Operation Manual

TSRM-600EL VISION TESTER

SCIENCETERA

INSTRUCTION MANUAL

Thank you very much for you purchasing the SCIENCETERA Vision Tester TSRM-600EL. Before using the TSRM-600EL, Please read this manual carefully. Your careful attention should be paid to the operation manual to help you obtain optimum results.

Special Attention

1. TSRM-600EL should be carried by the top handle or by both sides using both hands as shown in Figs1and figs2.
2. Never touch the sight apertures or power indication windows.
3. Never place the instrument with the face down。
4. Never leave the instrument in a damp or dusty place.
5. Wipe plastic parts (forehead rest, levers, etc.) with a silicon or damp cloth, never using cleansers or other chemicals.
6. service center.

（Fig1）

（Fig2）

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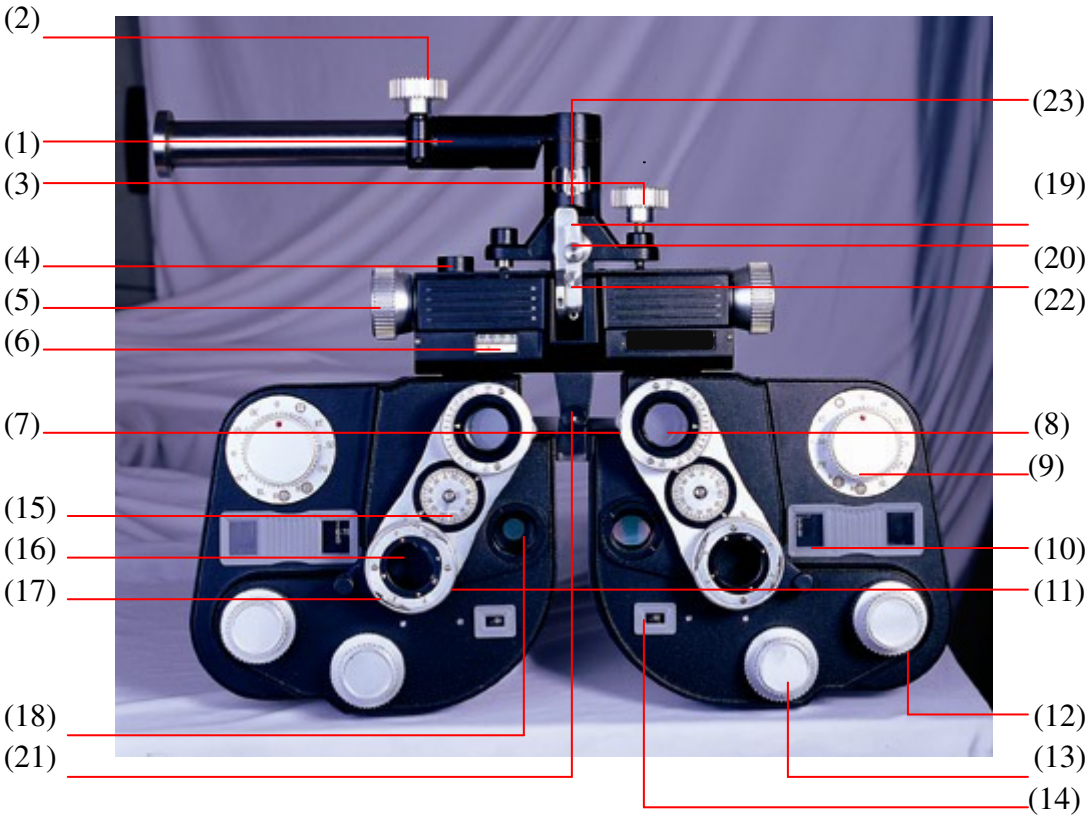
1. Nomenclature

