

What are These Tools



Welcome

This course is presented in partnership with the United Opticians Association and its member schools. We are proud to bring this hands-on frame adjustment workshop to you.

This course is designed for professionals who are building or strengthening their adjustment skills. Today, we focus on developing control, precision, and intentional tool selection to support accurate and confident frame modifications.

Throughout this session, you will work directly with professional adjustment tools to:

- *Identify and understand the purpose of each tool*
- *Select the correct tool for specific frame materials and designs*
- *Apply controlled adjustment techniques*
- *Protect frame integrity during modification*
- *Recognize when adjustment versus remake is appropriate*
- *Develop consistent, repeatable adjustment habits*

This is an active workshop. You will handle tools, perform guided adjustments, compare outcomes, and build confidence through structured exercises designed to establish precision and professional technique.

Several formal educators are serving as co-instructors during this session. If you need clarification or assistance at any point, please ask.

At the conclusion of this course, you will be invited to provide feedback. Your input helps us continue improving and refining future workshops.

We hope you find this session both practical and confidence-building.

This workbook is our gift to you. Please keep it as a reference as you continue developing your adjustment skills.

What are Theses Tools



Standard Alignment

The Foundation of Every Adjustment

Standard alignment is the baseline position a frame should be in before it is dispensed to a patient or adjusted for fit. Without understanding standard alignment, adjustments become guesswork rather than intentional correction.

Key Characteristics of Standard Alignment

- Four-point touch on a flat surface
- Eyewires are level with one another
- Temples are parallel and evenly aligned
- Proper face form (appropriate curvature across the front)
- No visible twisting or distortion of the bridge
- Symmetry between right and left sides

Why Standard Alignment Matters

- Prevents unnecessary adjustments
- Reduces patient discomfort
- Improves visual performance
- Protects frame integrity
- Creates professional consistency

Fill in the Blank

1. Standard alignment serves as the _____ for all frame adjustments.
2. A properly aligned frame should have _____-point touch on a flat surface.
3. Eyewires should be _____ with one another.
4. Temples should remain _____ and evenly aligned.
5. Adjustments without checking standard alignment often become _____ rather than intentional.

Terms

- reference
- four
- level
- parallel
- guesswork
- decorative
- random

Discussion

1. What is the most commonly overlooked element of standard alignment in your practice?
2. How often do adjustments fail because the original distortion was not correctly identified?
3. Why is checking alignment before adjusting critical to frame longevity?

What are These Tools



Understanding Planes of Distortion

The Three Primary Planes of Distortion

1. Horizontal Distortion

- One lens sits forward or backward
- X-ing of the frame front
- Uneven vertex distance
- Temple spread inconsistencies

2. Vertical Distortion

- One lens sits higher than the other
- Frame rocks on a flat surface

- Skewed bridge
- Uneven pantoscopic tilt

3. Rotational / Torsional Distortion

- Eyewire rotation
- Lens appears tilted within the frame
- One temple sits higher at the hinge
- Face form irregularity

Fill in the Blank

1. Frame misalignments occur within specific _____ of distortion.
2. Horizontal distortion may result in uneven _____ distance.
3. A frame that rocks on a flat surface likely has a _____ distortion.
4. Eyewire rotation is a form of _____ distortion.
5. Proper adjustment requires controlled _____-force.

Terms

- planes
- vertex
- vertical
- rotational
- counter
- decorative
- guessing

Discussion

1. Which plane of distortion do you find most difficult to diagnose?
2. Have you ever corrected one plane and accidentally created another?
3. Why is stabilization critical before applying counter-force?

What are These Tools



Measurement & Diagnostic Tools

Seeing Before Adjusting

Measurement tools allow you to diagnose alignment issues, confirm symmetry, and verify lens positioning. Adjustment without verification often creates additional distortion.

Key Facts

- Measurement confirms whether a true misalignment exists.
- Diagnostic tools prevent unnecessary adjustments.
- Small asymmetries can significantly affect visual performance.
- Measuring before adjusting protects frame integrity.
- Precision reduces rework and patient chair time.

