



Keratoconus
Nipple Cone
Irregular Cornea
Post Graft

PRACTITIONER'S FITTING GUIDE

ROSE K2™

ROSE K2 NC™
NIPPLE CONE

ROSE K2 IC™
IRREGULAR CORNEA

ROSE K2 PG™
POST GRAFT

Four lens designs...

One simple systematic approach to fitting

Featuring

Easy-to-fit using a simple systematic approach for all designs.

Simple to use flexible edge lift system.

Aberration control aspheric optics providing outstanding visual acuity, reduced flare and glare and minimum lens mass (ROSE K2, ROSE K2 NC, ROSE K2 IC, ROSE K2 PG).

Advanced fitting options including:

- Toric peripheral curves
- Asymmetric Corneal Technology or ACT
- Front, back and bi-toric designs
- Quadrant specific edge lifts

Extensive diameter and base curve range.

Fits most corneal shapes, sizes and stages of keratoconus because of the unique design that changes as the base curve steepens.

	ROSE K2	ROSE K2 NC	ROSE K2 IC	ROSE K2 PG
PRIMARY INDICATION	Oval keratoconus	Nipple cones	Pellucid Marginal Degeneration, keratoglobus, LASIK induced ectasia and post graft	For patients who have undergone penetrating keratoplasty
SECONDARY INDICATION	Early nipple cones	Advanced oval cones	Very decentered large oval cones	Decentered large oval cones, any post corneal surgery, e.g. LASIK and PK
PARAMETERS AVAILABLE	BASE CURVE 4.30 mm to 8.80 mm DIAMETER 7.50 mm to 12.00 mm POWER Varies with material EDGE LIFT Standard, standard flat, standard steep. More lifts are available	BASE CURVE 4.30 mm to 8.00 mm DIAMETER 7.60 mm to 10.00 mm POWER Varies with material EDGE LIFT Standard, standard flat, standard steep. More lifts available	BASE CURVE 5.50 mm to 9.30 mm DIAMETER 9.00 mm to 12.50 mm POWER Varies with material EDGE LIFT Standard, standard flat, standard steep, double flat, double steep. More lifts available	BASE CURVE 5.30 mm to 10.0 mm DIAMETER 9.00 mm to 12.50 mm POWER Varies with material EDGE LIFT Standard, standard flat, standard steep, double flat, double steep. More lifts available
ADVANCED FITTING OPTIONS	<ul style="list-style-type: none">• Toric Peripheral curves (TP), asymmetric splits available• Quadrant specific Asymmetric Corneal Technology (ACT)• Toric: back, front and bi-toric surfaces• Quadrant specific edge lifts• Combinations of the above			
TRIAL SETS	26 lenses from 5.10 to 7.60 mm in a variable diameter from 8.50 to 9.20 mm, with variable power to approximate the final lens power.	25 lenses from 4.60 to 7.40 mm in variable diameter from 8.10 to 8.90 mm with variable power to approximate the final lens power.	18 lenses from 6.00 to 8.40 mm in an 11.20 mm diameter, with variable power to approximate the final lens power.	22 lenses from 6.00 to 9.00 mm in a 10.40 mm diameter, with variable power to approximate the final lens power.

FLEXIBLE EDGE LIFT SYSTEM

The peripheral fit is the single most important fitting factor for a successful, comfortable GP fit. Rather than a complicated series of radii and diameters, all ROSE K2 lenses use a simple value referred to as edge lift to determine the optimal peripheral configuration. After assessment of the edge lift pattern of the trial lens, a comprehensive range of edge lifts are offered (see figures below) to provide the optimum amount of edge lift clearance. The final lens is automatically compensated (base curve and power, no calculations are required), so the change in edge lift (which alters the sagittal height) does not affect the central fit!

With ROSE K2 lenses, 85% of all lenses dispensed use either the standard edge, standard flat (increased) or standard steep (decreased) edge lift to achieve the desired peripheral fit. However, other edge lift values can be specified in 0.1 increments ranging from -1.3 decreased (steep) to +3.0 increased (flat) (see illustration D1).

