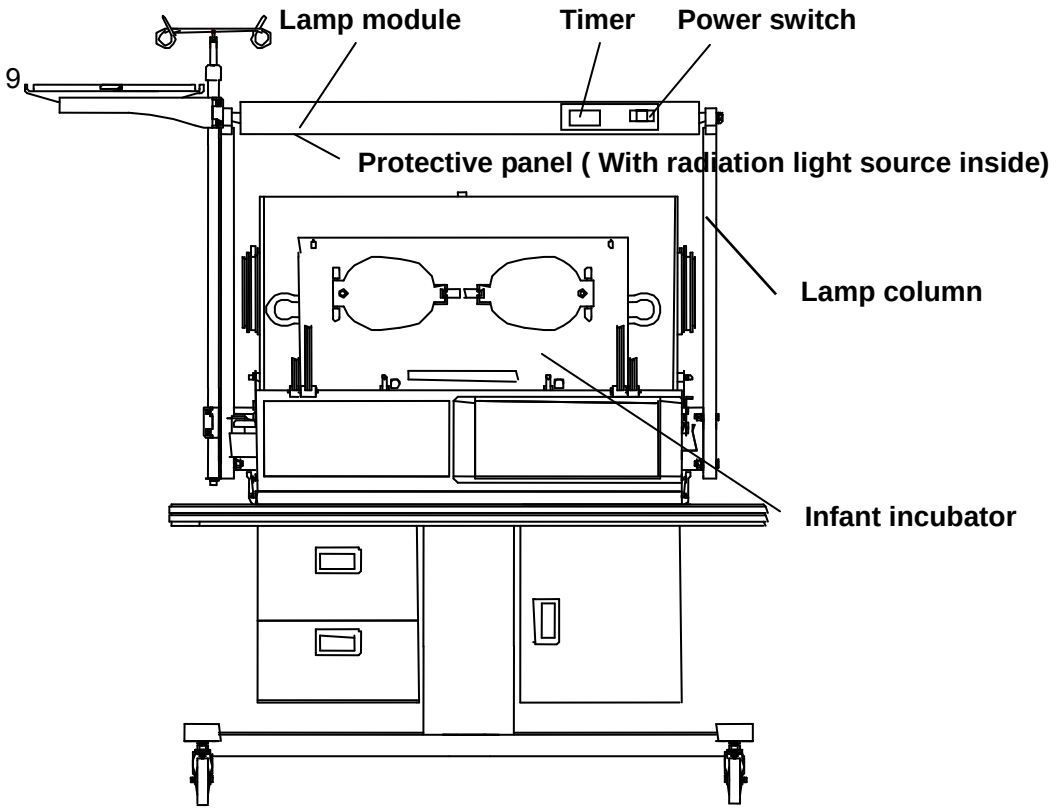


FIGURE 2

DESCRIPTION OF PART	EXPLANATION
lamp module	This main part is composed of radiation light source, protective panel, built-in timer and so on, and it is the corefor PHOTOTHERAPY UNIT.
Lamp column	For installing the phototherapy unit on top of the infant incubator.

3. INSTALLATION

Generally, the mobile phototherapy unit is usually packed to one carton, and the fixed phototherapy unit is uaually packed with the infant incubator together. When taking out the equipment from the cartons, take care not to damage the spare parts of it.

At least two professionals do the installation of the NEONATE BILIRUBIN PHOTOTHERAPY EQUIPMENT with screwdriver and spanners.

A. Installation of the mobile phototherapy unit

a. Install the lamp column on the stand

See figure 3, first, unscrew the 4 pcs cross groove pan head bolt M6 X16 for fixing the stand, Spring washer Φ6, Flat washer Φ6 with screwdriver, and then put the lamp column on the stand, move the dustproof cover upward, and fix the lamp column on the stand with the previous unscrewed bolt, Spring washer and Flat washer, at last put down the dustproof cover lightly.

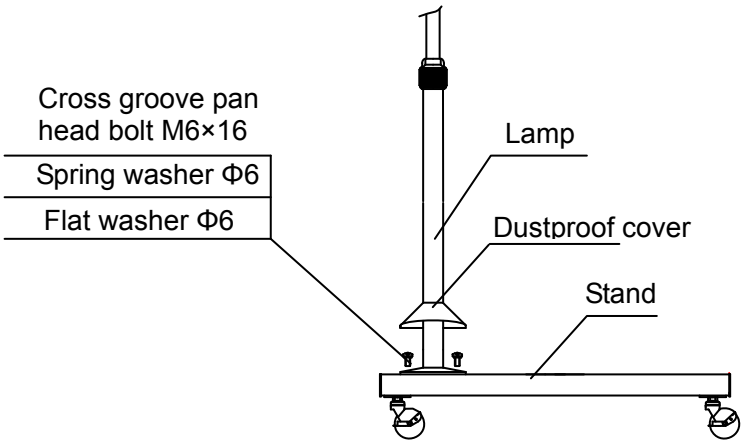
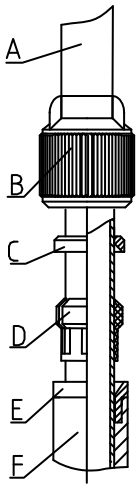


FIGURE 3

b. Install the height adjustment rod

① Rotate the clip nut anticlockwise in figure 4, and take out the clip nut, clamping ring, clamping claw, clamping seat.

② Make the clamping seat, clamping claw, clamping ring and clip nut through the height adjustment rod, and then insert the rod inside the lamp column, and then tighten the fixed nut clockwise.



A. height adjustment rod

B. clip nut

C. clamping ring

D. clamping claw

E. clamping seat

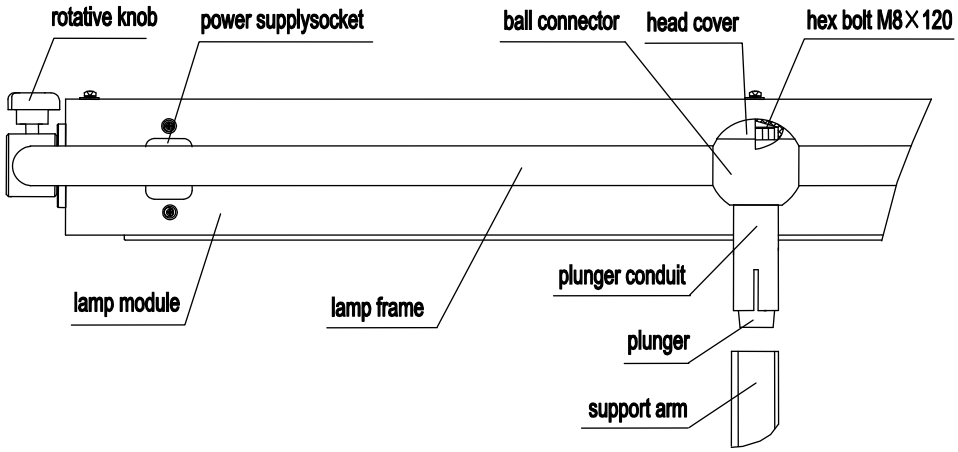
F. lamp column

FIGURE 4

c. Install the lamp module

① See figure 5, insert the lamp module into the height adjustment rod.

② Unscrew the cover cap anticlockwise, and fix the hexagon bolt M8×120 with spanner to fix the lamp module on the height adjustment rod, and install the cover cap to its own position.



WARNING: Please ensure the M8×120 hexagon bolts are tightly fixed, or the whole device would rollover because of horizontal turning of the lamp module.

FIGURE 5

d. Insert the power cord

Insert the power cord into the socket in figure 5.

B. Installation of fixed phototherapy unit

a. Install the frame of squareruler

See figure 6, put the squarerulers on the left and right side of hood respectively, and fix it with spring washer and flat wahser and the hexagon bolt.

b. Install the lamp column

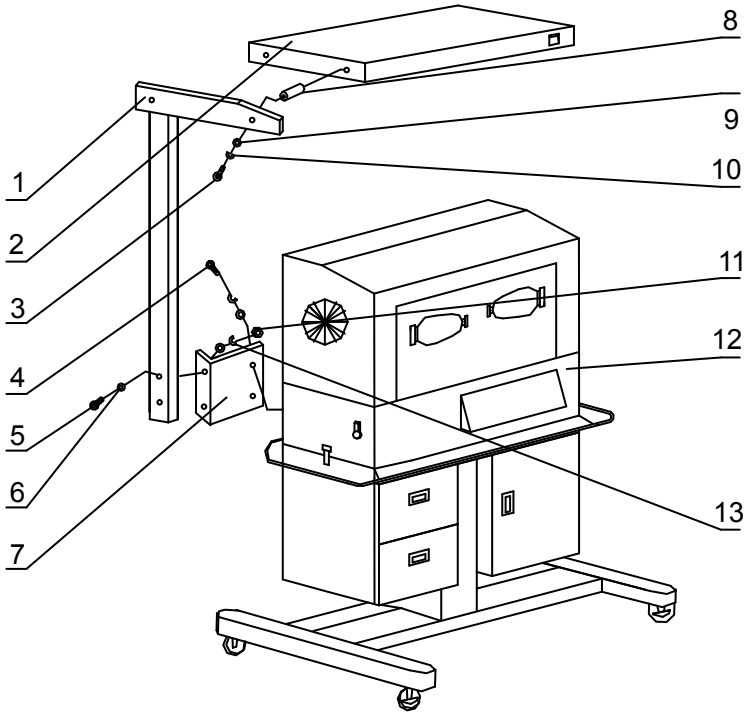
See figure 6, fix the lamp column and squareruler with the spring washer, falt washer, and hexagon nut. The installation of left and right lamp column are same.

c. Install lamp module

See figure 6, fix the lamp module between the left and right lamp column with the spring washer, falt washer, lamp colum, bush and hesagon bolt.

d. Insert the power cord

Insert the power cord into the auxiliary power output socket of infant incubator.



1	Lamp column 2	2	Lamp module.....1	3	Hexagon bolt M10×90.....4
4	Hexagon bolt M8×16.....4	5	Hexagon bolt M8×35.....4	6	Flat washer 8.....12
7	Frame of squareruler.....2	8	Bush.....4	9	Flat washer 4
10	Spring wahser 10.....4	11	Hexagon nut M8.....4	12	base.....1
13	Spring washer 8 8				

FIGURE 6

4. SPECIFICATION

TABLE 1.1 SPECIFICATIONS

This equipment belongs to Class I, mobile device continuously operated. The equipment can not use in mixture with air of flammable anesthetic gas and oxygen or nitrous oxide mixture of flammable anesthetic cases. Classification lever of waterproof is IPX0.