Primary Measurement Tools

Ruler

- Measures pupillary distance
- Assists in verifying segment height and alignment
- Useful for confirming visual symmetry during fitting

Lens Clock

- Measures lens base curve
- Confirms correct lens placement

- Identifies unintended lens warpage after adjustment

Caliper with Nylon Tips

- Measures eyewire dimensions
- Verifies lens thickness
- Confirms symmetry between right and left lens openings
- Nylon tips protect lens surfaces during measurement

Fill in the Blank

1. Professional adjustment begins with careful _____.
2. A lens clock measures lens _____.
3. A PD rule is commonly used to verify _____ distance.
4. Calipers help assess frame _____ and symmetry.
5. Measuring before adjusting reduces unnecessary _____.

Terms

- observation
- base curve
- pupillary
- dimensions
- adjustments
- guessing
- decoration

Discussion

1. How often do adjustments fail because measurement was skipped?
2. When would you use a lens clock during troubleshooting?
3. Why is verifying symmetry important before correcting vertical distortion?
4. Have you ever adjusted a frame only to discover the issue was lens-related?

What are These Tools



Screwdrivers

- Screwdrivers are the foundation of every ophthalmic tool kit.
- Improper use will damage a frame and compromise frame stability.

Key Facts

- The screwdriver tip must match the screw head precisely.
- Common types include flat-head and Phillips-head.
- The driver tip should sit fully and securely inside the screw slot before turning.
- Downward pressure should be applied while turning to prevent stripping.
- Worn or rounded tips reduce control and increase damage risk.
- Tightening a screw does not correct structural distortion.

Clinical Application

- Tightening hinge screws
- Securing eyewire screws
- Stabilizing rimless compression mounts
- Minor frame stabilization during alignment
- Small errors at the screw level often lead to larger alignment problems later.
- Inspect screwdriver tips regularly for wear or rounding.
- Replace worn tips promptly.
- Keep tips clean and free of debris or metal shavings.
- Store in a dry environment to prevent corrosion.
- Do not use screwdrivers for prying or scraping.
- Well-maintained tools protect both the frame and your professional reputation.

Maintenance and Care

Fill in the Blank

1. The screwdriver tip must match the _____ head precisely.
2. Applying downward _____ helps prevent stripping.
3. Worn tips reduce _____ and increase damage risk.
4. Tightening a screw does not correct structural _____.
5. Screwdrivers should be inspected regularly for signs of _____.

Terms

- screw
- pressure
- control
- distortion
- wear
- guessing
- decoration

Discussion

1. How often are stripped screws caused by incorrect driver selection?
2. When is tightening a screw not the correct solution?
3. What signs indicate a screwdriver should be replaced?
4. Have you ever seen a hinge damaged from over-tightening?

What are These Tools



Temple Adjusting Pliers

- Temple adjusting pliers are designed to make controlled corrections to metal temples and narrow frame components.
- Their jaw profile allows targeted pressure without affecting larger areas of the frame.
- These pliers are used for refinement — not heavy correction.

Key Facts

- Designed primarily for thin metal temples.
- Provide focused, directional pressure.
- Used to correct temple height and alignment asymmetry.
- Require stabilization of the frame front before applying force.
- Adjustments should be small and incremental.
- Temple alignment directly affects patient comfort and frame stability.

Clinical Application

- Correcting one temple sitting higher than the other
- Refining temple parallelism
- Adjusting bend location behind the ear
- Minor hinge-area refinements
- Small temple changes can significantly alter how a frame feels and sits.

- Excessive force may crease or weaken thin metal arms
- Precision is more important than strength.

Maintenance and Care

- Inspect jaw alignment regularly.
- Keep gripping surfaces clean.
- Avoid dropping, which may misalign jaws.
- Store in an organized tool case to prevent damage.
- Well-maintained tools improve consistency and longevity.

Material Considerations

- Best suited for metal temples.
- Not appropriate for thick acetate without heat.

Fill in the Blank

1. Temple adjusting pliers are primarily used on _____ temples.
2. Adjustments should be made in small _____.
3. Temple alignment affects patient _____ and stability.
4. Excessive force may _____ thin metal arms.
5. The frame _____ should be stabilized before adjusting the temple.

Terms

- metal
- increments
- comfort
- weaken
- front
- guessing
- decoration

Discussion

1. How does temple asymmetry affect retention and comfort?
2. Why should temple adjustments be incremental rather than aggressive?
3. What happens if the frame front is not stabilized during adjustment?
4. When should temple correction occur before adjusting the bridge?

