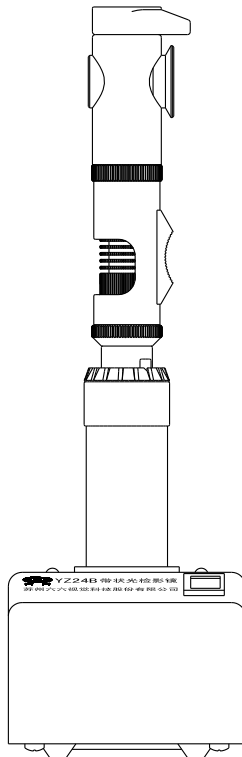


# YZ24B

## SREAK RETONOSCOPE

### Instruction Manual



## **Preface**

Thank you for purchasing our YZ24B Streak Retinoscope. Please read this manual carefully for the sake of better use.

### **General Requirement for Safety**

Please read carefully about following precautions to avoid unexpected personal injury as well as the product being damaged and other possible dangers

#### **Precautions**

1. Do not use this instrument in the environment where is prone to fire and to blast or where there is much dust and high temperature. Use it in the room and simultaneously be careful to keep it clear and dry.
2. Check that all the wires are correctly and firmly connected before use. Ensure that the instrument is well grounded.
3. Please pay attention to all the rating of the electrical connecting terminal.
4. Please only use fuse according to the specifications and rated stipulated by our product.
5. Use the power cable supplied with this instrument.
6. Don't touch the surface of the lens and prism with hand or hard objects.

7. Turn off the main power first before replacing the main bulb and fuse.
8. To prevent the instrument from falling down to floor, it should be placed on the floor where the inclination angle is less than  $10^{\circ}$  .
9. Turn off the power and cover the instrument with dustproof cover when it is not in use.
- 10 In case there is any trouble, please first refer to the trouble-shooting guide. If it still can't work, please make contact with the authorized distributor or our Repair Department.

**THE SAFETY MARKS:**



B Type



Refer to  
Instruction Manual



II Type

## Content

1. Usage	1
2. Construction	1
3. Connection of Handle	2
4. How to Use	2-4
4.1 Inspection	2-3
4.2 Note	3
4.3 Switch and Brightness Adjustment	3
4.4 Battery Charge	4
<b>5. Maintenance</b>	<b>4-6</b>
5.1 <b>Replacing the Illumination Bulb</b>	4
5.2 <b>Replacing the Batteries</b>	4-5
5.3 <b>Replacing the Fuse</b>	5
5.4 <b>Cleaning</b>	5
5.5 <b>Protection</b>	5-6
5.6 Spare parts	6
6. Waste disposal	6
7. <b>Trouble Shooting Guide</b>	<b>6</b>
8. <b>Responsibility</b>	<b>6</b>
9. <b>Transportation and Storage</b>	<b>7</b>
10. <b>Specification</b>	<b>7</b>
11. Normal Working Condition	7

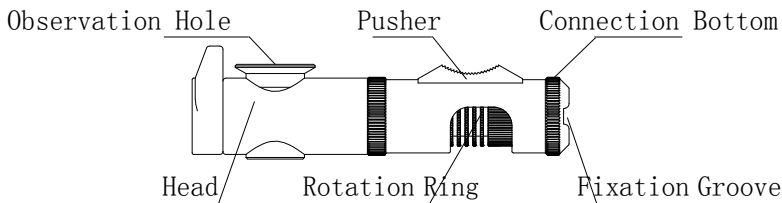
## 1. Usage

YZ24B Streak Retinoscope is a medical instrument for determining refractive errors and axis of astigmatism of fundus.

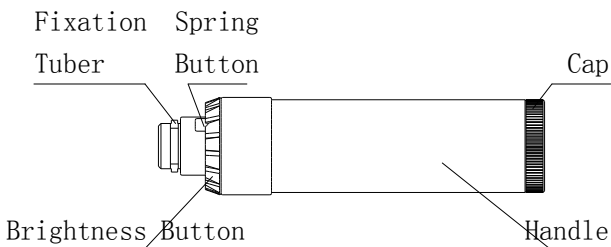
## 2. Construction

YZ24B is consisted of retinoscope, handle and charger.

### A. Retinoscope



### B. Handle



### C. Charger



There are no electromagnetism and other interferences between this equipments and other equipments.