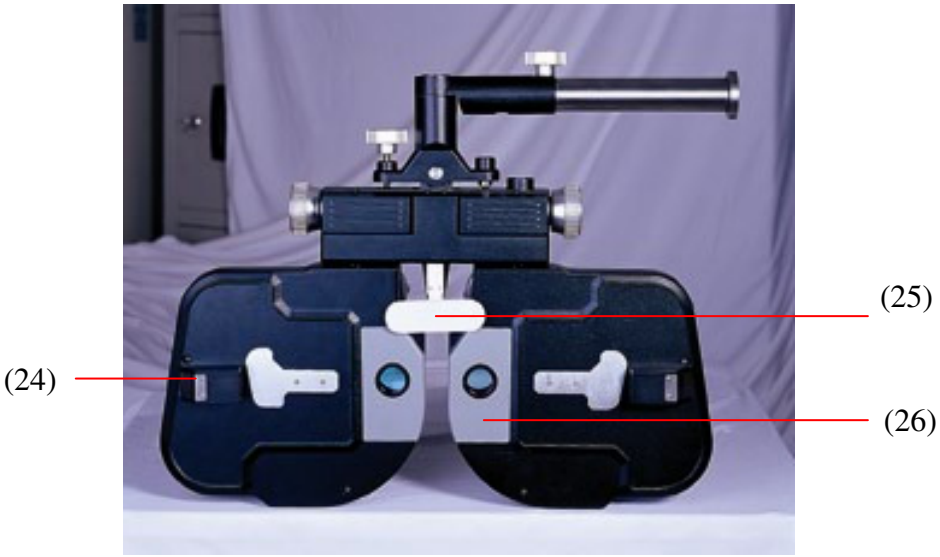


(Fig3)

1) Mounting bracket
2) Tightening knob
3) Leveling knob
4) Spirit level
5) P.D Adjusting knob

12) Spherical lens disk rotation dial
13) Cylinder lens disk rotation dial
14) Cylinder power indicator
15) Cylinder lens axis scale
16) Cross cylinder

6) P.D scale
7) Prism rotation knob
8) Rotary prism
9) Auxiliary lens disk dial
10) Spherical power indicator
11) Cylinder axis rotation dial
17) Reverse knob
18) Examination aperture
19) Near point card holder
20) Near point rod locking knob
21) Forehead rest knob
22) Joint screw

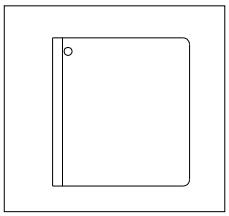
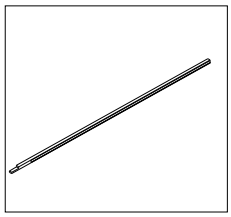
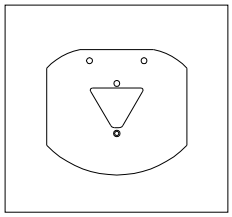
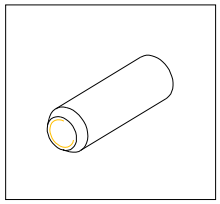


(Fig4)

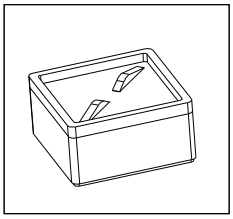
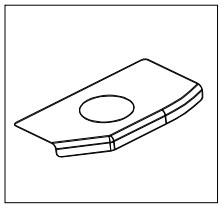
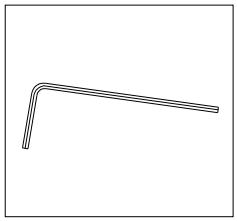
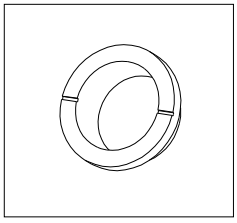
23) Vergence lever
24) Corneal aliging device
25) Forehead rest
26) Face shield

2. Components

The complete set of SCIENCETERA TSRM-600EL includes the following:

