

Frame Adjustment

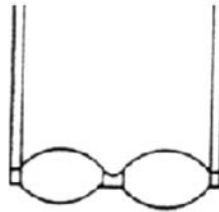
Proper frame adjustment is critical to insure a patient's comfort and that they experience maximum vision with their lenses.

Standard Adjustment

A standard adjustment is used for all new frames to establish a consistent starting point and positive presentation. All frames on the frame modules should be clean and in standard adjustment, ready for inspection and trial. A patient's first impression of new eyewear should not be marred by improperly adjusted or dirty frames.

The temples on the frame should be open and equally angled to the front of the frame.

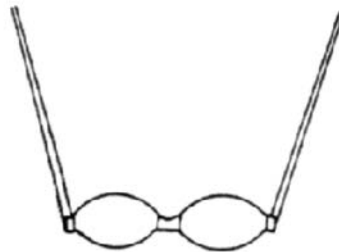
Correct
Ready to wear



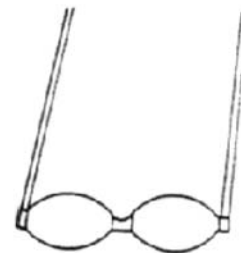
Incorrect
Temples are too close together



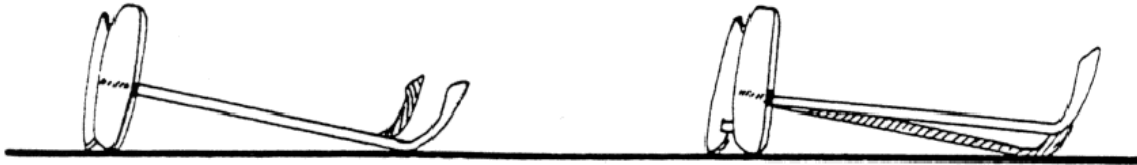
Incorrect
Temples are too wide apart



Incorrect
Temples are uneven



Placing an inverted frame on a flat surface is a good test for a pre-adjusted frame, though not necessarily a good test for a frame fitted for a patient. Before presenting a frame to a patient, ensure that the temple tips and both corners of the front lie in the same plane.



Professional presentations rely on well-prepared product. A twisted frame or dirty lenses can establish a negative impression which may be difficult to overcome.

Frame Pre-Adjustment

After the patient is presented with a clean, nicely squared frame, custom fitting can begin. Pre-adjustment of a frame begins at the front and proceeds to the back of the glasses. Properly align the frame front before accurately adjusting the temples.

Pre-adjusting a frame provides the following patient benefits:

- maximum optics from the lenses
- visual comfort from the lenses
- physical comfort from the frame

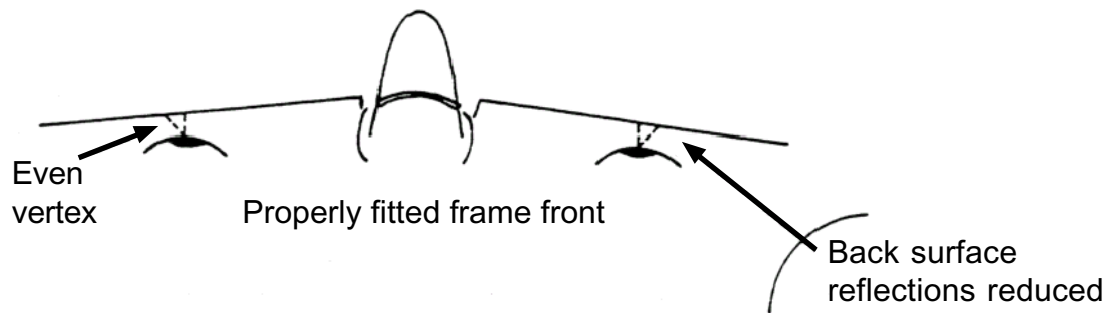
There are three major considerations when pre-adjusting a frame front to achieve the benefits discussed above. They are: **pantoscopic tilt**, **vertex distance** and **face form**.

