



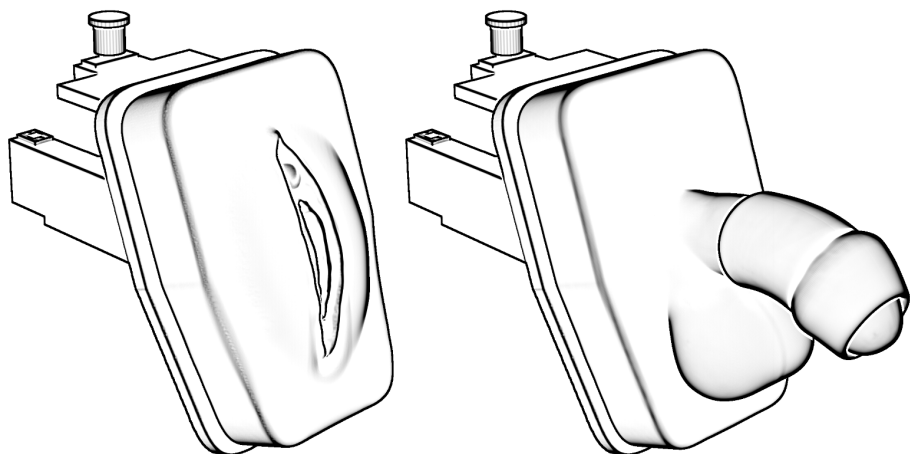
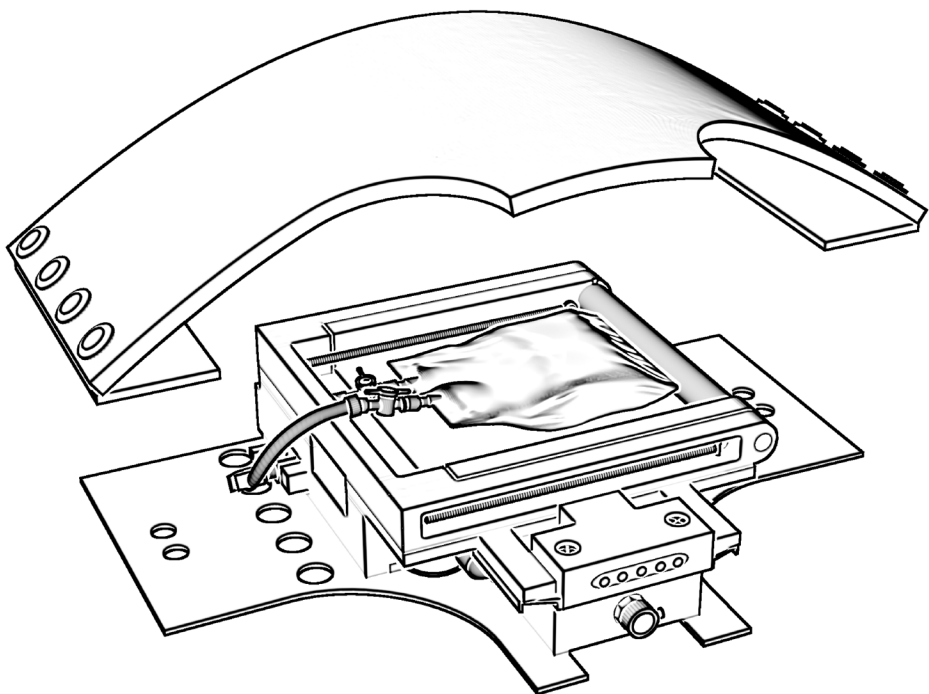
## **USER MANUAL**

**Customer Assistance**

302-562-2110

**Technical Support**

302-562-2040



# Welcome to your Avcath!



**Urine Output** - Once the catheter is in the bladder compartment, urine will flow from the compartment out the catheter.

**Bladder palpation** - The bladder bag can be felt through the abdomen area, allowing the learner to feel for a full bladder and apply external bladder pressurization.

**Bladder scanning** - The Avcath is compatible with bladder scanners for use in your simulations.

**Sensory Feedback** - SPs are cued through a light vibration around their mid-section when the catheter enters the bladder. For the female genitalia, the SP is also cued when the catheter enters the urethra.

# What's Included

- ✓ Avcath: wearable technology for use with standardized patients.
- ✓ Female and male genitalia with removable foreskin
- ✓ 1 filled 500ml bag of standard urine (to be used for non-urine analysis simulation)
- ✓ Battery charger
- ✓ Façade Plate
- ✓ Disposable kit
  - o Mineral Oil with dispenser
  - o 5 Blue Pads
  - o 5 Bard 14 Fr Lubri-sil Foley Catheters
  - o 5 Empty IV bags
  - o Yellow Food Dye
  - o Funnel
  - o 5 Valves
  - o Wrench