ROSE K2 NC presents a very rapid peripheral flattening with also a high percentage of all lenses dispensed using either the standard edge lift, standard flat (increased) or standard steep (decreased) for optimum peripheral fit. Other edge lift values are available in 0.1 increments ranging from -1.5 decreased to 3.0 increased (see illustration D2).

With ROSE K2 IC and ROSE K2 PG lenses, the flexible edge lift system is available in either the standard edge lift (0), standard flat /increased (+1.0), double flat (+2.0), standard steep/decreased (-1.0) or double steep (-2.0) for optimum peripheral fit. Other edge lift values are available in 0.5 increments ranging from -3.0 decreased to +3.0 increased (see illustration D3).



Illustration A: Optimal edge lift will give a fluorescein band of 0.5 mm to 0.7 mm with no excessive lift or peripheral seal at any point.

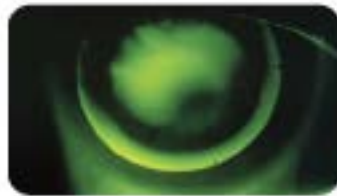


Illustration B : When the fluorescein pattern indicates edge lift in excess of 0.5 mm to 0.7 mm, a standard steep edge lift value is recommended.



Illustration C: When the fluorescein pattern indicates an edge lift less than 0.5 mm to 0.7 mm, a standard flat edge lift value is recommended.

AVAILABILITY

Illustration D1

ROSE K2

85% of all ROSE K2 lenses utilize either the standard, standard flat or standard steep edge lift values.

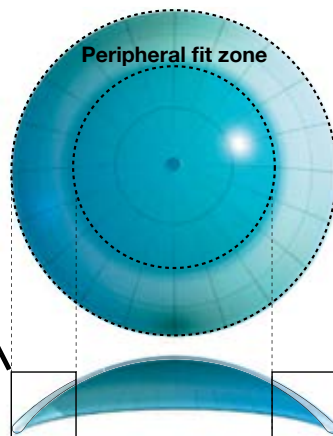
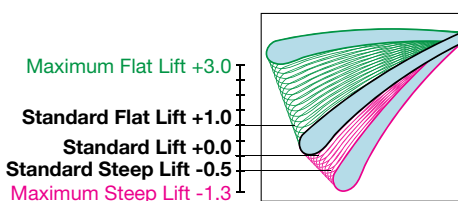


Illustration D3

ROSE K2 IC ROSE K2 PG

Edge lifts from +3.0 to -3.0 are available to fit all of your patients.

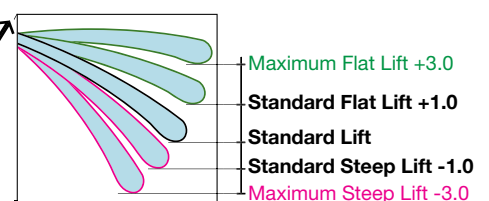
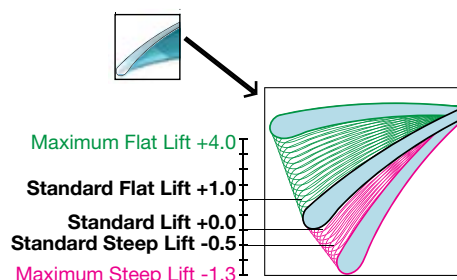


Illustration D2

ROSE K2 NC

85% of all ROSE K2 NC lenses utilize either the standard, standard flat or standard steep edge lift values.