### **3. Connection of Handle**

One hand holds the Head of retinoscope and the other hand holds the handle. Insert the Fixation Tuber into the Fixation Groove and then rotate Head clockwise to fasten the connection.

Whereas, rotate the Head anticlockwise to detach the connection of the Head and the Handle.

**⚠ Attention: Power Supply must be cut off before operation.**

## **4. How to Use**

### **4.1 Inspection**

1) The working distance should be  $2/3(0.67)m$  and the operation is same to spot retinoscope as following diagram.

2)The working distance should be fixed between the eyes of patient and the doctor. The doctor holds the handle with right hand. By using thumb and index fingers, rotate the moving block in the groove to rotate bulb  $360^\circ$  to change the optical axis and pushing slide shaft up and down to control the width of optical streak.

3) The moving direction of handle should be vertical with optical streak. For example, the optical streak should be at  $90^\circ$  to determine the  $180^\circ$  longitude refractive powers.



4) Owing to the distance between the eyes of patient and the doctor is  $2/3m$ , there is a 1.50D myopia objectively.

To inspect the patient without astigmatism who longitudinally shows no optical streak differences in the pupils, the pusher should be pushed to the highest position to check the myopia or hypermetropia. If the inspected eyes are put on proper trial lens and then the longitudinal images do not change, just add or subtract the inspection readings: if myopia, please add 1.50D; if hypermetropia, subtract 1.50D.

#### 5) Astigmatism

Push the Pusher to the highest position and rotate moving block to observe the axis. If the outer optical streak is parallel with the optical streak inner the pupils, it is astigmatism axis. If the outer optical streak is at  $90^\circ$ , the optical streak inner the pupil is the brightest and thinnest and two optical streaks is parallel, the astigmatism axis is  $90^\circ$ . The differences between the two longitudinal reading are the astigmatism degree.

If the astigmatism degree is too big, the inner pupil optical brightness will be very dark and wide. Please let the Pusher gradually

move down to get the brightest and thinnest optical streak inner the pupils.

6) Please do not move the pusher up and down when the moving block is rotated  $360^\circ$  .

#### **4.2 Note**

1) Please fully enlarge the pupils of patients, or it will affect the inspection result.

2) Please choose proper trial lens set and seating according to the ages of patients for better inspection.

3) The distance between the patient and examiner must be  $2/3m$ .

#### **4.3 Brightness Control**

Use thumb to clockwise rotate the Brightness Button to the maximum. The brightness will be gradually brighter. After use, anticlockwise rotate the Brightness Button till the spring button springs to turn off the bulb

##### **⚠Attention:**

1) In nonuse, please make sure that the spring button springs, which means the bulb is off.

2) To order to keep the life-span of bulb, please do not keep the maximum brightness when the battery is fully charged.

#### **4.4 Charging**

Put the Handle into the charger and turn on the switch. If the green bulb is on, it shows the power supply well connected. The yellow bulb shows that the battery is charging. After fully charged, the yellow bulb will turn off. If not in charging, please cut off the power supply.

##### **⚠Attention:**

1) The charger is automatically controlled and will not be over-charged.

2) The battery is  $Li^+$  chargeable battery. If the retinoscope is not used long time, please take out the



battery.

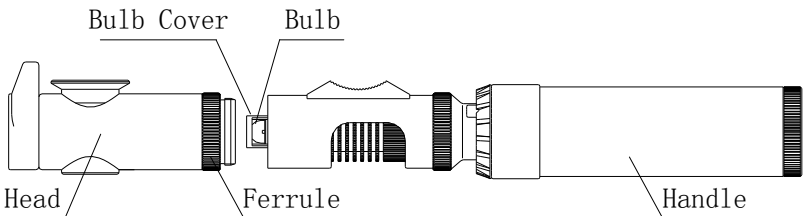
3) Please keep the outer handle clean to make sure the charging will not be affected.

4) In charging, the Spring Button must spring out.

5) After use, please handle with care to avoid the hot fuse to be broken.

## 5. Maintenance

### 5.1 Replacing the Bulb

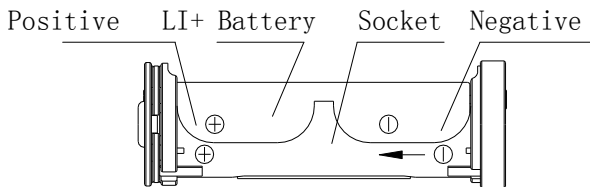


1) Turn off power supply and anticlockwise rotate the Ferrule to detach the connection of Head and Handle.

