

The B-HEX Pupil Expander has a deceptively simple design!

This is what very experienced phaco surgeons who used the device without watching the videos have said. When the same surgeons went back and saw some videos on YouTube and then used the B-HEX, they said, **"Ah! I wish I had seen the YouTube videos before using"**.

Please watch these  videos on YouTube and Usage Tips before you use your first B-HEX

B-HEX Various Surgeons_Rigid Pupil, Hard Cataract, Shallow AC, IFIS, IntraOp miosis, FLACS, VR Surgery

<https://www.youtube.com/watch?v=hAnDEs3TMn8&t>

Surgeons: Deepak Megur, Neto Rosatelli, Sri Ganesh, Ajoy Paul, Debdulal Chakraborty, Suven Bhattacharjee. Techniques & Unique advantages of the B-HEX in Challenging situations.

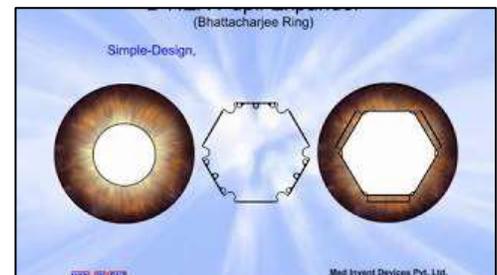


Features & technique Explained:

[Click on the links or the images to watch](#)

In this  video: https://youtu.be/nU-WEQGG_wQ

1. Tips on B-HEX® Pupil Expander usage with B-HEX® 23 g forceps
2. Synechiolysis & Pupillary membrane removal
3. Rigid Pupils & limited stretching
4. Strategic use of viscoelastic
5. Hexagon advantage
6. Relevance of Injectors for Pupil expanders



B-HEX 23 gauge Forceps:  This video shows the features of the B-HEX Forceps **at 45 Secs.**

It is a 23 Gauge forceps with a short curved stalk and serrated jaws (18-20 mm max including the jaws). The jaws open in a plane perpendicular to the squeeze handle. You may use a DSEK forceps - if it is 18-20 mm long it would be OK - usually they are much longer. The Capsulorhexis forceps is not suitable because the jaws open in the same plane as the squeeze handle - that could lead to difficult supination-pronation movements of the wrist & forearm during the engagement. With difficult movements and a sharp tip, the capsulorhexis forceps could be dangerous too. A Vitreo-retinal forceps stalk is too long and is unwieldy in the anterior chamber. The VR forceps stalk may even get bent with a few uses.

The Rigid & Elastic Small Pupil:

Please note that there are 2 types of small pupils.

Uveitic & Senile miosis pupils are usually rigid and fibrotic. The IFIS pupil is typically elastic.

This  video at 5'30" demonstrates how to differentiate between a rigid and elastic pupil.

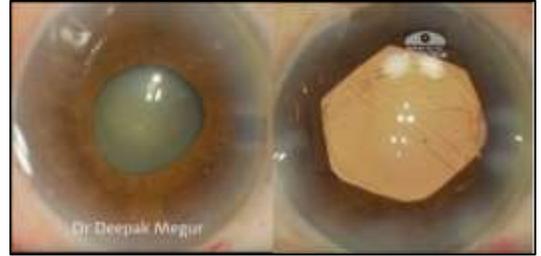
If we wish to use a Pupil Expander to expand a rigid pupil by causing sphincter tears, the device would be bulky and stiff. Moreover, the device is likely to cause uncontrolled and cosmetically disfiguring sphincter tears causing Post op glare etc. Hence it is recommended that in a rigid pupil, we use a bimanual stretch to cause multiple controlled small sphincter tears to stretch the pupil to about 4 - 5 mm before using a Pupil Expander. A simple way to distinguish between a rigid and elastic pupil is to inflate the AC with BSS/ RL after a paracentesis. If the pupil enlarges it is elastic and if it does not budge, it is a rigid pupil. The thinness/ flexibility of a device and its

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ability to tear a sphincter is inversely proportional. Just to give a comparison - the I-RING is about 1.5 mm thick at the corners, the Malyugin Ring is about 1.0 mm at the corners and the B-HEX is just 0.075 mm in thickness throughout. The B-HEX is less than one-tenth the thickness of Malyugin Ring. Now imagine if the central AC depth is 3 mm the mid-peripheral AC (where the corners of the device rests) would be about 1 - 1.5 mm. Even if the AC is inflated with OVD, the risk of endothelial touch remains with most devices. **This Video at 3'53" shows:** You could bimanually stretch and get a larger Pupil even after tucking the 2nd Flange or even after tucking the 3rd flange.