1)Instruction Manual 2)Near point rod 3)Near point card 4) Retaining screw

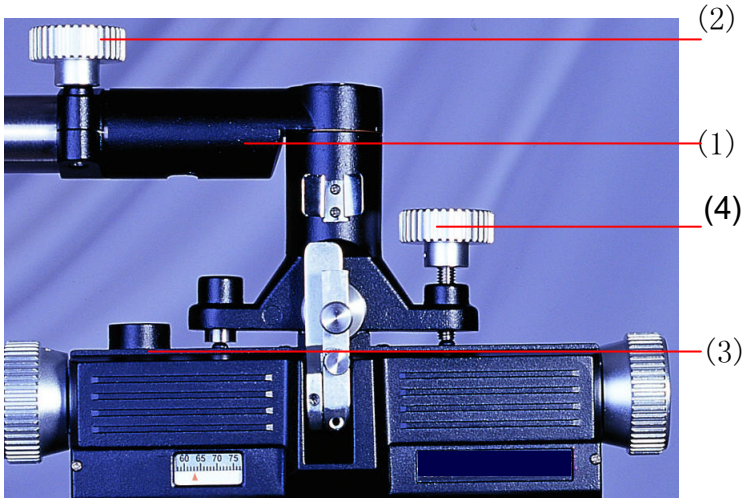
5) Accessory box 6)Face shield 4)Hexagon screw driver 8) Accessory lens

3.Installation

3-1 Installing Process

1） When you carrying the SCIENCETERA TSRM-600EL,please follow the instructions related to figs 1and figs2. place the back on a cushion for safety.

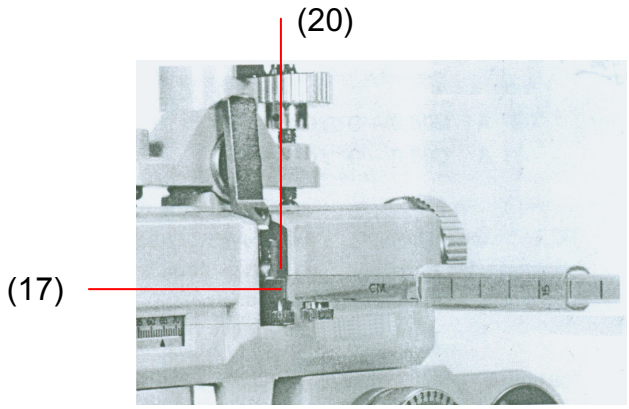
2) When In use, the instruments is suspended from the mounting bracket(1). Insert the mounting rod extending from the ophthalmic stand. Align the holes drilled in both the rod and the underside of the mounting bracket and then fix by tightening bracket (2). Take the retaining screw (found in accessory box), and screw it into the hole on the underside of mounting bracket. Turn the leveling knob(4) until the water-lever (3)is at the middle. (Fig5)



(Fig5)

3-2 Attaching near point rod

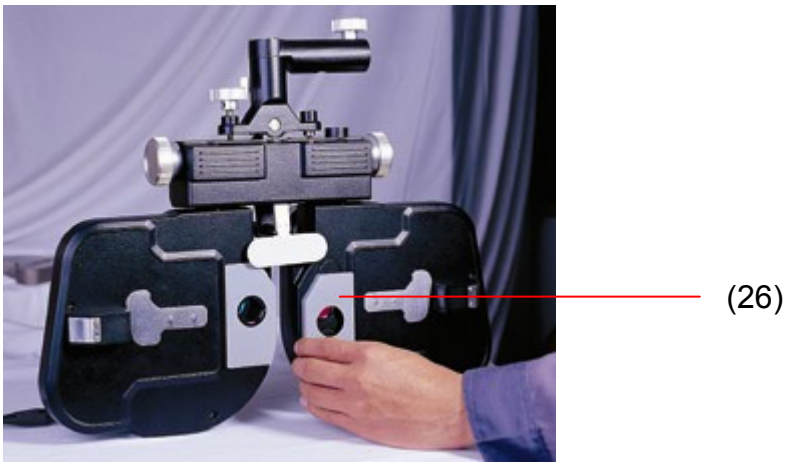
To attach rotary near point rod (found from the component) into near point rod holder(17), then fix it by tightening near point rod locking knob(20).When the rod is not used, store it by raising it.