2) Take out the Bulb Cover and old bulb, insert the new bulb.

3) Assemble the Bulb Cover and Head.

### 5.2 Replacing the Battery



Battery Module

1) Take off the handle bottom and Battery Module.

2) One hand holds the Socket, the other hand holds the Negative Pole and push the battery to pull out the battery.

3) One hand holds the Socket, the other hands holds the Positive Pole and push the battery to the Negative Pole to

insert the battery into the Socket.

4) Put the battery into the handle and make sure that positive pole is in inner and negative pole will connect with handle bottom. Mount the handle bottom.

**⚠Attention:**

1) Please use the same battery with specification: CGR18650C.

2) Make sure that positive and negative poles are right corresponded.

3) If the retinoscope is not in use long time, please take out the battery after fully charged.

### **5.3 Replacing the Fuse**

Cut off the power supply. Screw off the cover of fuse box and replace the new fuse.

The fuse specification: 51S-0500H

**⚠ Attention:**

**Please use the fuse with the same specifications.**

### **5.4 Cleaning**

Please keep the equipments clean and dry. If there is dust on the cover, please clean it with soft cloth. If there is dust on the optical lens, please clean the lens by absolute alcohol cotton

**⚠Attention:**

1) Please do not use any hard objects to clean or touch the optical lens.

2) Please do not use any corrosive detergent in order not to damage the surfaces.

### **5.5 Protection**

1) The retinoscope has been well checked before leaving factory. Please do not dismantle.

2) The retinoscope should be used in clean and dry condition. If the retinoscope is not in use long time, please pull out the battery and keep the retinoscope in the packing box.

3) The retinoscope should not be shaken and struck.

4) In order to be well charged, please do not cover the charger heat dispelling holes.

5) Please keep the handle bottom clean for better charging.

## 5.6 Consumable

Please clearly state the number of consumables when you order it. The main consumable is the bulb.

## 6. Waste Disposal

The used bulb and fuse can be disposed as normal industrial products. The battery should be strictly disposed according to local laws. Please do not pollute the environment.

## 7. Trouble-Shooting Guide

In case there is any trouble, please check according to the following table for reference. If it still can not work, please contact the Repair Department of 66 VISION TECH CO., LTD. or an authorized distributor.

Number	Trouble	Possible cause	Remedy
One	The bulb is not on	The button is not been pressed or not been rotated	Press the button and rotate clockwise
		The bulb is burnt	Replace the bulb
Two	The brightness is	The capacity of the batteries is not enough	Replace the batteries or charging them

	not enough	The bulb is used	Replace the bulb
There	The green indicator of the charger is not on	The switch of the charger unit is on “off”	Place the switch on “on”
		The fuse is melt	Replace the fuse
Four	The fuse is melt	The fuse specification	Replace the fuse
		is not right	

## 8. Responsibility

We will supply the circuit diagram of the instrument, electric component list, drawings and calibration details according to the customer’ s need for repair.

If there is any need for inquiry of relative information and relative service or some questions, please contact us directly or authorized distributors.

## 9. Transportation and Storage

1) Before leaving the company, the instrument has been well adjusted, please don’ t disassemble it anyway.

2) During the transportation, be careful to protect it from wetness, upside down and violent vibration.

3) This instrument should be stored in a well ventilated room without corrosive gas where the relative humidity should be 10% to 80% and environment temperature  $-40^{\circ}\text{C}$  to  $50^{\circ}\text{C}$ .

## 10. Specification

Bulb: 3.5V/2.5W Halogen Bulb。

Power: Charger: AC100—240V, 50—60Hz;

Retinoscope: DC3.6V 锂电池。

Input Power: 10VA。

Li+ Battery: CGR18650C。

Fuse: 51S-0500H。

## 11. Working Condition

1. Temperature:  $5^{\circ}\text{C}\sim 40^{\circ}\text{C}$ 。

2. Relative Humidity: 30%~75%。

3. Atmospheric Pressure: 700hPa~1060hPa。

4. Power: Charger: AC100—240V, 50—60Hz;

Retinoscope: DC3.6V Li+ Battery。

● Subject to change in design or specification without notice in advance. .