

Fitting protocol for fitting KeraSoft® Thin SMC peripheries using STD periphery lenses

SMC

SMC periphery KeraSoft® Thin lenses are generally used for those corneas that demonstrate extremes corneal curvature relative to the central area on topography. Examples would be nipple cones

Goals:

1. Stable and optimal vision between blinks
2. Optimal MoRoCCo fit

Creating an SMC lens involves making peripheral changes in up to two sectors. Examining the type of cornea being fitted can give guidance which changes to make to the periphery.

Cases of Keratoconus with low cones

1. Generally, the topography shows a steep area inferiorly combined with a flat area superiorly. These cases most often will just require an inferior “tuck” to improve the fit and prevent the lens dropping too much on upwards gaze.
2. In some cases, usually very low cones or PMD, the superior portion of the lens has to be flattened as well.
3. An indication of when to use SMC can be when no one lens from the fitting set gives optimal fit and vision. For example:
 - The lens that gives best, **stable VA** has unstable rotation and drops significantly on upwards gaze. These characteristics suggest the lens is flat.
 - However, if lenses are fitted that have base curves one or two steps steeper this improves centration and reduces rotation but **VA is now clearer after the blink**
 - This situation occurs because the original lens has a good central and superior fit but the lens is too flat

inferiorly. This causes the unstable rotation and dropping of the lens.

- Fitting steeper lenses improves the fit inferiorly and centres the lens, but results in a tighter central and superior fit, causing **VA** to be clearer after the blink.

Overview

The lens giving the **best, stable VA** and **least rotation** determines the **base curve**.

The lens giving **best centration** and **minimal drop** determines the inferior peripheral fit

Every **0.20 change** in base curve corresponds to **1 step change** in the periphery.

Example: 8.40 STD lens

| | | |
|-----------|--|---|
| Mo | 1.5 mm straight ahead gaze. Drops to limbus or below on upwards gaze |  |
| Ro | Unstable rotation 12 CW |  |
| C | Decentered inferiorly |  |
| Co | Not aware of lens |  |
| VA | 20/25, 6/7.5, 0.8 worse after blink |  |

In this example, the lens gives reasonable **VA** but movement and rotation is excessive.

However, making the lens tighter with a steeper base curve improves centration but the other categories are made worse.

8.20 STD lens

| | | |
|-----------|--|---|
| Mo | 1.5 mm straight ahead gaze. Drops to limbus on upwards gaze | ● |
| Ro | Unstable rotation 7 CW | ● |
| C | Less decentered inferiorly | ● |
| Co | Comfortable | ● |
| VA | 20/30, 6/10, 0.7 slightly clearer after blink | ● |

8.00 STD lens

| | | |
|-----------|--|---|
| Mo | 0.7 mm straight ahead gaze. Drops to limbus on upwards gaze | ● |
| Ro | 5 degrees CW slightly unstable | ● |
| C | Slightly decentered downwards | ● |
| Co | Comfortable | ● |
| VA | 20/30, 6/10, 0.7 Clearer after blink | ● |

Using the information that you have from these trial lenses you can now determine the best lens to order.

1. The **8.40 STD** gave **best VA**: Choose this as the **base curve**.
2. The **8.00 STD** gave best **centration and rotation**: Choose this as the inferior peripheral curve
3. As there was only a small amount of unstable rotation, it is assumed the final lens will have **NO** rotation when the SMC sector is applied.
4. Each **0.20** change in the base curve corresponds to **1 step** in the periphery, therefore the final lens to order is:

8.40:STD:STP2 Classic SMC

The order written this way shows the top of the lens is STD and inferior sector is **STP2**. "Classic" SMC means the top STD sector is between 30 and 150 degrees and the inferior **STP2** sector is between 220 and 320 degrees. This configuration works well in most cases of low cones. When fitted, this lens would demonstrate:

| | | |
|-----------|---|---|
| Mo | 0.7 mm straight ahead gaze and upwards gaze | ● |
| Ro | 0 rotation, stable | ● |
| C | Centered | ● |
| Co | Comfortable | ● |
| VA | 20/25+, 6/7.5+, 0.8+ Clear, high contrast VA | ● |

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