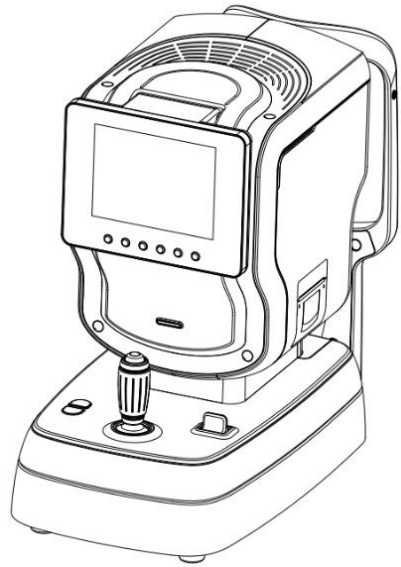
OPERATION MANUAL

AUTO REFRACTOMETER

RMK-700



CE

Shanghai Supore Instruments Co.,Ltd.
http://www.supore.com
REV.20170512

Preface

Introduction

Auto Ref/Keratometer RMK-700 is the precise instrument to measure objectively the parameter of diopter and corneal curvature, suitable for patient measurement of Spherical, Cylindrical, Axis, PD and Corneal Radius of Curvature .

Main Features

1、 More accurate Measurement.

The RMK-700 foggy method of the eye fixation target(15mm*15mm) locked inside makes examinee's eye more comfortable and measurement data more accurate.

2、 Classification

Classification of product: 2nd Grade Medical Instrument

Resistance against electric shock: Class I (earthed)

Protection class against electric: Type B

3、 Type

(1) Resistance against electric shock: Class I

(2) Degree of Resistance against electric shock: Type B Applied Part;

(3) NOT Type AP equipment, NOT type APG equipment

(4) Mode of operation : Continuous

(5) Not suitable for use in the presence of a flammable anesthetics mixture with air or with oxygen or with nitrous oxide.

Shanghai Supore Instruments Co.,Ltd. reserves the right to make changes in its products or product specifications at any time and without prior notice, and is not required to update this documentation to reflect such changes.

Safety symbol and instructions

⚠Note: Twist screws here before installation

Working condition :

1、 No hard light shoot directly

2、 No electromagnetic field of strong interference

3、 Temperature : +5℃ ~ +40℃

4、 Relative Humidity : 30% ~ 75% RH

5、 Atmospheric pressure range : 700hpa~1060hpa

Working environment

1、 Do not hit or drop the instrument. The impact may cause damage to the function of this instrument. Please handle with care.

2、 An exposure to the direct sunlight or bright indoor lights may influence the result of the measurement. Please use the URK-800 in an appropriate optometry room.

3、 Please contact your dealer while connecting this to other associated equipment.

4、 A sudden heating will cause condensation on the protective glass in the monitor screen and on optical parts inside the instrument. In this case, wait until condensation disappears before performing measurements.

5、 Keep the objective glass on the examinee side clean. If smudged, it may cause an ERROR or inaccurate measurements.

6、 In case there is smoke, strange odor or noise during operation, disconnect the power supply and consult the distributor.

7、 Don't use organic solvents such as alcohol, paint thinner, benzene, etc. to clean the surface of this instrument. It may damage the instrument.

8、 When moving the RMK-700, Fix the stage by using stage holding knob and clamping bolt, disconnect the power cable, and then lift the bottom of the unit with both hands.

9、 When the system is not in use for a longer period of time, disconnect the power supply and cover with the dust cover.

10、 Some material using instructions touched directly with skin：when operating the instrument, the customers need to use medical non-woven fabrics(Specification:8cm*8cm)to separate the touching part between instruments and patients, to avoid patients touch directly instrument surface.

11、 Don't open the enclosure until our company agree.

Using Attention

Dismounting packing container, and get rid of the packing material used for transportation. Saving the packing container and packing material well to repackage the auto refractometer when needing in the future.

Attention: Make sure to loose or rotate tightly the instrument pedestal lock when dismounting or packing the instrument. Loosing the instrument pedestal lock when using , or refractometer body can't be moved, which influences the use. Machine base lock is below part of pedestal. See Figure a.

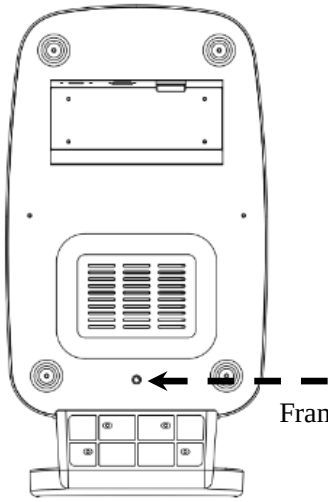


Figure a.

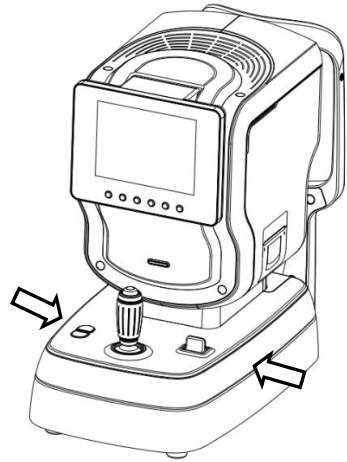


Figure b.

Attention: Before using the rubber pad on both sides of the rotation, the specific location as shown in figure b, Otherwise it will affect the left and right movement.

Move to one side, then turn up the rubber pad and then operate the other side.

Dismounting Matters need attention

Check the items in the package box

Should include articals as followings:

