On behalf of Vision Expo, we sincerely thank you for being with us this year.

Vision Expo Has Gone Green!

We have eliminated all paper session evaluation forms. Please be sure to complete your electronic session evaluations online when you login to request your CE Letter for each course you attended! Your feedback is important to us as our Education Planning Committee considers content and speakers for future meetings to provide you with the best education possible.

VISION EXPO

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DIY: Spectacle Solutions

Jesse Walters, ABOM

2-Hours ABO

2

Jesse Walters, ABOM

- No Financial interests to disclose
- Account Representative and Optical Trainer for an independent OD owned national lab: Summit Optical
- CE Author, content editor and advisor for the Optical Training Institute
- CE contributor for Quantum Optical
- All relevant relationships have been mitigated

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You Can…

Do-It-Yourself

Effective problem solving and the ability to fix things in-house will…

- Decrease turn-times
- Improve product quality and accuracy

4

Option 2:

Outsourcing

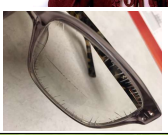
Relying on someone else…

Involves shipping time back and forth to the lab

5

Not Ideal…

What We Should **NOT** Give To Our Patients



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Checklist

Tool Inventory

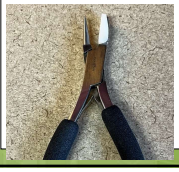
What to keep on hand

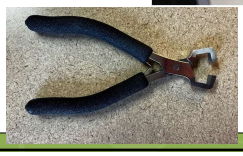
7

Necessities…

Must Have Tools

- Eyewire shaping pliers
- Half nylon pliers
- Temple angling pliers
- Nosepad Plier
- Spring hinge clamp





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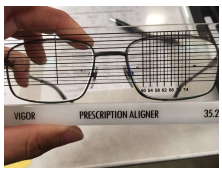
Necessities…

Must Have Tools

- Screw and bolt drivers
- Lens liner, figure-8, nylon cord
- Groove bands
- Prescription aligner



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Proper use…

Tool Use & Frame Adjustments

A tool is only handy if we know how to use it…

10

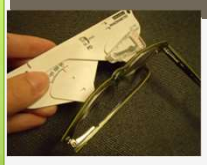
Pantoscopic

- Use temple angling pliers for stability and alignment
- Extra panto can be achieved by a gradual arc of the temples
- Make frame recommendations based on adjustability

Frame Adjustments

11

- Frame Wrap ≠ Lens Curve
- Greater than 12˚ should have wrap compensation
- Unmount lenses for wrap adjustment
- Correct temple angle



Frame Adjustments

Wrap & Face-Form

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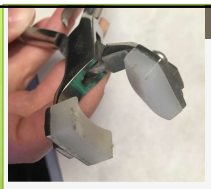
- Preparation for adjustment
- Marrying frame curve with lens curve



Frame Adjustments

Lens and Frame Curve

13

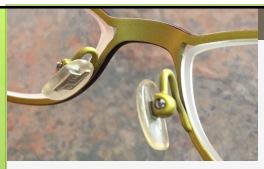
- Avoid tool use on plastic frames
- Examine other issues such as lens size or thickness
- If frame curvature isn't working, lens sizing or hand edging may be required.

Frame Adjustments

Lens and Frame Curve

14

- Use specified nosepad pliers
- Adjust height or vertex
- Advise on adjustability at frame selection
- Check other adjustments for nose sore solutions

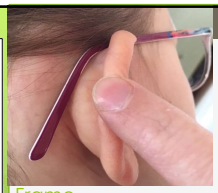


Frame Adjustments

Nosepads

15

- Aim for a 45˚ bend
- Even pressure behind ear and alongside head
- Brace adjustment with knuckle under temple bend
- Advise on temple length at frame selection



Frame Adjustments

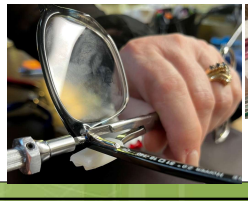
Temple Bend

16

Tool Use

Spring hinge solutions

- Holding open the spring
- Feeding in the screw



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Tool Use

Lens liners & nylon cord

- Figure-8 techniques
- Restringing Nylon Cords

18

Tool Use

Lens filler

- Techniques for fixing not-so-tight fits
- Lens filler options for small C-sizes

19

Practical Equipment

- **Hand Stone**
  For sizing down, removing polished edges, reducing edge thickness, or re-beveling.
- **Polishing Wheel**
  For adding edge polish, or buffing out frame blemishes.
- **Electronic Groove Machine**
  For sizing, widening, or deepening grooved lenses.

20

Lens Sizing

C-sizing and Archiving Shapes

A manual C-sizer only reads to the nearest mm, but lens fit accuracy only has a tolerance of 0.3 mm.

