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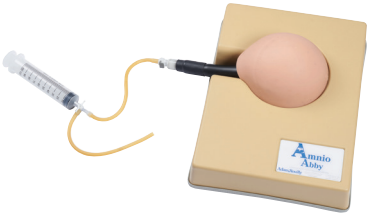
AR60 AMNIO ABBY® - ULTRASOUND GUIDED INVASIVE PROCEDURES SIMULATOR

Instruction Manual



Thank you for purchasing this **A60 Amnio Abby® - Ultrasound Guided Invasive Procedures Simulator.**

Developed in collaboration with Dr Graham Tydeman, Consultant in Obstetrics and Gynaecology - NHS Fife, Professor Andy Shennan - Professor of Obstetrics, and Dr Annette Briley – Consultant Midwife, Clinical Trial Manager, Maternal and Fetal Research Unit, Guy's and St Thomas' Hospital, the Amnio Abby® simulator has been designed to enhance training in ultrasound guided amniocentesis and chorionic villus sampling (CVS).

Please read this instruction manual carefully and retain it for future reference.

Skills

- A range of easy and more difficult procedures can be experienced by varying fetal position, abdominal layers, amniotic fluid volume and placental position enhancing simulation for both new trainees and experienced clinicians
- Visualisation under ultrasound of key anatomical structures including abdominal wall, placenta, fetus, umbilical cord and amniotic fluid
- Identification of a suitable needle entry point in the simulated abdomen
- Monitoring of the needle path under real-time ultrasound guidance
- Successful withdrawal of an amniotic fluid sample
- Transplacental needle approach simulation (via placement of the placenta and adjustment of the amniotic volume)
- Chorionic villus sampling (CVS) procedures
- Clinical planning and team work before, during and after invasive procedures
- Patient communication

Features

- Easy to use, minimal maintenance
- Highly realistic sonographic image
- 15 week size fetus with umbilical cord insertion
- Amniotic sac which may be punctured several times to allow for a number of invasive procedures to be simulated before replacement
- Variable amniotic fluid volume allowing for training to be tailored for easy or difficult procedures
- Separate placenta for posterior or anterior placement, to allow for transplacental scenarios as well as chorionic villus sampling (CVS) procedures
- Two abdominal layers to allow for simulation of patients with a higher BMI

Safety and Precautions

The fetal sac and filling tubes contain natural latex which may cause an allergic reaction to some individuals. If a reaction occurs, discontinue use immediately and seek medical advice.

Do not overfill the fetal sac beyond the limit of approximately 400ml

Air degrades the sonographic properties of the model and must be removed from the simulated fetal sac before use.

Do not leave or store the simulator with liquid inside the simulated fetal sac. When training has finished, use the supplied sac filling syringe to empty the fetal sac.

The fetal sac is a disposable item and will need to be replaced periodically.

This simulator is designed to facilitate training in ultrasound guided invasive procedures. The procedures demonstrated in this manual serve as a guide only. Local policies will determine the correct way of performing procedures.

As with a real patient, the simulator may require some adjustment of sonographic gain, frequency, contrast and depth to achieve the desired image dependent on the type of ultrasound equipment used.