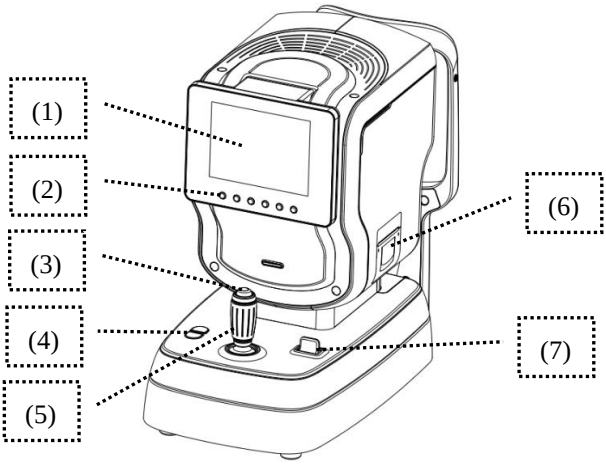
RMK-700 Refractometer

- RMK-700 User Manual
- Refer to packing list for Others

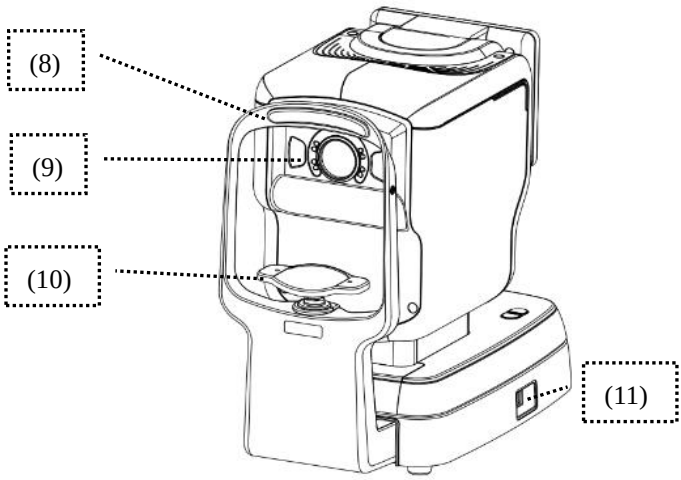
Index

1. Introduction of Instrument

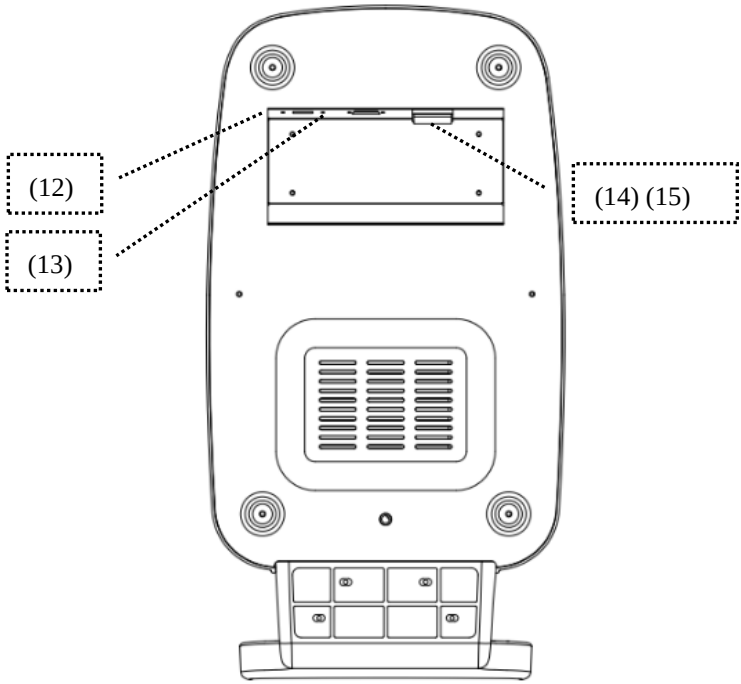
1.1 Host Machine



Name	Function
(1)LCD Display	Monitor that displays Measurement.
(2) User Key	There are various function keys
(3) Measurement button	Press this button for manual measurement
(4) Chin Rest Up/Down Button	For regulating height of chin rest
(5) Operation Joystick	Adjusting the focus by moving to the directions of forward/backward, left/right, up and down.
(6) Printer	Prints the measured results
(7) Stage Holding Knob	Holds the movement of stage.

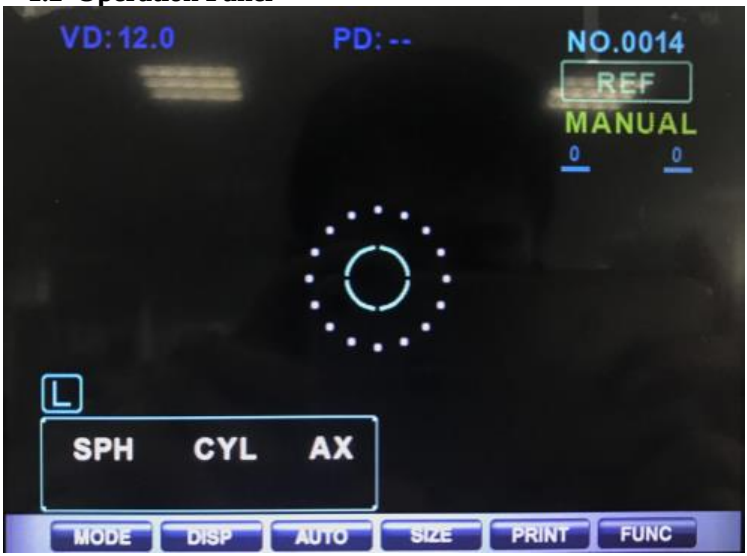


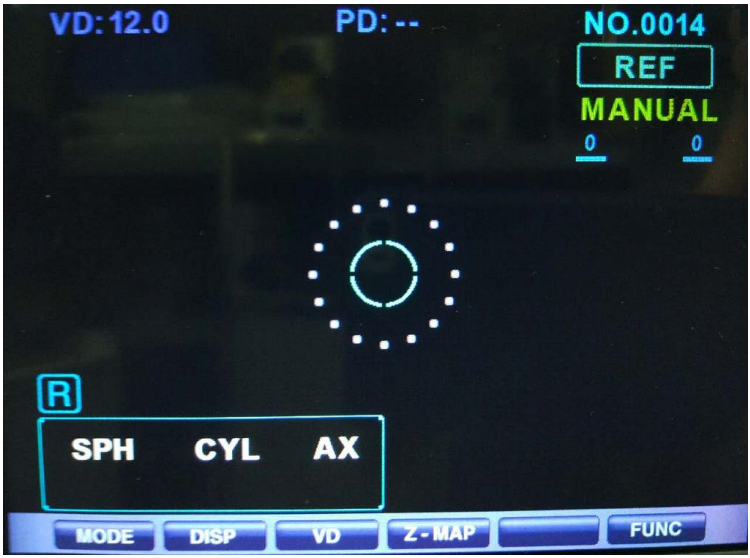
Name	Function
(8) Head Rest	Place the examinee's forehead against this rest
(9)Measurement window	Window for the examinee to look at for measurement
(10) Chin Rest	Place the examinee's chin on the rest
(11) Power Switch	Switch for turning power ON and OFF.



Name	Function
(12)USB Port	Upgrading the instrument
(13)RS-232 Port	Executing Online function with external devices
(14) Power Supply Socket	Connecting the power cord
(15) Fuse:F2AL 250V	Protects instrument from the excess electric power.

