Patient satisfaction has always been a priority in cataract surgery. This is most easily achieved by integrating the safest and most efficient techniques into Micro Coaxial Phaco. Protection of the incision from thermal and mechanical damage is an important key to success.

Phaco Prechop will minimize the required U/S energy in phaco and thus protect the incision. For soft nuclei, I recommend performing Karate Prechop with a Combo II Prechopper (AE-4190). In cases of hard nuclei or weak ciliary zonules, Counter Prechop with a Universal II Prechopper (AE-4192) and a Nucleus Sustainer (AE-2530) is recommended. These prechoppers have been redesigned specifically for micro coaxial surgery. The blades are 30% thinner than the conventional prechoppers and open wider through a sub-2mm incision. The Akahoshi Multi-Use

**Akahoshi Mini**

- **Straight I/A Tip**
  - AE7-3050
- **Bent I/A Tip**
  - AE7-3051
- **Curved I/A Tip**
  - AE7-3052

**Akahoshi Multi-Use Manipulation Cannula**: AE-7736

Manipulation Cannula (AE-7736), which is attached to a DiscoVisc syringe, is a new surgical instrument which also enhances the speed and safety of cataract surgery. It can be used through the side port as a nucleus sustainer to prechop the nucleus in the counter prechop technique or through the bent cannula, OVD can be injected into the space between the posterior capsule and the nucleus to perform a new surgical procedure called “visco-dissection.”

By this simple procedure, the nuclear fragments are safely separated from the posterior capsule and after phacoemulsification they can be attained quite safely and efficiently. In conventional surgical procedures, a nucleus sustainer may need to be inserted several times through the side port incision; this cannula however can stay in the side port incision from the start to finish of surgery.

The Akahoshi Mini I/A tips with a 0.7mm outer diameter can be easily manipulated through a small micro coaxial incision. There are three types of tips: straight, bent and curved. The Curved I/A tip (AE7-3052) has a unique design which can reach any part of the capsular bag quite easily. The sandblasting on the tip polishes the capsule perfectly.

In order to ensure safety during IOL implantation, proper instrumentation is necessary. The new ASICO Royale III Injector (AE-9036SP), designed for the Monarch® D cartridge, allows the implantation of a 6.0mm single piece AcrySof® such as SN60WF without using the Counter Traction Implant Technique in a 2.2-2.4mm incision. The hydrodissection cannula (AE-7636), which has a bent and tapered tip, is useful not only for perfect hydrodissection, but also for sealing the incision at the end of the surgery.

Through my years of experience with micro coaxial cataract surgery, I have found that by implementing these techniques and surgical instruments, safety and efficiency will be maximized.

**ASICO Royale III Injector**

AE-9036SP
Reduces phaco time by 50%! Ideal for high vacuum and laser phaco.

Phaco prechopping is a popular technique used for high vacuum phaco. Dr. Akahoshi’s designs and technique reduce the phaco time by 50%, because the nucleus is chopped before introducing the handpiece into the anterior chamber. Phaco prechopping can also be used to chop nucleus grades of 1-5. In the conventional phaco prechop technique, the direction and the depth of the prechopper insertion are the critical points for successful division. They are also the most difficult points to learn and master.

With the new combo prechopper AE-4190, the phaco prechop can be performed more easily and safely. The combo prechopper has two different types of the blades, one on each side. The rounded blade has a blunt finish that is suitable for prechopping soft nuclei effectively. It is also useful in completing the final division of hard nuclei safely. Division of hard nuclei requires special care and attention to use a sharp prechopper very close to the posterior capsule; however, the rounded blade’s blunt finish is safe even if it touches the posterior capsule. Thus the most important point of the prechop technique, to separate the posterior nuclear plate, can be attained safely and perfectly with the blunt side of the blade.

The flat side of the blade has a sharp finish to thrust easily into the core of the nucleus. It is suitable for prechopping medium-hard nuclei. Harder nuclei can be also prechopped with the flat, sharp side of the blade, as long as it is properly sustained with a nucleus manipulator (AE-2530) to reduce the stress on the ciliary zonules.