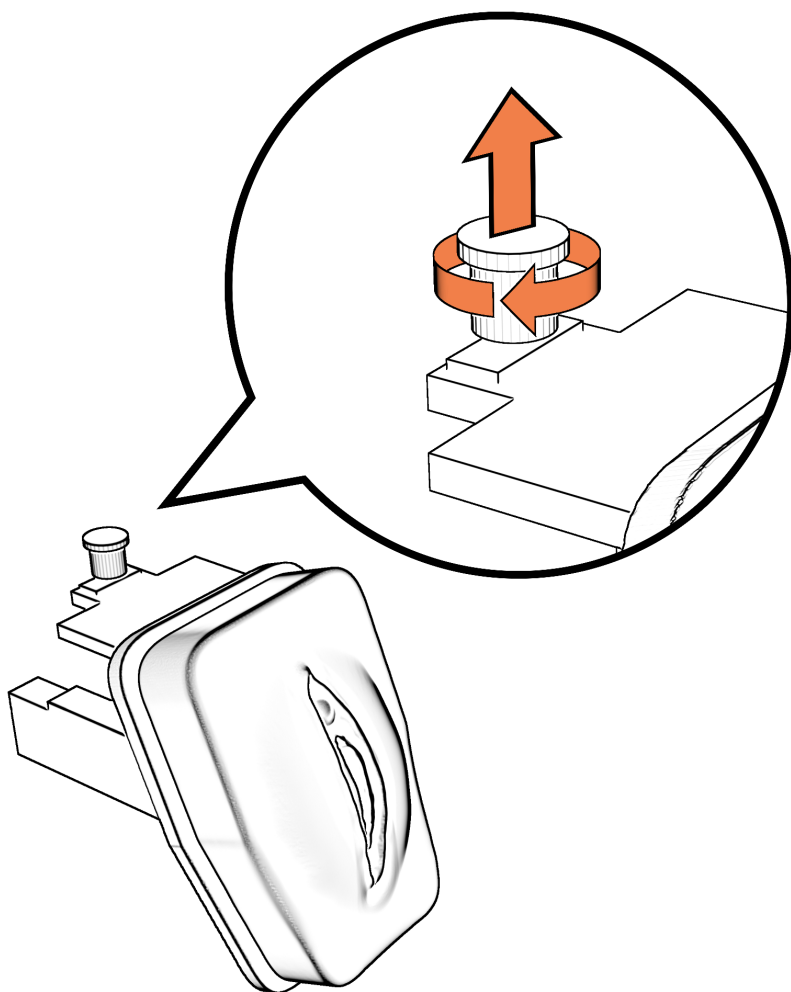


# Getting Started

*Watch the instructional video on the customer portal and USB.*

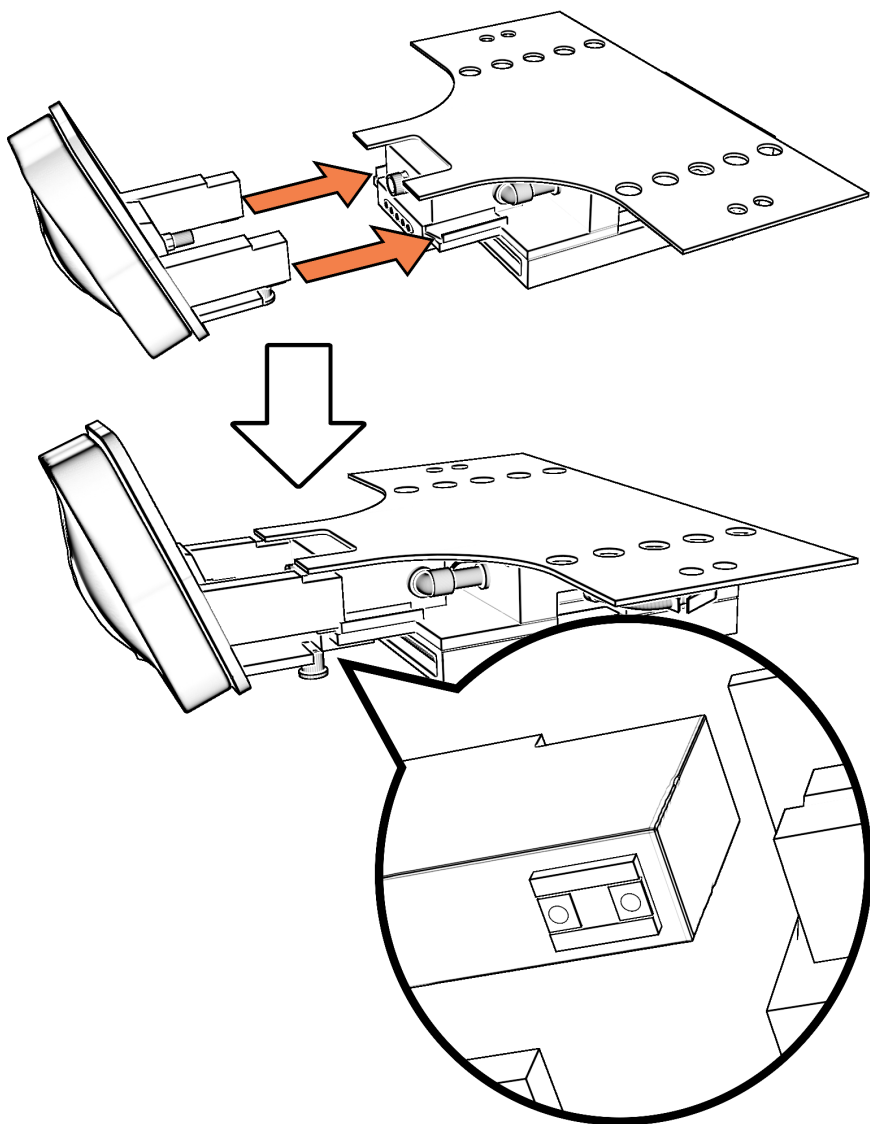
**1** Connect the genitalia.

**a.** Pull up the Spring Plunger and twist it slightly to the right, and gently let go to lock the pin.



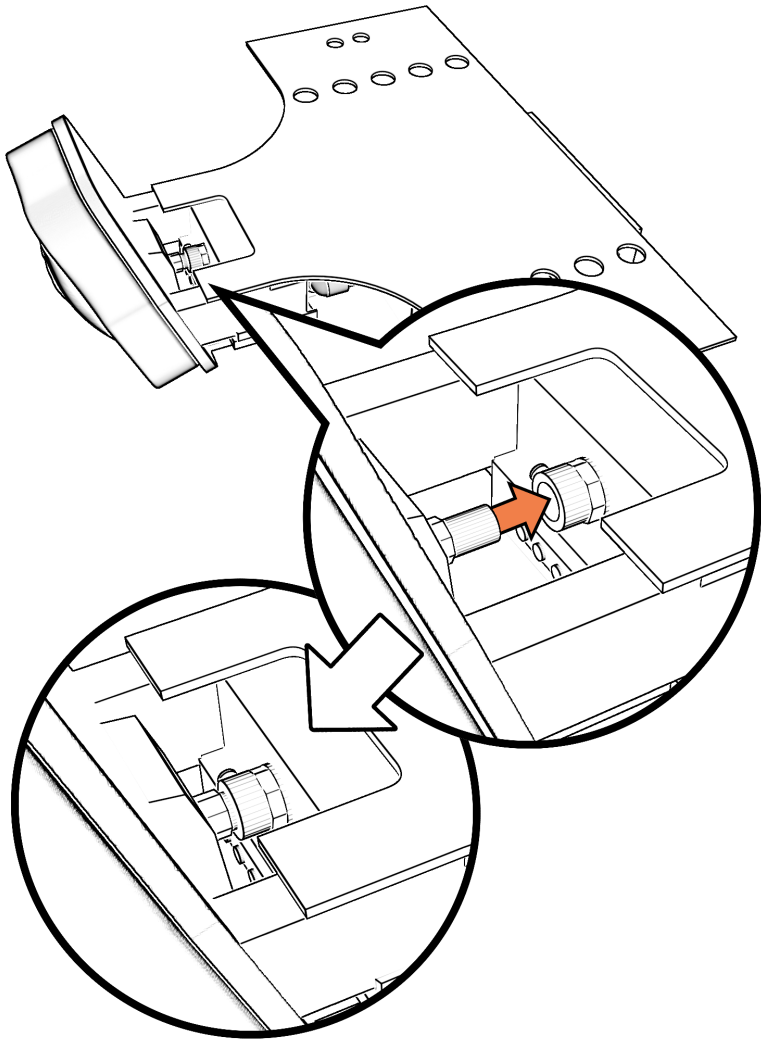
**b.** Flip the entire device over. Have the yellow compartment slightly off the edge of a table.

- C.** Align both of the rectangular beige colored carriages on the genitalia with the pointed edge of the guide rails on the Avcath.



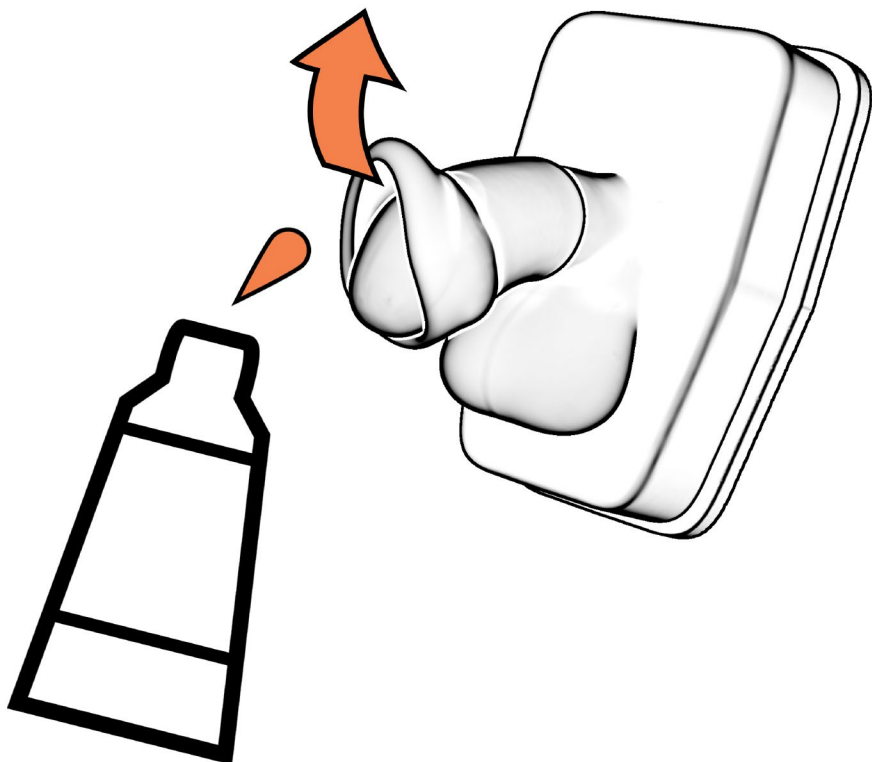
- d.** Slide the carriages in all the way down the guide rails until the metal fitting on the genitalia meets the metal housing on the yellow compartment

- e.** Lightly lift the yellow compartment until the metal fitting on the genitalia slides into the metal fitting on the yellow compartment. You should hear a small “click” when the metal fitting is all the way in.