1.2 Operation Panel





Title	Technical skill
MODE	A switch to change the mode for measurement and to get into the user’s configuration
DISP	A switch to indicate the measured results on the monitor
AUTO	A switch to begin to perform the measurement manually or
SIZE	To measure size of pupil.
PRINT	To print the data of measurement
FUNC	Change Operation panel
VD	To change the VD(Vertex Distance) value. Examp
Z-MAP	Zernike Map

2. Instrument Using

2.1 Installation

Installation location In your workplace, install the RMK-700 Refractometer in a flat place without direct sunlight and adjust it to appropriate height. The operating environment temperature is between + 5 ° C and + 40 ° C and the relative humidity is between 30% and 75%.

In order to avoid damaging the refractometer, it is forbidden to place it on the following places:

- where particularly hot and particularly cold;
- where the humidity changes tremendously;
- where there is a lot of dust;
- Near electromagnetic equipment of Strong interference.

Installation

- Put it softly on the table;
- Connect the power cord to the socket;
- Ground the earthing terminal in the socket reliably .

Note: The Operation desk should be placed on a flat place during installation and can be configured by the actual situation.

2.2 Calibration

- Pull the handle, the host should be able to move on the base smoothly and flexibly;
- Turn on the power switch, and the power indicator light is brighten, then the screen starts displaying;
- Place the standard model eye on the head rest and fix it with the dowel pin;
- Adjust the height lifting knob so that the standard eye height is roughly same as the measuring window;
- Pull and turn the joystick to make sure the internal collimation point is at the center of the corneal ring;
- adjust the joystick front and back to keep the corneal ring focus clearest, meanwhile internal alignment ring is locked in the internal collimation point;
- Press the measurement key, for a moment the measurement results will be displayed on the screen. The results should be consistent with the standard eye;
- Press the print key , the measurement result should be printed out;

● If the above measurement results are consistent with the standard eye ($\pm 0.25 m^{-1}$ deviation is still normal), and each function keys are working properly, which indicates that the instrument can be measured normally.

2.3 Measurement

Measure the Model eye before measuring the patient

Measurement Procedure

(1) Turn ON the power

(2) Set the model eye on

Remove the model eye and align the holes of the model eye with the the chin rest, and insert pins.

(3) Release stage lock

Loose the stage solid bolt downward.

(4) Adjust height of Test Model Eye

Adjust the height of the chin rest by rotating Height Adjustment Knob so that The Test Mode Eye is aligned with the Height Adjustment Mark on the headrest.

(5) Enter K & R or REF Mode

Press MODE button until either one is displayed.

(6) Adjust the position and focus on the Model Eye.

Note: The Model eye is developed by the National Institute of Metrology, so the customers configure it according to their own needs.

- Height adjustment: rotate Joystick and Height Lifting Knob of chin rest to adjust height;
- Focus adjustment: Move the joystick all around, and focus when the center becomes a cross.

(1) Measurement

- Manual measurement: Press the measurement button. If measurement is failed with message like TRY AGAIN on the top left corner of the screen, press the button again;
- Automatic measurement:Push AUTO button at the bottom of monitor.

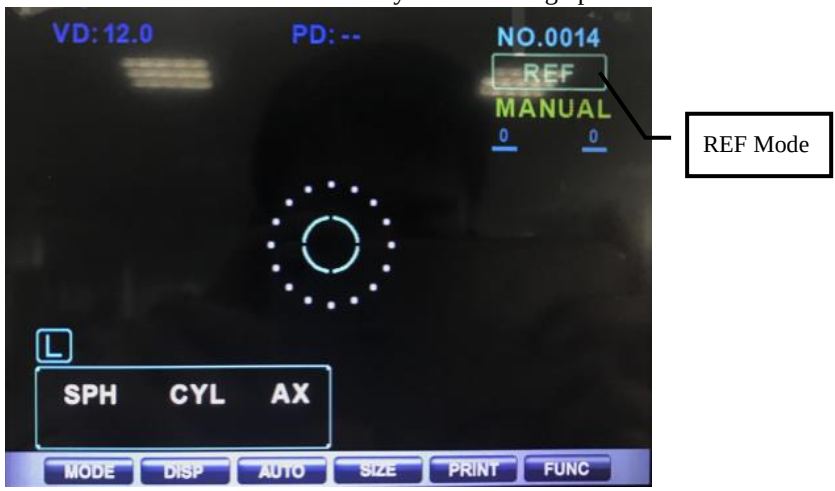
2.4 Operation method

DIOPTER\REF mode

In the REF Mode, Diopter measurement is performed only.

(1) Enter Mode

Enter REF mode automatically when starting up



(2) Adjust height of examinee's eye

- Have the examinee sit and adjust chair or Refractometer height to make examinee comfortable;
- Place his/her chin and forehead against the chin rest and forehead rest.
- Adjust the height of the chin by rotating the height adjustment knob so that the eye of the examinee is aligned with the height adjustment mark on the headrest.

(3) Perform Focusing

- Slide the operation joystick to the left so that the right eye of the

examinee is displayed on the monitor.

- Ask the examinee to look at the red balloon in the center of the scene(eye fixation target).
- Looking at the monitor, make certain Focusing Clear Mark can be observed, if the mark "十" doesn't appear, instruct the examinee to keep his/her eye opened wide until measurement ends.

Looking at the monitor, rotate the Fine Adjustment Joystick all around so the focusing alignment mark "十" is displayed clearly on the bright point

(4) Measurement

- Press the Measurement button
- The newest measured result will be displayed on the monitor.

(5) Repeated measurement

- Measurement could be repeatedly performed if necessary(there is error when continuous multimetering) ;
- The newest result will be displayed on the monitor whenever measured.
- CAUTION: before starting the new measurement you have to press CLEAR button to remove previous data in DISP screen.

(6) Measure the other eye

- Slide the stage to the right side and measure the left eye.
- After both eyes are measured, pupil distance (PD) will be displayed on monitor.

(7) Print

- Press the PRINT button
- The measured results will be printed.

When "TRY AGAIN" appears，refer to the following solutions, please.

Cause	Solution
Alignment of the eye is improper	Measure after aligning the pupil and the alignment mark properly.
Eyelid or eyelashes are covering the pupil.	Instruct the examinee to open his or her eyes wide, or lift up the eyelid lightly with your fingers and measure again.

