• Jupiter
  ◦ GP Scleral Lens
    • Boston XO
  ◦ Diameter 15mm-22mm
  ◦ Indications
    • Keratoconus
    • Post corneal graft
    • Post refractive surgery
    • Trauma
    • Ocular surface disease
• Diagnostic Lens Fitting
  ◦ Fitting Objectives
    • Complete Corneal Clearance
    • Alignment with Scleral
    • Semi-Seal fit
  ◦ Evaluate three zones
    • Corneal Zone
    • Limbal Zone
    • Scleral Zone and Edge
• Corneal Zone
  ◦ Vault Reduction Method (VRM)
    • Start with a diagnostic lens that completely vaults the cornea and then select progressively flatter lenses until the lens is 100 to 200 microns above the corneal surface.
    • For the first lens select a base curve that is 1 diopter steeper than the steepest corneal curve.
• Fill the lens with saline.
• Dip a fluorescein strip into the solution.
Fitting Technique
Corneal Zone: VRM

BC  48  46  44
• **Corneal Zone**
  ◦ Let the best diagnostic lens settle for 20-30 min.
  ◦ **Ideal Vault**
    • 100 to 200 microns
* You may have to fit 1-2 diopters steeper if your best fitting diagnostic lens settles reducing the vault to 50 microns or less.

Turn the slit beam to a 45 degree angle to observe the fluid reservoir highlighted with fluorescein in order to estimate vault (comparing the reservoir with the known thickness of the lens).
- **Limbal Zone**
  - The scleral lens should adequately vault the limbus.
  - A scleral lens that is inadequately vaulting the limbus necessitates a larger diameter.
• **Scleral Zone**
  ◦ The haptic portion of the scleral lens should rest evenly on the scleral conjunctiva.
  ◦ Blanching indicates that the lens is too tight and the haptic portion needs to be loosened.
Front surface toricity

- Toric power can be added to correct residual astigmatism.
- The toric lens is stabilized by double slab-off.

[Image of an eye]
Scleral Obstacles

- Notches can be beveled into the lens in order to accommodate scleral obstacles such as blebs or pincuquecas.
Scleral lenses can be used for cosmetic restoration.
Case #1

- 31 year-old with KC
  - Previous hydrops OD
  - Unable to get topography
  - Unable to get refraction
    - Visual acuity = count fingers
Case #1

- Diagnostic lens fit
  - Dia= 17.5mm
  - BC= 53 diopters
  - Over-refraction
    - Final power= -10.00 20/30

- Daily wear
  - Clear Care for cleaning/Disinfection
  - Fills lens with 0.9% NaCl (off label)
Case #2

- 26 year-old with KC
  - Inferior Intac OD
  - Previously failed in multiple lens designs.
• Case #2
  ◦ Diagnostic lens
    • Dia= 18.2mm

    • 50 diopter BC had adequate central clearance but exhibited some mid-peripheral touch.
    • 50 diopter BC with reverse geometry allows the lens to fully vault the entire cornea.
• **Case #2**
  - The 50 diopter reverse geometry lens fit slightly tight. Peripheral curve #2 was flattened 0.5mm to loosen the fit. This type of change will drop the lens slightly. The base curve was steepened one diopter to compensate.

• **Final**
  - BC= 51 diopters
  - Power= -10.50 20/25
• Case # 3
  ◦ 61 year-old with a corneal graft (PK) OD secondary to Fuch’s.
The patient was originally fit with a large diameter GP. Inadequate movement and bearing resulted in scar formation.
• Refit into Jupiter
  ◦ Dia= 17.5mm
  ◦ BC= 44 diopters
  ◦ Power= -2.50 20/40