Power requirements……AC220V-230V, 50Hz, 150VA (XHZ-90)
AC220V-230V, 50Hz, 75VA (XHZ-90L)

Light source……blue fluorescent tubes（XHZ-90）
LED（XHZ-90L）

Peak spectrum……436 nm（XHZ-90）
465nm（XHZ-90L）

The maximum of total irradiance for bilirubin of effective range on the mattress……
1.1mW/cm^2（for XHZ-90）
4.0mW/cm^2（for Mobile PHOTOTHERAPY UNIT,XHZ-90L）
2.6mW/cm^2（for Incubator Mounted PHOTOTHERAPY UNIT,XHZ-90L）

Lifetime of the light source……2000 hours（XHZ-90）
5000 hours（XHZ-90L）

Treatment distance……40cm (for Mobile PHOTOTHERAPY UNIT)
46cm（for Incubator Mounted PHOTOTHERAPY UNIT）

The total irradiance Ebi on the effective surface area……≥1mW/cm^2
（for Mobile PHOTOTHERAPY UNIT,XHZ-90）
≥0.6mW/cm^2（for Incubator Mounted PHOTOTHERAPY UNIT,XHZ-90）
≥3.7mW/cm^2（for Mobile PHOTOTHERAPY UNIT,XHZ-90L）
≥1.7mW/cm^2（for Incubator Mounted PHOTOTHERAPY UNIT,XHZ-90L）

The average of total irradiance for bilirubin of effective range on the mattress……
≥0.9mW/cm^2（for Mobile PHOTOTHERAPY UNIT,XHZ-90）
≥0.64mW/cm^2（for Incubator Mounted PHOTOTHERAPY UNIT,XHZ-90）
≥2.5mW/cm^2（for Mobile PHOTOTHERAPY UNIT,XHZ-90L）
≥1.3mW/cm^2（for Incubator Mounted PHOTOTHERAPY UNIT,XHZ-90L）

Uniformity of the total irradiance for bilirubin of effective range on the mattress……＞0.4

Infrared radiation on the effective radiant area……≤1mW/cm^2

Ultraviolet radiation on the effective radiant area……≤1.0×10^{-5}mW/cm^2(180nm＜λ≤400nm)

Working noise ……ambient noise≤35dB(A), working noise≤45dB(A)

Adjusting range for the radiation angle of lamp module……0 - 60^o up from horizontal
（only for Mobile PHOTOTHERAPY UNIT）

Adjusting range for the height of lamp module……1350mm～1650mm
（only for Mobile PHOTOTHERAPY UNIT）

Built-in timer range……0～9999 hour 59 minute

ENVIRONMENT TEMP (Not to use in the environment exceed specified)

Operating range……28℃～34℃

Storage and transport range……-40℃～+55℃

TABLE 1.1 SPECIFICATIONS

ENVIRONMENT HUMIDITY

Operating range……30%～75%

Storage and transport range……≤93%

ATMOSPHERE PRESSURE

Storage and transport atmospheric pressure range……500hPa~1060hPa

Working atmospheric pressure range……800hPa~1060hPa

Application environment altitude……≤2000m

Overvoltage category ……II

Pollution degree……2

AIR FLOW RATE

Ambient air movement rate……<0.3m/s

Mobile PHOTOTHERAPY UNIT measurement……L705mm×W620 mm×H1350 mm
（height adjustment rod is in the lowest position）
L705mm×W620 mm×H1650 mm
（height adjustment rod is in the highest position）

Incubator Mounted PHOTOTHERAPY UNIT measurement…L1000mm×W420mm×H810mm

Mobile PHOTOTHERAPY UNIT weight……18kg

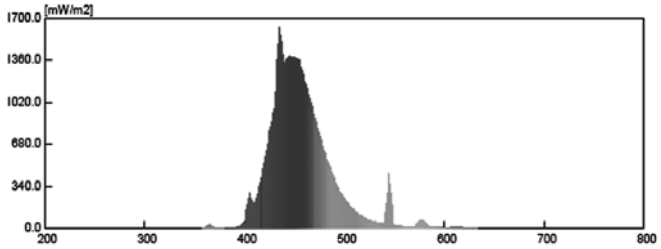
Incubator Mounted PHOTOTHERAPY UNIT weight……10kg

The lifetime……6 years

In the range of 320nm to 550nm, Schematic diagram of E_{bi} full spectrum radiation（XHZ-90）

320	0.0000000000	440	1.3437560000
325	0.0002263115	445	1.3883840000
330	0.0003517015	450	1.3795570000
335	0.0007115999	455	1.3621770000
340	0.0005458509	460	1.2156100000
345	0.0007096233	465	1.0839190000
350	0.0009008565	470	0.9347026000
355	0.0012197530	475	0.7754273000
360	0.0024330560	480	0.6321588000
365	0.0318963300	485	0.5123221000
370	0.0055510150	490	0.4077117000
375	0.0022163800	495	0.3114630000
380	0.0026974830	500	0.2422230000
385	0.0032235330	505	0.1879411000
390	0.0061878290	510	0.1472856000
395	0.0136484000	515	0.1131187000
400	0.0517163900	520	0.0866815200
405	0.2871739000	525	0.0671371500
410	0.1833341000	530	0.0543263300
415	0.3342484000	535	0.0438082300
420	0.5276484000	540	0.0448307100
425	0.7809934000	545	0.0463736000
430	0.9680536000	550	0.0298159600
435	1.6197250000		

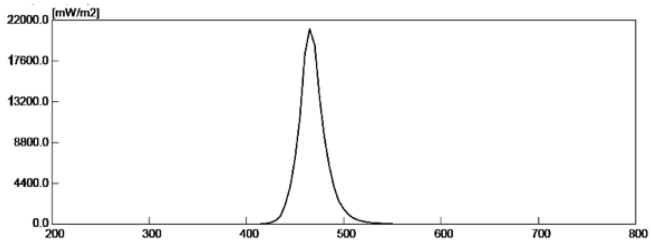
Spectral distribution



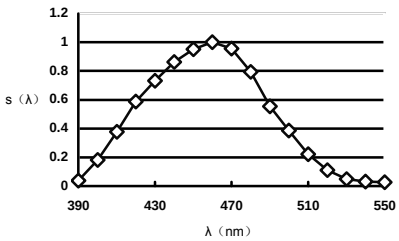
In the range of 320nm to 550nm, Schematic diagram of E_{bi} full spectrum radiation（XHZ-90L）

320	0.0000000000	440	2.0851640000
325	0.0000000000	445	4.0588730000
330	0.0000000000	450	7.1860800000
335	0.0000000000	455	11.5261200000
340	0.0000000000	460	18.2637400000
345	0.0000000000	465	21.0551500000
350	0.0000000000	470	19.3089700000
355	0.0000000000	475	13.6934800000
360	0.0000000000	480	9.3698260000
365	0.0000000000	485	6.3107570000
370	0.0000000000	490	3.9971590000
375	0.0000000000	495	2.4550760000
380	0.0000000000	500	1.5803700000
385	0.0000000000	505	0.9958963000
390	0.0000000000	510	0.6231434000
395	0.0000000000	515	0.3886996000
400	0.0000000000	520	0.2505039000
405	0.0000000000	525	0.1611249000
410	0.0000000000	530	0.1039433000
415	0.0014880750	535	0.0651738000
420	0.0412178700	540	0.0426970300
425	0.1388189000	545	0.0360784500
430	0.3533474000	550	0.0148103000
435	0.8143584000		

Spectral distribution



Testing device integral E_{bi} calibration trend



5. CLEANING AND MAINTENANCE

WARNING： Switch only cut off one pole of the mains supply, it is not a safety disconnecting switch, the appliance inlet is used as the disconnect device, always remain coupler readily operable. Use of appliance inlet as the intended isolation means. therefore, to make sure the safety, please cut off the power supply after stop using the device or before cleaning.

A. CLEANING

Please clean and sterilize the whole unit for initial use or use it for one week.

Use neutral disinfectant-detergent to thoroughly clean all surfaces including all corners and hollow part; then dry with a clean cloth or paper towel.

NOTE: To avoid the crack on the acrylic hood, please do not clean it with the alcohol, acetone, or other organic solution; do not put it under the ultraviolet radiation.

CAUTION: Avoid the liquid flowing into the inside of device through the radiator hole during cleaning.

B. MAINTENANCE

WARNING: To ensure the safety of using the equipment is not affected, the modified of the PHOTOTHERAPY UNIT is forbidden.

The total bilirubin radiation of the phototherapy equipment must be measured by the trained and experienced personnel every 12 months. And make sure that the surveyor's certificate is availableduring the measurement.

Draw the effective surface on the infant bed as showed in picture 5, mark off rectangle subregion which the distance is 100mm×50mm, then measure the total bilirubin radiation for each subregion and find out the maximum value with a irradiatometer (The sensitivity of irradiatometer requires to meet "The calibration curve of the measurement device" shown). Please replace the light source if the measured total bilirubin radiation value is lower than 25% of the claimed value.

In order to ensure the good effect of phototherapy treatment, when the lifetime of lamp ends, it must be replaced although it can work normally. The reasons are:

The light radiation capacity will be reduced with the prolonging working time and will make the average total bilirubin radiation attenuated, leading to the equipment lose the expected effect during the treatment.

For the lamp's replacing, it should be replaced to authorized and qualified service personnel.

Timer have primary battery, the battery is going gradually reduced as working so long time. When timer display is unclear or not displays, replace the timer. Timer replacement should be presented to the authorized and qualified service personnel.

Troubleshooting of the PHOTOTHERAPY UNIT is presented in the following table. If the fault cannot be localized from the table, the PHOTOTHERAPY UNIT should be removed from service and servicing should be referred to our company or authorized qualified service personnel.

As for replacement of spare parts, please refer to the service part.