The direction of the combo prechopper insertion is simple and easy. The closed prechopper is placed at the center of the lens. The direction of the insertion force should always be applied downwards to the center of the eyeball. While thrusting downwards, slowly open the prechopper to bisect the nucleus. With this new karate prechop technique, the stress on the ciliary zonules is equalized and minimized, when compared with the conventional phaco prechop technique.

The combo prechopper (AE-4190) is the most suitable instrument for the karate prechop technique. No other phaco prechoppers have ever prechopped the nucleus so easily and perfectly.

Find the Right Prechopper for You!

<table>
<thead>
<tr>
<th>Prechopper</th>
<th>Grades/Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE-4190</td>
<td>Akahoshi Combo II Prechopper</td>
<td>For soft nuclei</td>
</tr>
<tr>
<td>AE-4191</td>
<td>Akahoshi Super Combo III Prechopper</td>
<td>For nuclei grades 1 to 3</td>
</tr>
<tr>
<td>AE-4193</td>
<td>Hill Prechopper</td>
<td>For nuclei grades 2 to 4</td>
</tr>
<tr>
<td>AE-4293</td>
<td>Inamura Eagle Prechopper</td>
<td>For nuclei grades 1 to 4</td>
</tr>
<tr>
<td>AE-4192</td>
<td>Akahoshi Universal II Prechopper</td>
<td>For hard nuclei</td>
</tr>
<tr>
<td>DIFFICULTY ENCOUNTERED</td>
<td>SOLUTION</td>
<td>INSTRUMENTS</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Difficulty making an ideal incision</td>
<td>Use a sharp diamond keratome of appropriate size. Choose the appropriate diamond keratome according to the sleeve. Based on the IOL power, we can adjust the incision size by controlling the insertion depth of the keratome.</td>
<td>AE-8190 - Akahoshi Ultra Diamond Keratome</td>
</tr>
<tr>
<td>I do not make a long corneal tunnel. It will constrict the sleeve and reduce the irrigation. If the nucleus is prechopped and phacoemulsified by the Burst mode, there will be no thermal or mechanical damage of the incision and it will be easily sealed without hydrating the stroma. My tunnel length is usually less than 1.0mm.</td>
<td></td>
<td>AE-8192 - Akahoshi Nano Diamond Keratome</td>
</tr>
<tr>
<td>Difficult to control the insertion depth of the blade</td>
<td>Fix the eye ball by grasping the bulbar conjunctiva.</td>
<td>AE-4180 - Akahoshi Universal Forceps</td>
</tr>
<tr>
<td>Difficulty implanting AcrySof® due to the leakage of OVD</td>
<td>Use a small side port knife. If the side port is too large, there will be a leakage of OVD when the IOL is injected by the Counter Traction technique.</td>
<td>AE-8131 - Akahoshi Sub II Sideport Diamond Keratome</td>
</tr>
<tr>
<td>Difficulty making a capsulorrhexis through a small incision</td>
<td>Fill up the anterior chamber with Viscoat, which can protect the corneal endothelium during phaco. As it has dispersive property, it does not easily leak from the incision and maintains a deep anterior chamber. Any conventional capsulorrhexis forceps can be used, however cross action forceps causes less leakage of Viscoat.</td>
<td>AE-4344 - Akahoshi Capsulorrhexis Cross Action Forceps</td>
</tr>
<tr>
<td>It is not possible to rotate the nucleus after bisecting the nucleus by prechop. Generally much of the cortex remains after phaco. Cortical aspiration damages the incision by the mechanical manipulation at the incision.</td>
<td>Adequate hydrodissection of the nucleus. Use a 2.5ml syringe filled with BSS, to the cannula tip and perform cortical cleaving hydrodissection.</td>
<td>AE-7636 - Akahoshi Hydrodissection Cannula</td>
</tr>
<tr>
<td>Thermal burn and mechanical damage of the incision</td>
<td>Prechop the nucleus to reduce the U/S time. ASICO’s Type II prechoppers open wider in the anterior chamber through a small incision. Use the Nucleus Sustainer, AE-2530, to perform the Counter Prechop technique for a dense nucleus.</td>
<td>AE-4190 - Akahoshi Sub II Combo Prechopper AE-4192 - Akahoshi Universal II Prechopper</td>
</tr>
<tr>
<td>Inadequate Cortical cleanup through small incision</td>
<td>Because the outer diameter of the tip shaft is 0.6mm, it is easier to manipulate through small incision. As the space between the tip and sleeve is larger, the amount of irrigation is more than twice as much. Thus the anterior chamber is more stable.</td>
<td>AE7-3060 : Ball Straight I/A Tip AE7-3061: Ball Bent I/A Tip AE7-3062 : Ball Curved I/A Tip</td>
</tr>
<tr>
<td>Cannot set the AcrySof® properly in the cartridge</td>
<td>Use the special loading forceps. Any single piece AcrySof® can be implanted using a D cartridge. Use Provisc which is easier to remove after implanting the lens.</td>
<td>AE-4253N - Akahoshi Acrylic IOL Loading Forceps</td>
</tr>
<tr>
<td>IOL getting stuck in the cartridge</td>
<td>If IOL placement in the cartridge was not satisfactory, the lens may not be delivered properly when pushing the plunger.</td>
<td>AE-4825 - Akahoshi Combi Inserter AE-4826 - Akahoshi Forceptor</td>
</tr>
<tr>
<td>Cannot insert the IOL through the incision</td>
<td>Provide counter force to the cartridge and inject the lens quickly.</td>
<td>AE-9036SP - ASICO Royal Spring Injector AE-2530 - Akahoshi Sustainer</td>
</tr>
</tbody>
</table>