- f.** Turn the device back over. Gently lift slightly up on the spring plunger and twist slightly to the right to let the head to all the way down. The genitalia should be locked and sturdy.

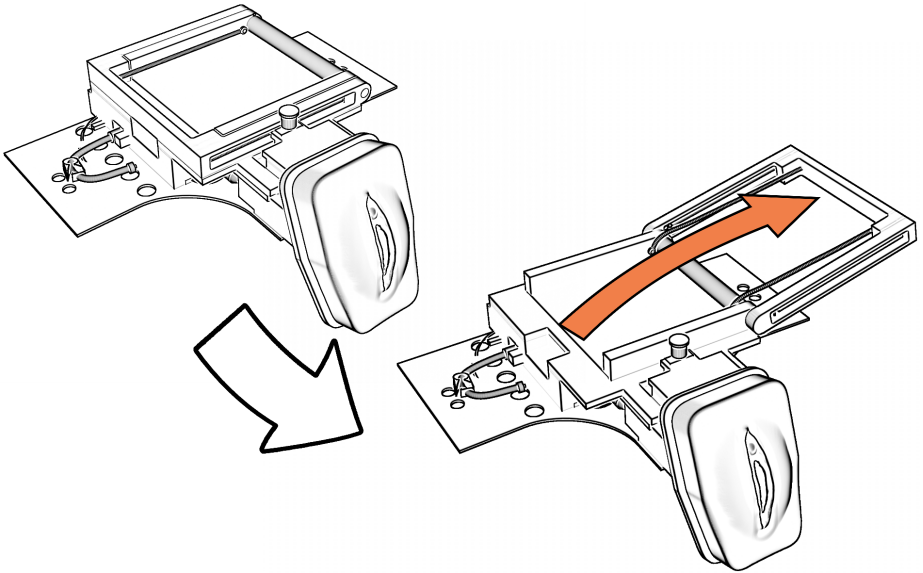
- g.** If using the foreskin with the male genitalia, put the foreskin on the genitalia and rub aquagel or an equivalent lubricant, to lubricate between the foreskin and the tip of the genitalia where the learner would push back the foreskin for catheterization.



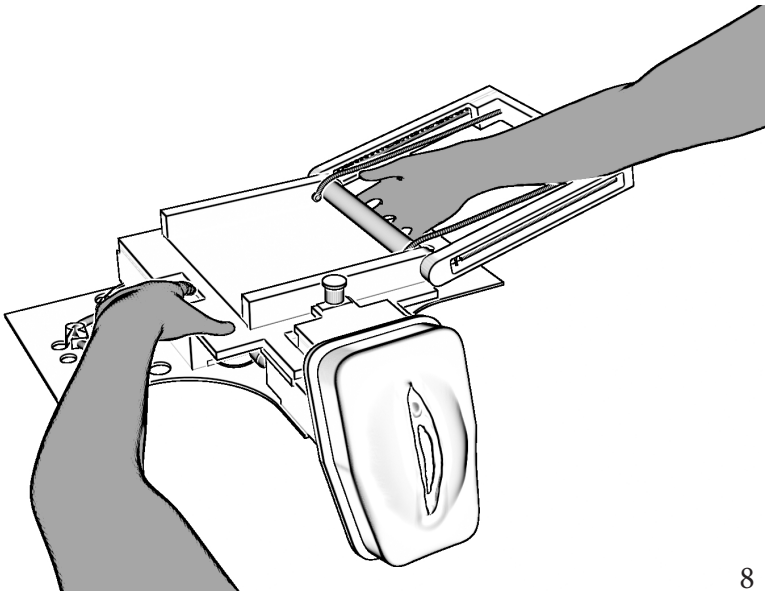
## **2** Insert fluidics

- a.** Remove an excess air from the urine bag.

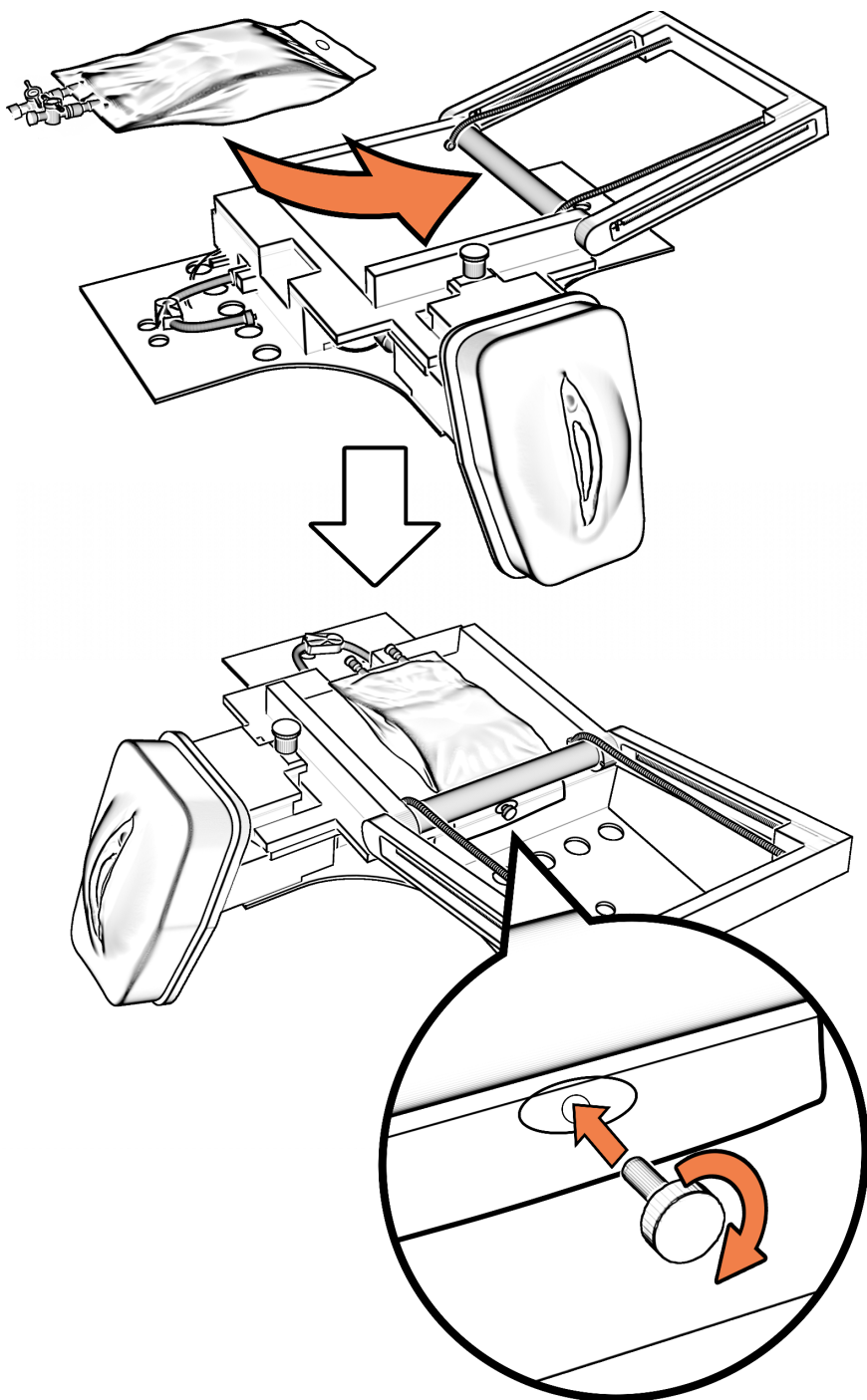
- b.** Open bladder mechanism by pulling back on the handle with one hand and holding down the rest of the device with the other