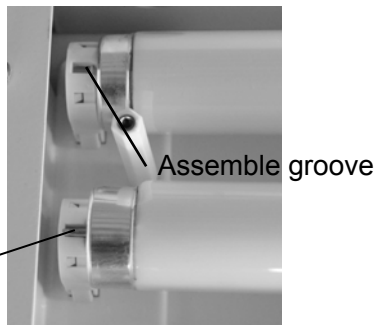
MODEL	SYMPTOM	POSSIBLE CAUSE	REMEDY
XHZ-90	All lamps are power off	Fuse damaged	Replace the fuse
	Single lamp is power off	Bad lamp contact	Rotate the lamp until it is on
		Lamp's seat damaged	Replace lamp's seat
		Lamp damaged	Replace lamp
		Electronic ballast damaged	Replace electronic ballast
	Timer does not work	Timer damaged	Replace timer
		Circuit failure	Check the circuit
XHZ-90L	All LED lamps are power off	Fuse damaged	Replace the fuse
		Bad Connector of LED board	Check the power connection of LED board
	Single LED lamp is power off	Every 5pcs LED lamps are one group, usually one of them is damaged	Connect power supply，look for the malfunction of LED with voltage multimeter.
	Some LED lamps is power off	One circuit or more on LED board work abnormally	Check whether the LED board is open circuit or short circuit
	Timer does not work	Timer damaged	Replace timer
		Circuit failure	Check the circuit

6. SERVICE

A. XHZ-90 replacement of the internal elements and circuit diagram

1. Replace the lamp

Unscrew the fixing bolt on the protective panel and remove the panel. Please replace the lamp according to the step indicated in the figure.



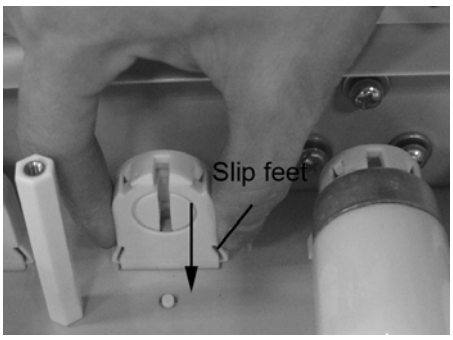


Rotate the lamp slowly until the lamp's feet is located on the assemble groove, and then pull outside the lamp

Insert the lamp's feet into the assemble groove, and then rotate the lamp at 90°

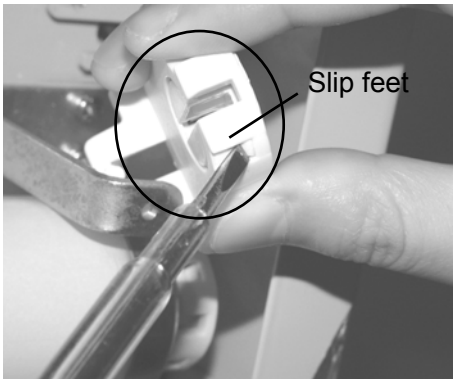
2. Replace the lamp's seat

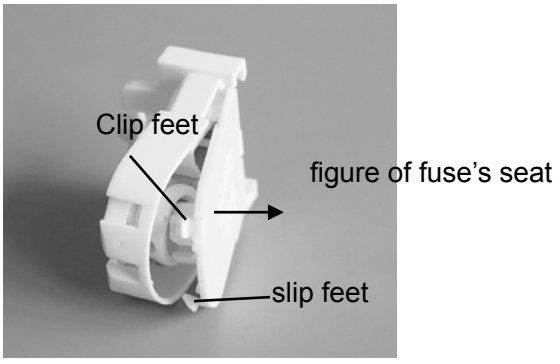
Disassemble all lamps to replace the lamp's seat as the figure indicates.



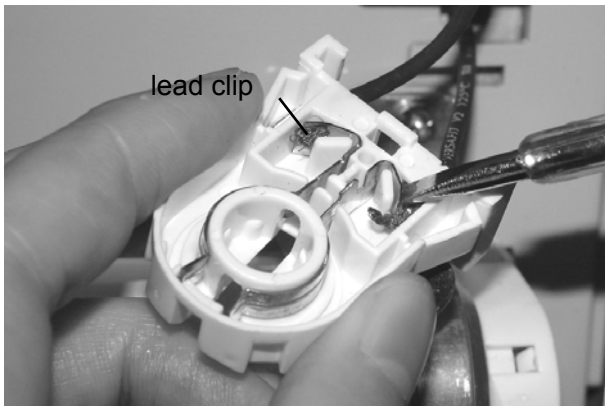
Step 1: Press the slip feet of fuse' seat, remove the fuse' seat inward as the on the arrow indicates.

CAUTION: Do not pull out the fuse's seat with great strength to avoid damaging the connection wire on the lamp's seat.





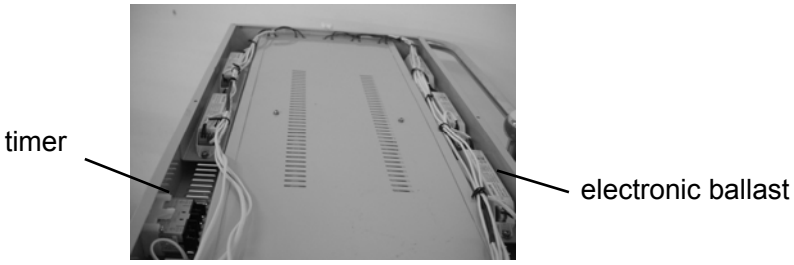
Step 2: Push out clip feet inward, and pull out the cap of lap as the arrow indicates in the figure.

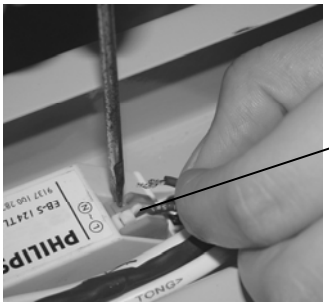


Step 3: open the lead with screwdriver to take out the connecting wire of the fuse's set to replace lamp.

3. Replace the electronic ballast and timer

Unscrew the fastening screw on top pf lamp module to replace the electronic ballast and timer as the figure indicates.

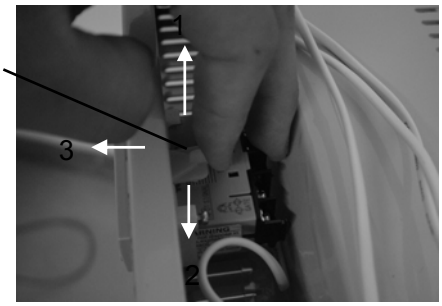




Press the wiring column to pull out The lead



Disconnect all lead connection on the electronic ballast, and unscrew the fastening screw to replace the electronic ballast



Disconnect the wiring on the timer, open the upper and down fastener of timer as the arrow 1 and 2 indicates, and pull out the timer to replace as the arrow 3 indicates.

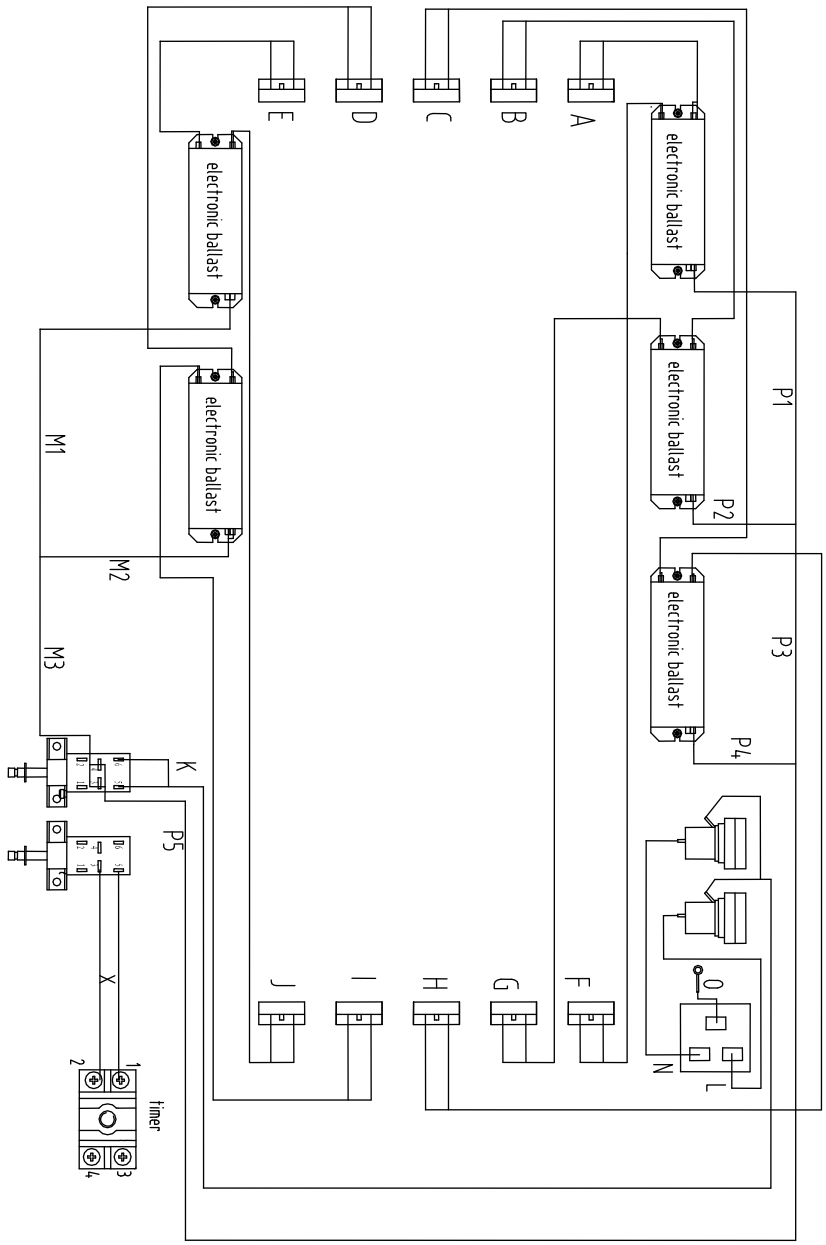
CAUTION: After replacing the electronic ballast, please make sure the right connection of lead and the wiring column has fixed the lead.