What are These Tools



Wide Jaw Angling Pliers

Broad Surface Adjustment and Controlled Frame Alignment

- They are designed to even, distributed pressure across a larger surface area of a metal frame.
- They are designed to reduce the risk of creating sharp bends or stress points during alignment corrections.
- They are designed to give the user control structural adjustments rather than pinpoint corrections.

Key Facts

- Wide jaws distribute force evenly.
- Designed primarily for metal frame fronts.
- Used to adjust face form and front alignment.
- Reduce risk of creating crease points.
- Provide stability during controlled bending.
- Broad force should still be applied gradually.

Clinical Application

- Adjusting face form curvature
- Correcting front plane distortion
- Refining bridge alignment
- Broad hinge-area alignment
- These pliers are ideal when a frame front requires even, balanced correction.

Material Considerations

- Best suited for metal frame fronts.
- Not intended for heavy acetate correction without heat.
- Excessive force may distort lens shape if lenses are inserted.
- Always stabilize and assess before applying pressure.

Maintenance and Care

- Inspect jaws for alignment and wear.
- Keep surfaces clean to avoid marring finishes.
- Avoid dropping to maintain jaw precision.
- Store in an organized tool case.
- Precision alignment tools require consistent care.

Fill in the Blank

1. Wide jaw pliers distribute _____ evenly across the frame.
2. They are primarily used for _____ frame adjustments.
3. Broad adjustments should still be made _____.
4. Excessive force may distort lens _____.
5. These pliers help prevent sharp _____ points.

Terms

- force
- metal
- gradually
- geometry
- stress
- guessing
- decoration

Discussion

1. Why is even pressure important during front alignment?
2. When would you choose wide jaw pliers over narrow temple pliers?
3. How can overcorrection affect lens positioning?
4. What visual clues indicate face form distortion?

What are These Tools



Flat / Round Snipe Nose Pliers

Precision Gripping and Controlled Directional Bending

- Two pliers that do the same job - adjusting the end piece
- One is round for rounder types and flat types for more square type.
- These pliers are used for precision work — not broad structural correction.

Key Facts

- One jaw is flat for stabilization.
- One jaw is rounded for shaping and contouring.
- Designed primarily for metal frame adjustments.
- Ideal for controlled, small-area corrections.
- Allow directional bending without crushing components.
- The jaw profile determines how force is distributed.

Clinical Application

- Refining bridge shape
- Minor eyewire contour adjustments
- Controlled hinge-area corrections
- Shaping thin metal components

- The rounded jaw helps prevent sharp bends or creases.

Material Considerations

- Best suited for metal frames.
- Not appropriate for cold acetate adjustments.
- Excessive force may distort eyewire geometry.
- Small movements produce more predictable results.

Maintenance and Care

- Keep jaw surfaces clean and smooth.
- Inspect for wear or misalignment.
- Avoid dropping to maintain precision alignment.
- Store in a protective case or organized tool roll.
- Precision tools lose effectiveness when jaws are misaligned.

Fill in the Blank

1. Flat / Round pliers combine a _____ jaw and a _____ jaw.
2. The flat jaw is used for _____.
3. The rounded jaw helps prevent sharp _____.
4. These pliers are primarily used on _____ frames.
5. Adjustments should be made in small, controlled _____.

Terms

- flat
- rounded
- stabilization
- creases
- metal
- increments
- guessing

Discussion

1. When would you choose flat/round pliers over wide jaw pliers?
2. How does jaw shape affect force distribution?
3. Why are rounded surfaces helpful during contouring?
4. What risks occur if too much torque is applied?

What are These Tools

Control. Precision. Intentional Adjustment.

Thank you for your active participation in today's hands-on workshop, presented in partnership with the United Opticians Association and its Formal Education Members.

Frame adjustment is both a technical skill and a professional responsibility. Understanding which tool to use — and how to use it with control — supports better outcomes, protects frame integrity, and increases patient confidence.

Today, you practiced identifying tools, selecting them intentionally, and applying controlled adjustment techniques. These foundational habits strengthen consistency and reduce unnecessary remake or material damage.

You are encouraged to keep this workbook as a structured reference as you continue refining your adjustment skills. The remaining pages provide terminology, technique reminders, and reinforcement exercises to support continued practice.

Please take a moment to complete the course evaluation so we can continue refining and improving future workshops.

If you have any questions after today's session, I am always happy to assist.

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