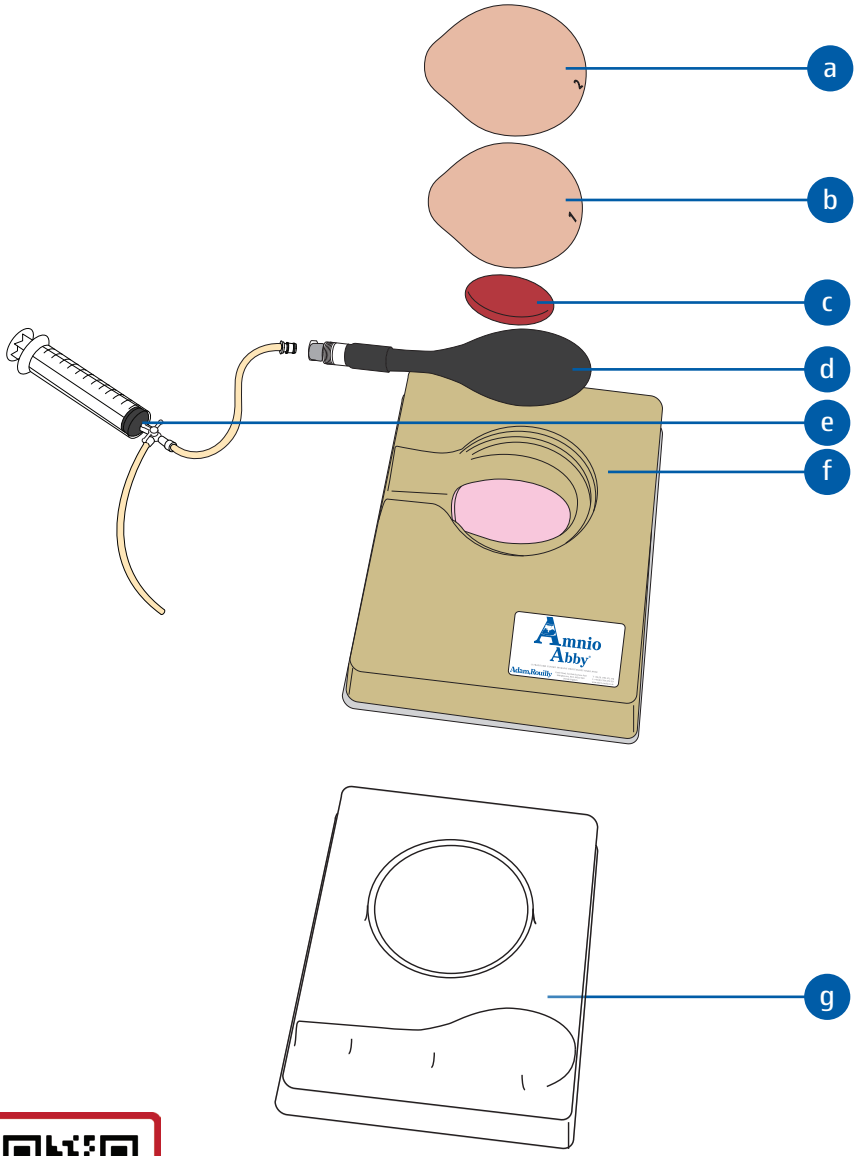
It is recommended that 22 gauge (or smaller) needles which are new, sharp and unbent are used to avoid accelerated wear of the model.

Due to the special sonographic and self-sealing properties of the simulated fetal sac, some leakage during use is normal.

Please treat the simulator with the same care you would a patient.

Contents

Parts



SCAN ME

a Abdominal layer 2

b Abdominal layer 1

c Separate placenta

d Simulated fetal sac (with 15 Week-old Sized Fetus and Umbilical Cord inside)

The fetal sac is a sealed unit. Do not attempt to open or gain access. Doing so could damage the model and invalidate your guarantee.

e Filling line and syringe

f Base

g Storage cover

Supplied With

S150/4 CARRYING CASE

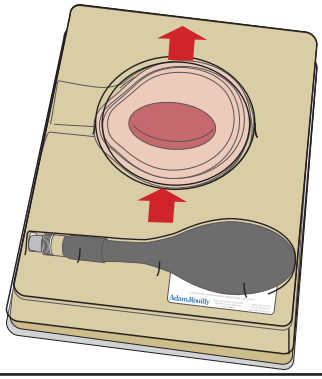
S58/8 ULTRASOUND GEL

If you require replacement parts please contact our Sales Department, quoting codes where applicable.

Scan the QR code to access the product video.
https://youtu.be/Nu7pSbOuIoM

Before Use

1a



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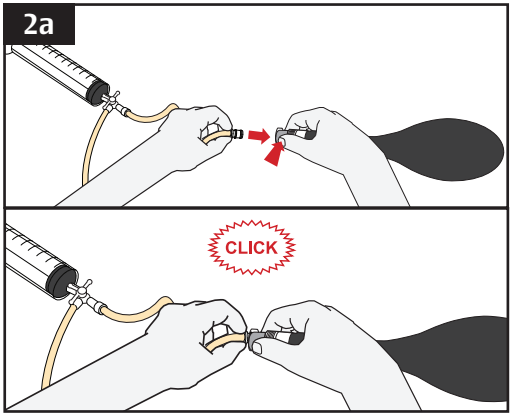

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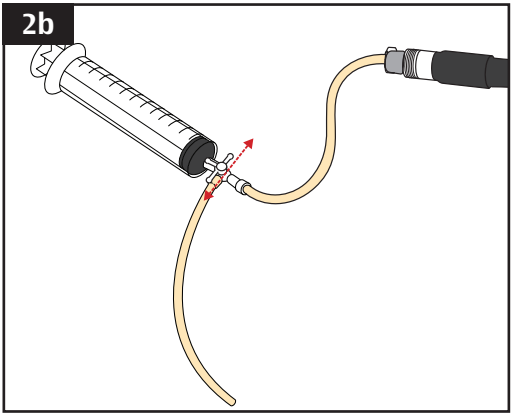

