essilor

CUSTOM CONTACT LENS
SPECIALISTS

eJupiter™

Fitting Guide

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LENS DESIGN

- Three curves form the Corneal Chamber: the Base Curve, the Second Corneal Curve (PC1), and the Limbal Curve (PC2).
- The Corneal Chamber needs to clear the entire cornea and is custom designed to clear the many different irregularities that may be encountered.
- Two curves form the periphery of the lens: the Landing Curve (PC3) and the Edge Lifting Curve

BASE CURVE / OZ
PC1 -CORNEAL ZONE
PC2 -LIMBAL ZONE
PC3 -SCLERAL ZONE: LANDING CURVE
PC4 -EDGE
CORNEA
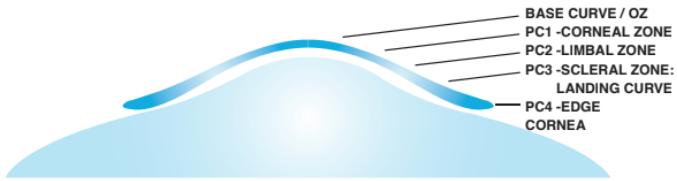
- BASE CURVE / OZ
- PC1 / CORNEAL ZONE
- PC2 / LIMBAL ZONE

MAKE UP THE CORNEAL CHAMBER
(note: none of these curves should touch the cornea)

The last two curves ar ethe true fitting curves in an eJupiter lens. The Landing Curve is the only curve to touch down on the eye. This curve should rest evenly (parallel) to the scleral conjunctiva. The edge rises just above the conjunctiva

CORNEAL CHAMBERS FOR STANDARD EJUPITER DESIGNS	
15.00mm Diameter	13.20mm Corneal Chamber
15.60mm Diameter	13.80mm Corneal Chamber
16.60mm Diameter	14.20mm Corneal Chamber
18.20mm Diameter	14.20mm Corneal Chamber
18.80mm Diameter	14.80mm Corneal Chamber
20.20mm Diameter	15.00mm Corneal Chamber

Note: As the diameter of the corneal chamber is increased, adjustments need to be made to the base curve to maintain sagittal height relationship.

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PARAMETERS AVAILABLE

BASE CURVE	POWER	DIAMETER
4.00 - 9.00	+20.00 to -20.00	15.00 - 20.80

FIT SET PARAMETERS (EXAMPLE: 15.60MM STANDARD)

BASE CURVE	POWER	DIAMETER	OZ	PC1	PC2	LANDING CURVE	EDGE
8.44	pl	15.60	8.6	8.64/1.7	8.7/.9	12.75/.5	14.25/.4
8.23	-1.00	15.60	8.6	8.43/1.7	8.7/.9	12.75/.5	14.25/.4
8.04	-2.00	15.60	8.6	8.24/1.7	8.7/.9	12.75/.5	14.25/.4
7.84	-3.00	15.60	8.6	8.04/1.7	8.7/.9	12.75/.5	14.25/.4
7.67	-4.00	15.60	8.6	7.87/1.7	8.7/.9	12.75/.5	14.25/.4
7.50	-5.00	15.60	8.6	7.70/1.7	8.7/.9	12.75/.5	14.25/.4
7.34	-6.00	15.60	8.6	7.54/1.7	8.7/.9	12.75/.5	14.25/.4
7.18	-7.00	15.60	8.6	7.38/1.7	8.7/.9	12.75/.5	14.25/.4
7.03	-8.00	15.60	8.6	7.23/1.7	8.7/.9	12.75/.5	14.25/.4
6.89	-9.00	15.60	8.6	7.09/1.7	8.7/.9	12.75/.5	14.25/.4
6.75	-10.00	15.60	8.6	6.95/1.7	8.7/.9	12.75/.5	14.25/.4
6.62	-11.00	15.60	8.6	6.82/1.7	8.7/.9	12.75/.5	14.25/.4
6.49	-12.00	15.60	8.6	6.69/1.7	8.7/.9	12.75/.5	14.25/.4
6.25	-14.00	15.60	8.6	6.45/1.7	8.7/.9	12.75/.5	14.25/.4

