

Summer 2021 Virtual Edition

INTRASCLERAL IOL FIXATION

When performing Yamane's double-needle technique, find your sclerotomy sites by combining the use of an axis marker, caliper, and ink. In addition, when piercing the conjunctiva and advancing through sclera, you have no control over recommended insertion angles for creating the scleral tunnels.

The combination of these variables are a challenge for reproducibility and standardization.

THE SOLUTION

YAMANE Double-Needle Stabilizer by Dr. Shin Yamane

Geuder®
Precision made in Germany



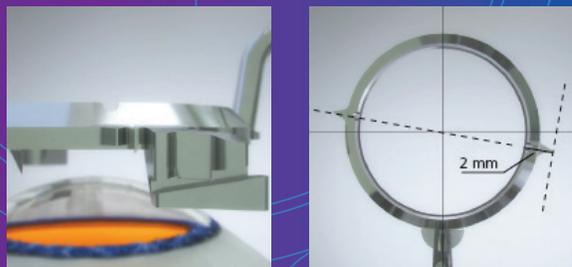
The Yamane Double-Needle Stabilizer helps simplify identification of the sclerotomy sites and provides control over the insertion angles when creating the scleral tunnels. Thanks to its ring shape and fixating teeth, it also provides excellent fixation of the eye when the eye is pierced with the needles.

ADVANTAGES OF THE INSTRUMENT

- Instrument incorporates two landmarks for visualization of sclerotomy sites
- Landmarks located at 2.0mm from limbus and 180° apart
- No need for axis markers, calipers or ink
- Two grooved platforms for passing the needles through the ring-shaped body
- Needle guides produce standardized insertion angles when creating the scleral tunnels
- Reflective surface of the ring to prevent IOL from tilting; the fixation ring is to be kept parallel to the iris plane.



Find your sclerotomy sites by combining the use of an axis marker, caliper, and ink.

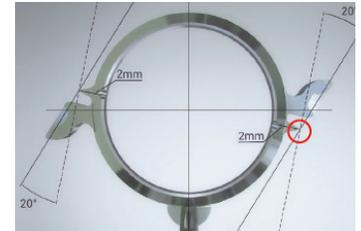
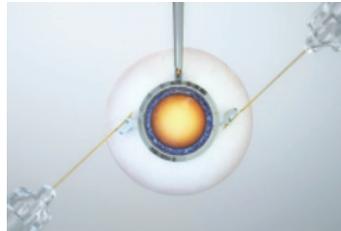


Control over the insertion angles when creating the scleral tunnels.

G31496 YAMANE Double-Needle Stabilizer 30G G31497 YAMANE Double-Needle Stabilizer 27G

Geuder
Precision made in Germany

Fixation ring for intrascleral IOL fixation with double-needle technique, overall length 110.0mm.



The YAMANE has two landmarks to visualize the sclerotomy positions, 2.0mm from the limbus and 180° apart. It thus replaces the use of an axis marker, compass and color.

Landmarks facilitate identification of sclerotomy entries.

Since it is difficult to insert a needle at a certain angle with your free hand, the instrument provides two grooved plates to guide the needles through the annular grooves. This makes it possible to insert the needles at a given angle of 20° with respect to the limbus, and 10° with respect to the iris surface in order to form reproducible scleral tunnels and avoid stress on the IOL haptics.

CONSIDERATIONS

WHAT IS THE BEST IOL TO USE?

3 piece IOLs with haptics made out of PVDF.

This haptics material is very malleable and resistant, allows for better flange formation and can better prevent erosion through the conjunctiva (Fig. 1).

CAN I USE A STANDARD 30G NEEDLE FOR THE YAMANE ISHF TECHNIQUE?

No.

The lumen of standard 30G needles is too narrow to dock the haptics of any 3piece IOL. The ultra thin wall (UTW) 30G needles provide the most secure tunnel for the haptics of 3piece IOLs. It is recommended that the inner diameter of the needle to be used must be 0.18 mm or greater (Fig. 1 & 2).

CAN I USE A STANDARD 27G NEEDLE?