Pantoscopic tilt refers to the frame alignment in the up and down position of the frame. A properly adjusted frame will normally have 7-12 degrees of tilt towards the cheek. This provides the multifocal wearer the maximum benefit from the reading portion of the lens. To obtain proper pantoscopic tilt, use angling pliers to bend the temples down from the frame front at the endpiece.

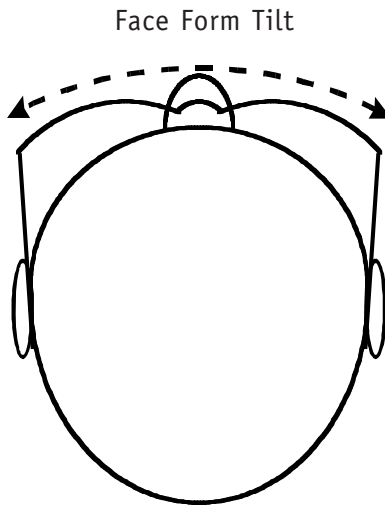


Retrosopic tilt is the opposite of pantoscopic tilt. The frame is tilted away from the cheek. Retrosopic tilt is sometimes necessary to fit frames on people with full cheeks, but it is not a desirable adjustment.

Vertex distance is the distance from the front of the cornea to the back of the lens. The frame front should be positioned as close as possible to the eye without the lenses touching the brow, lashes or cheeks. This provides the widest viewing areas in all parts of the lens. Proper vertex distance also helps eliminate back surface reflections on the lenses. To obtain the correct vertex distance, adjust the nose pads on a metal frame with nose pad pliers to bring the frame front closer to or farther away from the face. When fitting a plastic frame, it is necessary to start with the proper bridge fit. The importance and the effects of vertex distance will be discussed in later modules.



Face form is the adjustment that matches the frame front to the wearer's facial shape. A correct face form adjustment matches the curve of the frame to the brow line as illustrated below. To add face form on a metal frame, bend the frame at the bridge using gentle hand pressure. On a plastic frame, use the frame warmer until the frame is pliable and use gentle hand pressure to obtain the correct curvature.



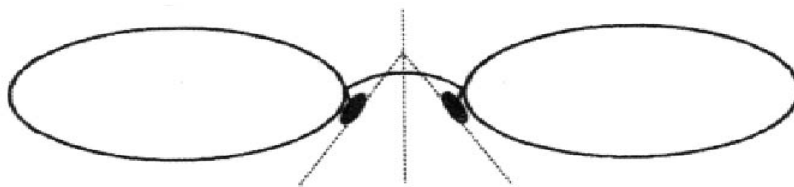
Pantoscopic tilt, vertex distance and face form are critical adjustments to ensure a patient's comfort and vision.

Nose Pad Adjustment

Nose pad adjustment is one of the most challenging aspects of frame adjustment. Be assured that with time and practice you will become an expert. The key is to understand the three angles of nose pad adjustment and to have patience.

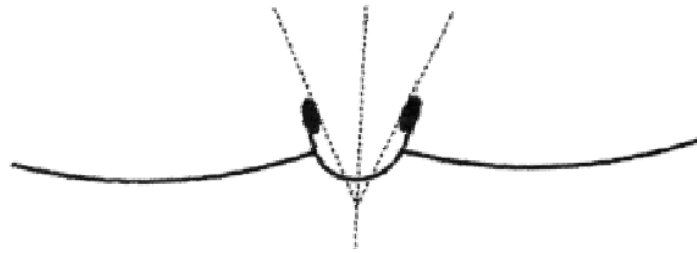
The three important nose pad angles are: the **frontal angle**, the **splay angle** and the **vertical angle**. The goal is to properly adjust all three angles so that the pad rests flush on the nose.

View the **frontal angle** from the front of the frame. Standard alignment of the frontal angle requires that the pads be closer together at the top than at the bottoms. This angle relates to the side of the nose and the fact that a nose is wider at the bottom than at the top. Be sure that each pad sits at the same height and is the same distance from the eviewire.



