INDICATIONS

- When alternative GP designs will not center or cause intolerable bearing forces on the central cornea and soft lenses cannot provide good vision.
- Fitting of irregular corneas with conditions such as keratoconus, trauma, or post-surgical deformities consequent to a graft, RK, PRK, and LASIK.
- In conditions where the cornea and/or sclera are extremely dry and need protection from direct exposure.

DESCRIPTION

The Jupiter Scleral™ series is designed to be a semi-sealed lens and does not need to closely contour the cornea. The scleral portion is designed to allow adequate tear exchange but hold a much larger volume of tears. It can address the most irregular and asymmetric corneas as well as provide a large tear volume for severe dry eye cases.

The Jupiter 15 mm and Jupiter 18 mm series lenses usually have 5 curves organized into 3 zones:
- The Corneal Zone, comprised of the central corneal curve and the ASPHERIC peripheral corneal curve.
- The Limbal Zone, comprised of an ASPHERIC scleral curve.
- The Scleral Zone, comprised of an ASPHERIC scleral curve and the ASPHERIC edge curve.

The Jupiter 15 mm and Jupiter 18 mm series lenses come in 3 configurations to address different corneal geometries by varying the posterior design.

- The Jupiter Standard Design, central corneal curve has a slightly steeper radius than the peripheral corneal curve. Most cases of corneal irregularity (keratoconus, post surgical, etc) are fit with the Standard design.
- The Jupiter Advanced Keratoconic Design has the central curve relatively STEEPER than the peripheral corneal curve.
- The Jupiter Reverse Geometry Design has the central curve relatively FLATTER than the peripheral corneal curve.

The anterior portion is designed for a constant thickness outside of the optic zone. All Jupiter 15 and 18 mm series lenses use aspheric optics to reduce spherical aberrations for enhanced VA. This aberration reduction technology may be modified by the fitter who has aberration measurements in order to further optimize visual acuity.
## JUPITER SCLERAL PARAMETERS

**BASE CURVES:** Any

**DIAMETER:** 13.5 mm to 24.0 mm

**BV POWERS:** +50.00 D to -75.00 D in 0.25 D steps

**CYLINDER (TORIC):** -0.25 D to -15.00 D in 0.25 D steps

**AXIS (TORIC):** 1° to 180° in 1° steps

Toric scleral zones are available to enhance the alignment on eyes with a very irregular sclera. When residual astigmatism indicates that a front toric lens is needed, double slab-off ballasting is used to stabilize lens rotation.

### VISIONARY OPTICS GUARANTEE:
All lenses are manufactured to specification and free from defects.

*We recommend Optimum GP materials by Contamac. All lenses are plasma treated to ensure surface wetting.*

## 14-LENS JUPITER DIAGNOSTIC FITTING SET

Fitting the Jupiter 15 and Jupiter 18 lens is done by the use of diagnostic lenses. 14 lens pre-designed fitting sets for each of the 3 configurations mentioned above are available in the Jupiter 15 and Jupiter 18 series.

In these sets, the corneal zone of the different lenses varies while the limbal and scleral zones are designed for the average eye. When the lens is ordered, the scleral zone may be steepened or flattened to improve scleral alignment.

Although the fitting sets are pre-designed, the Jupiter 15 and 18 mm lenses may be made to any configuration, zone shape, or diameter possible, given the restrictions of materials and manufacturing technology.

Fenestrations can be added to any 15 mm series lens upon request when lens removal may present a problem.

Jupiter Scleral diagnostic lenses are laser marked with the base curve for easy identification.

Loaner sets are available.
FITTING OBJECTIVES

Most patients can be successfully fit with the Jupiter 18 mm series lens. It can accommodate great amounts of corneal asymmetry and/or irregularity. It is usually the most efficient lens for difficult contact lens fittings. The Jupiter 15 mm mini-scleral series lens is generally used when the full sized sclerals are found to be difficult for the patient to insert. The lens should closely contour, but not rest on, the cornea.

The ideal fit is one in which the lens demonstrates:
1. 40 to 200 microns of clearance over the cornea;
2. Increased limbal clearance (as evidenced by a brighter fluorescein layer);
3. Scleral alignment with the edge just above the scleral epithelium (as shown by a thin fluorescein meniscus at the edge).

The Jupiter 15 mm mini-scleral is designed to closely contour average diameter corneas. Smaller corneas may require the 14.4 mm diameter Jupiter lens to reduce clearance and prevent bubbles when the HVID is less than 11.4 mm. Larger corneas may require a 15.6 mm diameter Jupiter lens to ensure adequate limbal clearance when the HVID is greater than 12.0 mm.