4. Replace the fuse

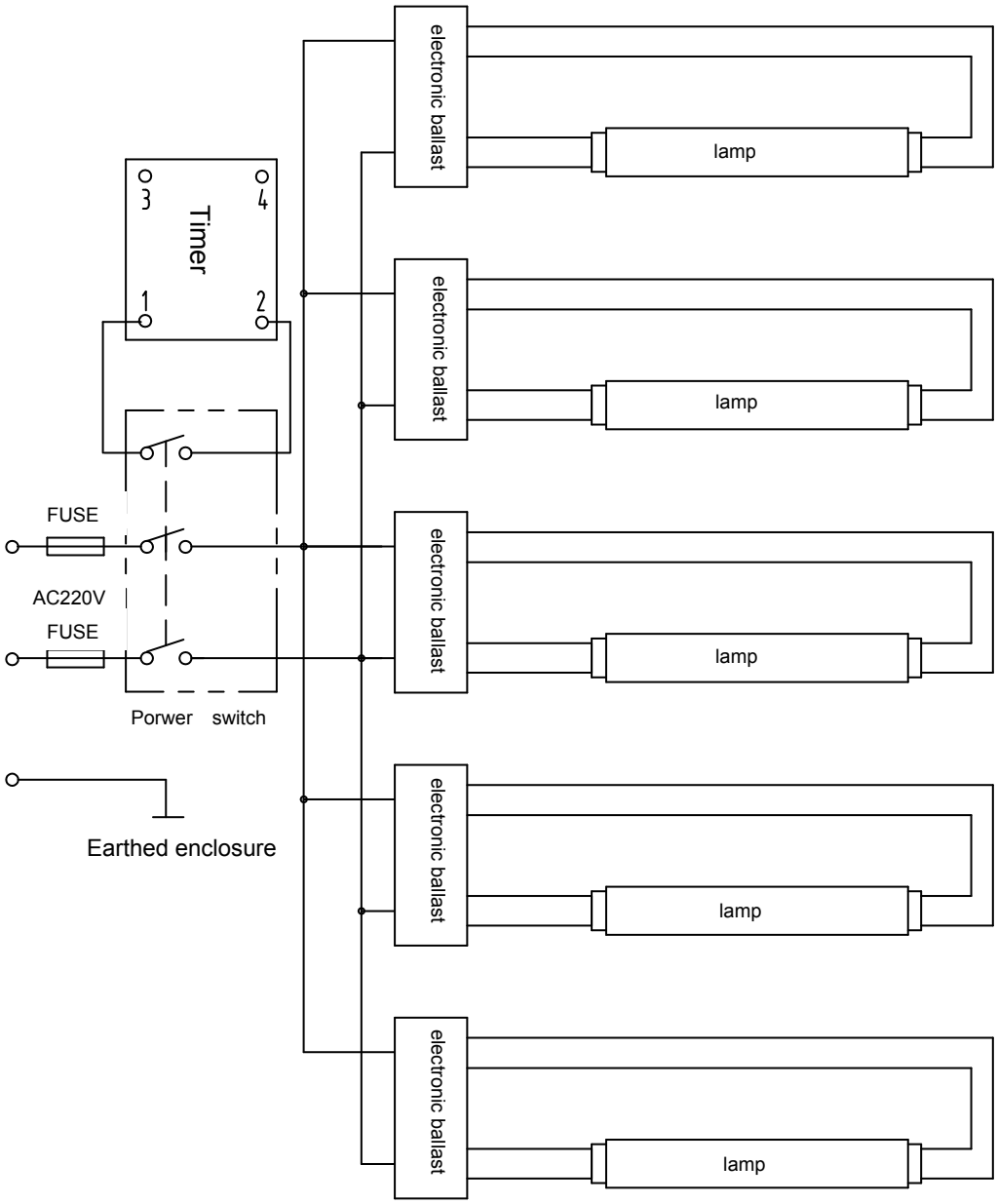
Unscrew the fuse's cover with screwdriver to replace the fuse with same model and same specification according to the fuse label.

CAUTION: You must cut off the power supply and pull off the power cord during replacing the fuse.

5. Principle diagram



WIRING DIAGRAM



ITEM No.	DESCRIPTION	PART NUMBER
1	Electronic ballast 20W/220-230V	42.38.007.00
2	Lamp 20W	86.62.623.00
3	Power switch PWL-2P2T	86.57.016.00
4	Timer DHL3L-3N	86.61.078.00
5	F type fuse 1AL/250V	86.59.006.00

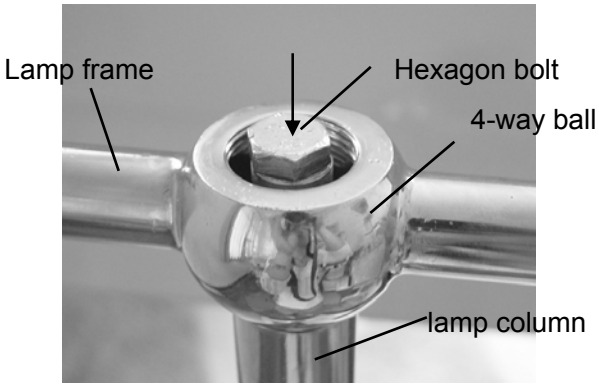
ELECTRIC PRINCIPLE DIAGRAM

B. XHZ-90L replacement of the internal elements and circuit diagram

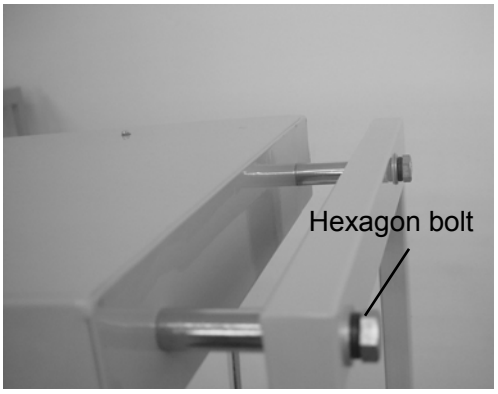
1. Replace LED board

Remove the LED board to replace as the figure indicates.

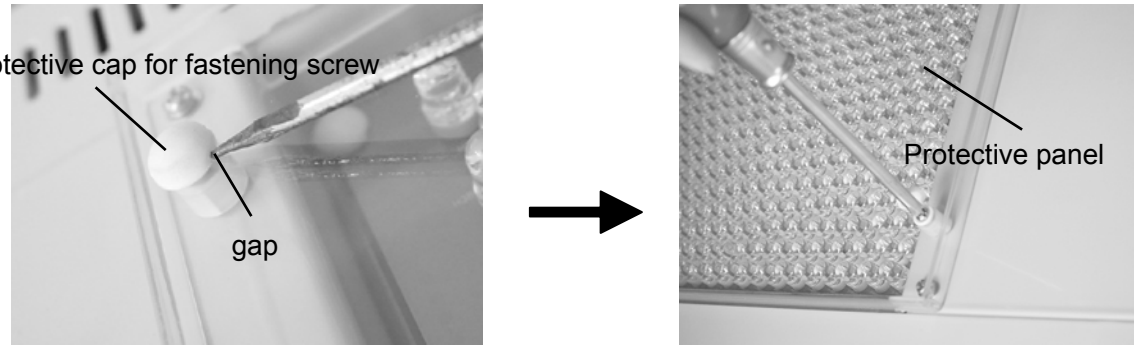
Step 1：Remove the lamp module



Mobile lamp module：Unscrew the cap anticlockwise, and loose the hexagon bolt anticlockwise with spanner, and knock the hexagon



Fixed lamp module：Unscrew 4pcs hexagon bolts anticlockwise to take out the lamp module.



Step 2: Return the lamp module, and make it in a horizontal position. Open the gap of the protective cover for fastening screw on the protective panel with screwdriver, and open the protective panel and unscrew the fastening screw, and remove the protective panel.

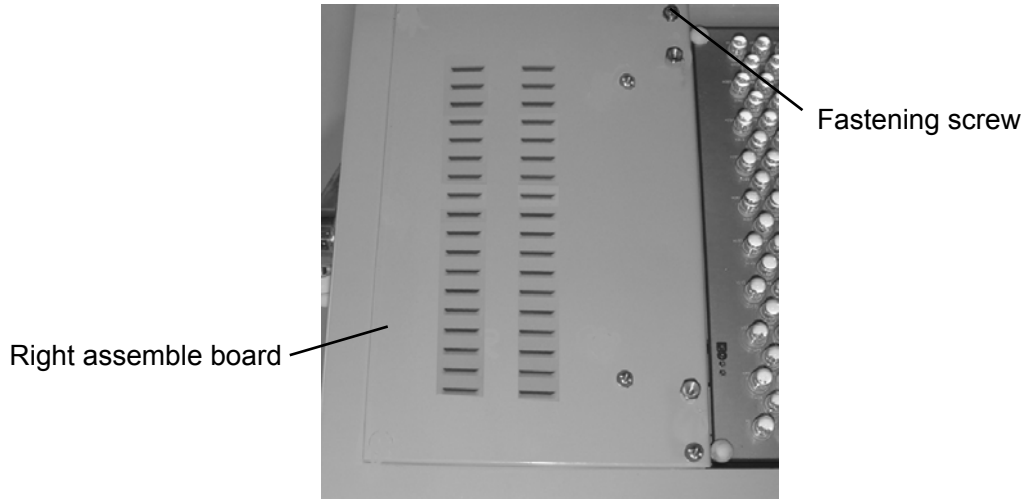


Step 3: Same as step 2, Open the gap of the protective cover for fastening screw on LED board with screwdriver, and open the protective panel and unscrew the screw, and remove LED board. Holder the fastener, and pull out the power socket as the arrow indicates.

NOTE: Do not take out LED board for long time to avoid the damage on the power cord.

2. Replace timer

Replace timer as the figure indicates



Step 1: Same as step 2 of LED board, and remove the protective panel, and unscrew 2pcs fixed bolt on the right assemble board, and remove the Left assemble board.