When the pupil is smaller than the Alignment Ring.	The minimum pupil diameter that can be measured is 2.0 mm. Don't expose examinee's eyes to direct sunlight or too bright indoor lights to prevent contraction of the pupil.
When the examinee has some illness like cataract.	Impossible to measure.
When the Mire Ring is oddly shaped because of tears.	Instruct the examinee to open and close his or her eyes several times and measure again.
Data was out of valid measuring range.	Impossible to measure

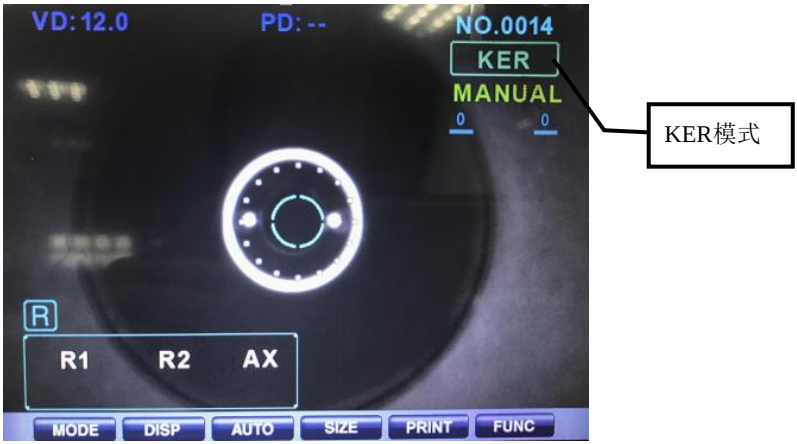
Keratometry (KER Mode)

Only the radius of curvature of the cornea can be measured in KER Mode.

(1) Enter the KER Mode

Press the MODE button until "KER" is displayed in the top of the display.

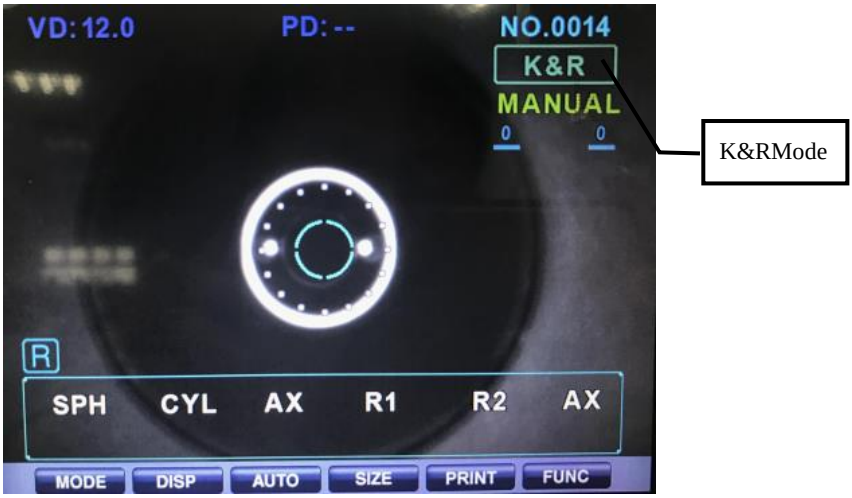
(2) Operatin is the same as REF



Keratometry and Refractometry\K&R mode

Both refractometry and the radius of curvature of the cornea can be performed in the K&R mode

(1)Enter Mode



(2)Press the MODE button until "K&R" is displayed in the top of the display.
(3)The measurement is the same as REF mode.

Diverse Indications

	Kind	Name	Meaning of Signs	Measures
Measurement of Refraction	#	Indicating low reliability	Measured value of low reliability	Measure again
	+ OUT	Exceeding measurable range	SPH exceeds +15 m^{-1}	Impossible to measure
	- OUT	Exceeding measurable range	SPHexceeds –15 m^{-1}	
	C OUT	Exceeding measurable range	CYL exceeds ±10 m^{-1}	

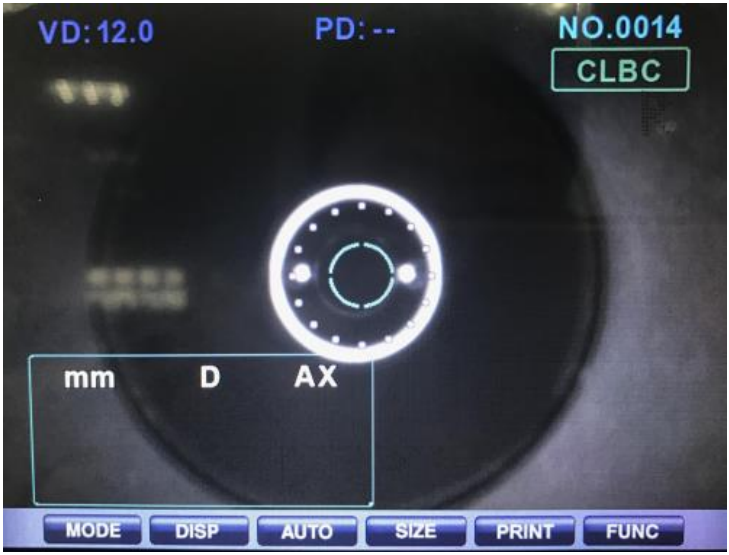
Measurement of Curvature	#	Indicating low reliability	Measured value of low reliability	Measure again
	+ OUT	Exceeding measurable range	Radius of curvature exceeds 9.4mm	Impossible to measure
	- OUT	Exceeding measurable range	Radius of curvature is less than 6.5mm	

Measurement of Contact Lens Base Curve(CLBC Mode)

It is the mode to measure base curve of contact lens (concave surface).

(1) **Enter the Mode**

In K&R mode, press the MODE button until "CLBC MODE" is displayed in the top of the display.。



(2) **Attach Contact Lens**

Put water in the concave section of contact lens holder at backside of the TEST Model Eye and place the contact lens on the holder with the concave surface facing upward. Take care that the contact lens not drop

(3) Attach the test Model Eye

Remove the chin rest paper. Fix the Model Eye attached with contact lens using fixation pin.

(4) Perform Focusing

Looking at he monitor, incline the operation joystick to right or left, and turn the operation joystick so there is"+" in the screen.

(5) Measurement

Press the Measurement button, as you keep pushing the measurement button, the measurement is to be performed consecutively.

- The newest measured result will be displayed on the monitor.

(6) Repeated measurement

- Measurement could be repeatedly performed if necessary；
- The newest result will be displayed on the monitor whenever measured.；
- CAUTION: before starting the new measurement you have to press CLEAR button to remove previous data.