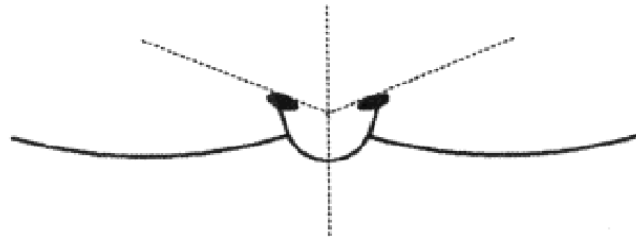
Frontal Angle of Nose Pads

View the **splay angle** from the top of the frame looking down. Standard alignment of the splay angle requires that the front edges of the pads be closer together than the back edges of the pads. This angle relates to the slope from the crest of the nose to the inner eye area.



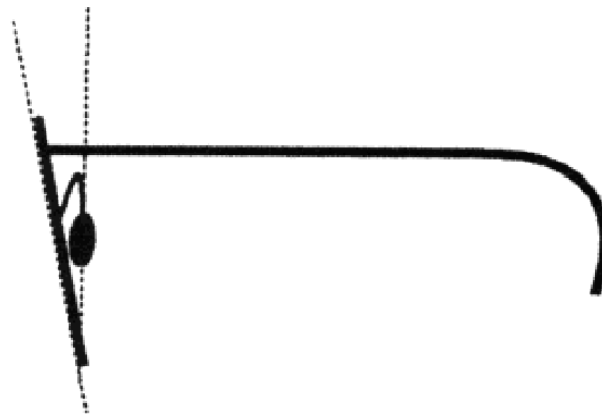
Splay Angle

Patients with flat bridges (very little slope) require wide splay angles, that is, the pads are open so that they appear to be facing the eyes.



Adjusted Splay Angle

View the **vertical angle** from the side of the frame. Standard alignment of the vertical angle requires that the bottom edges of the pads be closer to the eyewires than the top edges of the pads.



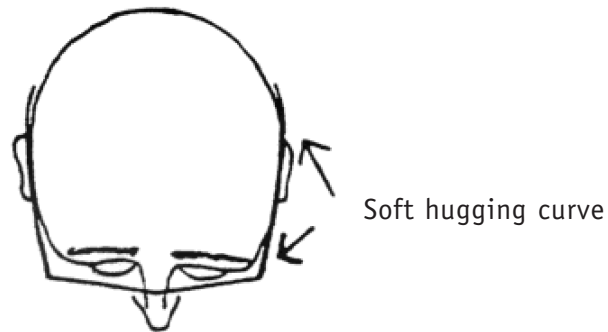
Vertical Angle of Nose Pads

If all three angles are sitting flush with the skin, you have achieved a proper fit and the patient will be comfortable.

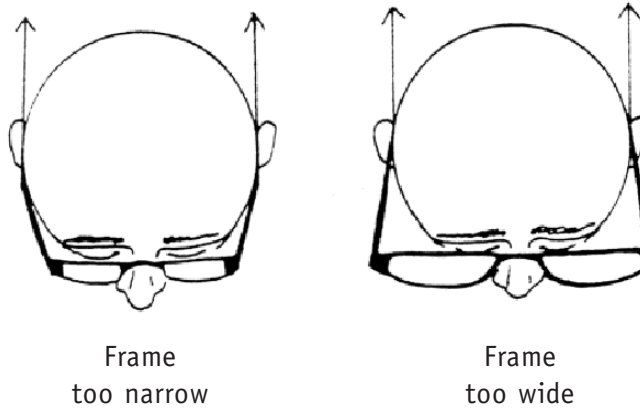
Temple Adjustment

After the frame front is adjusted, you are ready to adjust the temples. Temple wrap refers to the portion of the temple that extends from the frame front to the top of the ear. As with all adjustments, the closer the frame conforms to the face and head structure, the better the overall fit. In most cases, a very slight curve from front to back will help the temple to achieve both snugness and a comfortable fit.