Yes.

The lumen of standard 27G needles is adequate for docking, however the external diameter is significantly wider than the haptic and this may increase the likelihood of postoperative hypotony and IOL slippage, if the flanged haptic slides through the needle track back into the eye. The technique was initially developed using 27G needles. The UTW 30G needle (left) allows for proper fitting

of haptics, while the standard 30G needle (right) does not allow haptics to advance beyond the beveled section (Fig. 3).

CAN I EXTERNALIZE THE HAPTICS SEQUENTIALLY, INSTEAD OF SIMULTANEOUSLY?

Yes.

The technique originally calls for the needles to be externalized simultaneously. An alternative is to externalize the leading haptic first, prior to docking and externalizing the trailing haptic. It must be kept in mind that pulling out the leading haptic with the 30G needle first, will rotate the IOL in an anticlockwise direction. As a result it becomes more difficult to insert the tip of the trailing haptic into the second 30G needle.

WHY IS THE SURFACE OF THE RING REFLECTIVE?

To prevent IOL from tilting, the fixation ring is to be kept parallel to the iris plane. The light of the microscope will reflect on the ring surface as a visual aid for inclination of the instrument. Therefore the reflection on the instrument needs to be the strongest, after confirming that the reflection on the cornea is in the center (Fig. 4).

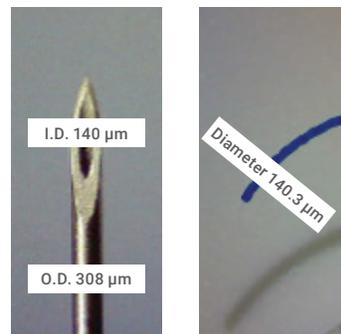


Fig. 1: Inner diameter of standard 30G needle vs. diameter of 3-piece IOL haptics.

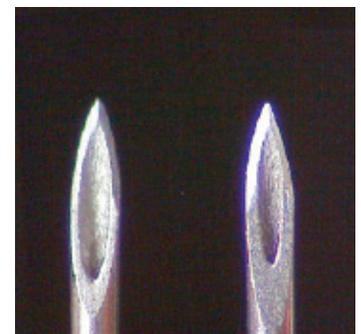


Fig. 2: Ultra thin wall (UTW) 30G needle (left) vs. standard 30G needle (right).

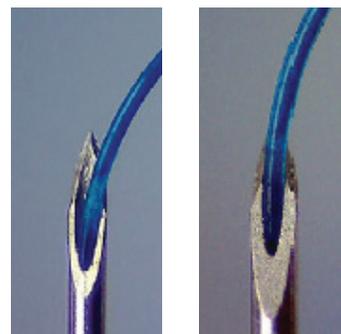


Fig. 3: The ultra thin wall (UTW) 30G needle (left) allows for proper fitting of haptics, while the standard 30G needle (right) does not allow haptics to advance beyond the beveled section.



Fig. 4: Inner edge of the ring displaying the reflection.

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WHAT TYPE OF CAUTERY SHOULD I USE?

Cauterization of the haptics is to be performed by using a low temperature cautery device. The haptic should be dry in order to avoid a twisted flange and must not touch the cautery to evade adhesion. Moreover the cautery should only come close to the haptic, never in touch. Crestpoint suggests using the AMSI-3103 Low-temp, Fine Tip Cautery - Sterile.

WHAT IS THE APPROPRIATE LENGTH OF THE HAPTIC TO "CAUTERIZE"? 0.5mm to 1.0mm

Post-operative OCT measurements have shown that 1.0mm of the haptic is necessary to make a flange diameter of 0.3mm, which is the size required to fit the scleral tunnel created by the 30G needle. If 27G needles are used, the flange diameter needs to be 0.4mm or greater.

WHAT IOL HAPTIC MATERIAL IS MORE SUITABLE FOR THE TECHNIQUE? PVDF haptics

Most 3piece IOLs have thin haptics that are prone to bending and breaking during manipulation. The doubleneedle technique requires an IOL that can withstand significant manipulation. Polyvinylidene fluoride (PVDF) haptics are very malleable and resistant, create a much better flange than PMMA haptics and can prevent erosion through the conjunctiva. PMMA haptics are not discarded but it must be taken into consideration that its material makes the intraocular manipulation of the trailing haptics more difficult. Additionally, the haptics may be more susceptible to breaking or bending.



