Important Notice

(1) Please use SJR-9900A Auto Refractomenter after you read the manual carefully

(2) Do not use this instrument in the sunlight or bright indoor light, the bright lights can influence the results of measurements.

(3) During measuring, the patient's eyes must directly look at the red plane of color image with his(her) eyes opened as large as possible for the largest pupils to receive more infrared in order to obtain accurate data.

(4) For longer service life, please turn off its power supply once the operation is finished.

(5) Normal operation temperature range is from 10℃ to 40℃ and humidity is from 30% to 75%.

(6) Storage temperature range is from -25℃ to 40℃ and humidity is from 10% to 95%。

Note: This instrument must be well grounded for safety of both patient and operator.

I . Transportation and Unwrapping

This instrument is an precise measuring device. Do not give the shook or drap the instrument. Handle with care. The instrument must be prevented from moisture.

II . Summazy

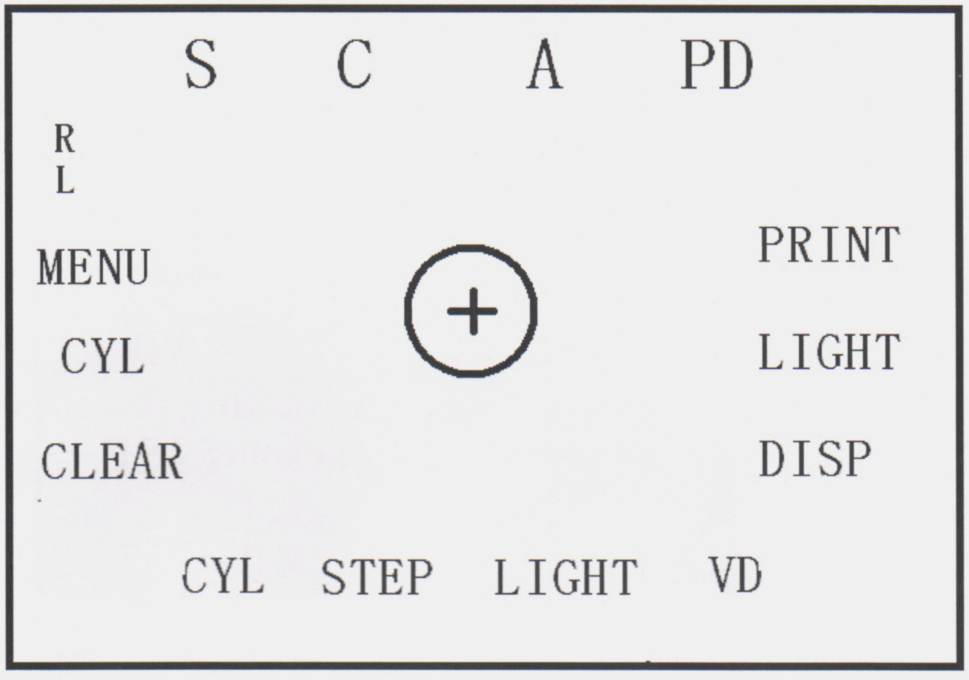
This instrument is an auto refractometer, in which conputer is a core, and fogging device, high-sensitivity CCD camera and LCD monitor are adopted to position and measure patient's eyes. It is also equipped with automatic data processing, pringting and outputting functions. It is professionally manufactured for measuring and detecting human's eyesight for quickly giving more accurate data useful in preparing glasses to correct eyesight of patients with defects, such as myopia, hyperopia, astigmatism.

III. Specification

Diopter of spherical lens: 0~±10D(±0.25D),±10D~±15D(±0.50D)
Diopter of cylindrical lens: -6D~0(±0.25D)
Axis position of cylindrical lens: 0~180°(±1.5°)
Top distance of cornea: 12.00mm
Pupil distance: 41~90mm
Detectable minimum pupil: ⩾Φ2.5mm
Bracket lifting range: 0~30mm
Instrument head lifting range: 0~25mm
Instrument moving range forward and backward: 0~25mm
Displayer: color LCD monitor
Measuring speed: 0.5seconds
Calculation of displayed value: 0.5seconds
Printer: Heat-sensitive fast printer
Dimension: 380(d)X280(w)X450(h)mm
Weight: 14kg