(7) Print

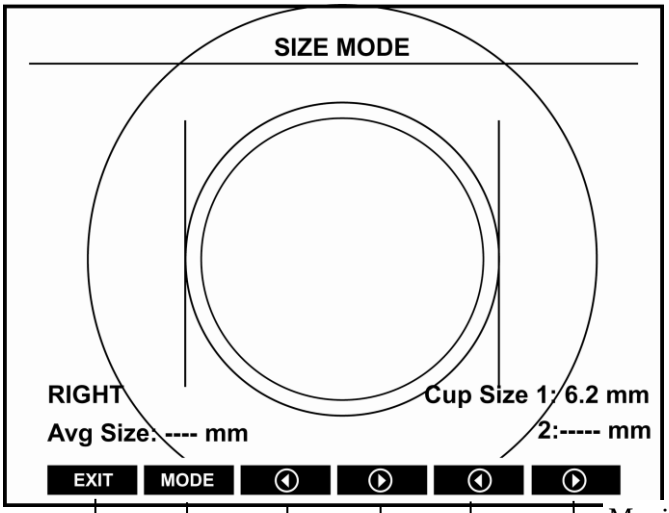
- Press the PRINT button；
- The selected data will be printed。

Measurement of Corneal Radius(SIZE Mode)

Diameter of cornea can be measured in the SIZE mode.

(1) Enter the Mode

A. Press MODE button until "SIZE MODE" is displayed in the top of the display.



Moving right perpendicular bar to right side

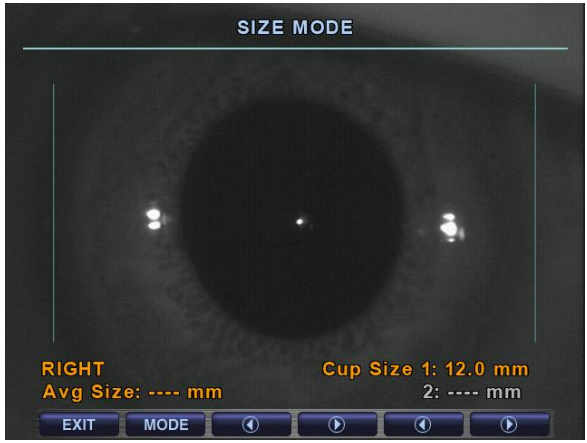
Moving right perpendicular bar to left side

Moving left perpendicular bar to right side

Moving left perpendicular bar to left side

Selecting measured value1,2

Terminating measuring size of pupil



(2) Adjust height of examinee's eye

- Let the examinee sit down, and adjust the height of the chair.
- Place examinee’s chin and forehead against the chin
- Adjust the height of the chin by rotating the height adjustment knob so that the eye of the examinee is aligned with the height adjustment mark on the headrest.

(3) Perform Focusing

- Slide the operation joystick to the left so that the right eye of the examinee is displayed on the monitor.
- Ask the examinee to look at the red icon in the center of the scene(eye fixation target).
- Looking at the monitor, check that image of the ARRAY RING is not obscured by the upper eyelid, if it is covering the ring, instruct the examinee to keep his/her eye opened widely until measurement ends.
- Looking at the monitor, incline the operation joystick to right or left, and turn the operation joystick so the pupil is centered with the inner alignment mark and focus on the ARRAY RING.

(4) Measurement

- ◀ button and ⇒ butt ▶ in tl ◀ center is to a ◀ ▶ st the movement of left bar, and ⇒ button and ⇐ button in right side is to adjust the movement of right bar
- The measured value shall be indicated on the screen of monitor；
- Store the measured value by pushing the measurement button.
- Repetition of Measurement
- Repeat the measurement in the entry of measured value as many times as you need. Repeat the procedure of 2~4 as performing the measurement again；
- No matter When you measure, the newest date can be appeared on the screen.
- Measurement of the other eye
- Measure the other eye in the same way while holding the operation lever and pushing the stage to the counter direction；
- Repet the above setp, can get the size data of another eye.

DISPLAY Mode

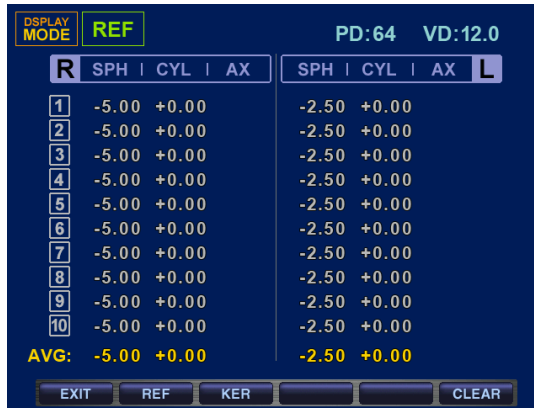
You can see the measured results(Max ten(10) units of data) stored in memory in this mode.

(1) Enter the mode

- As pushing DISPLAY mode in the measurement mode, it changes to DISPLAY Mode. It returns to the measurement mode as pushing EXIT button again.

(2) Measured Result of Refractometry

- It indicates the latest measured result of max amount of ten(10) times (refractive power of left/right eyes). As pushing CLEAR button, the stored data is to be removed.



(3) Measured Result of Keratometry

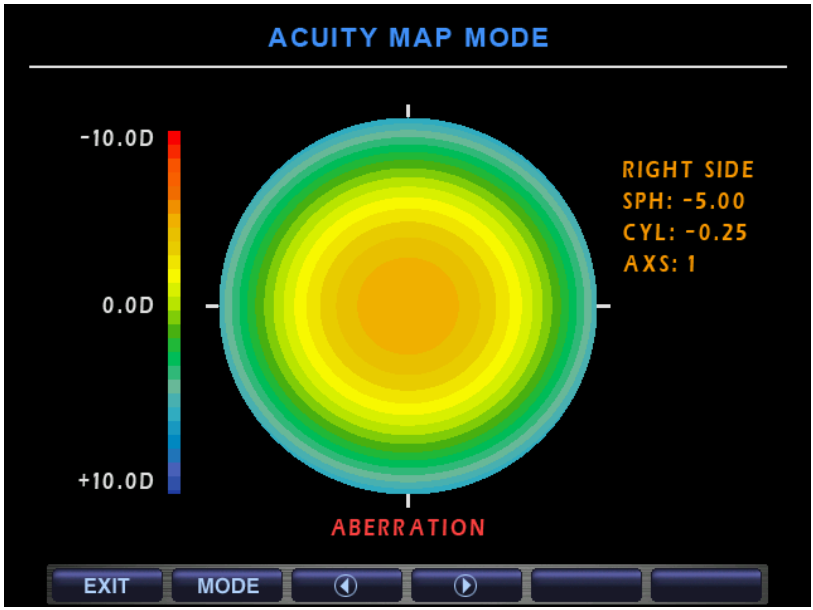
It indicates the latest measured result of max amount of ten(10) times(refractive power of left/right eyes). As pushing CLEAR button, the stored data is to be removed.