STANDARD PARAMETERS

15.0	15.6	18.2	18.8	20.2	
8.0	8.6	8.2	8.2	8.2	BASE CURVE/ OZ
BC + .2 1.7	BC + .2 1.7	BC + .4 2.0	BC + .4 2.6	BC + .4 2.7	CORNEAL ZONE/ PC1
8.70 .9	8.70 .9	9.00 1.0	8.35 .7	8.35 .7	LIMBAL ZONE/ PC2
Landing curve 12.75 .5	Landing curve 12.75 .5	Landing curve 12.25 1.5	Landing curve 12.25 1.5	Landing curve 12.25 2.1	SCLERAL ZONE/ PC3
14.25 .4	14.25 .4	14.50 .5	14.50 .5	14.50 .5	EDGE ZONE/ PC4

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INITIAL LENS SELECTION

- Choose the initial diameter based on horizontal visible iris diameter (HVID). Unless the cornea is unually large, begin with the 15.mm or 16.6mm trial lens.
- Select a base curve from diagnostic set approximately two diopter steeper than the mean keratometric (or sim K) measurement. (note: if the patient is aware of the diagnostic lens, it is probably not vaulting the cornea enough)
- Observe the fluorescein under the corneal chamber (ideal clearance is generally 200-400 microns)
  - Too Short (Flat): A lens that is too "short" will rest upon the cornea or show little or no fluorescein in the Corneal Chamber area. To correct this, choose a steeper Base Curve
  - Too Tall (Steep): A lens that is too "tall" will vault the cornea excessively (you will see deep pooling of fluorescein under the Corneal Chamber). To correct this choose a flatter Base Curve (note: if you have difficulty clearly seeing the iris through the fluorescein, it is probably too steep)
- Observe the limbal area
  - Vaulting should occur, showing a thin pooling of fluorescein
- Observe the Landing Curve
  - Should align with the conjunctiva
- Observe Edge Lift (should show small ring of flourescein around the outside of the lens)
- Perform Over-refraction
- Contact an Essilor lab consultant to design final lens parameters

The eJupiter come in 3 configurations to address different corneal geometries by varying the posterior design.

- The eJupiter Standard design has a Second Corneal Curve that is slightly flatter than the Central Corneal Curve. Most cases of corneal irregularity (keratoconus, post surgical, etc.) are fit with the standard design.
- The eJupiter Advanced Keratoconic design has a Second Corneal Curve that is 4.00D flatter than the Central Corneal Curve.
- The eJupiter Reverse Geometry design has a standard Second Curve 4.00D steeper than the Central Corneal Curve. This curve is customizable to 20.00D steeper if necessary.

TO SUCCESSFULLY FIT THE EJUPITER CONTACT LENS, THREE OBJECTIVES MUST BE MET

- Vault the cornea (ideal clearance is 200-400 microns)
- Have complete limbal clearance (150-200+ microns)
- Landing curve parallel with the sclera (no flourescein)
- Small ring of flourescein around the outer edge

See image to the right >

Diameters of 15.6mm and 16.6mm **fit 75% of eyes**

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Fitting Guide
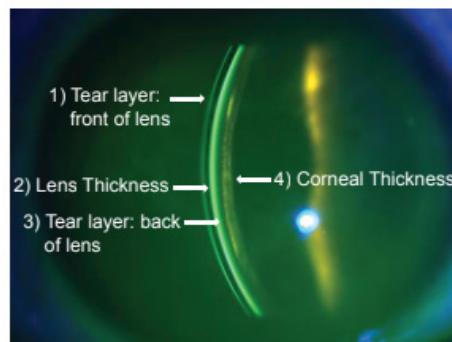
1. Fill the chamber of the scleral lens with non-preserved saline and dip the fluorescein stick to dye

- This step is optional, but helpful in observing pattern when first learning.