- Estimate large and size down
- Never dispense a final product that needs lens liner or filler.
- Use properly calibrated remote tracing for best shape & size.

21

Hand Edging

- Run dry for poly & Trivex and wet for CR-39 and High-Indexes
- Edge down the thinner margins first.
- Reduce pressure on all lens corners to avoid gapping.
- Align bevel forward on the lens.

22

Hand Edging

- Use one hand for turning against rotation and one hand for stabilizing.
- Edging down the bottom and nasal can make changes to p.d.s and seg heights
- Test lens fit frequently to avoid under sizing and allow for corrections.
- Always re-apply safety bevel.

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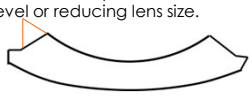
Hand Edging

Solving Temple Splay

Often when a plastic frame has spread out temples, it is due to excessive lens thickness.

Carefully edge down the back-temporal thickness without touching the bevel or reducing lens size.



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Hand Edging

Rolling Edges

When lens thickness prevents frame closure

- Edge down an even curve to the back thickness of the lens
- Careful to not touch bevel

25

Hand Edging

Poor fitting lenses

Lenses popping out of the top eyewire of a plastic frame

- Carefully edge down the "A" only
- On lenses with a flat top, hand edge a little arc to it

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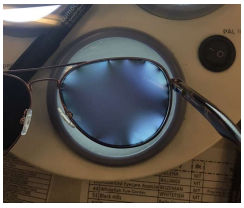
Hand Edging

Polarized Pinching

- Identify and mark pressure points
- Edge down back thickness first
- Edge down bevel in small increments at pressure points



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Polishing

- Preparation
- Adding High-Luster
- Removing Polish
- "Satin" Polish
- Buffing out Frame Blemishes

28

Correcting Lens Axis

Turning the Lens

- Determine direction the Lens needs to be adjusted.
- Examine both lenses AND frame adjustment before any modifications.
- NEVER use an axis pliers.
- Loosen screws or un-mount before resituating the lens.
- If lens is too square to turn, you may be able to fix through strategic edging...

29

Correcting Lens Axis

Hand Edging to Turn a Lens

In rectangular frames an off-axis lens can be made to turn by edging a small amount off opposite sides.

30

31

Grooving

Fixing Small or Poorly Fit Lenses

- Bend eye-wire to bring in any corners that have gapping
- Heat nylon string to shrink or re-string tighter
- Check top groove for properly fit lens liner or irregularities
- Use lens bands for filler on full-metal grooved frames

32

Grooving

Modifying Grooves

Sizing down, deepening, widening

- Apply non-slip protective pads to the front and back lens surface
- Groove wet for Cr-39 & high index, dry for poly and Trivex
- Rotate the lens and readjust alignment multiple times before running the wheel
- Increase depth slowly

33

Bushings

Rimless Drill

- Clippers
- Mounting
- Adjustment

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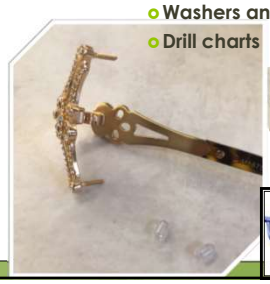
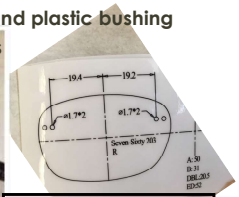
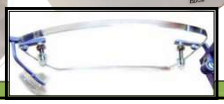
Nuts & Bolts

Rimless Drill

- **Bolt length**
- **Washers and plastic bushing**
- **Drill charts**







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Correcting to…

ANSI Standards

Be intimately familiar with axis and prism tolerances and how to apply them.

Cylinder Axis
0.25cyl ± 14°
0.50cyl ± 7°
0.75cyl ± 5°
1.00 to 1.50cyl ± 3°
Over 1.50cyl ± 2°

Prism Imbalance
Vertical prism:
- Plano to ±3.37 ≤ 0.33
- Over ±3.37 ≤ 1mm difference in PRP height

Horizontal prism:
- Plano to ± 2.75 ≤ 0.67
- Over ± 2.75 ≤ 2.5mm (1mm for PAL) difference from specified pupillary distance

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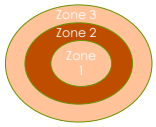
Visual Inspection

- Pits
- Waves
- Swirls
- AR Voids



- Oil Slicking
- Crazing
- Polar Axis
- Lens Fit
- Scratches
- Frame Style
- Frame Condition
- Adjustment
- Screw Tightening
- Bevel

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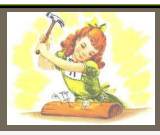
Self-sufficiency and skill will not only earn you more accurate and quality products in less time but will also make you an invaluable resource in your optical.



DIY Spectacle Solutions

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