**\*\*Warning: this is a spring loaded system, if you do not keep a hand on the handle it will snap back on you. Try putting your arm down on the handle while you work to keep both hands open!\*\***

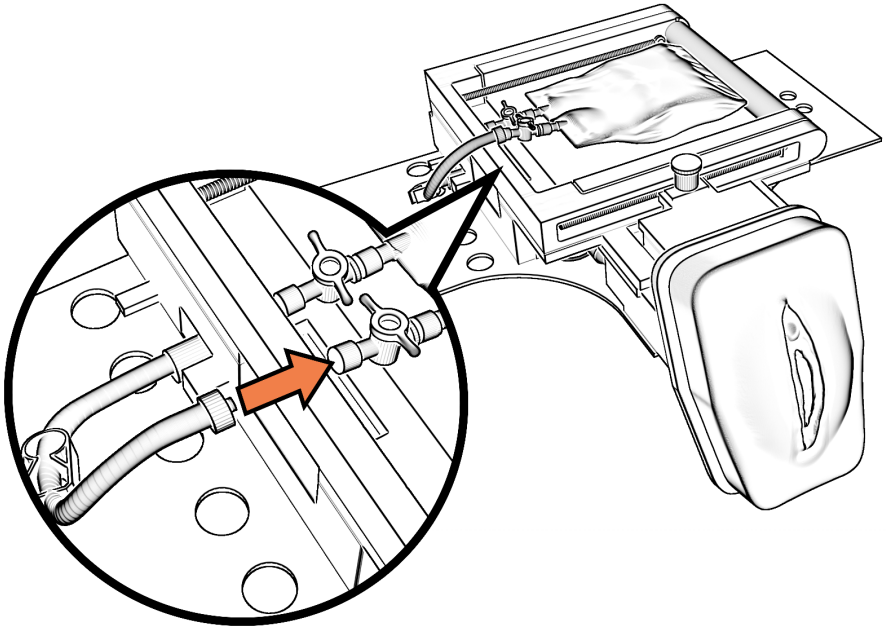


- C.** Insert urine bag under the white roller and attach to side of the device with thumb screw.

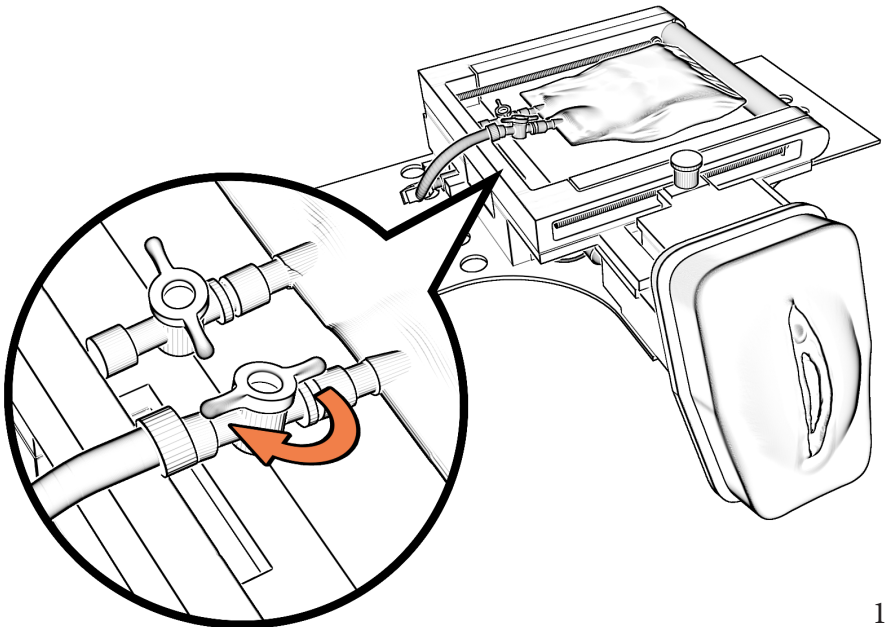


**d.** Release bladder handle slowly and with control.

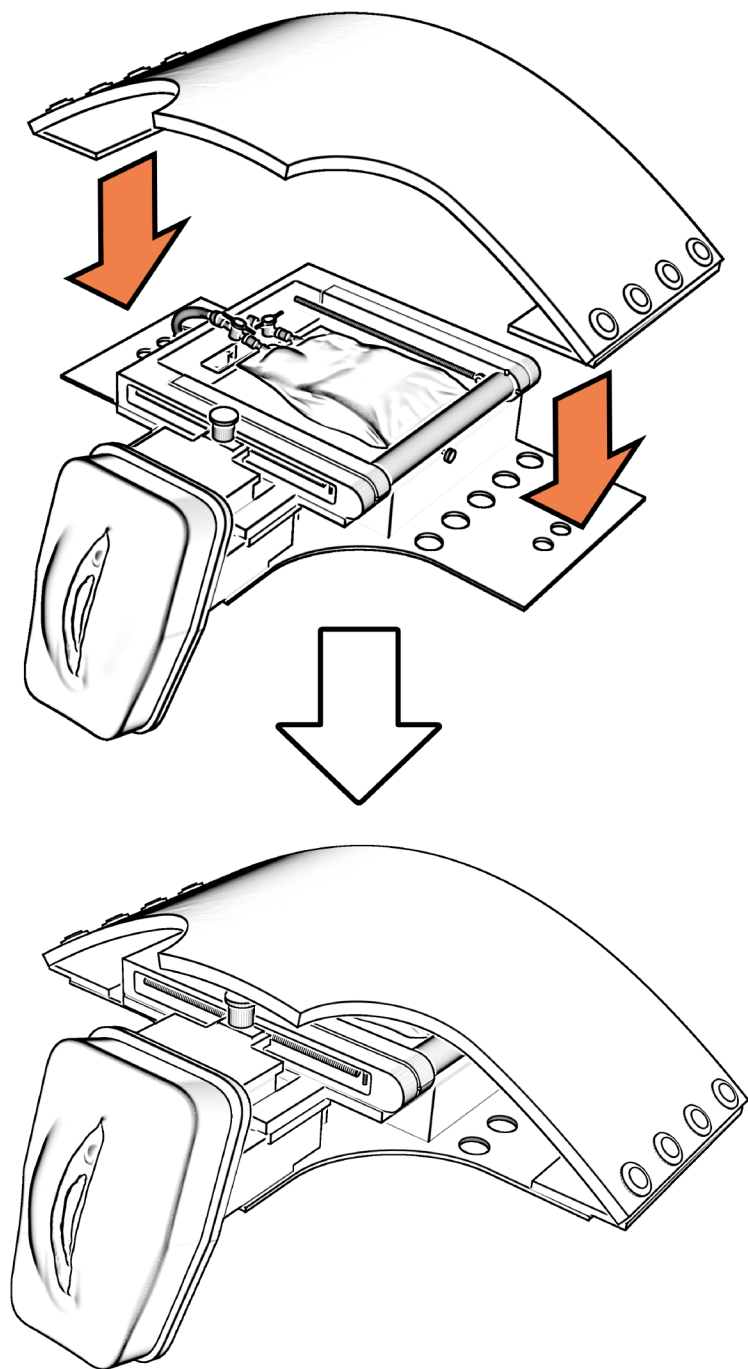
**e.** Connect tubing to urine bag.