AcrySof is a registered trademark of Alcon Labs.
For LRI

Koch LRI Axis Marker: AE-2863
Precisely marks 45, 60, and 80 degrees along the steepest meridian

Villasenor-Navarro Degree Gauge: AE-2763N
Atraumatic teeth aid in fixing the globe

ASICO 3-Step LRI Diamond Knife: AE-8187
Preset depth settings of 500, 550, and 600 microns

“ASICO’s new LRI diamond knife design offers less epithelium drag and is at the best angle for subincisional work; I have also found it the easiest diamond knife for my residents to learn astigmatism correction with.”

For Micro Coaxial

Akahoshi Ultra Diamond Knife: AE-8190
Trapezoidal blade 2.0mm at the shoulder and 2.3mm at the base

Akahoshi Capsulorhexis Cross-Action Forceps: AE-4345
Cross-action mechanism prevents incision stretch and reduces visco loss

Akahoshi Bent Mini Ball I/A Tip: AE7-3061
Ideal for small incisions as less movement is needed for effective cortical cleanup

“Because the outer diameter of the tip shaft is 0.6mm while conventional I/A tips are 1.0mm, it is easier to manipulate through a small incision. As the space between the tip and sleeve is larger, the amount of the irrigation is more than twice as much. Thus the anterior chamber is more stable.”

For Toric

Nuijts/Lane Pre-Op Toric Reference Marker: AE-2791TBL
Bubble-level ensures that the marker is parallel to the horizontal axis

Yeoh Toric Gauge: AE-1592N
Thinner rim allows easier access to the eyes

Nuijts Toric Axis Marker with center opening: AE-2740H
Peg acts as a reference guide to the center of the myotic pupil without compromising visibility

“The marks created with this marker stay visible for more reliable intraoperative axis determination.”

Perfect Partner for Prechopping

Complete nuclear division is key for safe and rapid phaco. The Akahoshi Visco-Dissection Cannula (AE-7506) can ensure complete nuclear division after phaco prechop. By injecting OVD between the prechopped nucleus and capsular bag, the nuclear fragments can be clearly separated from each other as well as the posterior capsule. Afterward, phaco can be performed quite easily with the bevel down technique. The cannula attached to the OVD syringe can be used to control nuclear fragments during phaco. When further corneal protection is necessary, OVD can be immediately injected through the cannula. After removing the cataract, OVD can be injected into the anterior chamber with this cannula and provide relief from any psychological stress a surgeon may have due to constantly introducing new instruments through the sideport. There are many other uses for this cannula, including polishing the posterior capsule, providing counterforce during IOL implantation, and positioning the IOL through injecting OVD and manipulation. Because of the many advantages this cannula brings, I highly recommend this for all surgeons performing Micro Coaxial Cataract Surgery.

“The more you know... TM

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FM 79009

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