In this video: <https://youtu.be/x6lyF4rEGsU>

Dr Deepak Megur demonstrates a standardized protocol for insertion of the B Hex Pupil expansion Device and shares a few practical tips which will hasten the short learning curve. This film also highlights the importance of performing stretch Pupilloplasty before placing the B Hex ring in eyes with rigid Pupil.



In this video:

<https://www.youtube.com/watch?v=Alfz6f2Q7Yk>

Hard Cataract - Intraoperative miosis occurs during quadrant removal. Because of the uniplanar design, the gaps in the notches of the B-HEX Pupil Expander are directly visible throughout, enabling engagement to the pupil margin safely avoiding the capsulorhexis.



In this video:

<https://www.youtube.com/watch?v=m4P0GB-OnaM&t>

A Rigid Pupil in a uveitic eye is better stretched to 4 – 5 mm to facilitate placement of a Pupil Expander. This also helps preserve a round pupil. The B-HEX Pupil Expander is not mechanically designed to stretch a rigid pupil which often has a fibrotic band at the pupil margin. However the Elastic pupil typical of IFIS is easily expanded with the B-HEX Pupil Expander.



In this video:

<https://youtu.be/o1xxEEI3LjQ>

Dr Neto Rosatelli MD from Brazil showing us his approach to cataract surgery in a **uveitic eye with posterior synechiae and a small pupil**. This video shows an excellent technique to successfully complete these tough cases. The pupil expansion ring is the B-HEX.



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In this video:

https://youtu.be/eT_q7Vsf-Fc

Dr Neto Rosatelli MD from Brazil showing us **B-HEX in Extremely Small Pupil**: an untreated blunt trauma case, presented with a very small pupil with fibrotic bands and an anterior mid-peripheral synechiae. **The flanges of the B-HEX are tucked bimanually using a Iris hook & B-HEX 23 G Forceps, avoiding the need of pupil stretching.** Patience, Planning & Care always pays off.



In this video:

<https://www.youtube.com/watch?v=bi6S6nEXWPs>

B-HEX in Phaco-vitrectomy: **Dr Debdulal Chakraborty** in this video demonstrates the enhanced visualization during Phaco-vitrectomy in eyes with small non dilating pupils using the B-HEX Pupil Expander. This was the 'Winner' in the Film Festival of All India Ophthalmological Conference (FIFA), 2020 in the 'Instruments & Devices' Category.



In this video:

<https://www.youtube.com/watch?v=lnPvHiNXcSI&feature=youtu.be>

Dr Pradip Mohanta demonstrates that an assured pupil size of 5.5 mm provides **invaluable visibility and safety during manual SICS** (Small Incision Cataract Surgery) in an eye with a non-dilating pupil. While it is possible to do SICS by performing capsulorhexis and cortical clean up blindly by going under the Iris, a little extra effort and use of a device could definitely enhance outcomes.



In this video:

<https://www.youtube.com/watch?v=lgijJe5zCMM>

Dr Sourabh Patwardhan demonstrates the challenges faced in a **nanophthalmos eye** with extremely shallow anterior chamber and non-dilating pupil. A 57 D IOL was required. The 75 micron thin profile of the B-HEX Pupil Expander was invaluable in providing adequate pupil expansion for safe phacoemulsification & IOL implantation.



More Videos at: <http://medinventdevices.com/b-hex-videos/>

Ten Tips for Phacoemulsification in Small Pupil:

[Click here](#)

B-HEX pupil expander in Vitreoretinal Surgery – (IJO)

Debdulal Chakraborty, Ayan Mohanta, Arup Bhaumik

[Click here](#)