(Fig6)

3-3Face shield

Face shield (26) is very easy to detach and reattach for cleaning ,as show fig5.

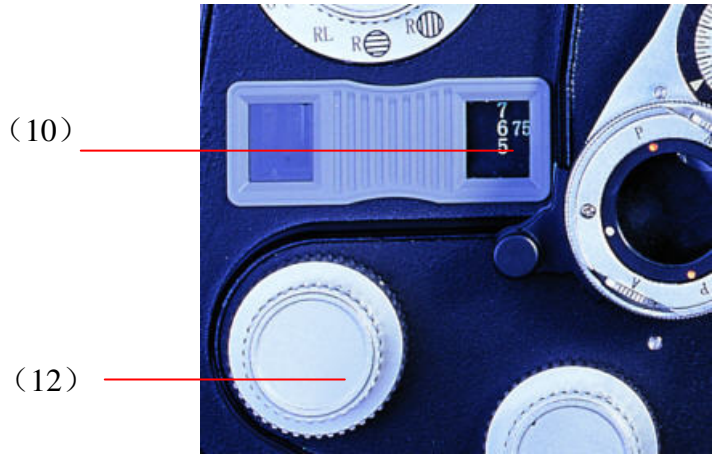


(Fig7)

4. Operation Procedures:

4.1 Spherical lens

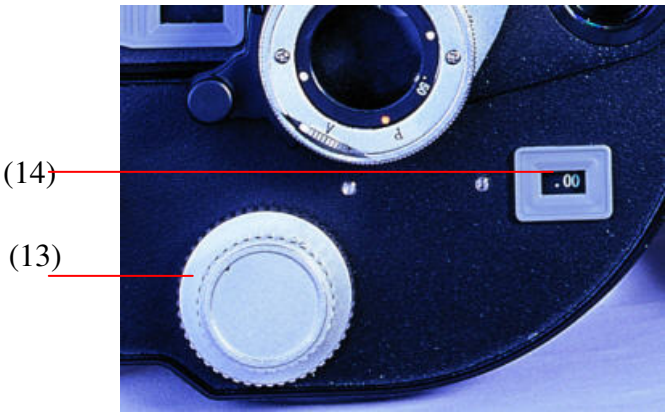
To show only the spherical power(referred to S from here),set auxiliary lens disk dial(10) to open and set the cylinder lens disk(13) until it shows .00at cylinder power indicator(14). Then by turning the spherical lens disk dial(12), an S value is indicated in examination aperture(10) with a range of -19.00 D to+16.75D in0.25D steps.（Fig8）



（Fig8）

4.2 Cylinder Lens

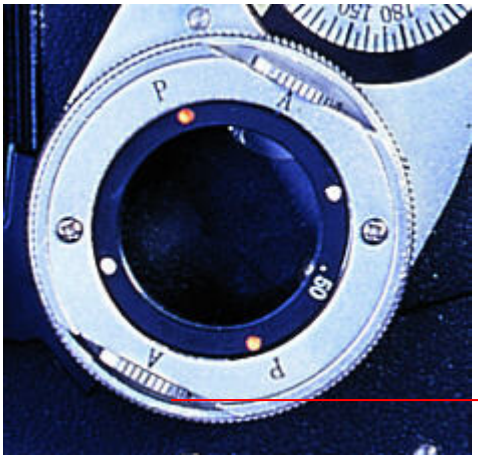
By turning cylinder lens rotation dial (13), the cylinder lens, with a range of 0.00 D to-6.00D will appear in the examination aperture every 0.25D. The power is indicated by cylinder power indicator(14).