ACT ASYMMETRIC CORNEAL TECHNOLOGY

By nature, the keratoconic cornea is asymmetric, where the inferior quadrant is frequently significantly steeper than the superior portion, causing the GP lens to lift off at 6 o'clock (**see illustration E**). ROSE K2 lenses incorporating ACT are designed to accommodate this asymmetry (good edge fit at 3, 9 and 12 o'clock but lift at 6 o'clock). The inferior quadrant of the lens is steepened, providing a more accurate fit at 6 o'clock making the lens more comfortable and stable (**see illustration F**), and often providing superior vision. ACT is independent of the primary base curve and edge lift and can be added to any Rose K design in up to 2 quadrants at any axis.



ACT is quadrant specific and allows the steepening of the inferior quadrant only

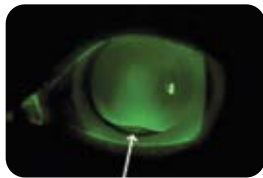


Illustration E: A spherical ROSE K2 lens (symmetric) fitted on this asymmetric keratoconic cornea fits well at 3, 9 and 12 o'clock but causes the lower edge to lift off at 6 o'clock.

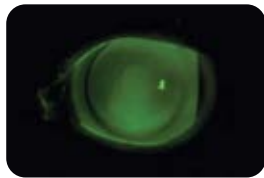
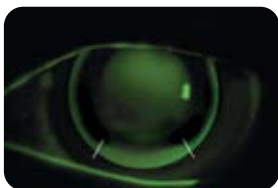
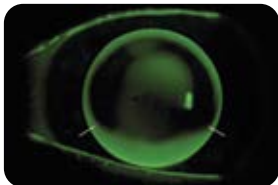


Illustration F: Incorporating ACT into the design improves the fit at 6 o'clock, making the lens more comfortable and stable and providing superior vision.

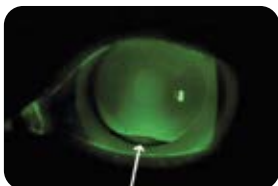
AVAILABILITY



ACT GRADE #1 (0.7 mm)
Slight edge stand off with pooling at or around 6 o'clock (between 5 and 7 o'clock).
Specify: ACT grade #1



ACT GRADE #2 (1.0 mm)
Moderate edge stand off with pooling and possible bubble at or around 6 o'clock (between 4 and 8 o'clock). The tear meniscus may also start to break up on blinking. Specify: ACT grade #2



ACT GRADE #3 (1.3 mm)
Significant edge stand off or lift off (tear meniscus breaks up) at around 6 o'clock.
Specify: ACT grade #3

Note: other grades of ACT are available (0.4 mm to 1.5 mm), please contact us for more information.

TORIC PERIPHERAL CURVES

A toric periphery (TP) is where the optical zone is spherical and approximately the last 1 mm of the peripheral curve is toric although this is variable dependent on the overall diameter of the lens. With Keratoconus, the tight areas, usually within 20 degrees of 180° (3 and 9 o'clock), will be eliminated with a TP design (**see illustration G**). In PMD there is often significant against-the-rule astigmatism making the lens tight at 12 and 6 o'clock and loose at 3 and 9 o'clock. A lens that is tight at 12 o'clock causes discomfort, so a TP design is often useful here.

The TP design is available on ROSE K2, ROSE K2 NC, ROSE K2 IC, ROSE K2 PG lenses and will greatly enhance lens fit, stability, comfort, vision and wearing time.

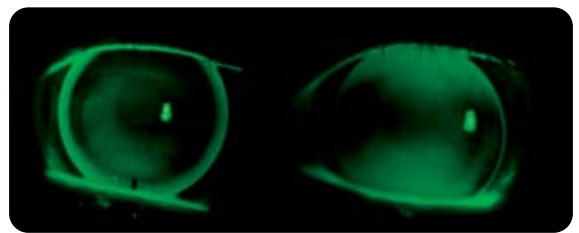
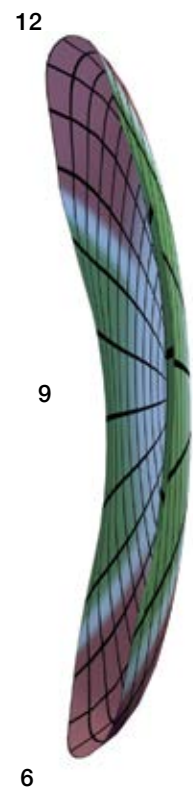


Illustration G: With Rose K2 standard peripheral toric

No peripheral toric

AVAILABILITY

The 3 and 9 o'clock meridians are flattened while the 6 and 12 o'clock meridians are steepened. A standard toric periphery will create an 0.8 mm difference in meridians. Other values are available in 0.1 steps between 0.4 mm and 1.3 mm.



