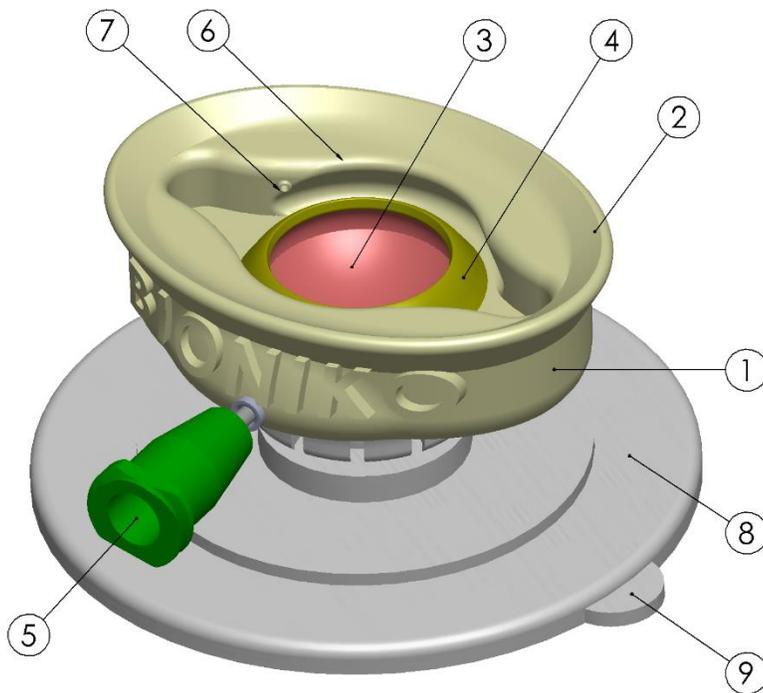


# ADVANCED CATARACT HOLDER (AVH)

## INSTRUCTIONS FOR USE

The Advanced Cataract/Anterior Vitrectomy Holder (AVH) allows for simulation of cataract surgery and its complications when used with Bioniko OKULO anterior segment models.



- 1- HOLDER BODY
- 2- LIP
- 3- VITREOUS CAVITY
- 4- SOFT SEAL
- 5- VITREOUS PORT
- 6- EYELID MARGIN
- 7- PUNCTUM (0.6mm)
- 8- SUCTION CUP
- 9- RELEASE TAB

The holder features a vitreous cavity (3) that can be filled with vitreous substitute through a port (5) using a standard syringe (5cc recommended). The soft seal (4) mates with the OKULO anterior segment model when inserted in the holder, allowing for vitreous loss to be controlled via the syringe when a rupture is made in the posterior capsule of a cataract lens (OPHT-OKU-LNS-CAT) or an empty bag lens (OPHT-OKU-LNS-EB). As with all BIONIKO holders, the AVH has flexible neck to simulate natural eye movement and is coupled to a suction cup for fixation to any flat surface. The release tab (9) is used to remove the AVH from the surface.

The raised lip feature (2) allows fluid pooling, mitigating the ingress of bubbles when using instruments with high rates of aspiration during phaco or vitrectomy.

The AVH also features a 0.6mm punctum feature (7) because... why not?

### Inserting an OKULO Anterior Segment:

1. Place AVH on a smooth surface and press down to engage suction;
2. IF SIMULATING ANTERIOR VITRECTOMY:
  - a. connect a syringe filled with vitreous substitute (egg whites are a good option);
  - b. add DISPERSIVE viscoelastic around the soft seal (4);
  - c. fill the vitreous cavity up to the seal margin by slowly pressing on the syringe;
3. Slide the anterior segment under the eyelid (6) and over the soft seal (4) into place. Do not compress the OKULO model while engaging to the holder, but rather gently peel the holder eyelid until eye model seats properly;
4. Press the anterior segment down to confirm proper seating of the anterior segment and to create a coupling with the seal;
5. wait 5 minutes for visco-seal to set.

**Simulating Vitreous Loss:** There are two ways to simulate an Anterior Vitrectomy scenario: One, right after performing a phaco simulation with our cataract lens, and the second option, skipping the phaco and starting the anterior vitrectomy scenario with an empty bag lens.

**Option 1 (Cataract lens):** Insert an OKULO brown 8 anterior segment (OKU-AS-BR8) with cataract lens (OPHT-OKU-LNS-CAT) as described above; perform the cataract simulation normally until you have an empty capsular bag; if posterior capsule is still intact (good job!), create a PCR with the energized phaco hand-piece or with your second instrument. Make sure the rupture is large (3-4mm) so that vitreous can easily flow anteriorly. Slowly inject vitreous substitute with the syringe connected to the port.

**Option 2 (Empty Bag):** Create a PCR on the empty bag posterior capsule. Make sure the rupture is large (3-4mm) so that vitreous can easily flow anteriorly; Attach the empty bag to an OKULO brown 8 anterior segment (OKU-AS-BR8). Insert the pre-assembled segment and lens in the prepared AVH as described above; create the main incision and paracentesis in the cornea; Slowly inject vitreous substitute with the syringe connected to the port.

**Both Options:** After the Vitreous is in the anterior chamber, proceed to perform the Anterior Vitrectomy technique as guided by your faculty. To repeat the scenario, simply inject more vitreous with the syringe and start over.

**Tip:** It is important to create the incisions before injecting vitreous so that air in the chamber can escape. Failing to do so will prevent vitreous from coming into the AC and will instead come out the side of the model.

**Tip:** The soft seal may be lost after repeated use, so press down on the anterior segment when injecting new vitreous to help maintain the seal and ensure the vitreous prolapses into the AC.

**Disassembly:** Remove ANTERIOR SEGMENT by leveraging out with a blunt object through either "corner" of the eye. DO NOT PULL ON HOLDER BODY TO RELEASE. Lift the suction release tab to remove the AVH from surface.

## INSTRUCTIONS FOR CARE

Follow these recommendations to maximize the life of your models:

- Store in a **cool, dry** and **dark** place (a drawer will be fine). Extended exposure to sunlight (UV) may affect material properties. Prolonged exposure to humidity or high temperatures may adversely affect material properties.
- Do not place **heavy objects** on top of the model. Prolonged compression may deform the model.
- Clean with anti-bacterial soap and water. Do not soak the models for cleaning. Avoid using alcohol or bleach.
- Gently scrub the vitreous cavity with a cotton swab if necessary.
- Flush the vitreous port with a syringe and soapy water several times after use.
- Air or blow dry before storing. **Do not store wet.**