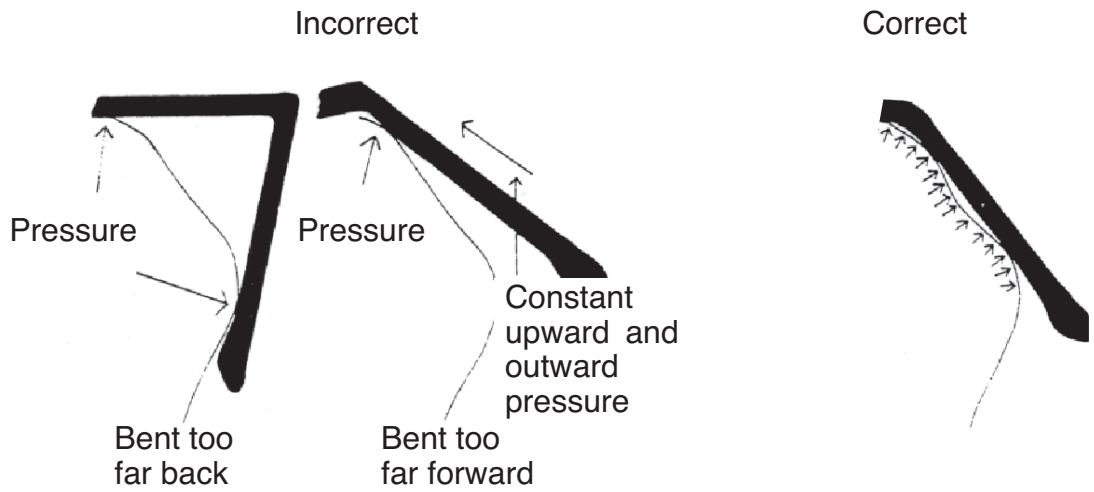
Correct Temple Wrap



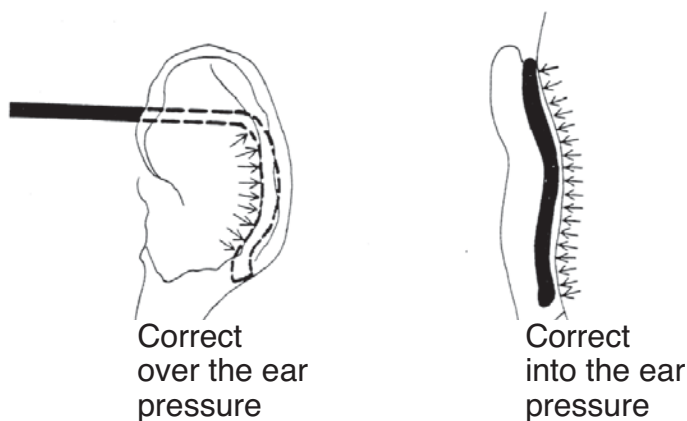
Incorrect Temple Wrap



The next consideration in adjusting the temple is the **temple bend**. This is the portion of the temple from the top of the ear to the back of the ear. A good temple bend will follow the contour of the ear. A good over-the-ear fit will allow gravity to work in your favor. The temple will lie close to the contours of the ear without pressing against it. Achieving a correct temple bend will allow comfort and snugness. When a temple's hold is on one or two points, pressure and slippage result.



The final consideration for temple adjustment is the into the head adjustment which concentrates on matching the inside surface of the temple to the side of the head. This final adjustment allows the frame's temple to gently but firmly hug the contours of the patient's skull. Even distribution of temple hold will minimize pressure and increase snugness.



