Introduction to Lensometry
Handout Vision Expo West 2023
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This workshop is a hands-on introduction to the lensometer. There will be a hands-on component with actual ophthalmic lenses and finished eyewear. The principles of loose spherical and Sphero cylindrical lenses in the lensometer will be covered, as well as evaluating and neutralizing finished eyewear.

Topics:
Parts of a lensometer
Calibration
Spotting a single vision sphere
Spotting a lens with cylinder to an axis
Neutralizing Single Vision Lenses
Neutralizing Bifocal Lenses

Terms:
- Focimeter
- Vertometer
- Lensometer
- Eyepiece
- Lens Stop
- Lens Holder
- Lens Table
- Axis wheel
- Power Wheel
- Auxiliary Prism
- Prism Ring
- Marking Pens
- Convex
- Concave
- Mires
- Optical Center
- Sphere line
- Cylinder Lines
- Axis
- Prism
- Add Power
- Optical center distance

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Steps to Calibration of a lensometer:
1. Rotate eye piece counter clockwise until it stops
2. Turn power wheel to +10.00 and axis wheel to 180
3. Look through eyepiece while rotating it clockwise until reticle is clear
4. Looking through eyepiece rotate power wheel until sphere and cylinder come in sharp and clear
5. If your power wheel is at 0.00 you have calibrated it correctly, if not repeat calibration.

Steps to Spot a Single Vision Spherical Lens:
1. Make sure lensometer is calibrated for you
2. Approximately Center lens blank
3. Turn power wheel to +10.00
4. Move power wheel in minus direction
5. Stop when mires are sharp and focused do not use it back and forth
6. Gently lift lens stop and while looking in eye piece center the mires in the reticle
7. Move power wheel back to +10.00 and verity power
8. Spot optical center

Steps to Spot a Single Vision lens with Cylinder to a prescribed axis
1. Make sure lensometer is calibrated for you
2. Approximately Center lens blank
3. Turn power wheel to +10.00
4. Turn axis wheel to prescribed axis
5. Move power wheel in minus direction
6. Stop a brightest spot
7. Gently lift lens stop and rotate lens until sphere lines are clear and focused
8. Move power wheel back to +10.00
9. Move power wheel in minus direction stoping at first set of lines
10. If cylinder comes in clear first rotate lens 90 degrees or until sphere lines come into focus, then repeat step 8, if sphere lines are clear first, continue to next step.
11. Record sphere power and continue in minus direction to locate the cylinder power
12. Record cylinder power and calculate the difference between sphere and cylinder lines
13. Gently lift lens stop and while looking in eye piece center the mires in the reticle
14. Move power wheel back to +10.00 and verity power
15. Spot optical center

Steps to neutralize a Single Vision with unknown prescription
1. Make sure lensometer is calibrated for you
2. Start with eye with most power if unknown start with right eye
3. Move power wheel to +10.00
4. Approximately center the glasses in the lens stop and stabilize the frame on lens table
5. Move power wheel in minus direction
6. Stop at brightest spot if no cylinder power is present, both lines will be sharp, move to step if both lines are not clear continue to step 7.
7. Rotate axis wheel until sphere lines come into focus
8. Rotate power wheel to +10.00
9. Rotate power wheel in minus direction and stop at first set of line
10. If the first set of line you see is sphere lines record power and continue moving power wheel in minus direction to find cylinder lines
11. Determine the difference between sphere and cylinder
12. Center lens on optical center and spot lens
13. Record power, and measure the distance between optical centers to determine optical center distance.

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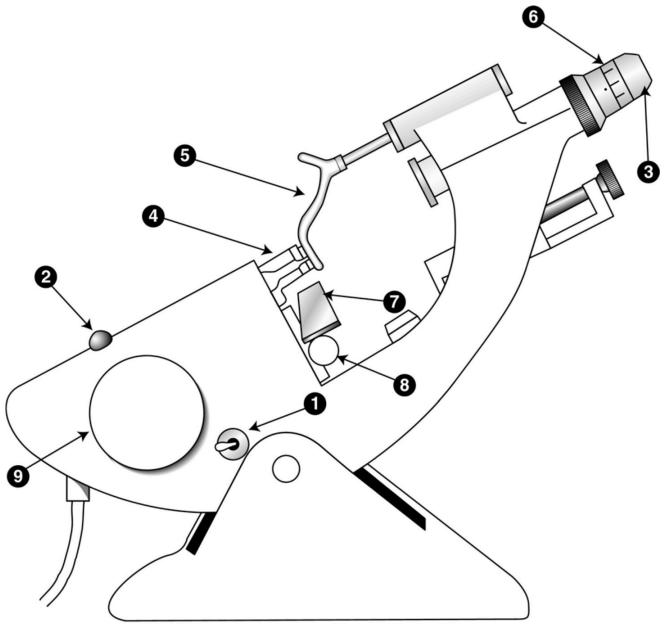
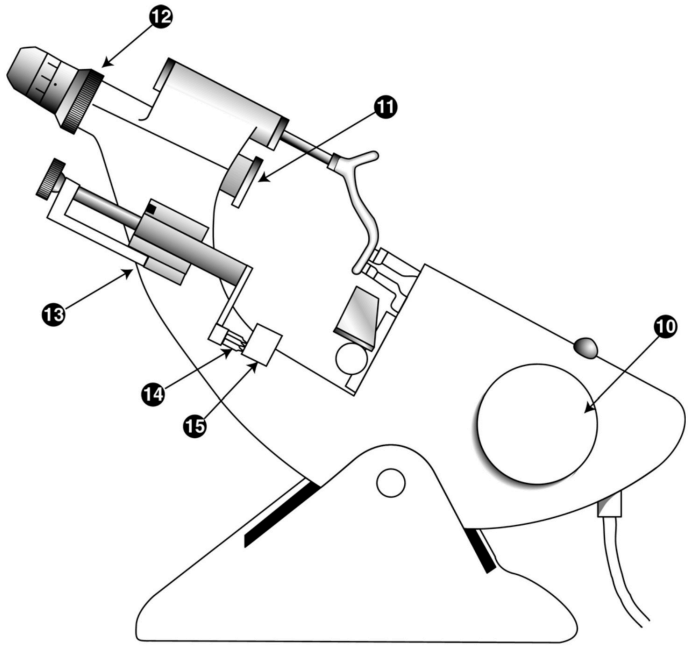


1. On/Off Switch
2. Pilot Light
3. Focusable Eyepiece
4. Lens Stop
5. Lens Holder
6. Eyepiece Focus Position Scale
7. Lens Table
8. Lens Table Adjustment Knob
9. Axis Wheel



10. Power Wheel
11. Auxiliary Prism Holder
12. Prism Direction Ring
13. Ink Marking System
14. Marking Pins
15. Ink Well

FIGURE 2