

A COMPACT GUIDE TO UNDERSTANDING THE EXECUTIVE[®] BIFOCAL LENS

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It is unfortunate that the EXECUTIVE Bifocal lens, after twenty-odd years, is the most misunderstood lens in the industry. Regrettably, all attempts to enlighten the industry have only added more confusion.

Perhaps this simple review of lens basics will help clarify the facts about the EXECUTIVE lens.

WHAT IS A BIFOCAL?

A bifocal is that small additional window of glass which helps the patient accommodate for reading. These little additional windows of varying powers are carefully positioned before the eye to the patient's near pupillary distance requirements.

There is, as you know, a wide variety of different style bifocal segments available.

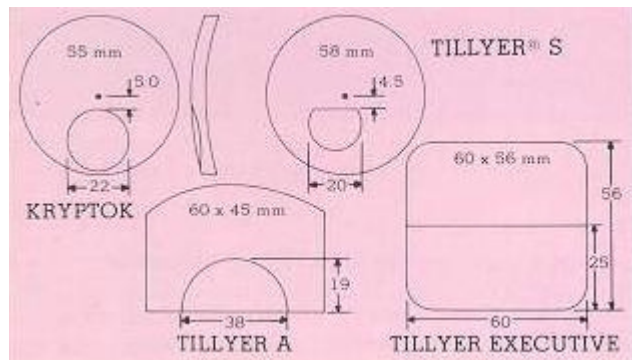
All bifocals perform the same basic function. They provide clear vision for distance viewing and clear viewing at near. All may have slightly different characteristics, such as the shape of the blank, shape and size of the segment, or the position of the center of the segment.

As mentioned earlier, the positioning of those little windows (segments) at the patient's near pupillary distance is most critical.

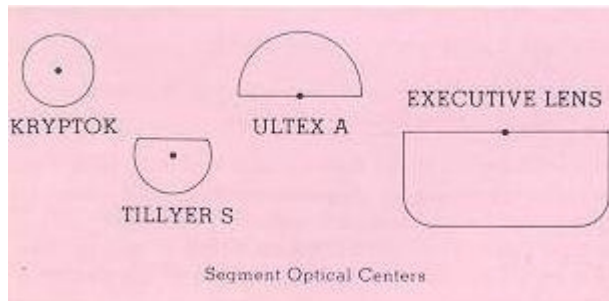
For example, imagine looking through a knothole in a fence. If the hole is small, you must carefully line up behind this hole to see through the fence. The larger the hole in the fence, the less critical the alignment behind it. If the fence had a large window in it there would be no problem with alignment.

BIFOCAL SEGMENTS

These little glass windows, bifocal segments, must be lined up before the patient's near pupillary distance in the same manner as lining up behind the hole or window in the fence. The smaller the window (20mm or 22mm diameter segments), the more critical the alignment. The larger the window, the less critical the alignment. The EXECUTIVE lens is the Big Window.



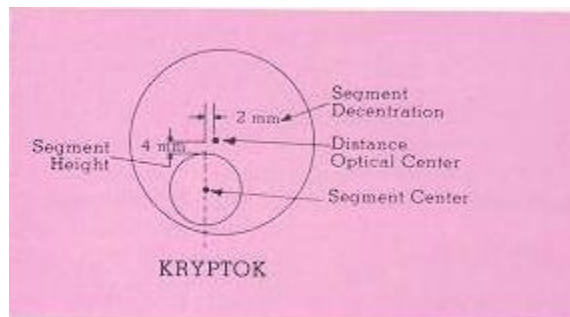
Bifocal segments all perform the same function even though they vary in size or shape. The centers of these segments may be in different locations. The location of the segment center will determine only the amount of image jump that exists with the segment style. With the EXECUTIVE lens, the center of the segment is at the top of the segment, hence, there is **no image jump** for the patient.



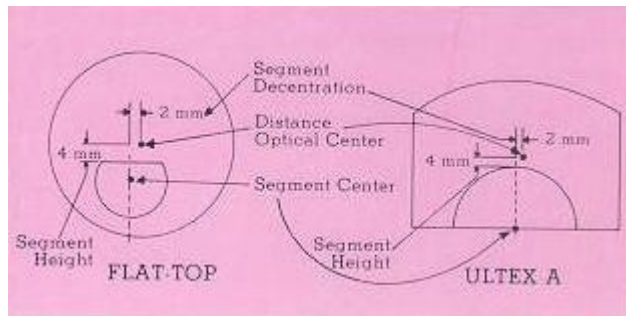
A bifocal segment is decentered for one reason only...to put the segment where the patient looks for near vision. **This applies to all bifocals.**

Accepting this premise as the reason for the position of the bifocal segment, we will lay out the EXECUTIVE lens to meet the requirements of the Rx...just the same as any other bifocal.