Ⅳ. Description of parts

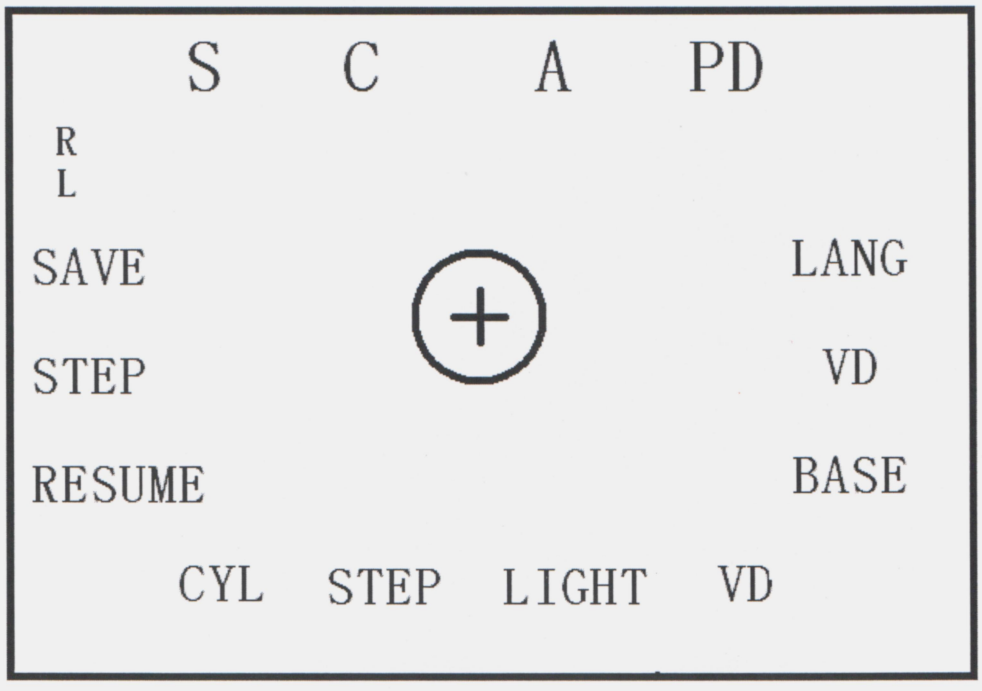
V. Description for Screen Displaying



(Figure 1)

VD: Indicating top distance between eye cornea and lens
CYL: Indicating cylinder type
LIGHT: Indicating lightness of entering pupil
CLEAR: press this button to clear all data
MENU: press this button to enter next menu(Figure2)

VI. Operation Methods



(Figure 2)

1. Turning on

Connect power supply reliably, then turn the power switch on.The instrument can be operated normally if the screen displayed as Figure 1.

Press MENU button to shift the screen displayed as Figure 2

- Press STEP button to select 0.12D or 0.25D increment.
- Press CYL button to shift the cylinder signal.
- Press LIGHT button to increase the lightness for small pupil.
- Press LANG button to select English or Chinese.
- Press SAVE button to return the screen displayed as Figure 1.

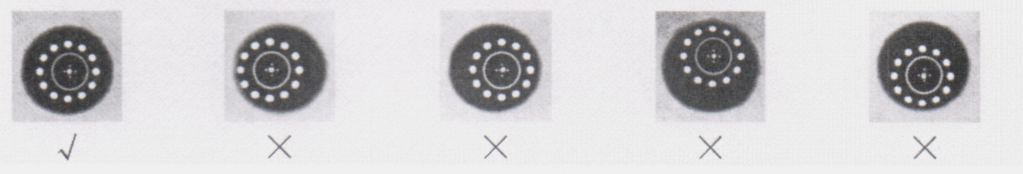
2. Positioning operation

A. Adjust the height

- Let the patient seat in front of the instrument with his(or her) chin on the chin rest and his (or her) forehead against forehead rest.
- Rotate the bracket adjusting rod to lift the bracket up or down, until the patient's eye height is adjusted to the height aligning mark.

B. Focus the patient's eye

- Slide the operation stick left to let the patient's right eye appear on the screen.
- Slide or turn the operation stick to guarantee the positioning ring in the center of the patient's pupil (As shown in Figure below).

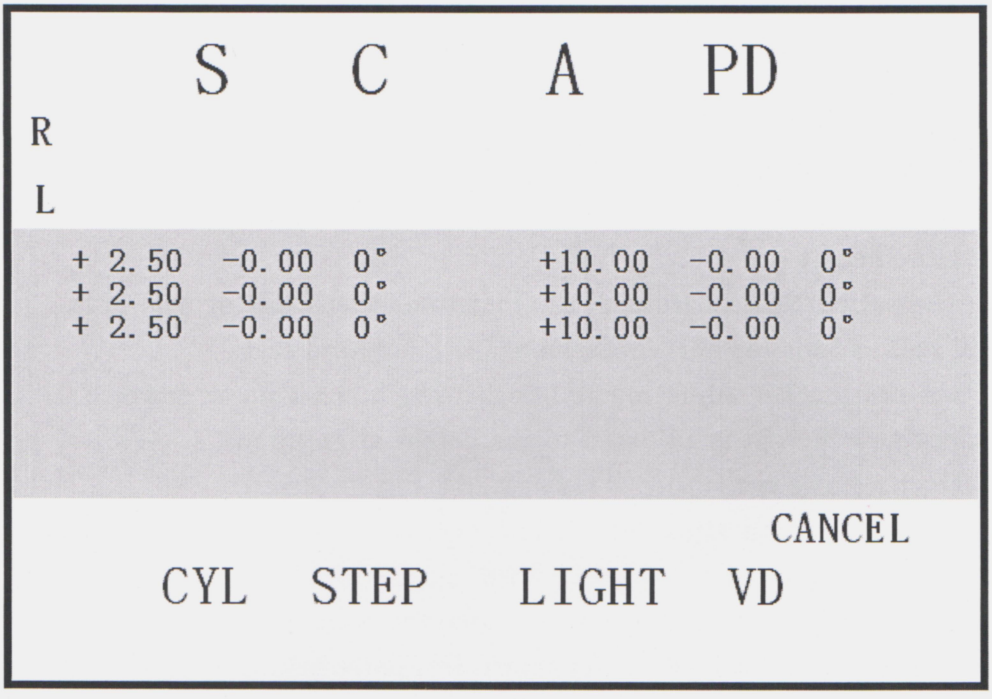


- If the corneal image is not clear, let the patient open his (or her) eye as large as possible until the measurement is finished.
- Adjust the operation stick to let the blue "+" at the screen center align the bright point at the center of pupil, press measurement button when the bright point is minimal.