Fig. 5: Optimal flange shape: mushroom-like with a diameter of approximately double the diameter of the haptic.

WHAT IS CONSIDERED OPTIMAL IN TERMS OF FLANGE SHAPE?

An optimal flange is that of a mushroom-like shape with a diameter of approximately double the diameter of the haptic (Fig. 5). This shape provides maximum hold in the scleral tunnel and minimum leak to the subconjunctival space.

HOW MUCH OF THE HAPTIC SHOULD BE INTRODUCED INTO THE 30G / 27G NEEDLE CAVITY?

The haptic is advanced about 2.0mm into the needle in the case of 30G Ultra Thin Wall needles. For 27G needles, the haptic will have to advance about 3.0mm to be able to create better points of fixation inside the needle.

WHAT IS THE APPROPRIATE TIP TO BENT LENGTH FOR THE NEEDLES? 7.0mm

If the 30G Ultra Thin Wall needle (27G alternative) is bent 7.0mm from the tip, it will stop when the needle has advanced 3.0mm into and through the sclera (Fig. 6 & 7). This applies if the needle is used in combination with our instrument.

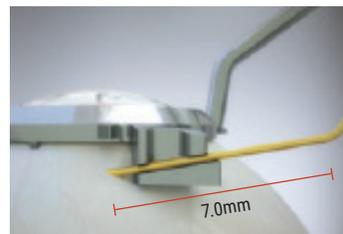


Fig. 6: Needle is bent at 7.0mm from tip.

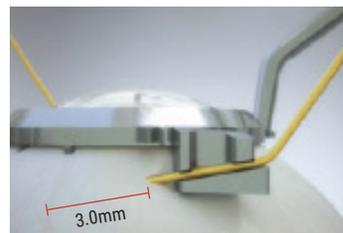


Fig. 7: When the angle hits the platform (red circle) the needle has created a 2.0-3.0mm scleral tunnel.

WHAT IS THE OPTIMAL SCLERAL TUNNEL LENGTH? 2.0mm

"Too short a scleral tunnel may result in IOL dislocation, and too long a tunnel may lead to intraoperative distortion of the cornea. A too small angle of the 30G needle can also lead to this."



Fig. 8: The dents on the inner edge of the ring are used to place reference marks.

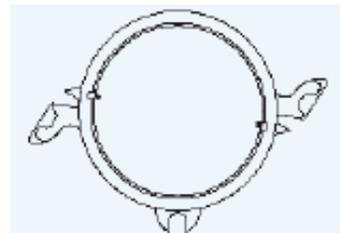


Fig. 9: Showing dents on inner edge.

THE RING HAS AN UNIVERSAL INNER DIAMETER, HOW DO I ACCOMMODATE FOR DIFFERENT CORNEA SIZES?

The two dents on the inner edge of the ring are in line with the two insertion point visual marks. Use these to place reference marks and to align the ring inside diameter with the corneal limbus (fig. 8 & 9).

WHAT TYPE OF INTRAOCULAR FORCEPS ARE SUITABLE TO MANIPULATE THE IOL HAPTICS?

Intraocular anterior chamber forceps such as G32997 are suitable for manipulation of the haptics and its insertion into the needle cavity. Prior to the implantation of the secondary IOL a previous lens needs to be removed, the same forceps is used for both procedures.

WHERE DOES THE FLANGE NEED TO BE PLACED?

The flange needs to be placed under the conjunctiva and back into the scleral tunnel. Leaving the flange in between conjunctiva and sclera could provoke erosion.

WHAT TO DO WHEN HAVING ISSUES PLACING THE FLANGE BACK INTO THE SCLERAL TUNNEL?