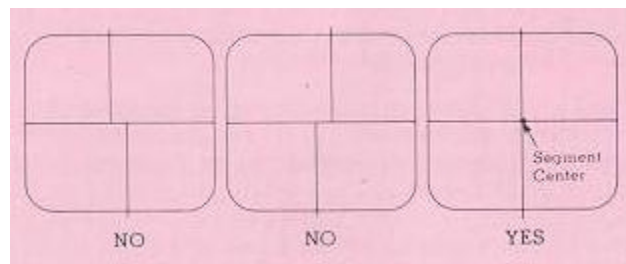
For example, a prescription for a pair of bifocals is a +3.00 sphere, +2.00 add, seg 4 below, 50 - 20 frame size, P.D. 65/61. If the Rx specifies a Kryptok, the laboratory would select the proper semifinished Kryptok blank and lay out this blank by locating the top and middle of the segment. The layout person would then move above the segment by 4mm. (The Rx called for a seg height of 4 below.) The distance optical center would then be located **over** an additional 2mm (P.D. 65/61, 4mm difference or 2mm per lens).



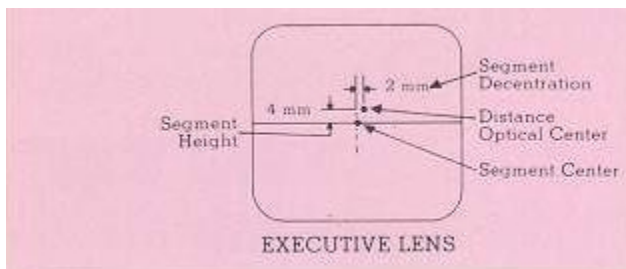
If the Rx was a Flat Top or an Ultex A, it would be laid out the same.



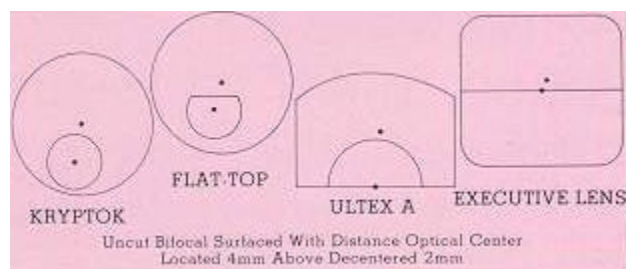
Now, if the Rx specified an EXECUTIVE lens we would have to do one thing before laying the Rx out - located the segment center. By holding the semifinished blank 4 to 5 inches away from a straight line (edge of a piece of paper) and by moving the lens from left to right, the edge of the paper will break as it passes from the upper portion of the blank to the segment. But where there is no break, then we have the segment center.



Place a dot on the ledge at this point. Now, from this point, lay out the lens for distance grinding as we did for the Kryptok, Flat Top, and Ultex - **the exact, same way.**



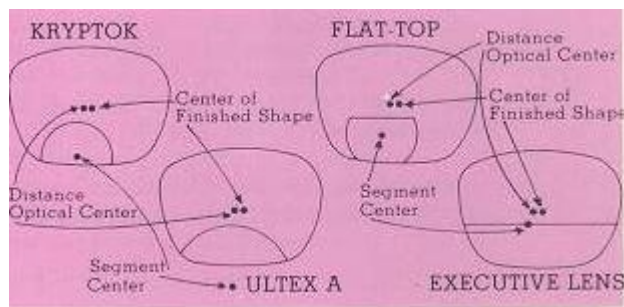
Though the physical characteristics of the semifinished blank differ, the segment shapes differ, the position of the segment optical centers differ, the layout of the Rx is the same.



Now that we have ground the distance Rx into the blank (+3.00 sphere), we must lay the lens out for edging.

The Rx called for a distance P.D. of 65mm, with a frame P.D. of 70mm - a difference of 5mm total, or 2 1/2mm of distance decentration per lens. By placing the finished, uncut lens in the lensometer, the distance power of +3.00 sphere will be located where we wanted it - 4mm above the segment, and 2mm over. We dot this point, and then lay out for edging, which is the cutting center or mechanical center of the finished lens shape 2 1/2mm over (distance decentration) from the distance optical center.