Systematic Approach to Fitting

Recommendations

The use of diagnostic lenses is the only way to properly assess the correct fit and final lens power. Topical corneal anesthetic is recommended for new fits to reduce tearing for more accurate fitting assessment.

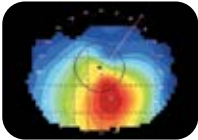
Toric peripheral curves and Asymmetric Corneal Technology (ACT) are available on all lens designs.

	ROSE K2	ROSE K2 NC	ROSE K2 IC	ROSE K2 PG
INDICATIONS	Oval Keratoconus, Nipple Keratoconus	Nipple Cone only	Pellucid Marginal Degeneration, Keratoglobus, LASIK-induced Ectasia and Post Graft	For patients who have undergone penetrating keratoplasty
1 INITIAL BASE CURVE SELECTION	<ul style="list-style-type: none"> For K readings 7.1 mm and flatter, select first trial lens 0.2 mm steeper than the mean K reading. For K readings from 6.0 to 7.0 mm, select the first trial lens equal to the mean K reading. For K readings 5.9mm and steeper, select the first trial lens 0.4 mm flatter than the mean K reading (less predictable). <p>NB: This is only a guide as the keratometer only measures the central 3 mm along the line of sight.</p>	<ul style="list-style-type: none"> For mild to moderate cases (where mean K reading is flatter than 6.0 mm), select a first trial lens 0.2 mm steeper than mean K. For advanced cases (where mean K measures between 5.1-6.0 mm), select a first trial lens equivalent to the mean K reading. For severe cases (where the mean K reading is steeper than 5.0 mm), select a first trial lens 0.3 mm flatter than the mean K reading. If using a corneal topographer, select the first trial lens based on the 3.0 mm sim K's. 	<p>PMD AND GLOBUS Select the first trial lens 0.3 mm flatter than steepest corneal meridian.</p> <p>POST LASIK AND GRAFT refer to ROSE K2 PG section.</p>	Select the first trial lens 0.3 mm steeper than average K reading.
2 CENTRAL FIT	<p>Ignore peripheral fit at this stage.</p> <p>A Evaluate central fit immediately after blink when lens is centered.</p> <p>B A light, feather touch at the apex of the cone is desired. (See fluorescein images section.)</p>	<p>Ignore peripheral fit at this stage.</p> <p>A Evaluate central fit immediately after blink when lens is centered.</p> <p>B Look for similar or slightly greater central touch than with the conventional ROSE K2 design. (See fluorescein images section.)</p>	<p>Ignore peripheral fit at this stage.</p> <p>A Evaluate central fit immediately after blink when lens is centered.</p> <p>B FOR PMD AND GLOBUS, a light feather touch is desired.</p> <p>FOR POST LASIK, look for central pooling of 0.2 mm to 0.3 mm.</p> <p>FOR POST GRAFT, refer to ROSE K2 PG section. (See fluorescein images section.)</p>	<p>Ignore peripheral fit at this stage.</p> <p>A Evaluate central fit immediately after blink when lens is centered.</p> <p>B Look for central pooling of 0.2 mm to 0.3 mm in early flatter grafts; alignment to 0.1 mm flatter in more mature grafts. (See fluorescein images section.)</p>
3 PERIPHERAL FIT	Once optimum central fit is achieved, assess the edge lift. Look for an even fluorescein band of 0.5 mm to 0.7 mm in width. Order increased (flat) or decreased (steep) edge lift accordingly. For asymmetric edge lift where the lift is excessive in one meridian and insufficient in the other meridian, consider toric peripheral curves (TP design). For significant edge stand off/lift off in one quadrant only, consider ACT. Quadrant specific lifts are also available where a different lift can be ordered in each quadrant.			
4 ASSESS THE DIAMETER	Smaller diameters are required for central cones and larger diameters for decentered cones. A larger diameter is often required for early cones and will also tend to make the lens ride higher. The lens should hang off the top lid and be well clear of the lower limbus.	Small, steep nipple cones often require a smaller diameter approximately 8.3 mm on average. As a rule flatter nipple cones go larger on diameter, steeper nipple cones go smaller on diameter. Look for movement on the the blink of 1.0 to 1.5 mm.	The standard diameter is 11.2 mm. Increasing the diameter will help lens location/centration. Make sure the lens is not impinging onto the upper sclera.	The standard diameter is 10.4 mm. Increasing the diameter will help lens location/centration. Make sure the lens is not impinging onto the upper sclera.
5 ASSESS POWER LAST	Perform over refraction in well-lit room. Over refract using $\pm 1.00D$ steps initially and refine with 0.50D and 0.25D steps. ROSE K2 NC: Allow the trial lens to settle for a minimum of 10 minutes before over refracting. Ensure testing room lights are on and push the plus to blur. It is common to over minus these patients.			
6 RESIDUAL ASTIGMATISM (R.A.)	It is common to leave low amounts of R.A. uncorrected, or to compensate spherically for it (see table). It is rare to see R.A. amounts over this level; when it is, toric lenses (front, back or bi-toric) are usually needed.			<p>Spherical compensation of R.A.</p> <p>R.A. -0.25 to -0.50, add -0.25 D</p> <p>R.A. -0.75 to -1.00, add -0.50 D</p>