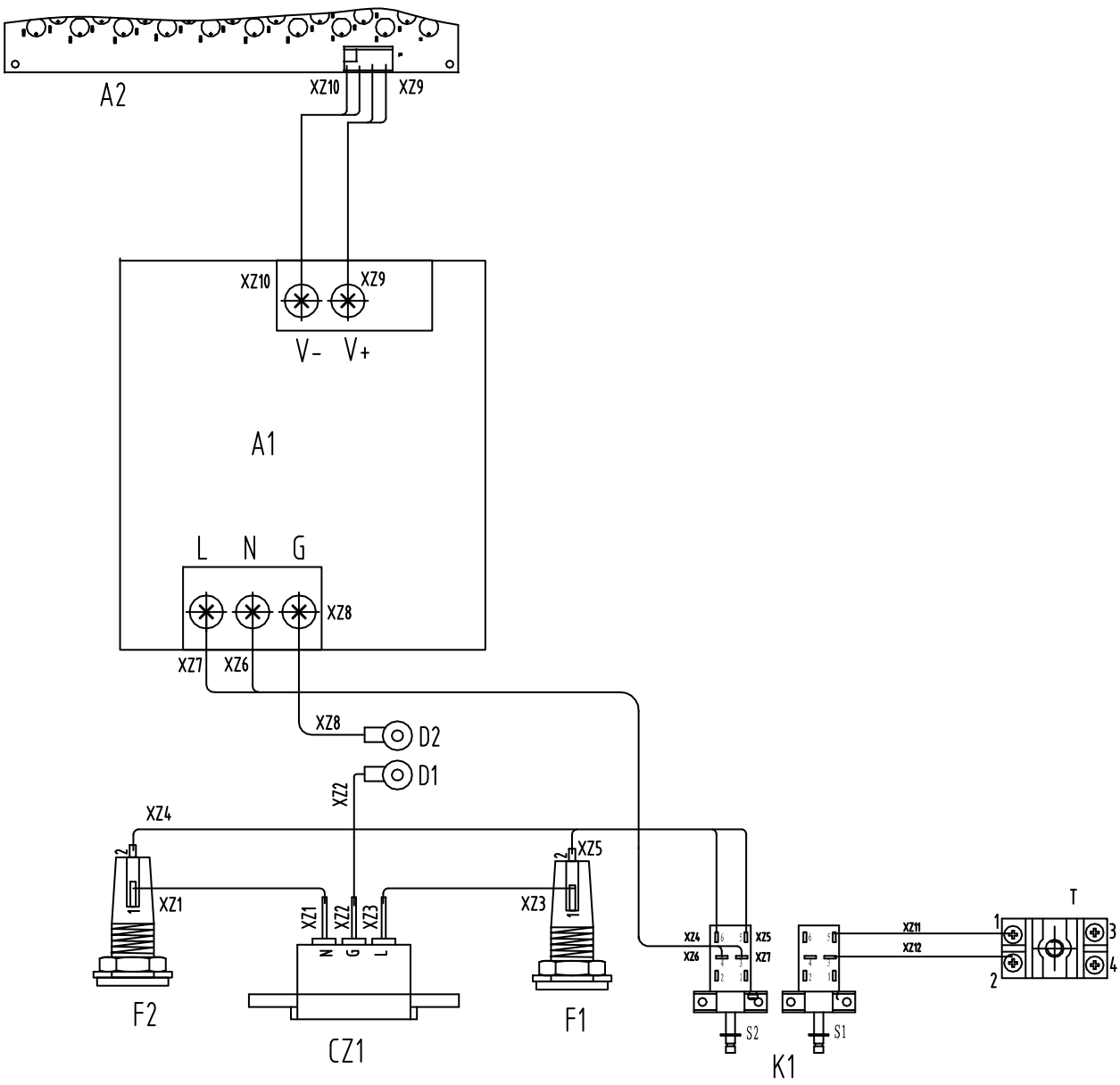
Step 2: Same as the method of replacing the timer for NEONATE BILIRUBIN PHOTOTHERAPY UNIT XHZ-90.

3. Replace the fuse

Unscrew the fuse's cover with screwdriver to replace the fuse with same model and same specification according to the fuse label.

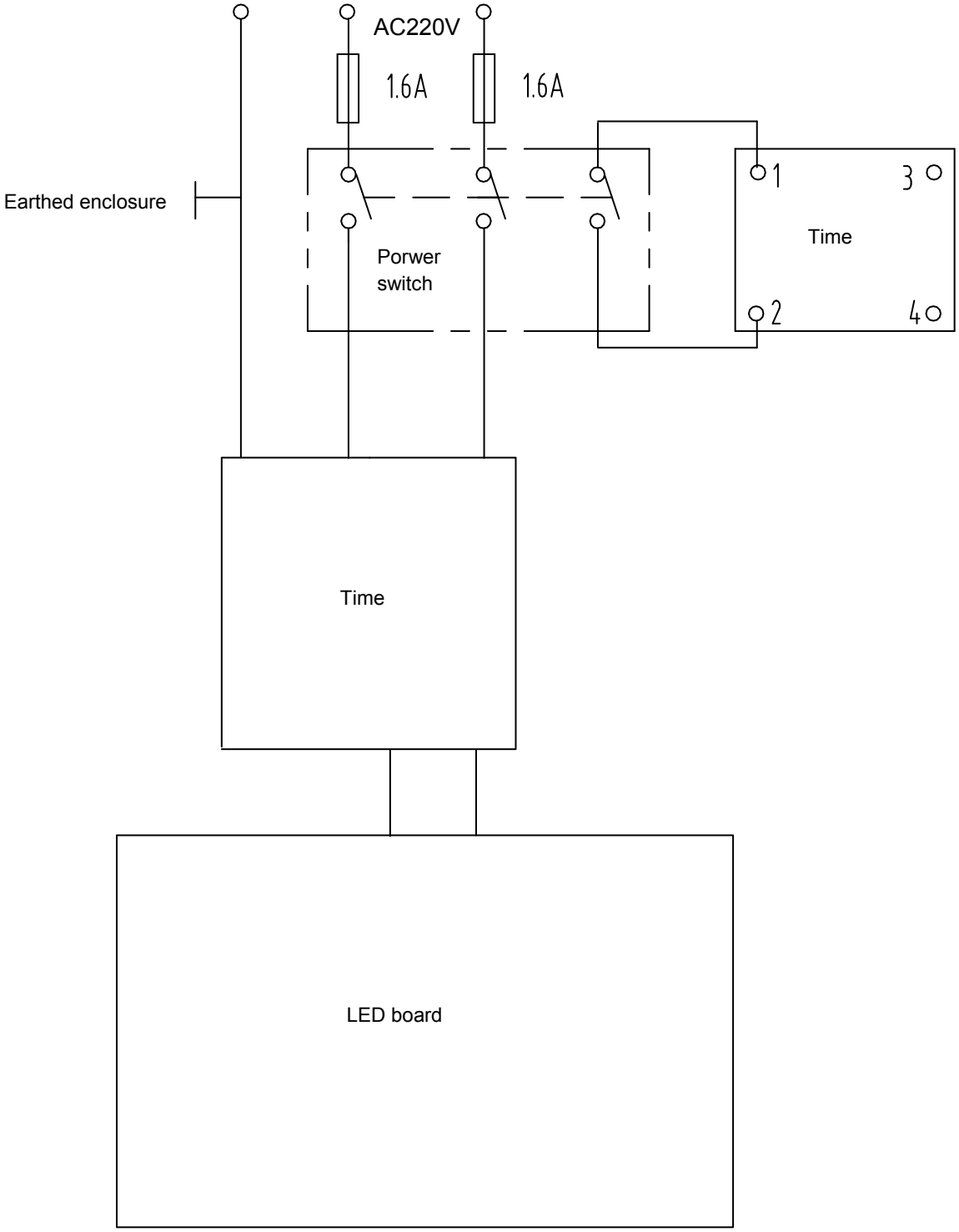
CAUTION: You must cut off the power supply and pull off the power cord during replacing the fuse.

4. Principle diagram

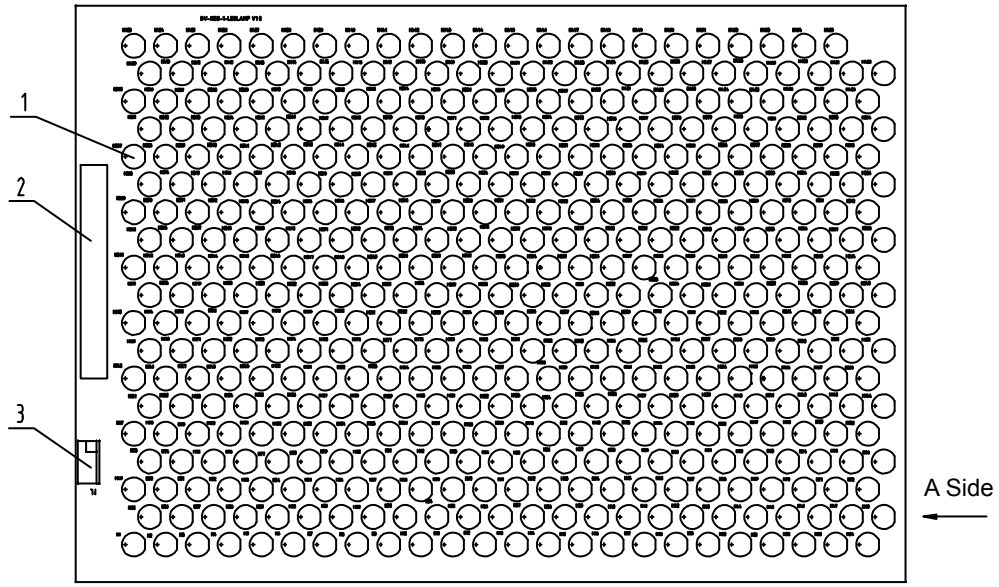


SERIAL NO.	SYMBOL	NAME AND SPECIFICATION	QUANTITY
1	A1	Switch power WSZ6-1BAC	86.60.126.00
2	A2	LED board	44.19.003.00
3	CZ1	Power socket 3GTJE1	86.55.001.00
4	F1、F2	T type fuse 1.6AH/250V	86.59.044.00
5	K1	Power switch PWL-2P2T	86.57.016.00
6	D1、D2	Earthed slice	86.55.133.00