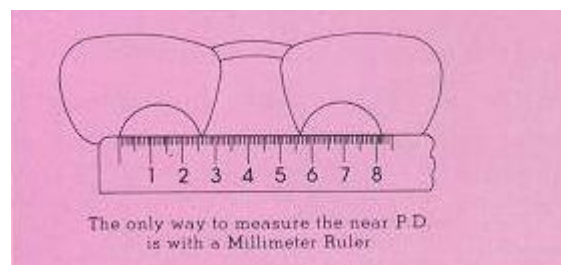
Now all four lens types have been ground and edged to the specified Rx. When the lenses are inserted into the frame, we have the same Rx in all cases.



In each of the four cases, we have processed the lenses exactly the same. How do we know that we have? By placing the mounted lens into the LENSOMETER[®] Instrument in the normal manner, we can locate the distance optical center and dot each lens. Then, with a millimeter ruler, we can measure from one optical center to the other and we have the distance P.D. of 65mm, as called for on the Rx.

We can verify the seg height by measuring the vertical dimension of the finished shape, divide in two to find the 180 line, and then note how many millimeters below this point the top of the segments are. In this case, 4mm. We can check the power of the addition in the normally prescribed manner, to ascertain that it is a +2.00 add. The one remaining step is the near P.D.

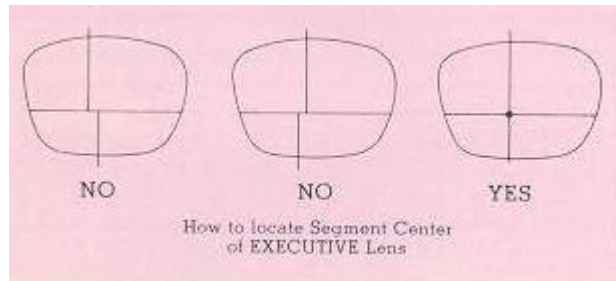
On the Kryptok and Flat Top, we can measure from one segment to the other and check to see if it is 61mm. The Ultex will be a little more difficult to measure accurately, for the segments may be partially edged away and the full segment is not always within the edged lens shape.



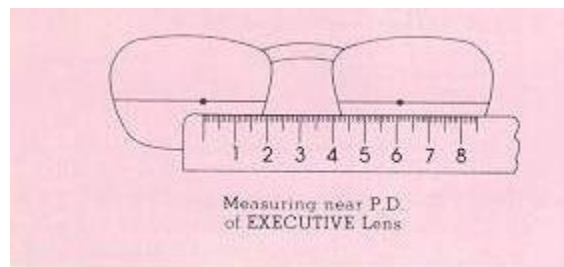
Measuring the near P.D. in this manner is the **only** way of determining if the near P.D. is as prescribed. Because this is the **only** way of determining the near P.D., we have a problem with the EXECUTIVE lens.

There are no physical boundaries to the EXECUTIVE lens segment as with other styles of bifocals. **Do not try** to locate the segment center with the LENSOMETER[®] Instrument. When checking the bifocal segment with the lens measuring instrument, you incorporate the power of the distance portion also. You could locate the segment optical center if the segment could be removed from the distance portion, but this cannot be done.

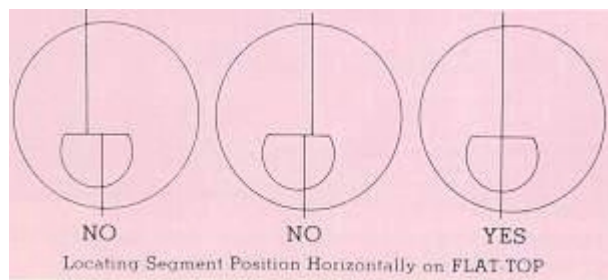
How, then do we check the EXECUTIVE lens? Locate the center of the segment as we did for layout, by viewing a straight line through the lens.



With a felt-tip pen, place a dot at this point. Then dot the other lens. After both lenses have been dotted, measure the distance between dots. This will be the near P.D. This procedure, if desired, can be done with any bifocal style.



Take a Flat Top bifocal - a 28mm segment - and you can locate the segment center in the horizontal plain in the same manner.



The EXECUTIVE lens is no different than any other style bifocal. Prescription requirements may prohibit the use of a specific blank where a larger or thicker blank might be needed. This could also be in the case of the EXECUTIVE lens. If there is excessive distance decentration required with the EXECUTIVE lens, the bifocal style might have to be altered from an EXECUTIVE lens style to some other style bifocal where a larger blank can be supplied, or a blank with special segment location which will permit the laboratory to fill the Rx correctly.

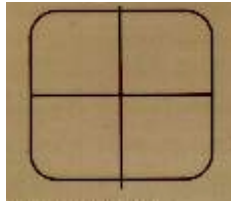
Now, let's repeat some basic about the EXECUTIVE lens.