2. Questions to ask:

- Is the lens tall enough (adequate sagittal depth) to jump all irregularities?
- Is it wide enough and tall enough to clear the limbus?
- Is the Landing Curve parallel to the conjunctiva without blanching any blood-vessels?
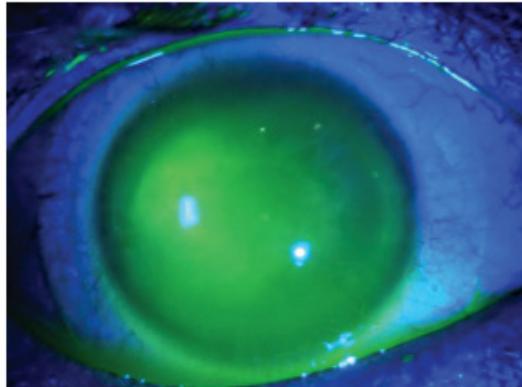
3. Once a good fit is achieved, check for settling in the conjunctiva area after 20 minutes

- Some patients have a soft conjunctiva and the overall sagittal depth will descrease as the lens settles into the conjunctiva.
- Another technique is to judge the fit by instilling dye while the lens is on the eye. During the blink tear pumpling should allow the fluorescein to flow under the contact lens. If fluorescein is not completely under the lens, there may be a mismatch between the landing area (steeper or flatter) causing a lack of tear exchange.

KERATOCONUS

IDEAL FIT
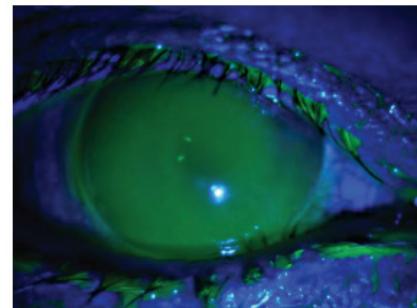
STEEP FIT
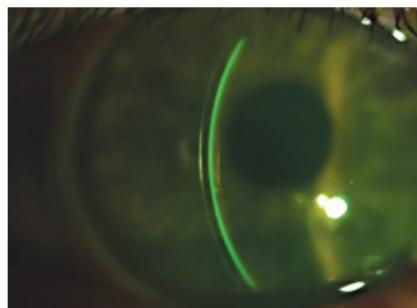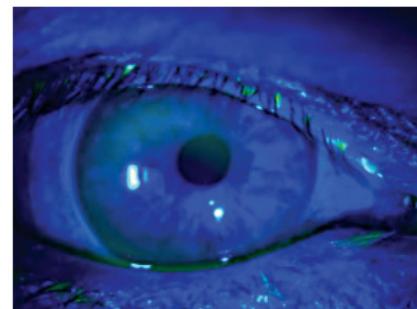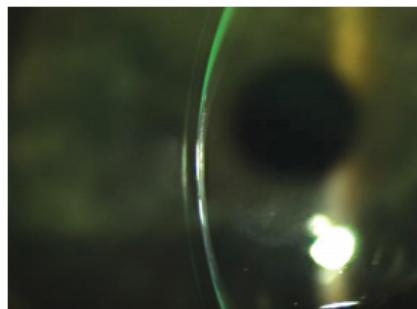
FLAT FIT