WIRING DIAGRAM



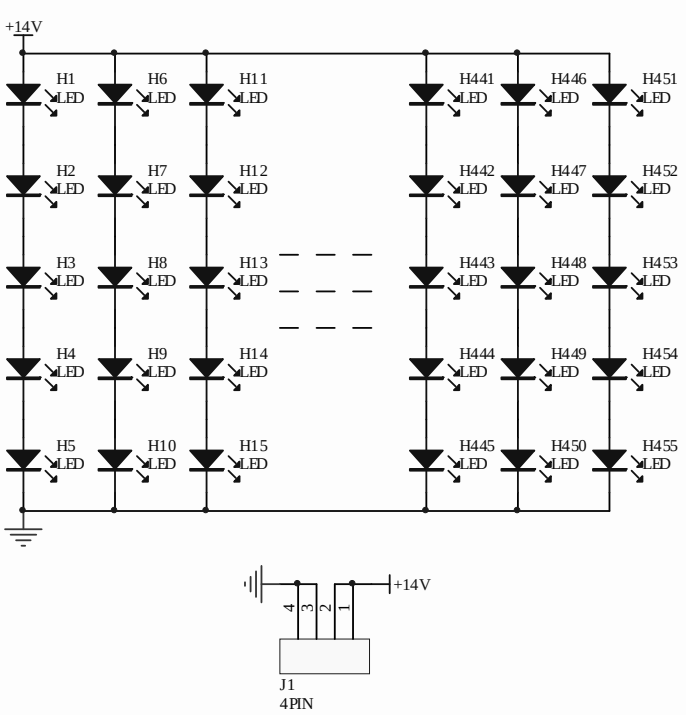
ELECTRIC PRINCIPLE DIAGRAM



ASSEMBLY DIAGRAM FOR LED BOARD

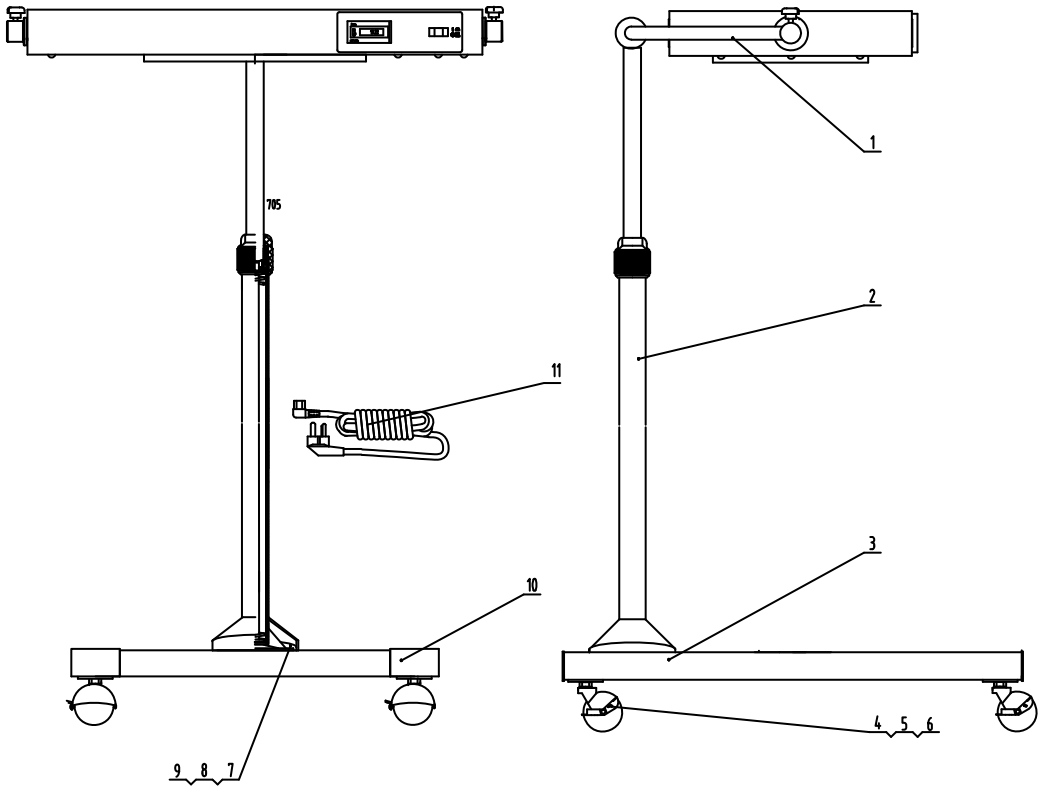
PARTS LIST FOR LED BOARD

SERIAL NO.	SYMBOL	NAME AND SPECIFICATION	QUANTITY
1	H1～H455	LED JN-393SUBC	86.58.005.00
2		LED label	27.07.030.00
3	J1	Socket XY4-4	86.55.114.00



PRINCIPLE DIAGRAM of LED BOARD

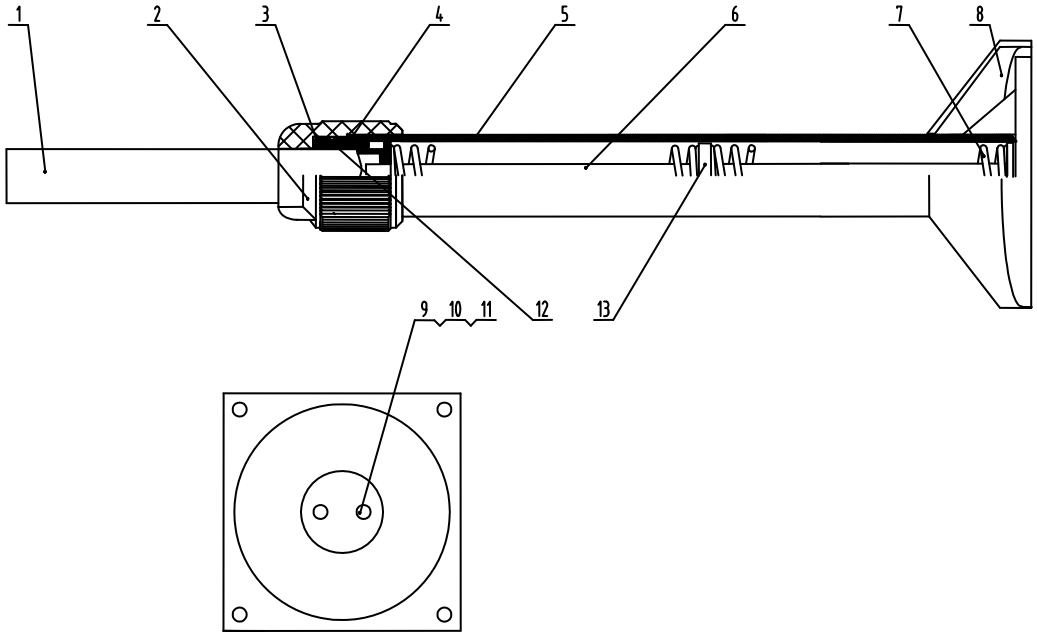
7. SPARE PARTS LIST AND NUMBER



WHOLE UNIT（XHZ-90/XHZ-90L, MOVING TYPE）

WHOLE UNIT PARTS LIST（XHZ-90/XHZ-90L, MOVING TYPE）

ITEM No.	DESCRIPTION	PART NUMBER
1	Lamp module（XHZ-90）	42.50.003.01S
	Lamp module (XHZ-90L)	42.38.018.01S
2	Column	42.20.001.02S
3	Stand	42.08.001.00
4	Ball cardan caster M10	86.52.012.00
5	Spring washer 10	86.44.402.00
6	Flat washer 10	86.44.429.00
7	Cross groove pan head bolt M6×16	86.44.200.00
8	Spring washer 6	86.44.419.00
9	Flat washer 6	86.44.445.00
10	Cover for vertical bar	42.08.009.00
11	Power cord	86.14.001.00