**f.** Open stopcock on urine bag.



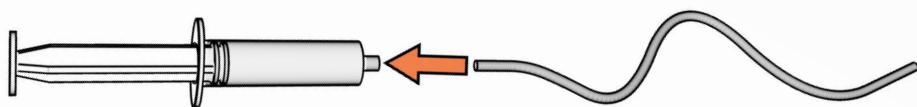
### 3 Put belly plate on device.





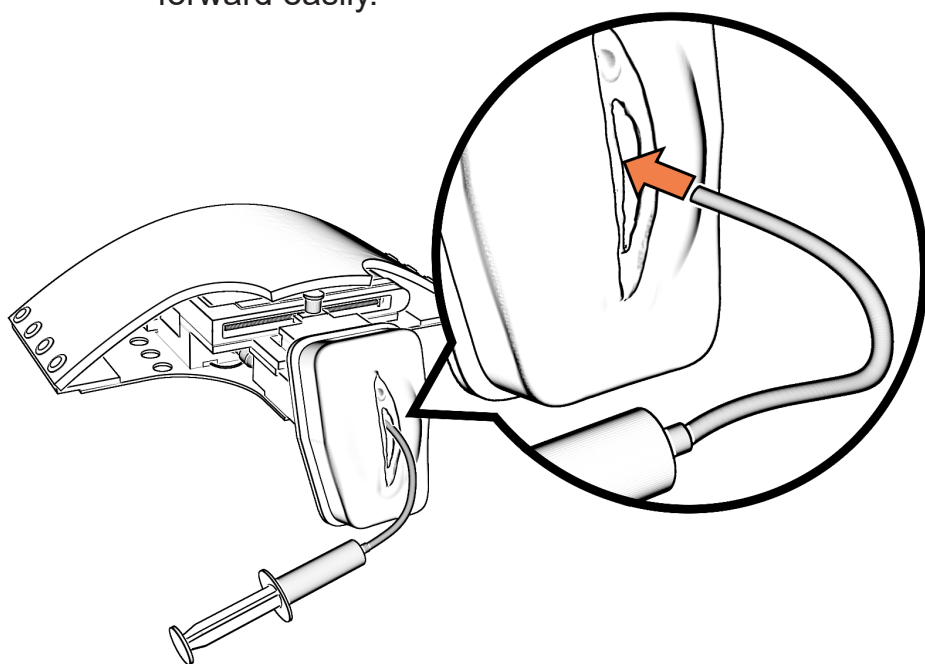
## 4 Insert mineral oil into device.

### a. Put tubing on mineral oil dispenser.



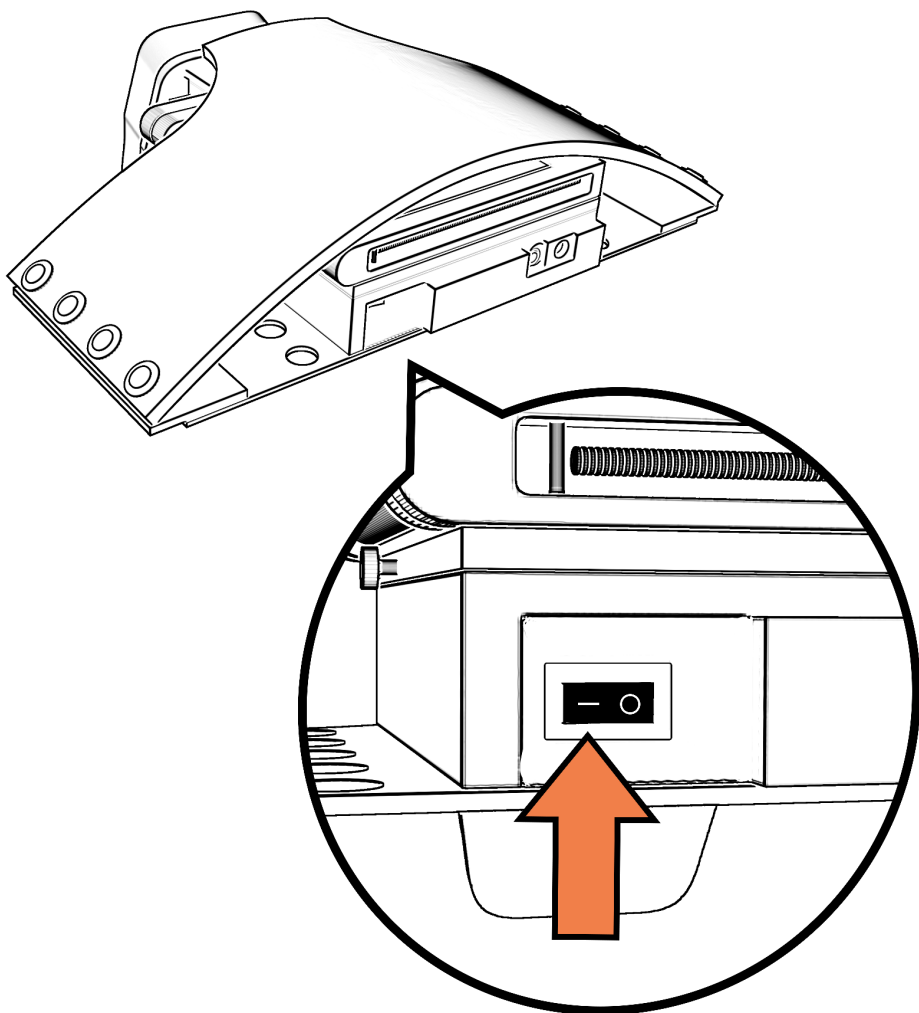
### b. Coat outside of tubing with mineral oil or lubricant.

### c. Insert into urethra, whenever the tubing gets stuck, inject mineral oil until tubing can move forward easily.



- i. For male genitalia, it should take about 1ml of mineral oil total to coat the system.
- ii. For female genitalia, it should take about .5ml of mineral oil total to coat the system.