**POST RADIAL KERATOTOMY (RK)/ LASIK**

IDEAL FIT
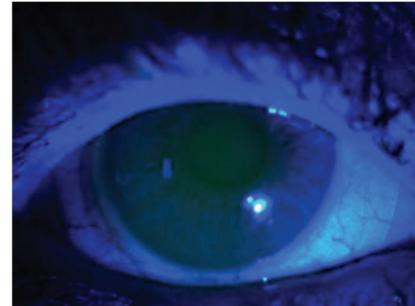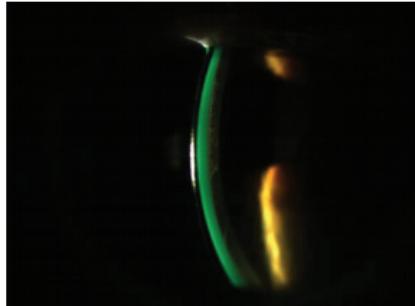
STEEP FIT
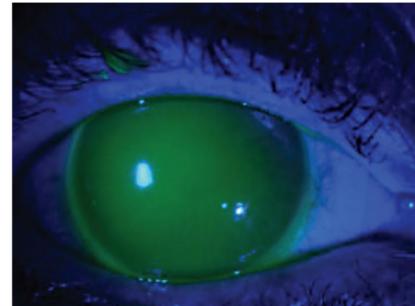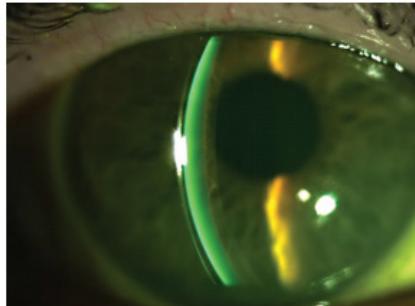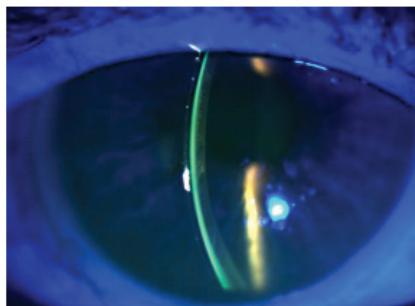
FLAT FIT

**DRY EYE/ CORNEAL OPACITY**

IDEAL FIT

STEEP FIT

FLAT FIT

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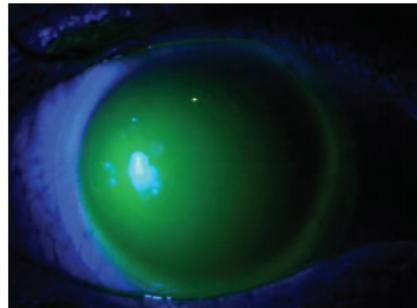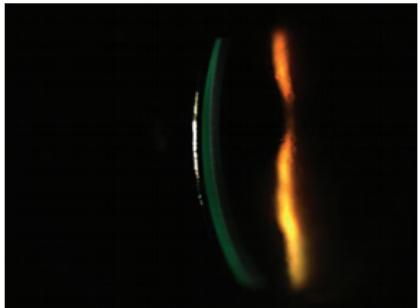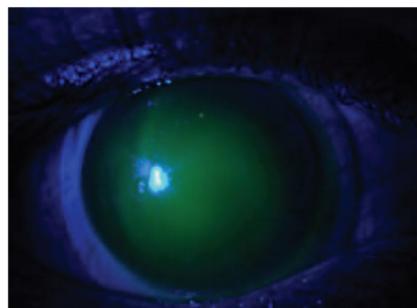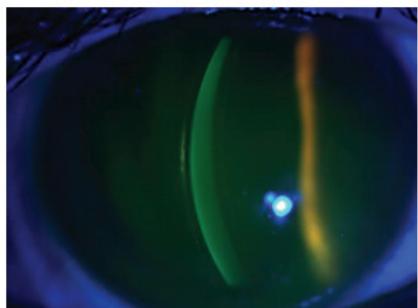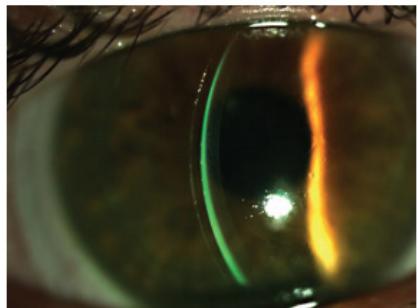
FITTING TIPS