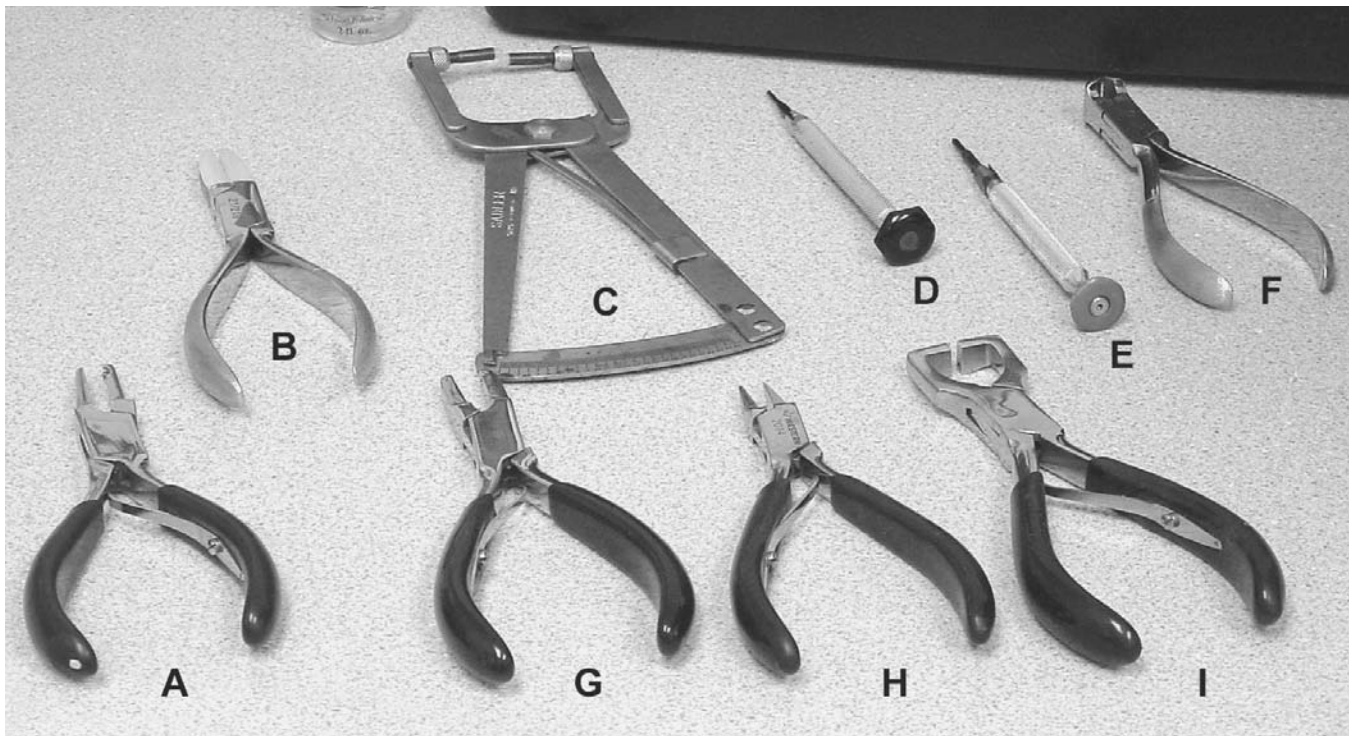
Following the pre-adjustment steps will help prevent fitting mistakes, reduce follow-up adjustments and increase patient comfort and satisfaction.

Helpful Adjustment Hints

1. Always hand a patient a new frame that is in standard adjustment.
2. Keep all frames on the modules in good adjustment and clean.
3. Always pre-adjust a frame before taking any measurement.
4. Take time to ensure sure all adjustments are correct.
5. Recommend that the patient return regularly for adjustments.
6. Never put an anti-reflective lens in the frame warmer. Remove the lenses from the frame prior to heating.
7. When adjusting frames always use a padded pliers or towel to protect the frame from scratches.
8. When replacing nose pads, protect the lenses from scratches in case your pliers slip.
9. Place the frame on a flat surface to prevent the screwdriver from slipping.
10. Never put an anti-reflective lens in the ultrasonic cleaner.
11. To loosen a locked screw, heat the screw in the warmer and melt wax around the screw.
12. Don't get discouraged!

Tools Used for Adjusting Eyewear

Pictured below are some of the more common tools used to adjust frames. There are many other tools you will become familiar with as you advance in your adjustment skills.



Below is a brief definition of these tools:

- A. **Parallel tip pliers** – Holding pliers to adjust temples and guardarms.
- B. **Nylon jaw pliers** – For general shaping or bracing. The nylon rectangle on the pliers protects the frame from damage.
- C. **Lens caliper** – Measures the thickness of a lens.
- D. **Flat head screwdriver** – Tightens/removes slotted screws.
- E. **Phillips head screwdriver** – Tightens/removes Phillips screws.
- F. **Chappel end cutters** – Cuts ends of screws and similar optical materials.
- G. **European pad adjusting pliers** – Used for adjusting snap in and screw secured nose pads.
- H. **Chain nose/snipe pliers** – For general shaping and bracing. The most common use is for nose pad adjustment. (To protect the finish of the frame, cover any external surface with a protective cloth before gripping.)
- I. **Angling pliers** – Used to angle the temples up or down to adjust for pantoscopic or retroscopic tilt.