CORNEAL TOPOGRAPHY

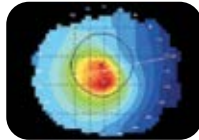
Corneal topography is a very useful and effective tool in determining irregular corneas and different cone shapes and sizes. The images below represent typical cones and irregular corneas encountered in a practice along with the recommended ROSE K2 lens design for optimal fit.

Oval Cone



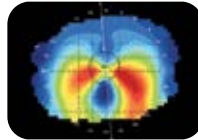
ROSE K2
ROSE K2 PG

Nipple Cone



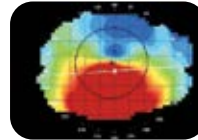
ROSE K2 NC

Pellucid Marginal Degeneration



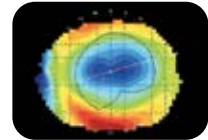
ROSE K2 IC
ROSE K2 PG

Keratoglobus



ROSE K2 IC
ROSE K2 PG

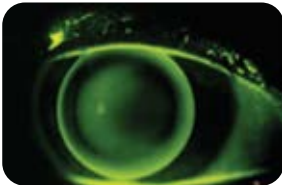
LASIK- Induced Ectasia



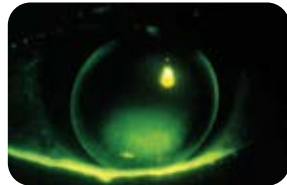
ROSE K2 IC
ROSE K2 PG

FLUORESCIN IMAGES

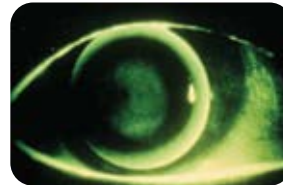
ROSE K2



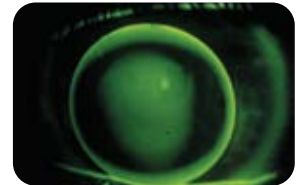
Optimum fit immediately after blink



Optimum fit a few seconds after blink. Don't judge fit in this downward location

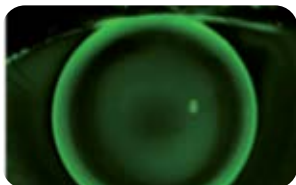


Good fit centrally - loose peripherally



Steep centrally - good fit peripherally

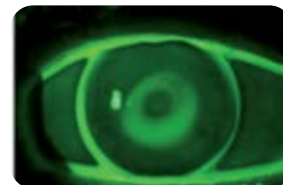
ROSE K2 NC



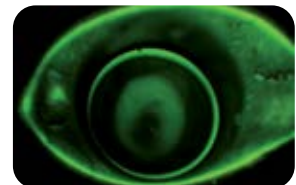
Nipple Cone. Optimum fit



Nipple Cone. Excessive edge lift

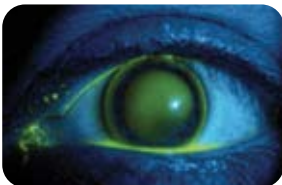


Nipple Cone. Tight edge lift



Nipple cone. Tight edge, low location