Blanching of the blood vessels

- If the fit shows a touch of blanching after settling on the conjunctiva and still exchanges tears under the lens, no change is indicated as the flexure that pumps tear film under the lens will relieve the pressure.
  - But if 1/4 or 1/2 of the Scleral Zone has blanching, then change the landing zone by choosing a flatter Scleral Zone/ PC3 and Edge/ PC4.
  - Have a patient follow-up in a week if there is blanching.
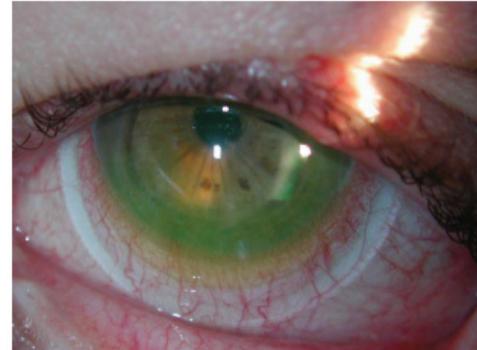
*Photo courtesy of Edward Boshnick, OD

Compression ring

- Some patient's scleral conjunctiva are quite a bit softer and may show some compression signs with no resulting problems.
- If the tear pump is working then the compression may be acceptable. The flexing that occurs during the blink allowing tears under the contact lens (providing the fluorescein uptake) results in the compression being relieved.
- If a compression ring is noted and wearing time is decreased within 6 hours due to performance, you will need to adjust fit.
  - If more than 1/4 of the scleral zone shows compression make change in the landing area.
  - If it is an even compression ask the consultant to provide a larger landing zone.

Cylindrical over-refraction

- This usually means you have too much flexure.
  - On a 15.6mm lens, increase to .50mm thick and on an 18.2mm increase to .70mm thick.

Limbal touch

- This occurs when there is not enough clearance around the Corneal Chamber in theis case, increase the Corneal Chamber size; or add some reverse geometry.

Touch

- It is acceptable as long as it is not true pressure.
  - Does the touch change with each blink?
  - Does it slide over and touch but with the touch is relieved?
  - If the touch does not go away it is probably pressure.

Movement on a eJupiter lens

- Should be minimal.
  - It should not be immobile but also it should not be sliding or moving much with a well fit lens.
- Exessive movement:
  - Excessive height or width.
  - Evaluate after a lens has settled about 20 minutes.
  - Look at the Scleral Landing Zone. This should be parallel on the sclera with only a ring of fluorescein around the edge.
  - Too flat a landing curve bears all the weight on the inner edge of the curve.
  - Too steep a landing curve bears all the weight on the outer edge of that curve.
  - Optimal is bearing the weight across the entire curve evenly.
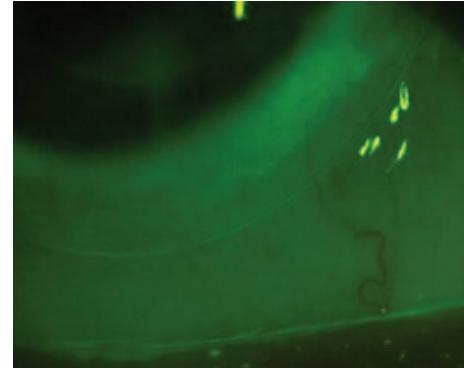
Soft conjunctive

- With an eJupiter design, it is possible that with the lens flexure during the blink conjunctiva can be sucked in under the lens.
- This could mean that the lens is too tall, and/ or the scleral curve may be too flat, or it may just be sucked in under the lens.
  - Consult your Essilor Consultant for questions regarding troubleshooting this problem.

*Unless otherwise noted images courtesy of Michael J. Lyons, OD, FAAO.