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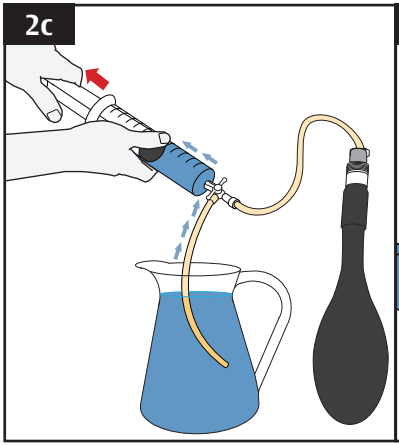

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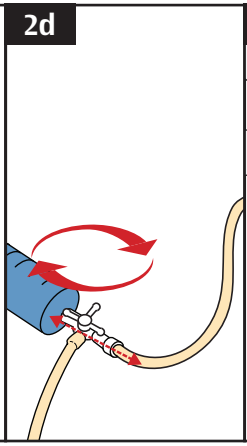

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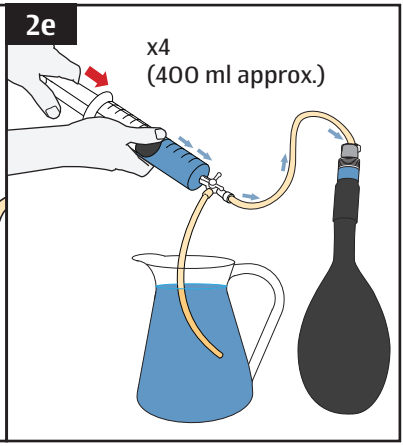


Remove the Components from the Storage Cover

1a After removing the model from the carrying case, remove the base, abdominal layers, placenta and fetal sac from the storage cover.

Retain the storage cover and bags to refit the components for storage or transportation of the model.

Fill the Simulated Fetal Sac with Water

2a Connect the filling line and syringe to the simulated fetal sac using the connector, ensuring the connector clicks into place.

2b With the filling line and syringe now connected to the fetal sac, ensure that the 3-way stopcock is orientated to only allow supply from the open tube to the syringe, as shown, shutting off supply to the fetal sac.

2c Fill a container or jug (not included) with fresh, clean water.

Insert the open tube into this and using the syringe, draw in water to the **maximum 100 ml** as indicated.

2d Rotate the 3-way stopcock so that it is now orientated to supply the sac from the syringe, shutting off the supply from the filling container, as shown.

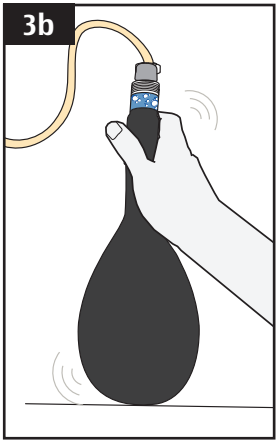
2e Using the syringe, fill the simulated fetal sac with water. Repeat this process approximately **4 times,** so that the sac is filled with approximately **400 ml** of water.

Do not overfill the fetal sac beyond the limit of approximately 400ml

Avoid injecting air into the fetal sac during filling. Air degrades the sonographic properties of the model and must be removed before use.