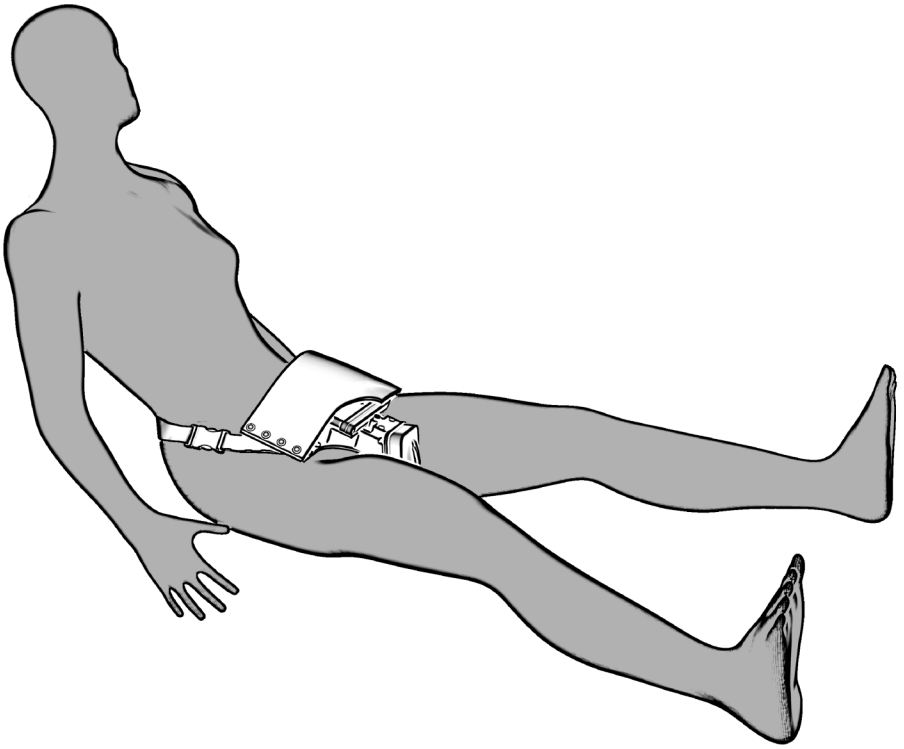
**5** Turn on the device (on/off on back of device)



**6** Prime the system.

- a.** Before starting with your learners, turn the system on and put a catheter into the urethra to make sure that you (1) have enough mineral oil and (2) that there is urine throughout the system, so that the first time the learner goes to catheterize the patient there is no delay.

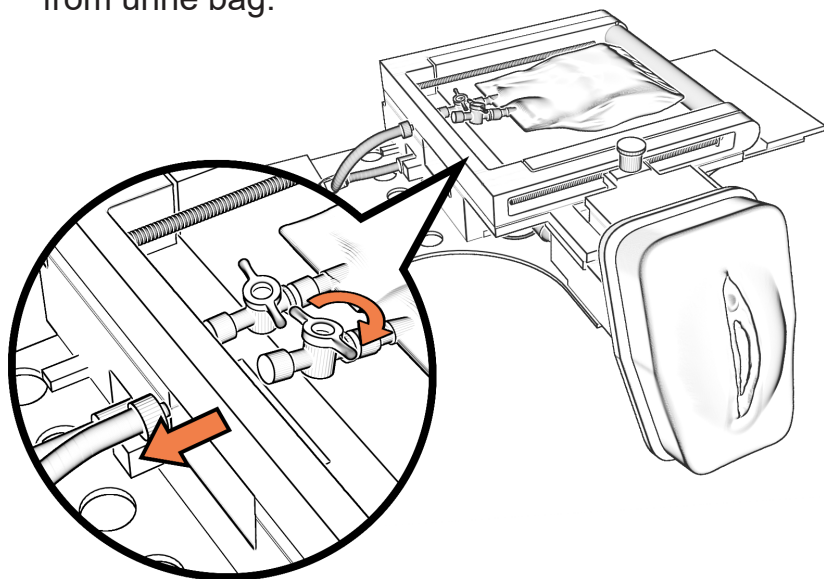
## 7 Put device on simulated participant (SP)



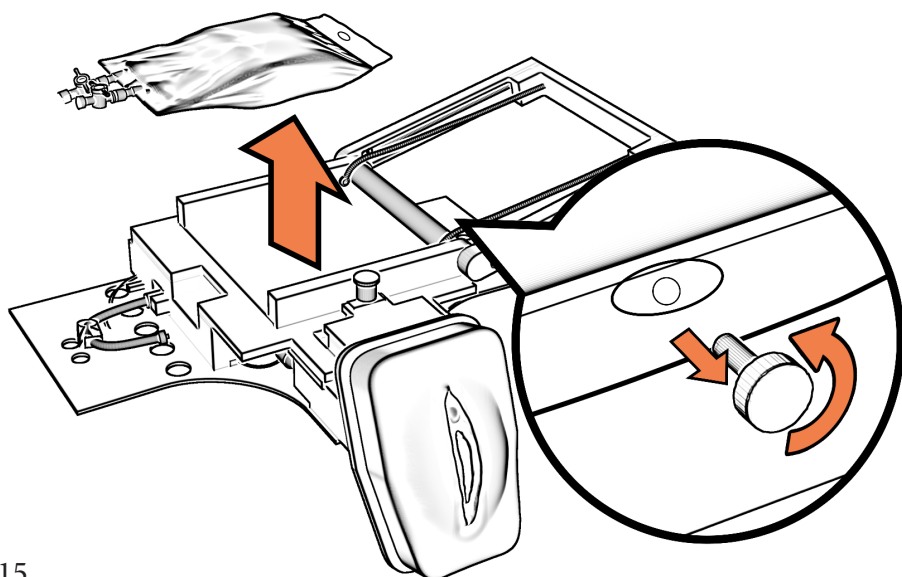
- a.** Make sure SP is wearing tights or compression shorts and a t-shirt underneath the device.
- b.** Buckle the device to the SP's preferred tightness.
- c.** Check to make sure that the device is laying flat on the SP, if the device is at an angle it could leak out the urethra during catheterization.

# Putting Away

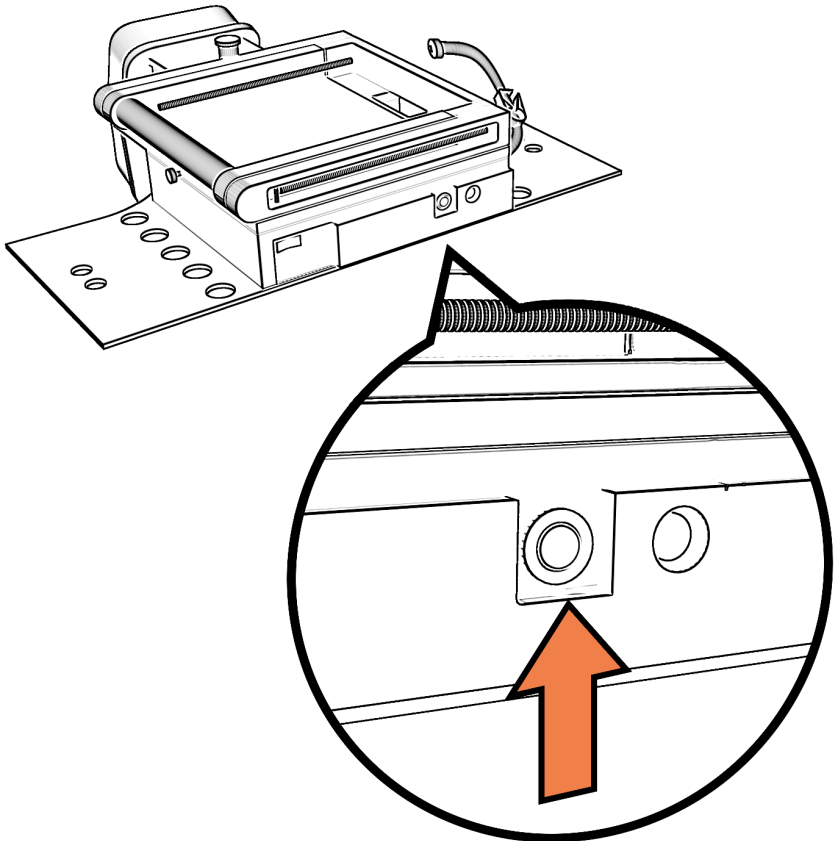
- 1** Remove belly flap.
- 2** Close stopcock to urine and disconnect tubing from urine bag.



- 3** Remove urine bag – be careful opening and closing the bladder mechanism.