Other Measurement Mode

Acuity Map Mode (Z-MAP Mode)

Zernike Map indicates the distribution of refractive power in pupil area. Based upon the wavefront of emmetropes, Z-Map is drawn as a kind of topographical map having the elevation according the degree of distortion (aberration) of wavefront come from myopia or hypermetropia. Z-Map is to measure the refractive power in REF or K&R mode, and you can see it by pushing Z-MAP button.

1.Composition of Window

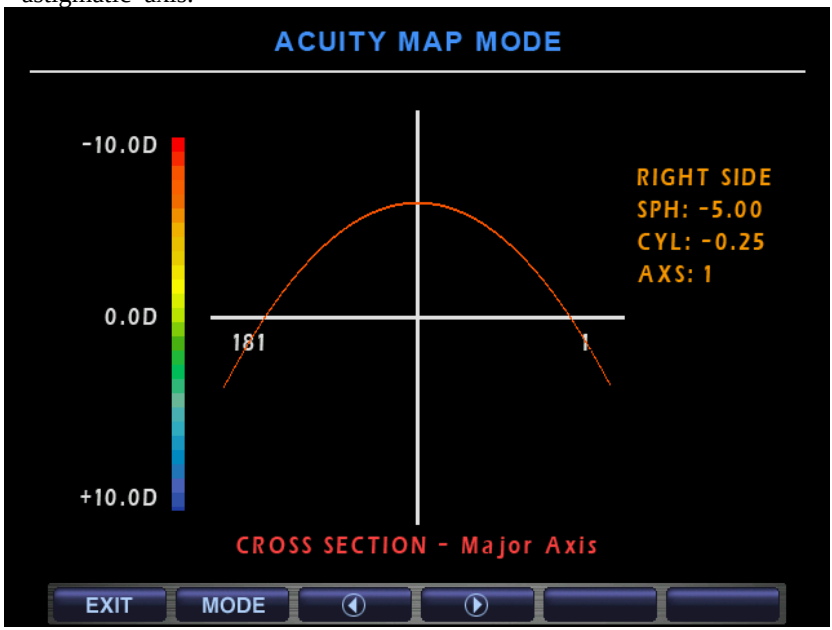


[Z-Map Window(Aberration)]

- Map Level on the left side in window is the aberration value of
- wavefront, and it is the color table to draw map. The max and
- min value of the aberration of measured wavefront is indicated by
- the unit of micrometer(um). The wavefront aberration of emmetropes is 0, and the severer the myopia and hypermetropia is, it is to have higher wavefront aberration of (+) and (-) sign respectively.

- By using the color table defined in Map Level, the map in the center of window is to be drawn according to the areal wavefron aberration(refractive power) within pupil area. Emmetropes is as in green, hypermetropia is as in blue, and myopia is indicated as in red: the severer the abnormality of eye is, the thicker their colors

become. In case including astigmatism, the refractive power topography of oval type is to be drawn to the direction of astigmatic axis.

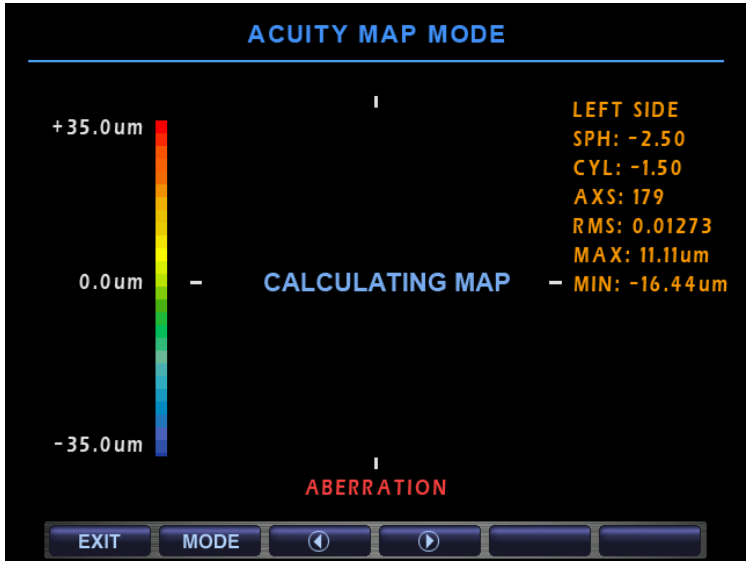


[Z-Map Window(Low Graph)]

- As pushing ◀ ı ▶n, it is changed to the graph which is to be seen as a sectional diagram as the map is cut horizontally and perpendicularly.
- Map information items indicated on right side of window are as follows.
- Side : Right or Left
- Sph : Spherical Aberration
- Cyl : Cylinder Aberration
- Axs : Cylinder Axis
- RMS : Size of Wavefront Aberration (Root Mean Square)
- Max : Max of Wavefront Aberration (um)
- Min : Min of Wavefront Aberration (um)

2.Change of Window

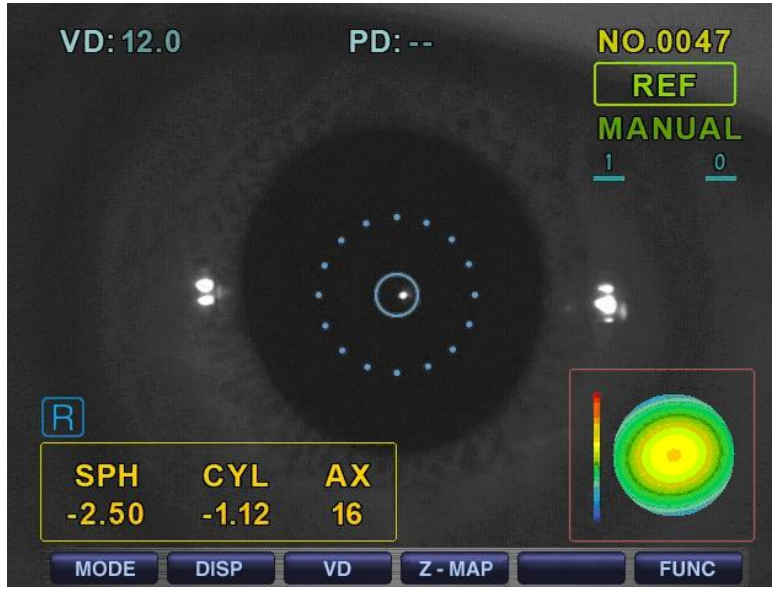
- As changing the measurement position of examinee to left or right side by moving the joystick, the map is to changed again as a result obtained in the measured direction.



[Z-Map Window Change]

- As the map is drawn for the first time, the guide message is to be indicated as “Calculating Map” for some time of standby for calculation.