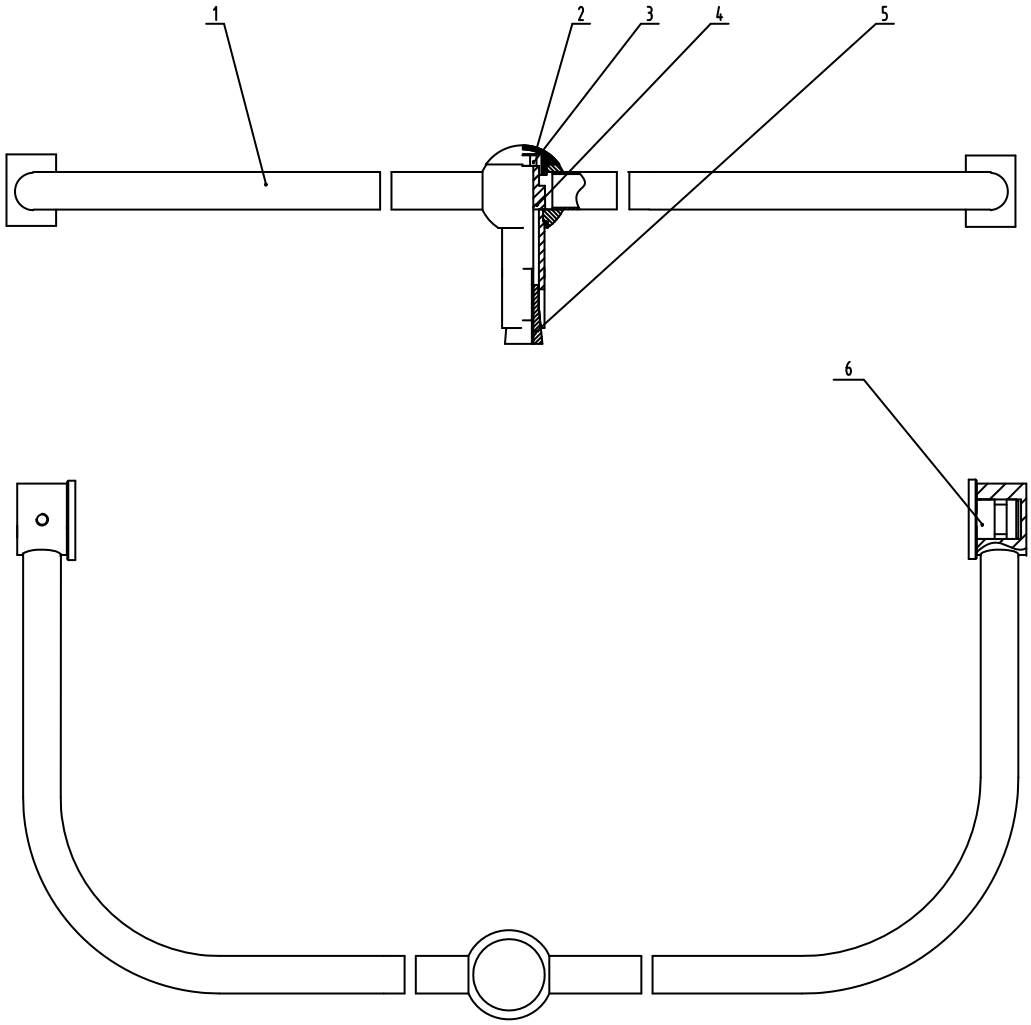


LAMP ROD AND LAMP COLUMN GROUPWARE（XHZ-90/XHZ-90L, MOVING TYPE）

LAMP ROD AND LAMP COLUMN GROUPWARE PARTS LIST

（XHZ-90/XHZ-90L, MOVING TYPE）

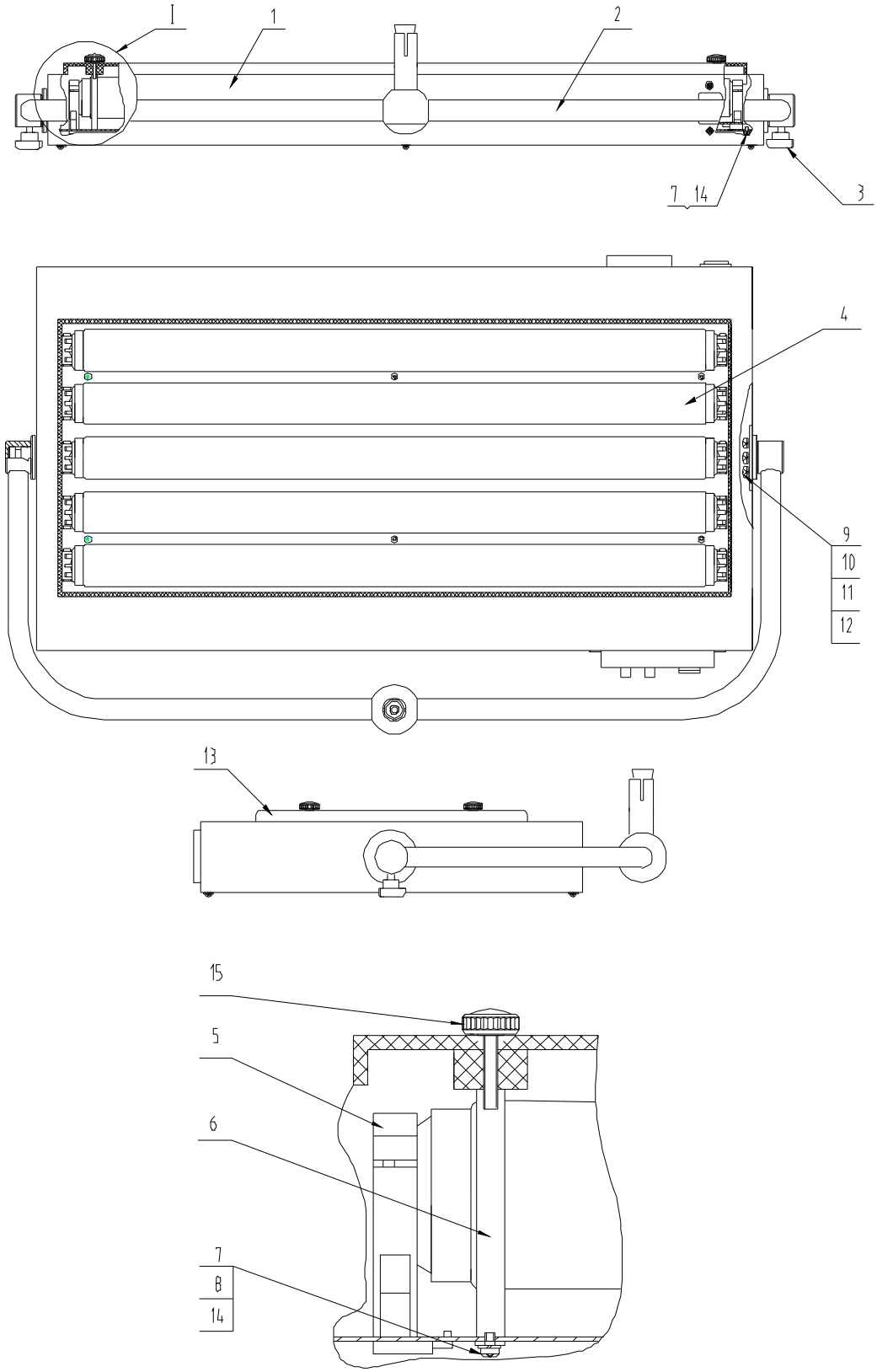
ITEM No.	DESCRIPTION	PART NUMBER
1	Lamp rod	42.20.002.00
2	Clip nut	42.20.005.00
3	Clamping ring	42.20.006.00
4	Clamping seat	42.20.007.00
5	Column	42.20.008.00
6	Guide bar	42.20.011.00
7	Spring	42.20.014.00
8	Dustproof cover	42.20.015.00
9	Cross groove pan head bolt M5×14	86.44.182.00
10	Spring washer 5	86.44.415.00
11	Flat washer 5	86.44.443.00
12	Clamping claw	42.20.016.00
13	Spring’s seat 10	42.20.017.00



LAMP FRAME（XHZ-90/XHZ-90L, MOVING TYPE）

LAMP FRAME PARTS LIST（XHZ-90/XHZ-90L, MOVING TYPE）

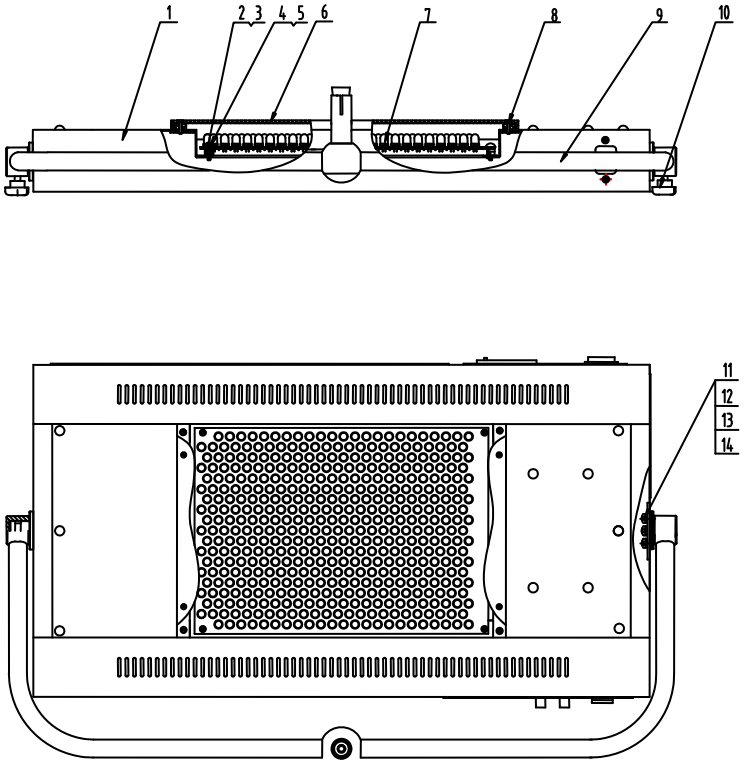
ITEM No.	DESCRIPTION	PART NUMBER
1	Lamp frame	42.01.044.00
2	Cap	42.01.050.00
3	Hexagon bolt M8×120	86.44.001.00
4	Washer	42.01.051.00
5	Expanding stopple	42.01.052.00
6	Roll axis	42.01.053.00



LAMP MODULE（XHZ-90, MOVING TYPE）

LAMP MODULE PARTS LIST（XHZ-90, MOVING TYPE）

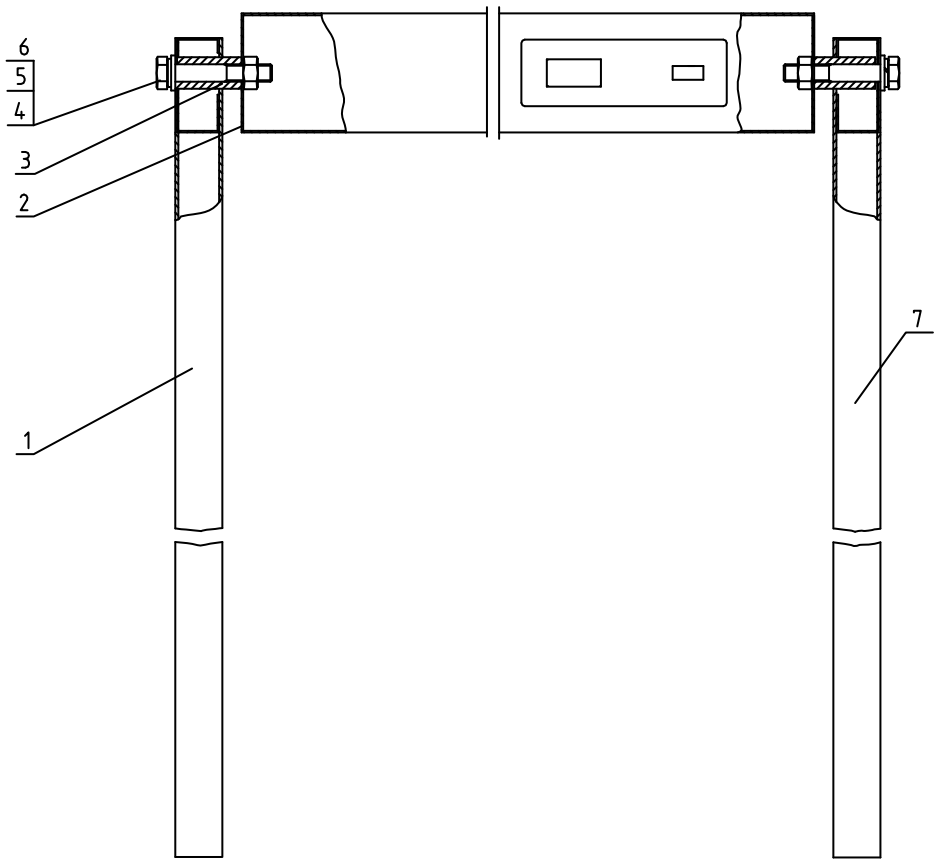
ITEM No.	DESCRIPTION	PART NUMBER
1	Lamp module	42.01.023.00S
2	Lamp frame	42.01.043.00S
3	Knob	01.04.029.00
4	Blue fluorescent lamp	86.58.026.00
5	Lamp’s feet	86.61.046.00
6	Holder	42.01.058.00
7	Spring washer 3	86.44.412.00
8	Flat washer 3	86.44.440.00
9	Cross groove pan head bolt M5×10	86.44.178.00
10	Spring washer 5	86.44.418.00
11	Flat washer 5	86.44.444.00
12	External teeth serrated lock washer 5	86.44.389.00
13	Protective panel	42.01.054.00
14	Cross groove pan head bolt M3×6	86.44.158.00
15	Thumb screw	42.01.074.00