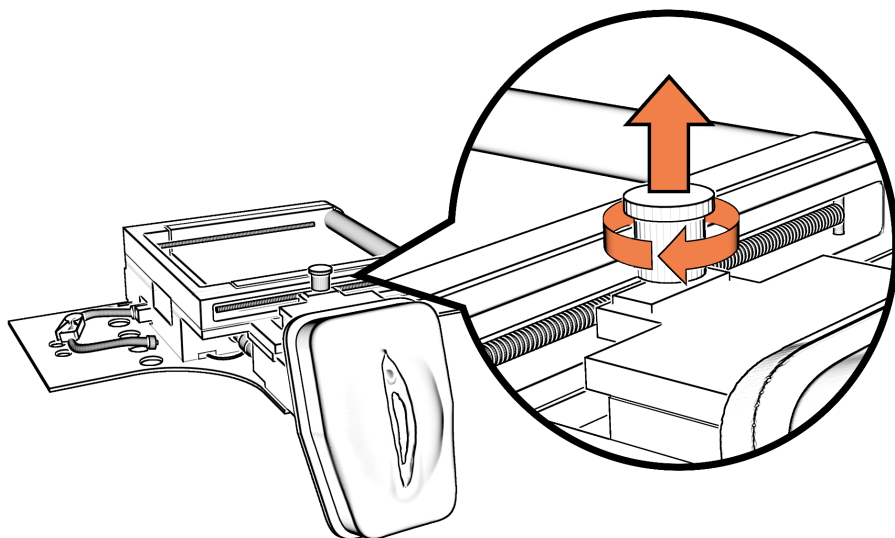


- 4** Empty the device of fluids.
- a.** If you used distilled water and yellow food dye for urine, you just need to empty the device at the end of the day. If you used anything organic in your urine, flush the system with alcohol/distilled water solution first.
  - b.** Turn device on its side.
  - c.** Hold over a sink or bucket.
  - d.** Press the priming switch (blue button on back of device) until the urine is emptied out of the device.



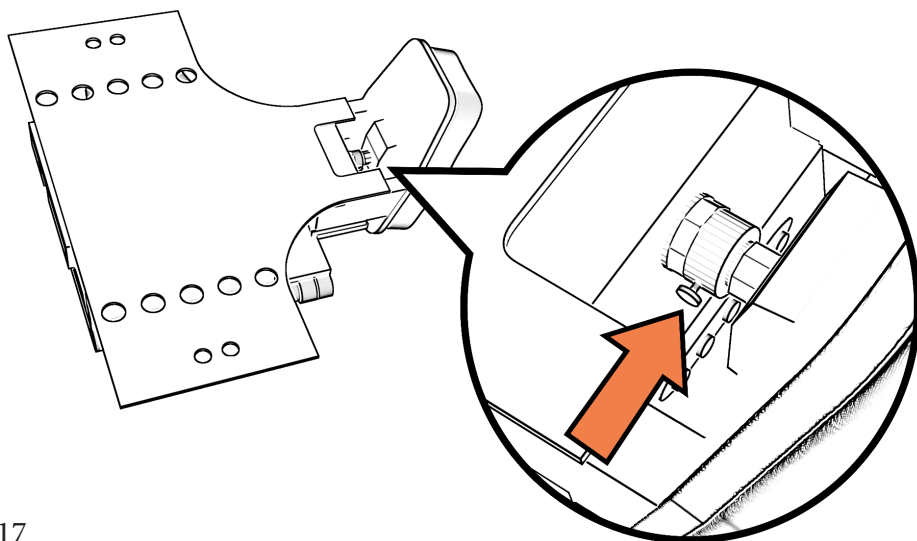
## 5 Remove genitalia

- a.** Pull up the Spring Plunger and twist it slightly to the right, and gently let go to lock the pin.

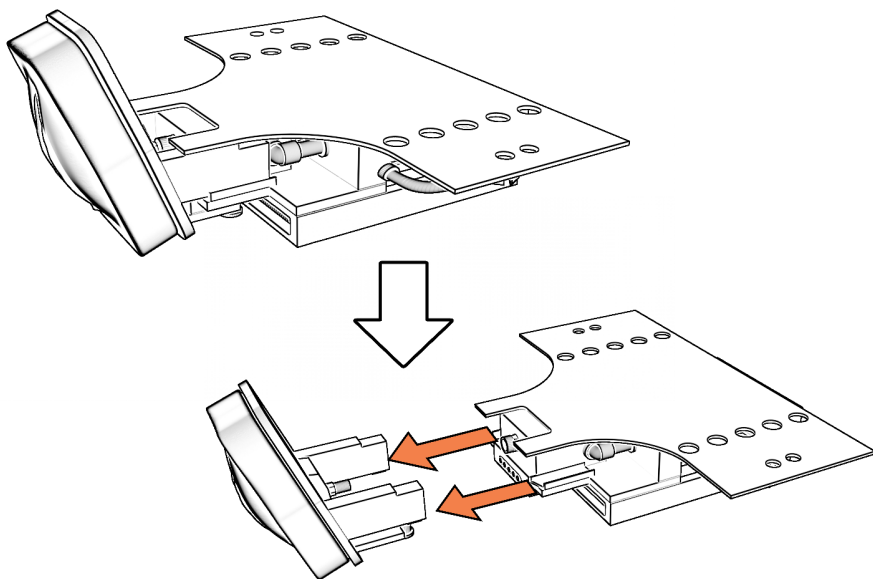


- b.** Flip the entire device over.

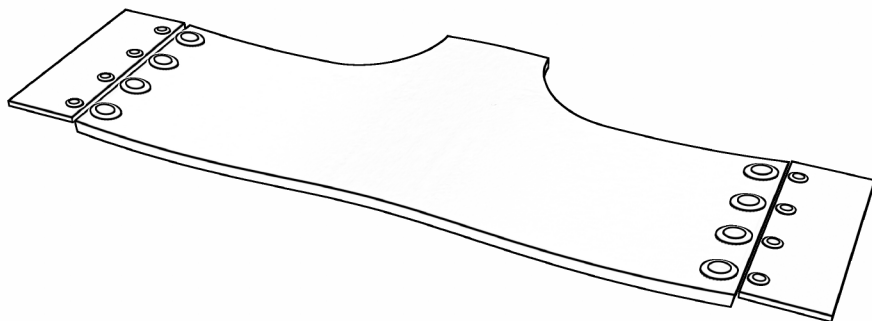
- c.** Place the thumb and pointer finger on the large metal fitting coming from the yellow compartment. Push down and hold the little metal switch.



- d.** While holding down the metal switch with one hand, use the other hand to pull the genitalia straight back until it is completely off the guide rail system.



- e.** Turn the device back over. Gently lift slightly up on the spring plunger and twist slightly to the right to let the head to all the way down.
- f.** Store with belly plate flaps flat.