FITTING & EVALUATION PROCESS

SELECT THE INITIAL TRIAL LENS

Select a BASE CURVE which is equal to the STEEPEST Corneal curve PLUS 1.00 D (Round up—for example, keratometry of 46.00 x 48.75 would yield a 50.00 D BC).

**Note:** When the central corneal shape is significantly different from the peripheral cornea, central keratometry readings alone are not usually a good source of data to design the fit of this lens. If reliable keratometry or corneal topography data is not available, select the 48.00 D (7.03 mm) lens from the diagnostic lens set as this will vault most central corneal areas. It is necessary that the base curve of the lens does not rest on the central cornea when determining the fit.

INSTILL SALINE AND FLUORESCEIN AND APPLY THE LENS.

With the lens concave side up, instill saline solution into the lens and add a small amount of fluorescein. Have the subject tilt their head down, looking at a tabletop. Place the lens directly on the cornea so that the solution stays in the lens.
EVALUATE THE THREE ZONES OF THE LENS

**Corneal zone:** base curve and first peripheral curve. Observe the fluorescein under the central curve. A lens that is too flat will rest upon the cornea and show little or no fluorescein in this area. To correct this, choose a steeper base curve. A lens that is too steep will vault the cornea excessively; you will see deep pooling of fluorescein under the central area. A 15 mm Jupiter lens will form large bubbles when the clearance is excessive, as the capillary forces cannot hold the tear layer intact. Bubbles under the 18 mm lens may be eliminated by re-filling and re-inserting the lens.

Select progressively FLATTER lenses (VRM – vault reduction method) until any area in the corneal zone ALMOST touches the cornea. Although mild corneal touch will usually cause no problems, corneal bearing is not acceptable. If the diagnostic lenses demonstrate a situation where one base curve appears too flat and the next steeper base curve appears too steep, order a base curve that falls somewhere between the two diagnostic lenses. The final fit should be slightly steeper than ideal because scleral lenses settle into the eye and lose vault during the first few hours of wear.

**Note:** Many distorted or irregular corneas will not show optimum corneal clearance with lenses in the diagnostic set. We can adjust any specification of the lens to accommodate most conditions. Please contact our consultants for design assistance. For more complex corneal geometries, a Jupiter Advanced Keratoconic or Jupiter Reverse Geometry or a completely customized design may be needed to provide the best fit. Please contact our fitting consultation service by phone, fax, or email.

**Limbal zone:** Complete, generous limbal clearance insures good tear circulation. If there is very little fluorescein in the limbal area of the lens, the lens is too small and you should select a larger diameter. If there is too much clearance, large bubbles will form in the 15 mm Jupiter lens, and a smaller diameter should be selected.

**Scleral zone and edge:** The lens should rest evenly on the bulbar conjunctiva with the edge appearing just above the conjunctival epithelium (as shown by a thin fluorescein meniscus at the edge). No fluorescein will be seen under a well-fit scleral zone except at the edge. If vascular compression is seen near the EDGE, order a flatter scleral zone. Conversely, if vascular compression is seen near the limbus, order a steeper scleral zone. Logical increments for flattening and steepening the scleral zones in the Jupiter lens have been determined and ordering in these steps usually results in the correct modifications to the fit. If the edge is burrowed into the conjunctiva, the lens should be ordered with a flatter edge lift to allow for adequate tear exchange. If the edge rises significantly above the conjunctiva, the lens should be ordered with a steeper edge lift to prevent excessive edge awareness.

**DETERMINE LENS POWER**

Once the radius of the base curve is determined, the power of the lens is determined by a spherocylinder over-refraction. A cylinder component in the over-refraction usually indicates lens flexure and can be corrected with the final lens design. Over-keratometry is the best way to confirm lens flexure. When modifying the base curve radius, the lens power must be changed accordingly.
APPLICATION & REMOVAL TIPS

When handling the Jupiter Mini-Scleral lens, always wash your hands and follow the lens care instructions provided by your eye care practitioner.

APPLICATION

1. Center the lens on a large scleral plunger. Alternatively, form a “tripod” with the thumb, index, and middle finger, with the lens positioned in the center.
2. Fill the lens with non-preserved saline solution.
3. The patient should lean forward with their head down, while opening the eyelids as widely as needed.
4. Apply the lens to the eye surface.

REMOVAL

1. Moisten a contact lens plunger with a few drops of saline.
2. Position the plunger on the lens near the edge so that the plunger is just inside the lens. Do not position the plunger on the center of the scleral lens, as the suction from the lens will cause difficulty with removal.
3. Lift the edge of the lens and remove the lens from the eye.

Please visit the Scleral Lens Education Society (www.sclerallens.org) for a link to a 10 minute video on application, removal, and care of scleral contact lenses.

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