Before Use


3a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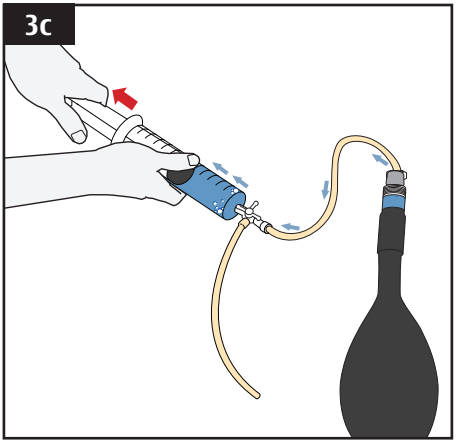
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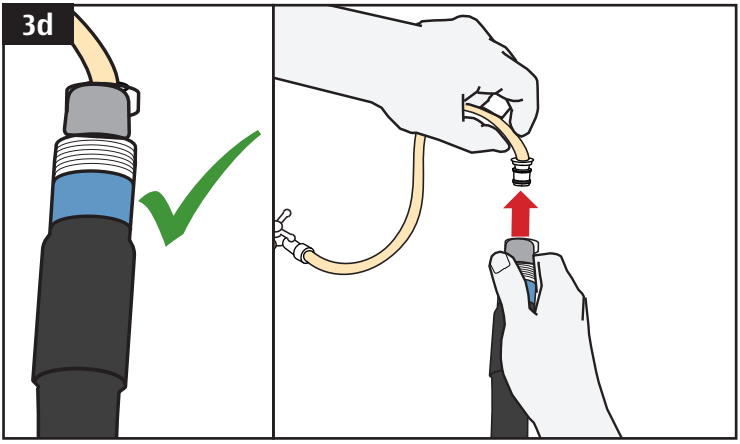
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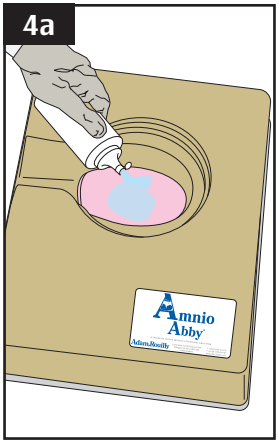
4a
Amnio
Abby
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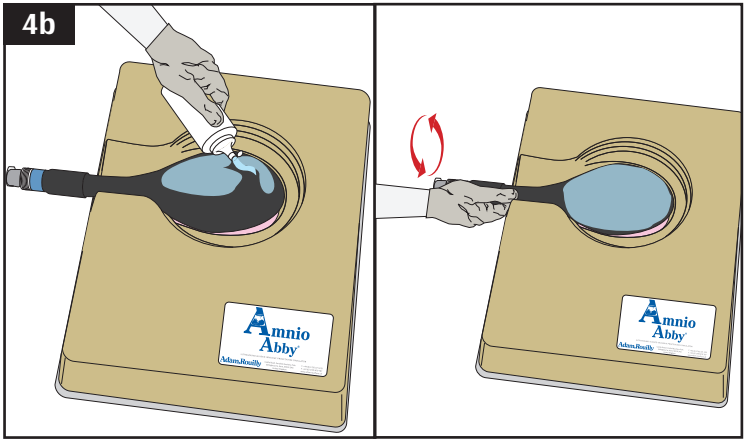

4b
Amnio
Abby
Adam Reilly
Amnio
Abby
Adam Reilly

Remove Air Bubbles from the Simulated Fetal Sac

Air degrades the sonographic properties of the model and must be removed from the simulated fetal sac before use.

3a Inspect the viewing area of the fetal simulated sac after filling, ensuring that the sac is completely full of water, that there is no air gap or bubbles present.

3b Gently tap the base of the simulated fetal sac on a hard surface - this will allow air bubbles trapped around the simulated fetus to be released.

3c Using the syringe, gently draw water and any air back into the syringe. Water can then be added back into the sac, being careful that no air re-enters.

3d After verifying there are no air gaps or bubbles left in the viewing area, disconnect the filling line and syringe from the simulated fetal sac using the quick-release connector.

Keep the filling line and syringe nearby to later adjust the fetal sac liquor volume.

Assemble the Model: Base and Simulated Fetal Sac

Ultrasound gel is required to ensure a realistic sonographic image and must be applied to all components before use.

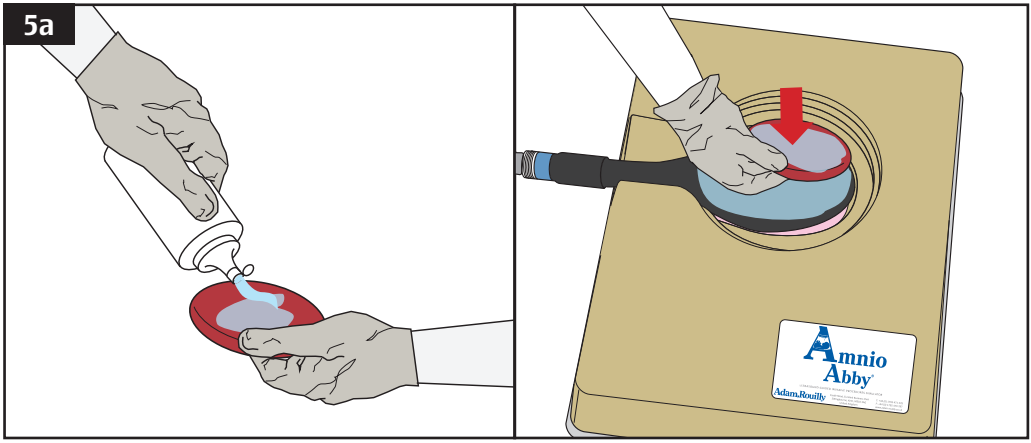
4a Apply ultrasound gel to the pink foam at the bottom of the base.