# Types of Catheters

The following catheters have been tested and are confirmed to work with the Avcath:

- Bard Lubri-Sil – 14 Fr, 5cc Balloon, Silicone Coated
  - We recommend this catheter for best results!
- Bardex I.C. – 14 Fr, 5 cc Balloon
- Medline Foley Catheter Silicone Elastomer Coated (Latex), 14 Fr, 5-10cc
- Medline Urethral Self Catheter, Male, 14 Fr
- Bard Lubricath – 12 Fr
- Dynarex 14 fr latex catheter

Types of Catheters that do NOT work with Avcath:

- Bard Lubricath – 14 Fr

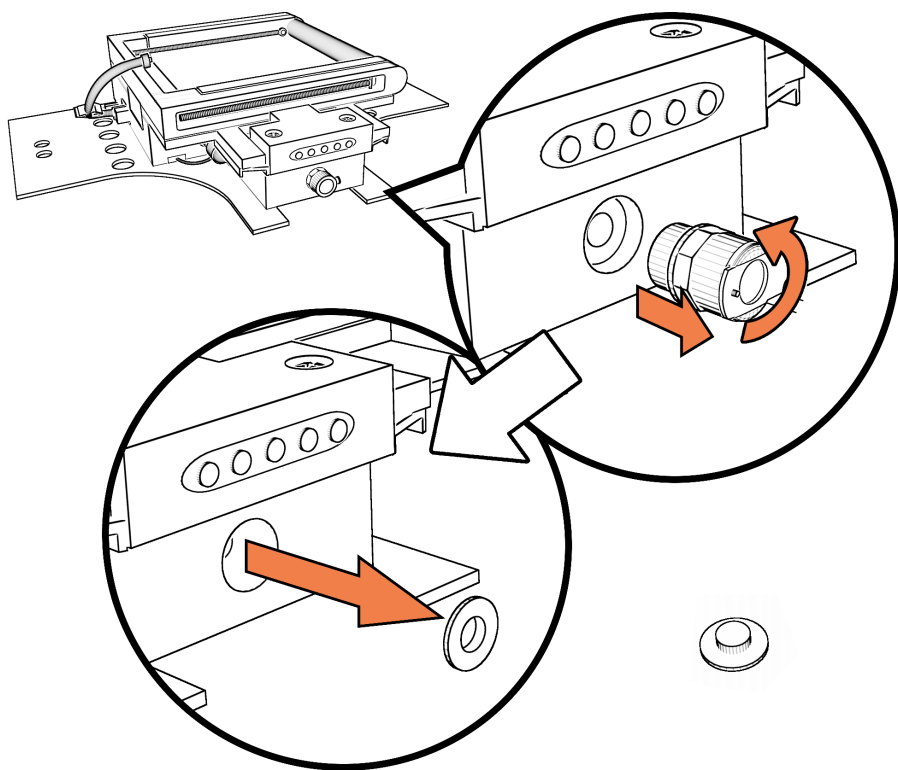
If you would like us to test another type of catheter, please email us and let us know!



# Care and Maintenance

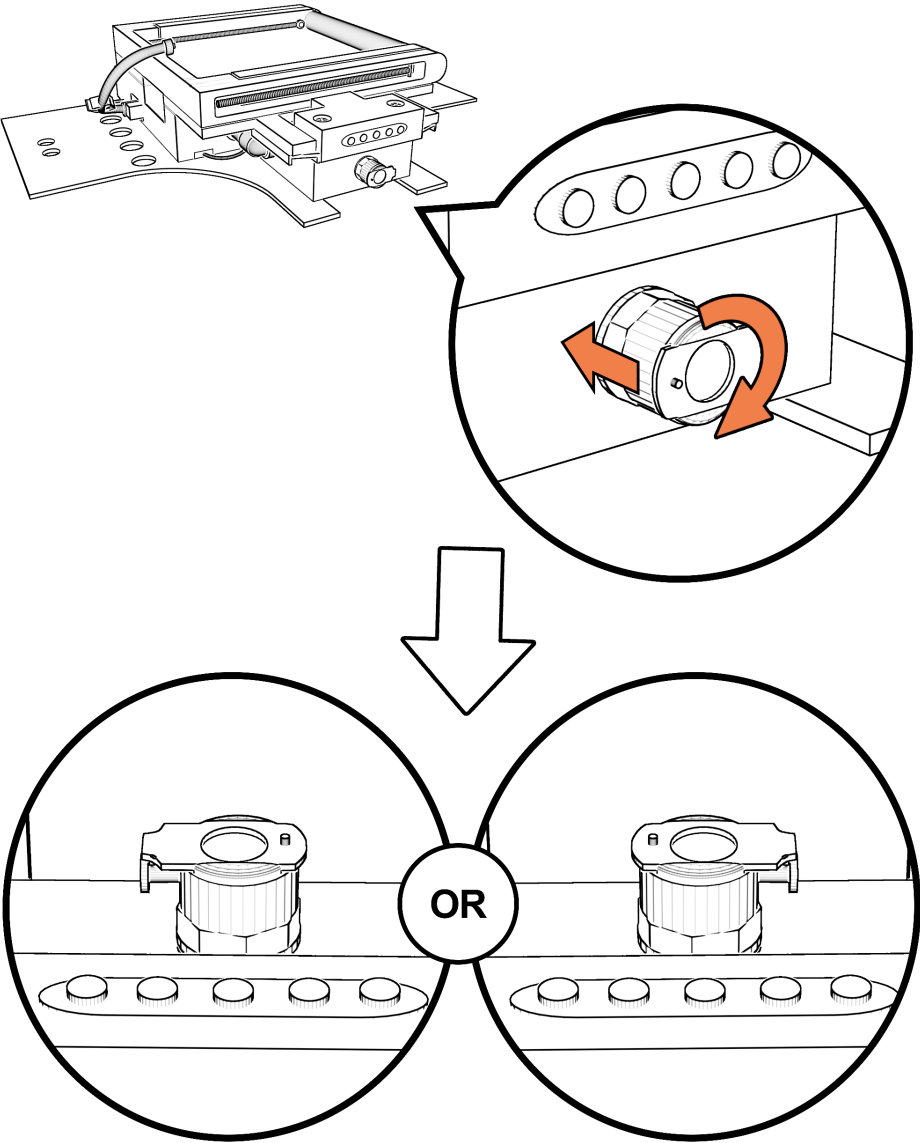
## *To Clean Exterior*

- 1** Use a damp lint-free cloth to clean off the silicone chest. Once dry, dust with baby powder or cornstarch to remove tackiness. Add cocoa powder to the cornstarch if you have a dark skin tone Avcath
- 2** After about 100 catheterizations, it is important to check that the valve is still intact. Unscrew the large metal fitting in the yellow compartment. Take the valve out and examine for any large tears.



If there are any tears, replace the torn valve with a new one. When placing the new valve in, it may be helpful to use a slim object such as a pen to make sure the valve lays flat inside the yellow compartment.

When screwing the large metal fitting back into the yellow compartment, it is important to check that the little metal switch is in the correct orientation. Screw in the metal fitting all the way until tight. Make sure that when you finish screwing in the metal fitting, the little metal switch is facing either to the left or the right.





# AVCATH BATTERY SAFETY GUIDELINES



The Avcath contains a rechargeable 12V Lithium Ion Polymer Battery that could cause injury if mishandled. Follow the proper handling procedures for the Avcath and the Avcath charger:

- Do not charge the Avcath with any other charger than the one that came with it
  - Call Avkin for a replacement if you need a new charger
- Do not charge or use unattended
- When charging, keep away any flammable or conductive materials (ex: textiles, paper, metal, etc.)
- Do not disassemble the Avcath battery
- Do not puncture the Avcath battery
- Do not immerse the Avband in water or other liquids
- Do not expose the Avband to:
  - Extremely cold temperatures (below freezing, 32 deg F)
  - Extremely hot temperatures (above 130 deg F)
  - Direct sunlight
  - Hot vehicles
- Do not expose the Avcath to mechanical impact (ex: throwing, dropping, etc.)
- Do not use the Avcath if it is damaged
  - Call Avkin for a replacement if needed
- Store the Avcath in a cool, dry place
- Keep the Avcath away from children - it is not a toy
- Refer to FAA guidelines for airplane transportation of devices with installed lithium batteries:
  - Turn the Avcath completely off (power switch on the side)
    - It is off when the Red/Green/Blue light is off
  - Protect it from accidental power-on
  - Pack it to cushion it from damage

Avcath™ is provided by:



*Wearable technology for  
patient-centered simulation*

[www.avkin.com](http://www.avkin.com)