"Too small a flange harbours the risk of IOL dislocation (during wound healing). Too large a flange is difficult to be pushed into the scleral tunnel. If so, you should enlarge the entry site of the tunnel using the 30G needle (Fig. 10)."

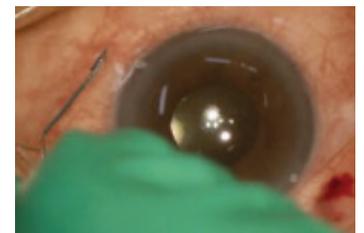


Fig. 10: The flange needs to have the right size in order to be pushed into the scleral tunnel.

ANY SUGGESTIONS TO AVOID HAPTIC-NEEDLE FIT COMPLICATIONS?

Before the procedure, it is recommended to verify that the IOL haptic fits into the thin wall 30G needle to avoid previously reported problems of the haptics not fitting into the lumen of the needle. This is not the case when using 27G needles, but it must be kept in mind that the IOL haptic and needle lumen relation changes. As the haptic is easier to be inserted into the needle, it will also be easier for the haptic to slip out, so it is recommendable to insert the haptic at least 3.0mm into the needle.

HOW TO PREVENT AIR BUBBLES FROM INTERFERING WITH VIEW FOR NEEDLE INSERTION DURING HAPTIC FIXATION?

Fill syringes with a small amount of BSS and make sure to irrigate the needle before the scleral pass.



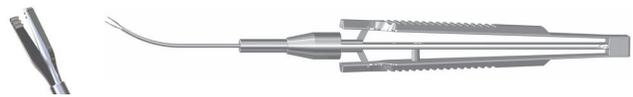
[Click Here to view the Yamane video on our YouTube channel!](#)

Crestpoint Ophthalmics Instruments to use with the G31496 & G31497 YAMANE Double-Needle Stabilizer



**Geuder G32996 Snyder Osher IOL Cutter
(for Snyder Osher Forceps G32997)**

Long blade 4.5mm, 18 gauge for cutting acrylic and silicone foldable IOL's. Serrated tips prevent the "watermelon seed" phenomenon, especially vexing with smooth scissors edges and implants. Chromium plated stainless steel.



**Geuder G32997 Snyder Osher Forceps
(for Snyder Osher IOL Cutter G32996)**

(Incision Size 1.9mm) For use with G32996 and G32998. These unique forceps have square-tipped ends with teeth that can firmly grip an IOL or IOL fragment. The three-dimensional gripping prevents the piece from torquing or tilting with the forceps. Chromium plated stainless steel.



Duckworth & Kent DK7717E IOL Loading Forceps

Highly polished tips, round handle, for loading AcrySof IOL lens into Monarch B, C, and D cartridge. Titanium, reusable.



Duckworth & Kent DK7797-2 IOL Injector

Plunger type, with pre stop position, for Alcon Monarch B, C & D cartridges, used with DK7717E forceps (cartridge not supplied). Single handed delivery. Titanium, reusable.



MANIMSL30 Angled, Primary Incision

3.0mm Hard Fiber Stainless Steel, Disposable. Box of 6 or Bag of 50. Other sizes available.



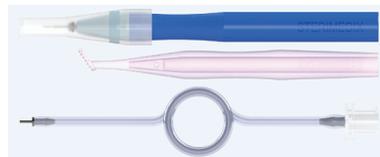
MANIMST15 Sideport, Straight 15°

Hard Fiber Stainless Steel, Disposable. Box of 6 or Bag of 50.



**Mr. Phaco PH9001
Lieberman Adjustable Speculum**

Temporal, open blades, adjustable thumb screw. Stainless Steel, reusable.



**Sterimedix M4510
One-step Trocar Set**

23 gauge, 3 x self-sealing valved trocars, 1 x 3.5mm scleral fixation plate, 1.0mm x 185.0mm BSS infusion line. Stainless Steel, Disposable.



**AMSI-3103
Low-Temp, Fine Tip Cautery – Sterile**

11.0mm x 5.0mm x 0.2mm sterile tips include a sterile drape to cover the non-sterile handle. Tips are individually packaged. 10 per box. Reusable handle. Disposable tips.



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