LAMP MODULE（XHZ-90L, MOVING TYPE）

LAMP MODULE PARTS LIST（XHZ-90L, MOVING TYPE）

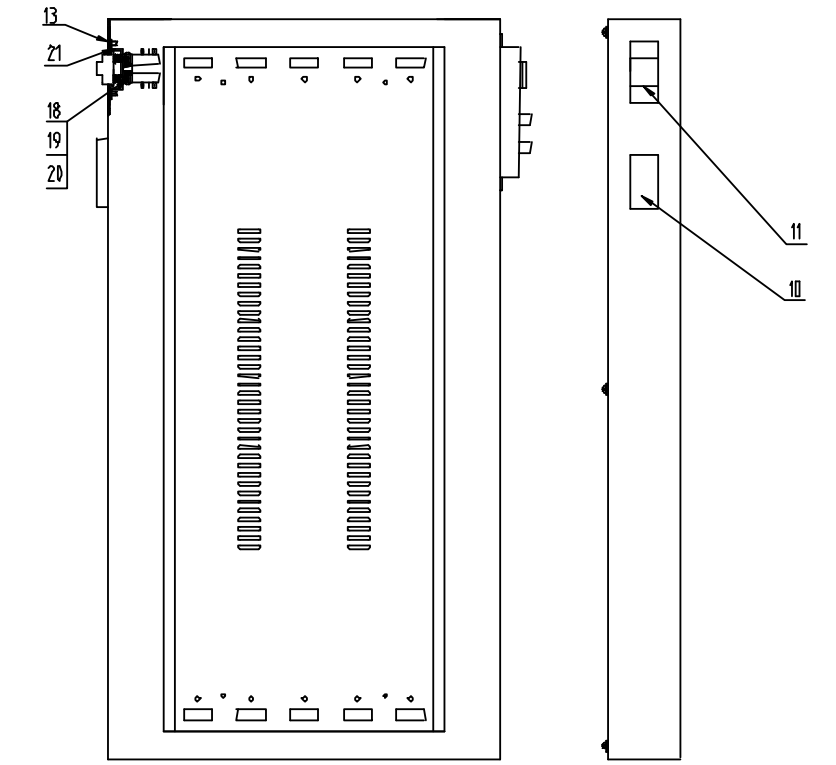
ITEM No.	DESCRIPTION	PART NUMBER
1	Lamp module	42.01.076.00S
2	Cross groove pan head bolt M3×6	86.44.158.00
3	M3 bolt cover	05.02.046.00
4	Bolt bush	13.07.006.00
5	Hexagon insulation bolt	13.07.007.00
6	Protective panel	05.01.037.00
7	Blue lamp board	44.19.003.00S
8	Cross groove countersunk head bolt M3×16	86.44.210.00
9	Lamp frame	42.01.043.00S
10	knob	01.04.029.00
11	Cross groove pan head bolt M5×10	86.44.178.00
12	Flat washer 5	86.44.443.00
13	Spring washer 5	86.44.415.00
14	External teeth serrated lock washer 5	86.44.397.00

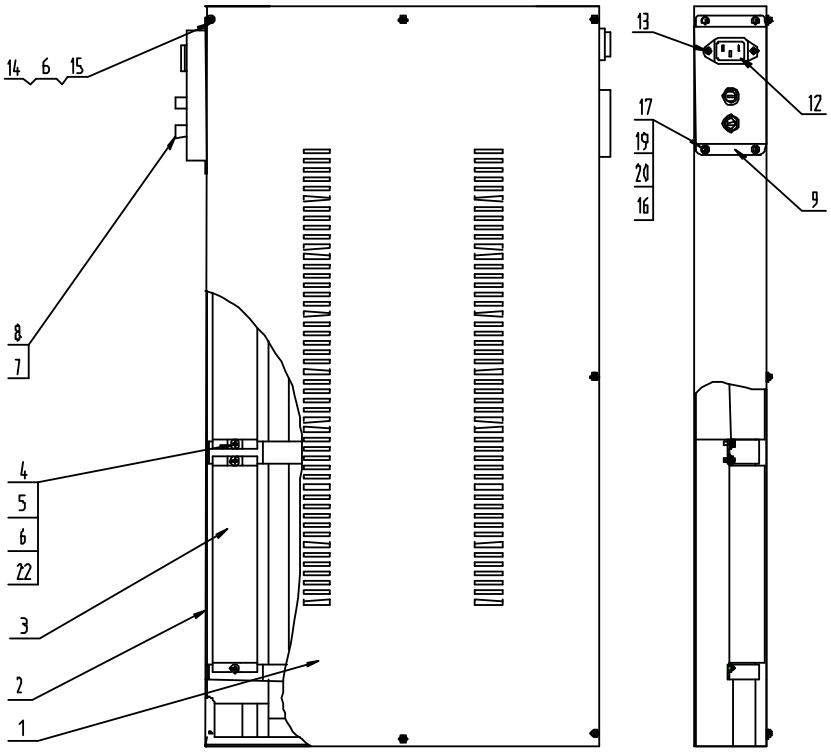


WHOLE UNIT（XHZ-90/XHZ-90L, FIXED TYPE）

WHOLE UNIT PARTS LIST（XHZ-90/XHZ-90L, FIXED TYPE）

ITEM No.	DESCRIPTION	PART NUMBER
1	Right mounting bracket for lamp module	05.01.002.00
2	Lamp module （XHZ-90, FIXED TYPE）	05.01.004.00S
	Lamp module （XHZ-90L, FIXED TYPE）	05.01.024.00S
3	Bush	05.01.017.00
4	Hexagon bolt M10×90	86.44.008.00
5	Spring washer 10	86.44.402.00
6	Flat washer 10	86.44.429.00
7	Left mounting bracket for lamp module	05.01.018.00

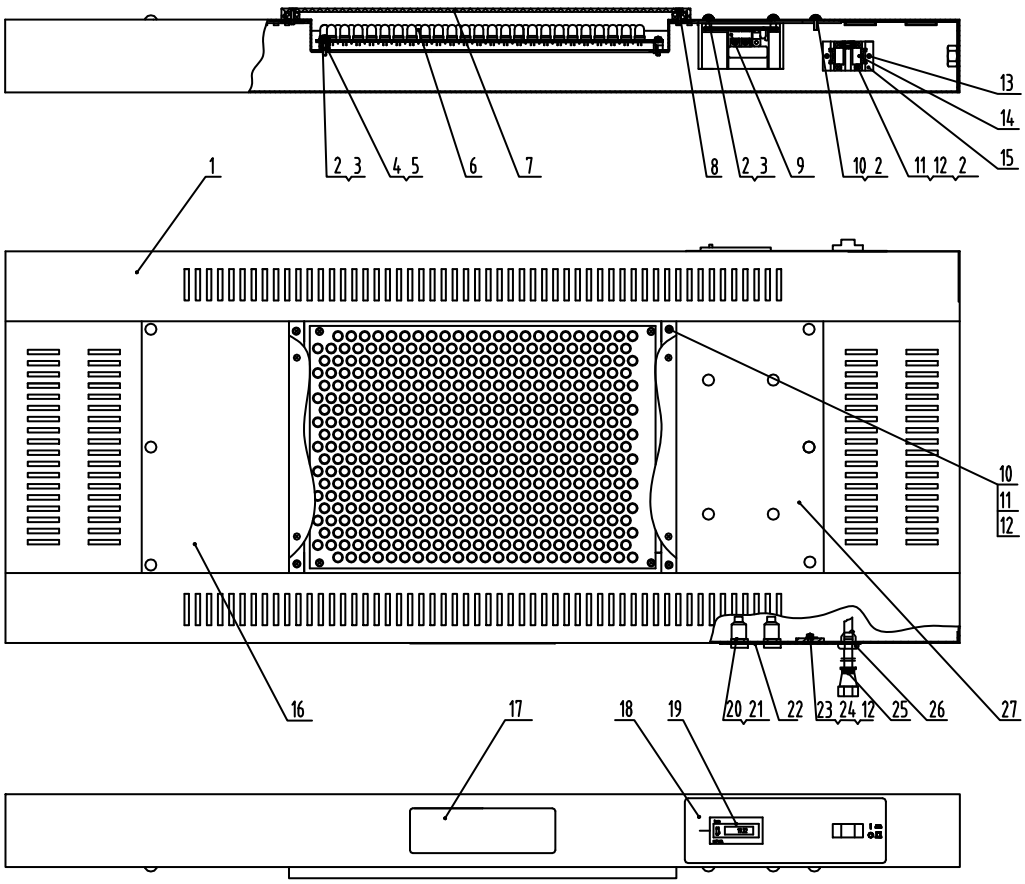




LAMP MODULE（XHZ-90, FIXED TYPE）

LAMP MODULE PARTS LIST（XHZ-90, FIXED TYPE）CONTINUED

ITEM No.	DESCRIPTION	PART NUMBER
1	Lamp box cover	42.01.024.00
2	Lamp box shell	42.01.025.01
3	Electronic ballast	86.60.067.00
4	C5ross groove pan head bolt M4×8	86.44.176.00
5	Sp6ring washer 4	86.44.414.00
6	Flat7 washer 4	86.44.442.00
7	Fuse seat	86.59.017.00
8	Fuse	86.59.053.00
9	Electric case	42.01.041.00
10	Timer	86.61.078.00
11	Switch groupware	12.07.075.00S
12	Power-supply filter	86.60.021.00
13	Cross groove countersunk head bolt M3×8	86.44.216.00
14	Cross groove oblate head tapping boltST4.2×12	86.44.259.00
15	External teeth serrated lock washer 4	86.44.395.00
16	External teeth serrated lock washer 3	86.44.394.00
17	Cross groove pan head bolt M3×6	86.44.159.00
18	Cross groove pan head bolt M3×6	86.44.158.00
19	Spring washer 3	86.44.412.00
20	Flat washer 3	86.44.440.00
21	Switch seat	42.01.036.00
22	Ballast tabletting	05.01.016.00



LAMP MODULE (XHZ-90L, FIXED TYPE）

LAMP MODULE PARTS LIST (XHZ-90L, FIXED TYPE）

ITEM No.	DESCRIPTION	PART NUMBER
1	Outer shell of lamp module	05.01.025.00
2	Cross groove pan head bolt M3×6	86.44.158.00
3	M3 bolt cover	05.02.046.00
4	Bolt bush	13.07.006.00
5	Hexagon insulation bolt	13.07.007.00
6	LED plate	44.19.003.00S
7	Protective panel	05.01.037.00
8	Cross groove countersunk head bolt M3×16	86.44.210.00
9	Switch power	86.60.015.00

LAMP MODULE PARTS LIST (XHZ-90L, FIXED TYPE）CONTINUED

ITEM No.	DESCRIPTION	PART NUMBER
10	Cross groove pan head bolt M3×8	86.44.159.00
11	Flat washer 3	86.44.440.00
12	Spring washer 3	86.44.412.00
13	Cross groove countersunk head bolt M3×8	86.44.216.00
14	Switch groupware	12.07.075.00S
15	Switch seat	42.01.036.00
16	Right assemble board	05.01.035.00
17	LED warning label	24.01.008.00
18	Switch label	42.01.081.00
19	Timer	86.61.078.00
20	Fuse’s seat	86.59.017.00
21	Fuse	86.59.044.00
22	Nameplate	05.01.039.00
23	Cross groove pan head bolt M3×5	86.44.157.00
24	Wiring terminal OT1.5-4	86.55.130.00
25	Power cord	86.46.009.00
26	Wiring clip	86.45.001.00
27	Left assemble board	05.01.033.00

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EDITION/REVISION C/1

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