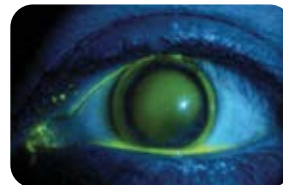
ROSE K2 IC



11.4 mm diameter lens on PMD. Optimum apical touch and edge lift



11.4 mm diameter lens on PMD. Excessive apical bearing, insufficient edge lift



11.4 mm diameter lens on PMD. Optimum apical touch, excessive edge lift

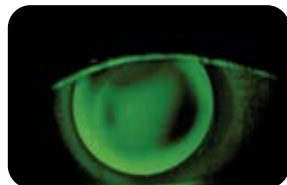


11.4 mm diameter lens on Nipple Cone. Optimum apical touch and edge lift except at 6 o'clock where edge lift is excessive. ACT grade #1 recommended

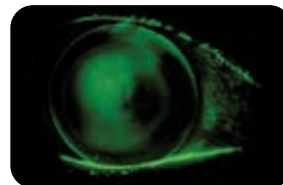
ROSE K2 PG



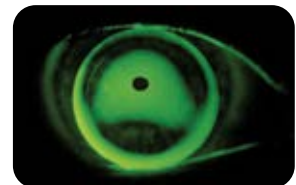
Optimum fit



Early graft - good location and central fit, excessive edge lift



Optimum central fit, tight periphery

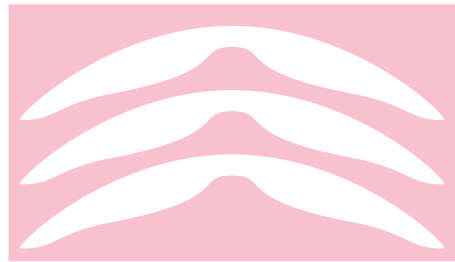


Oblate Graft - steep centrally, loose periphery

ROSE K2

Keratoconus Fitting Tips

	FLATTEN BASE	STEEPEN BASE	INCREASE DIAMETER	DECREASE DIAMETER	INCREASE EDGE LIFT	DECREASE EDGE LIFT	CONSIDER TORIC
LENS RIDING LOW	✓		✓		✓		
LENS RIDING HIGH		✓		✓		✓	
APICAL STAINING		✓					
3 & 9 O'CLOCK STAINING				✓			✓
SUPERIOR LIMBAL STAINING				✓			
FLUORESCIN EDGE BAND TOO WIDE						✓	
FLUORESCIN EDGE BAND TOO NARROW					✓		
GHOSTING OR CLOUDY VISION			✓				
POOR ACUITY	✓						
BUBBLING, ORANGE PEEL STIPPLING OR DIMPLE VEILING	✓			✓	✓		
POOLING AT CONE BASE	✓			✓	✓		
COMFORT					✓		
EARLY CONES			✓			✓	
ADVANCED CONES				✓	✓		



R O S E K

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