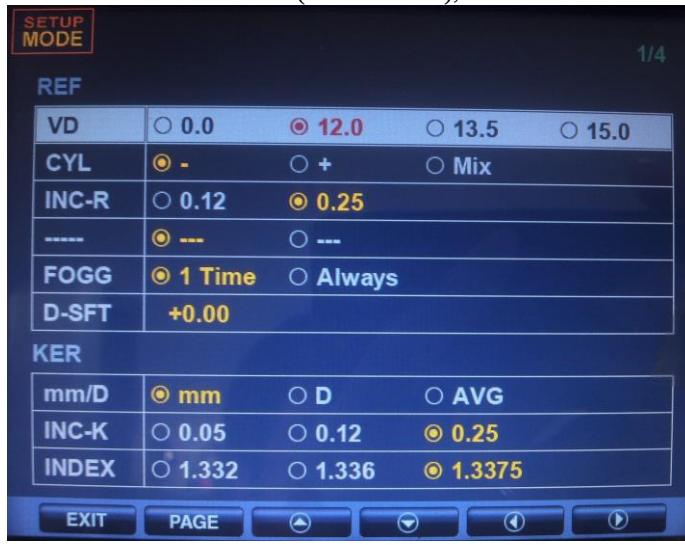
- As changing the MAP item n user SETUP as ON, Zernike Map window is to be indicated directly on right bottom in the measurement window of REF and KNR Mode.



[Z-Map Window]

2.5 User SETUP Mode

It is to perform many setups relating to measurement, print-out, etc. As pushing MODE button for seconds(2~3 seconds), it enters SETUP mode.



[Setup Mode Information (page 1)]

[How to change page]

As pushing PAGE button, it is to enter the next page.

[How to change item]

Select the wanted item while pushing ▲button or ▼button.

[How to change content]

As pushing ◀button or ▶button, the selected content changes. The selected content is to be indicated as yellow character length.

NOTE
You should change some contents in other way. The procedure of relating setup change is to be ordered under the explanation on each item.

[How to enter the measurement mode]

As pushing EXIT button, window as below is to pup up.

Cancel: As intending to return to Setup mode again.

Save & Exit: As intending to store the content and to return to the measurement mode.

Exit without saving: As intending to return to the measurement mode without storing, After pushing ▲button or ▼button toward the wanted item and selecting it, push SEL button.

[Content of Item]: 1/4 Page

REF: setup for measurement of refraction

[VD] Corneal Vertex Distance

[CYL] Astigmatism Indication Type

[INC-R] Indication Unit of SPH and CYL

[FOGG] Select the way of REF motor working

[D-SFT] Shift measured data

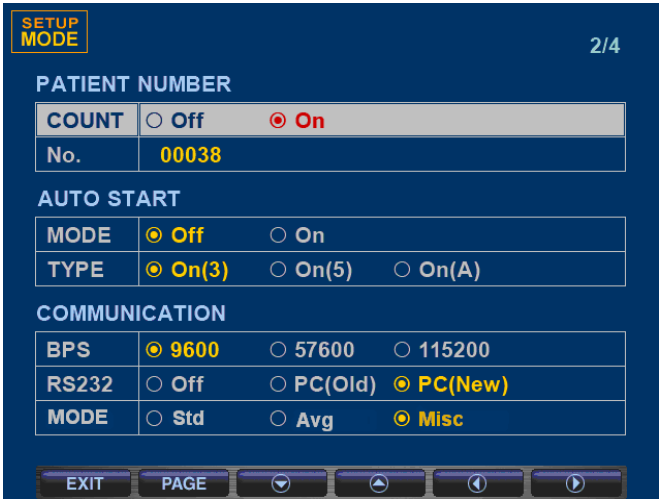
KER: setup for measurement of Keratometry

[mm/D] measurement result display type

[INC-K] Indication Unit of R1 and R2

[INDEX] Index of keratometry

PATIENT NUMBER / AUTO START / COMMUNICATION



[Setup Mode Information (page 2)]

[Content of Item] : 2/4 Page

PATIENT NUMBER : patient number management

[COUNT] Select whether use or not patient number

[NO.] Setup of number : As pushing ◀button or ▶button, the serial number is to be changed by the unit of '1' each time.

AUTO START You can select "ON" or "OFF" of AUTO START MODE.

[MODE] Select "ON" or "OFF" mode by pushing ◀button or ▶button.

[TYPE] Select number of measurement in AUTO Start mode. Can select 3, 5 or infinite.

COMMUNICATION : Setup for communication to other machines

[BPS] Select the one among 9600, 57600, and 112500bps as its data transfer rate.

[RS232] Setup of transmission method(method and version of other equipment)

Date & Time, Print

[Setup Mode Information (page 3)]

[Content of Item] : 3/4 Page

DATE & TIME Date & Time

[DISP] Setup of indication sequence of year/month/date

YMD: Year/Month/Date

MDY: Month/Date/Year

DMY: Date/Month/Year

[SET] After selecting item by pushing ◀button or ▶button, you can Change the value by using ▲button or ▼button.

PRINT Print Setup

[A-PRT] In case of measuring in AUTO START Mode, it is to print out the measured result automatically as the each measurement of left/right

[R-PRT] Refractometry -Output type of built-in printer for the measured result of Refractometry

STD : The measured result & average value of max ten(10) times are to be printed out

AVE : Only average value is to be printed out

OFF : It is not to be printed out

[K-PRT] Keratometry -Output type of built-in printer for the measured

result of Keratometry

STD : The measured result & average value of max ten(10) times are to be printed out

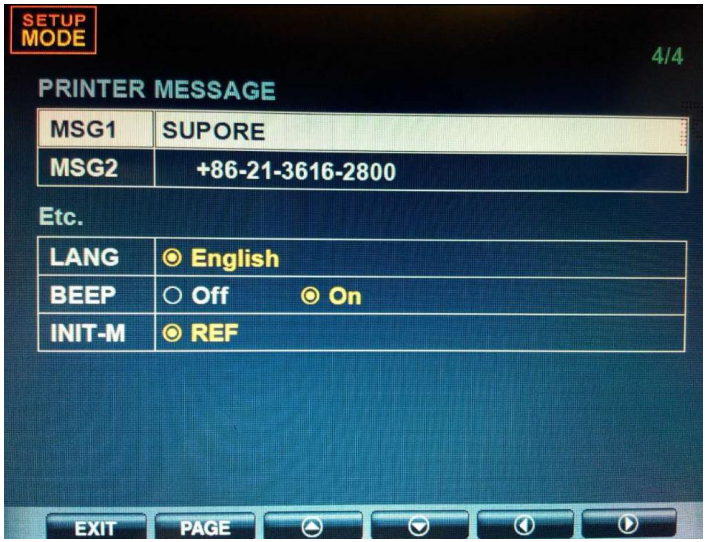
AVE : Only average value is to be printed out

OFF : It is not to be printed out

[EYE] ON : Pictures of eye & refraction according to the measured result of Refractometry is to be printed.