(Fig9)

4.3Cross cylinder

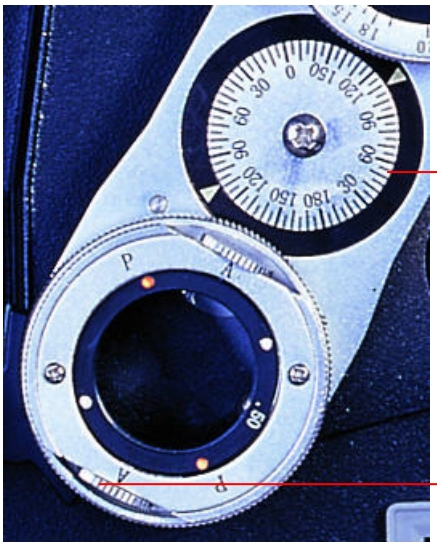
Use for precise determination of cylinder power and axis. Hold outer frame of cross cylinder lens to move the cross cylinder loupe to the examination aperture.The letter"A" at the front stands for Axis and "P" for power. The inner white dot indicates minus axis and outer orange dot indicates minus axis position. Plus and minus axis can be altered by turning reverse knob(18).



（Fig10）

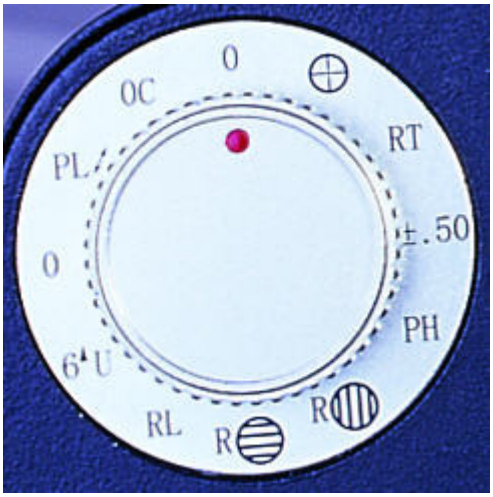
4.4 AXIS：

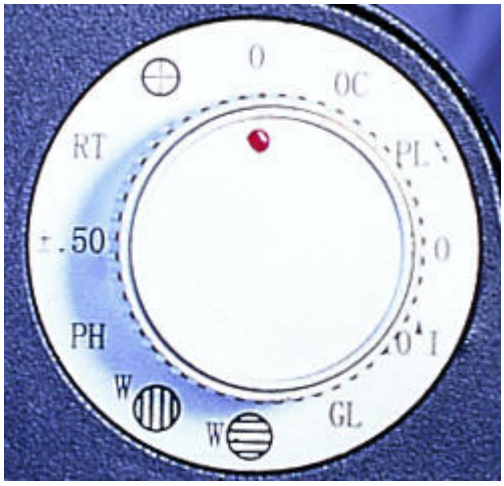
To determine the axis of astigmatism, turn cylindrical axis knob(17) and axis direction is shown on cylindrical axis scale(15).



（Fig11）

4.5Auxiliary Lens





"O"： OPEN

"O"：OCCLUDER

"PH"： Pinhold, Used for determining the pupillary distance and also for determining

6^{Δ}U：6 $^{\Delta}$prism base up, for use in testing abduction.

10^{Δ}I：10^{Δ} prism base in, for use in testing abduction.

⊕：P.D，Transparent filter with cross lines. Used for determining the pupillary distance.

"RT"：+1.50，

R ：Red moddox rod in vertical position

R ：Red moddox rod in vertical position

W ：Transparent Moddox rod in vertical position

W ：Transparent Moddox rod in horizontal position

} should plus rotary prism to see pinhole ( ) of chart projector.

"RL"：Right filter（left）

"GL"：Green（right）

} should be used together with the R/G Filter( )of chart projector.