For the Rx Laboratory:

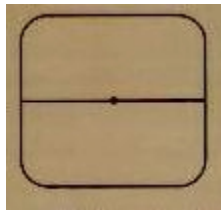
(Surfacing)

Treat the EXECUTIVE lens as **Any Other Style Bifocal**.

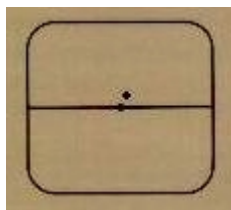
1. Locate the segment center as illustrated.



2. Dot segment center.



3. Position point for grinding distance Rx as specified...segment decentration plus segment height.



4. Continue surfacing as any other style bifocal.

For the Dispenser:

Is the blank large enough for the Rx? The patient desires a specific style frame. Will the laboratory be able to fabricate? Can they achieve decentration requirements? It is easy with the glass EXECUTIVE lens to determine. All frame eye sizes are determined by the boxing method, a rectangular box around the eye shape. The horizontal dimension of this box is the eye size.

The EXECUTIVE lens is also a rectangular blank, available in 60mm and 65mm sizes. Simply by subtracting one half of the eye size from one half of the blank size (either 60mm or 65mm), the difference is the total amount of decentration that is obtainable.

Example: The frame selected for the Rx is a 50 eye size, 20 bridge. Patient P.D. is 65/62. With these specifications, the Rx would require 2 1/2mm of distance decentration and 1 1/2mm segment decentration, or a total of 4mm. The eye size was 50mm. Divided by 2 = 25mm subtracted from half the blank size 30mm = 5mm total possible from the blank. We could get this Rx out of a 60mm EXECUTIVE. There is no other bifocal on the market that this formula will work with. Use it before sending the Rx to the laboratory for processing.

EXECUTIVE LENS DECENTRATION TABLE		
IF EYESIZE IS	TOTAL AMOUNT OF DECENTRATION AVAILABLE	
	(COLUMN A) FROM	(COLUMN B) FROM
	56 x 60 MM BLANK	60 x 65 MM BLANK
46	7MM	9 1/2MM
48	6MM	8 1/2MM
50	5MM	7 1/2MM
52	4MM	6 1/2MM
54	3MM	5 1/2MM
56	2MM	4 1/2MM

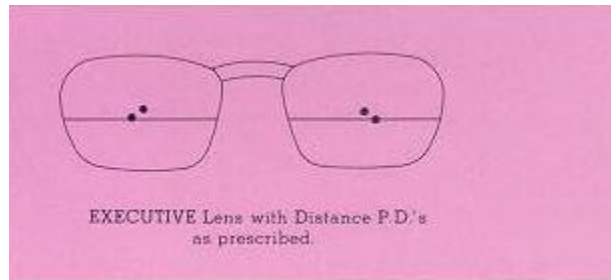
HOW TO USE

Determine from the Rx the amount of distance decentration per lens.
 Add the segment decentration, this equals total decentration.
 Find the eyesize that is to be used in the left column.
 Check Column A to see if the amount listed is greater than the total decentration computed from the Rx. If greater, this blank size can be used to fabricate the Rx.
 If the amount listed is not greater, check the amount under Column B. If this is greater, this blank size can be used.
 These computations do not permit any edging allowance.

What happens if you cannot get the necessary decentration from either a 60mm or 65mm blank? The EXECUTIVE bifocal lens cannot be supplied in special blank sizes or thicknesses. The selection of any EXECUTIVE lens must be governed by the fact that the laboratory can or cannot meet the prescription requirements.

The prescribing practitioner does have an alternative. If the P.D.'s cannot be achieved because of excessive decentration, the **distance P.D. can be achieved**. Locate the cutting center (geometric center of finished lens shape) on the semifinished blank. From this point, compute the distance decentration called for by the Rx.

Grind distance Rx at this point. When the Rx is completed, the distance P.D. will be as prescribed. In this case, the near P.D. may be greater than the distance P.D. The amount of induced horizontal prism at reading point should be calculated to determine if this will be acceptable.



The EXECUTIVE bifocal lens is the **only** bifocal on which this method can be used, because of the “unlimited window size.”

The EXECUTIVE lens offers many advantages not found in other types of bifocals - one-piece construction, minimizing chromatic aberration, unlimited size reading window, no image jump, correct curve design, available in photochromics. The only lens that allows size application computation before surfacing. The easiest lens for the bifocal wearer to adjust to.

TREAT THE EXECUTIVE LENS AS ANY OTHER BIFOCAL FOR RX FABRICATION.