OFF : It is not to be printed.

Printer Message, Etc.



[Setup Mode Information (page 4)]

[Content of Item] : 4/4 Page

PRINTER MESSAGE Input the measured data and message for printer It can print 26 characters on two(2) lines.

[MSG1] Character input for the first line

[MSG1] Character input for the second line

-Character Input

By pushing ◀button or ▶button, the character board will be shown. After selecting the line by ▲button or ▼button again, input them by using SEL button while selecting characters pushing ◀button or ▶button.

[Character Input]

ETC Other Setup

[LANG] You can select the characters indicated on the screen from among supported languages. Select one among English, Chinese, and Japanese.

[BEEP] Turn On/Off Beep sound

Power saving Function

The power saving function begins to operate if you do not operate the machine at all for five(5) minutes or so. It is to return to the measurement mode as pushing any button optionally in saving mode.

3. Maintenance

3.1 Daily Maintenance

（1）Don’t put machine under sunshine；

（2）Don’t put heavy part on machine, which will damage to machine；

（3）To keep clean both machine and air around；

（4）To keep machine clean. Don’t use the organic solution like volatile liquid, diluent or benzol to machine；

（5）No operation for long time, to cut off power supply and pull out the plug；

（6）To put on the dust cover when not use the machine.

3.2 Replacement

3.2.1 Printer paper

- As red line appears on the paper, immediately change the print paper with new one.
- Confirm the material of paper and size（material：thermo-sensitive paper，size：width57mm，diameter 39mm）；
- Open the printer cover.

- install the printer paper.
- Close the printer cover.

3.2.2 Chin rest paper

- Pu**ll** two(2) pins out of the chin-rest.
- Push the pins into the holes of chin-rest paper. You can put 50 sheets of it on.
- Insert the pins into each one of two(2) holes in the chin-rest.

3.3 Cleaning

(1) The equipment should be kept as clean basically. Do not use the solvents such as strongly volatile substance, thinner, benzene, etc.

(2) Put some soapy water to the soft cloth, and twist the water out of the cloth. Then, polish each part of the equipment.

(3) As polishing the parts of lens or glass, get rid of dusts on the surface of lens with wind-blower and use a dry cloth.

3.4 Moving attention

(4) Turn OFF the power switch.

(5) Disconnect the power cable.

(6) Close the stage holding dial in the clockwise direction.

(7) Move this machine holding the lower part of the mains to keep horizontally.

(8) Put it on the horizontal table

3.5 Service Information

(1) Repair:

If the problem is not solved in spite of the settlement according to t he contents of chapter Four, please contact to Supore's agent with the info rmation on the following items.

- Name of Equipment Type： RMK-700
- Typical No. of Equipment : Typical number consisted of 8 digits and characters written on its name plate
- Explanation on its symptom : Description in details

(2) Supply of parts required for repair:

The preservation period of parts required for repair of this machine is by eight (8) years after stopping to produce the product.

(3) Disposal of the instrument:

Parts below are consumable in their characteristics, or the quality of them shall de degraded after the long time use. User should not replace them by him or herself. Please contact to Supore's agent for the replacement if these parts are consumed enough or degraded by the long time use. Back-up battery for clerk and data

(4) Environment Protection

When disposing packing materials, sort them by the materials and follow local governing ordinances and recycling plans.

4 Fault phenomenon and eliminating

4.1 As the power switch is on

Message	Cause	Method of settlement
Motor Error	Internal abnormality for the equipment	Re-input the power in 10 seconds after switching it off. In case that the message is indicated again, contact our sales representative.
EEPROM Error		
EEPROM Data Error		
System Error		
Clock Error		
INVALID SETUP DATA – REF	Abnormality in the internal data for Refractometry	Please contact our sales representative.

4.2 Messages during measurement

Message	Cause	Method of Settlement
TRY AGAIN	Refer the 11th page	Refer the 11th page
	Objective glass in the measurement window is polluted	Clean the glass
+ OUT	Sphere of examinee's eye exceeds $+15m^{-1}$	Impossible to measure
	Object lens within measurement window is polluted	Clean the glass
- OUT	Sphere of examinee's eye exceeds $-15\ m^{-1}$	Impossible to measure
	Object lens within measurement window is polluted	Clean the glass
C OUT	Sphere of examinee's eye exceeds $6\ m^{-1}$	Impossible to measure
	Object lens within measurement window is polluted	Clean the glass

4.3 Message as printing

Message	Cause	Method of settlement
CHECK PAPER	-There is no printer paper or lever is not closed.	Install printer paper or close the lever.

5 Performance Parameter

5.1 Refractometer

Vertex Distance (VD)	0.0 mm，12.00 mm，13.5 mm，15.00mm
Sphere Power (SPH)	-20.00m-1 ~ +20.00m-1 (VD=12mm, 0.12 m-1/0.25 m-1)
Cylinder Power (CYL)	0.00 m-1~+10.00 m-1 (0.12m-1/0.25m-1)
Axis (AX)	1°~ 180° (1°)
Cylinder Form	-, +, MIX
Minimum Pupil Diameter	2.0mm

5.2 Keratometer

Radius of Curvature	6.5 mm ~ 9.4 mm (Increment：0.02mm)

5.3 Environmental requirements:

Operation Temperature:	+ 10 to + 40°C	Humidity: 30 to 75% RH Atmospheric pressure: 700 ~ 1060 hPa.
Storage Temperature:	- 25 to + 55°C	Humidity: 30 to85% RH Atmospheric pressure: 700 ~ 1060 hPa
Transportation Temperature:	- 40 to + 70°C	Humidity: 10 to 95% RH Atmospheric pressure: 700 ~ 1060 hPa.

5.4 Others

Printer	heat printing
Monitor	LCD Color Monitor
Power supply	AC110V-220V, 50Hz/60Hz
Power consumption	75VA
Size	506mm×269mm×477mm
Weight	About 19Kg
Production date	At Certification
lifespanofthe product.	10Years

6. Packing list

RMK-700 Main Unit	1
Operation Manual	1
Power Supply Cable	1
Dust Cloth	1
Warranty Cards	1
Certification	1
Nail Care Chin	2
Printing Paper	2