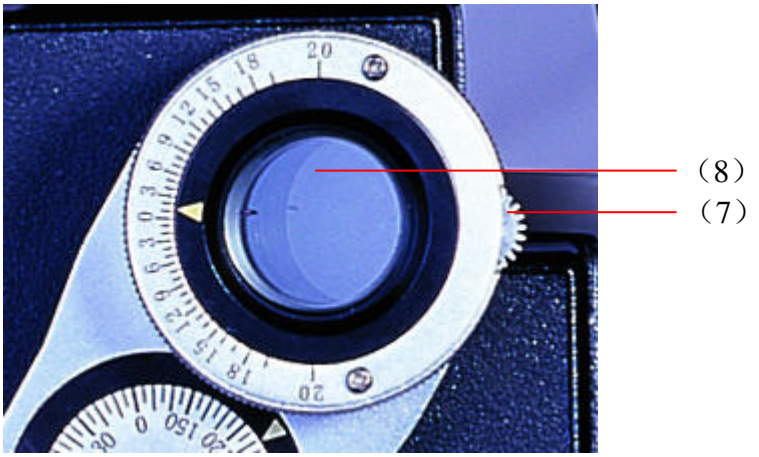
±0.50 fix cross cylinder：should be used together with the chart ( ) of projector.

Rotary cross cylinder：should be used together with the chart ( ) of projector.

"Polarizing filter"：(right eye：135°，left：45°)need to use together with the following five chart of chart projector. ( )

4.6 Rotary prism

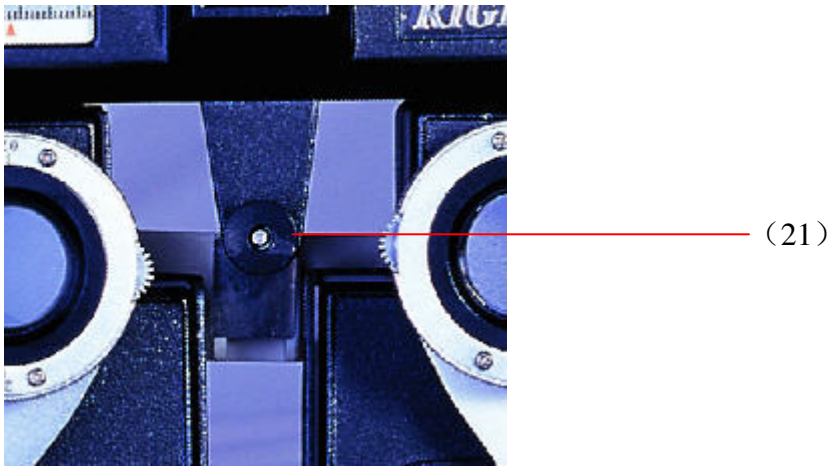
Turn rotary prism(8)by holding the base of rotary prism to set it on the examination aperture. If you would change prism power, turn prism rotation knob(7), until the prism with required power is set.



（Fig12）

4.7Corneal Aligning Device

Turn forehead rest knob (21) to adjust the position of forehead rest(25)Fig1. After setting the patient's forehead on the rest , look though the corneal aperture(24)Fig2 from approx .20cm away. Look at the patient's apex of the cornea after the pointer aligns with the longer line.（Fig13）



（Fig13）

7. SPECIFICATION

VISION TESTER	TSRM-600EL

（A）Measuring range：

（1） SPH：0.00D~ -19.00D（-0.25D）
+0.25D~ +16.75D（+0.25D）

（2） CYL：0.00D~ -8.00D（-0.25D）

（3） AXIS：0~180（5° increment）

（4） P.D：50mm~ 78mm

（B）Auxiliary lenses：

（1） Occluder：Occluder

（2） Pinhole plate：Pinhole plate（1mm）

（3） P.D Check：P.D Check

（4） Red/green filter：red：left　　green：left

（5） Polarizing：right eye 135°

（6） Polarizing：left eye 45°

（7） Lenses for retinscope：+1.50D

（8） Cross cylinder lens：±0.50D

（9） Balance check：right eye：6△ B/U

（10） Balance check：left eye：10△ B/I

（11） Moddx rod：right eye horizontal / vertical

（12） Moddx rod：left eye white horizontal / vertical

（C）Cross cylinder lens：±0.50D

（D）Prism：Rotary prism0△ ~ 20△

（E）Dimension：330(W) x 400(D) x 100(H)mm

（F）Weight：5.1Kg