3. Measuring again

- If you are not satisfied with the measured value, measure again in the same way.
- During measuring again, the new measurement value will appear on the screen.

Note: If you need focusing the patient's eye again, press **CLEAR** button to clear the measured value before measuring again.



(Figure 3)

4. Measurement of pupil distance

A. Select button operation (displaying pupil distance with white).

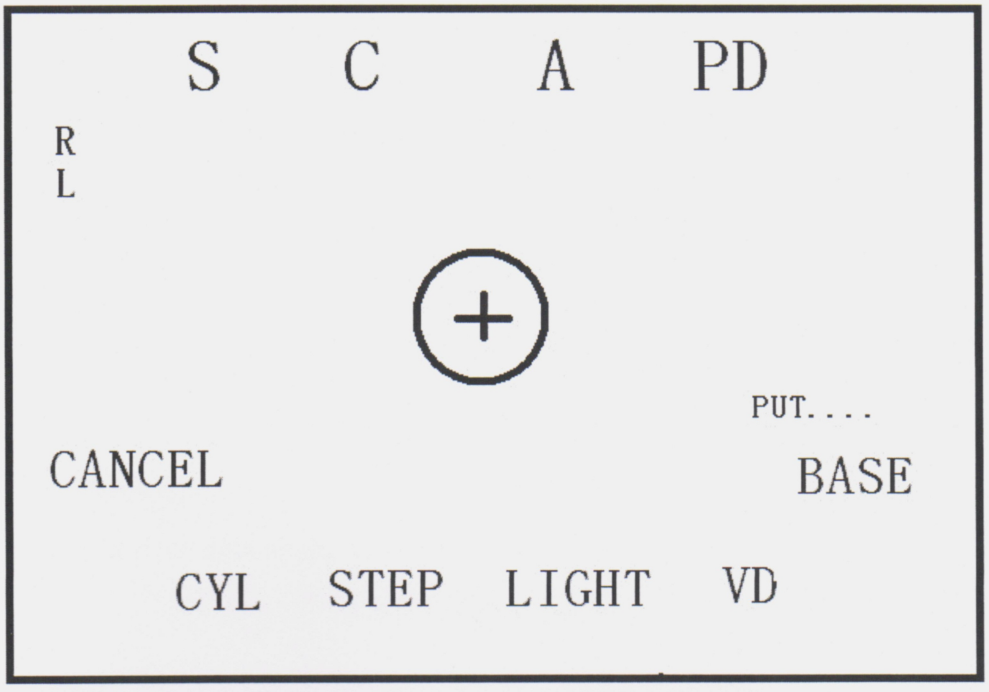
- Press **Measurement** button when measure right eye.
- Slide the operation stick righe, press **Measurement** button when measure left eye. The pupil distance will appear on the screen.

B. Select stick operation (displaying pupil distance with blue)

- Press measurement button on the operation stick when measure right eye.
- Slide the operation stick right, the pupil distance appear on the screen when measure left eye.
- Press **DISP** button, all measurement date will appear on the screen (Figure 5).
- Press **CANCEL** button to return the screen displayed as Figure 1.

5. Printing results

Press **PRINT** button, this instrument will automatically print the measurement results.



(Figure 4)

Ⅶ. Initialization Operation Methods

After long distance transportation or a certain period of application, the instrument may be inaccurate of may often appear "NOK" on its screen, in this case the initialiyation operation is need. Its method is as follows:

(1) After covering up its lens cover, press **MENU** button to shift the screen displayed as Figure2.

(2) Press **BASE** button two times to shift the screen displayed as Figure 4, and **"WAIT"** will appear at upper part of the screen. Wait for several seconds, when **"WAIT"** disappear press **SAVE** button to return the screen displayed as Figurel.

The initialiyation of the instrument is finished.

Ⅷ. Screen Protection

If there is no any operation within ten minutes, the instrument will enter into screen protection status with JINGLIAN logo, after five minutes it will enter into protection status with black screen. Pressing measurement button the instrument may return to operation status.

Ⅸ. Replacement of Printer Paper

(1) Open the printer cover.
(2) Remove the roll of paper lnsert the new roll.
(3) Pull out the end edge of paper from the printer cover slot with aligning the paper.
(4) Close the printer cover.

X. Other Attentions

(1) This instrument must be operated by operator professionally engaged in optometry.
(2) Wipe the forehead rest and the chin rest with ethanol er glutaraldehyde solution to disinfect them each time different patients examination, in order to prevent infection.