



Work Life Oct 16, 2017

Progressive lenses – small masterpieces

Perfect glass design creates the ideal customised vision aid for people with vision problems

Convenient and precise vision – remote, close-up and in all transition ranges: Progressive lenses provide the best solution for vision problems. However, it is also one of the most complex solutions: Did you know that a customised progressive lens consumes several hundred hours of development, design and production time to complete?

Actually, this is hardly surprising considering that the lens has to achieve a virtual technical miracle: It is expected to correct both – far and near sightedness – and allow the user to enjoy perfect vision every step of the way, even in the transition ranges. Certainly not an easy feat. To improve close-up vision, the strength (dioptr) of the lens must be increased.

Consequently, all progressive addition lenses are more concave in the bottom portion. The top portion of the lens provides long distance vision and the small section between the two – the so-called transition or progression area – ensures perfect vision at all progressive distances, for instance to see things displayed on a monitor. As a result of the manufacturing process, the edges of this area are out of focus – and the severity of this differs depending on the quality of the progressive addition lens design and the level of customisation.

Ranges of progressive lenses

Specific design parameters that make ZEISS progressive lenses so unique minimise these distortions and allow the user to enjoy comfortable vision throughout.

A general rule: The greater the level of customisation of the progressive lens design, the better the quality of vision the user will be able to enjoy. Unlike other manufacturers who do not make the custom adjustments until the final stage, ZEISS takes the individual values of the customer into account from the start, i.e. the lens production process.

The differences between this type of lens and a standard progressive addition lens are amazing: it takes much less time to get used to these glasses; the user will not have to move the head around as much until he or she adjusts to the glasses and enjoys natural, large scale vision at every range. This makes reading comfortable, driving a car safe and work a lot less tiring.



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1. **Standard progressive lens:** This design offers the smallest usable vision range. As a result, users have to put up with reduced vision comfort and it takes them a long time to get used to their glasses.
2. **Universal progressive lens:** All vision ranges are easy to use and offer large fields of vision. This means that users will enjoy a high level of vision comfort and will spontaneously enjoy wearing these glasses.
3. **Customised progressive lens:** Tailor-made customised progressive lenses offer the maximum possible vision range and the greatest instantaneous vision comfort.

To attain this production level, ZEISS utilises what we refer to as so called free-form production processes. The background: Standard progressive addition lenses place the progressive addition vision on a fixed place on the front of the lens, while the back end is used to provide the actual focal strength. This creates an obstacle that is difficult to overcome when adapting the lens to your eyes.

The free-form production method allows the relatively random distribution of the progressive addition vision and the prescription strength of the glasses to the front and backside of the progressive addition vision lens. Hence, the design can be perfectly aligned with the needs of the customer – upon request a personal engraving can also be added (for instance the patient's initials).

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