4b Place the simulated fetal sac into the base with the quick-fit connector pointing outwards, as shown.

Apply ultrasound gel **liberally** to the simulated fetal sac. Rotate the simulated fetal sac on the base to ensure all sides of the sac are covered with ultrasound gel.

Continues, please see next page...

Before Use


5a
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Abby
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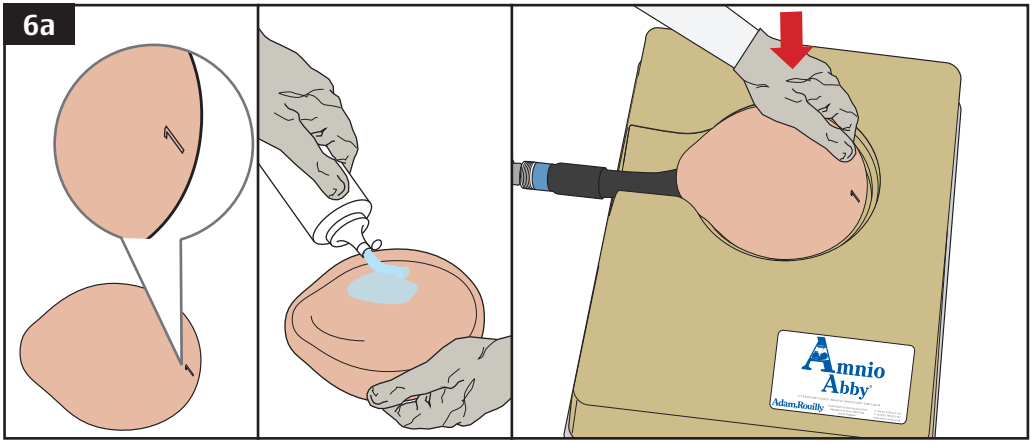
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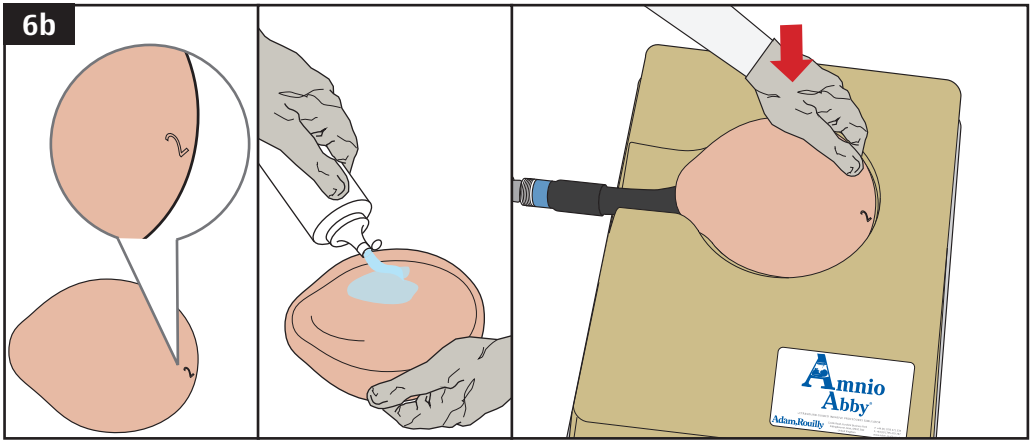
Amnio
Abby
Adam,Rouilly


6b
2
2
Amnio
Abby
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Assemble the Model: Placenta

5a The separate placenta allows for placement in lateral, posterior or anterior positions for a range of simulation scenarios.

To use the placenta, apply ultrasound gel liberally to both sides and place this in the desired position around the simulated fetal sac.

Ultrasound gel is required to ensure a realistic sonographic image and must be applied to all components before use.

Assemble the Model: Abdominal Layers

6a The separate abdominal layers allow for simulation of procedures with normal or high Body Mass Index (BMI).

For normal BMI simulation, use abdominal layer one, marked "1".

Apply ultrasound gel liberally to the underside of the abdominal layer and place this over the placenta and simulated fetal sac, ensuring it fits into the base.

If the second layer is not going to be used, the model is ready for use. See 7a Page 12.

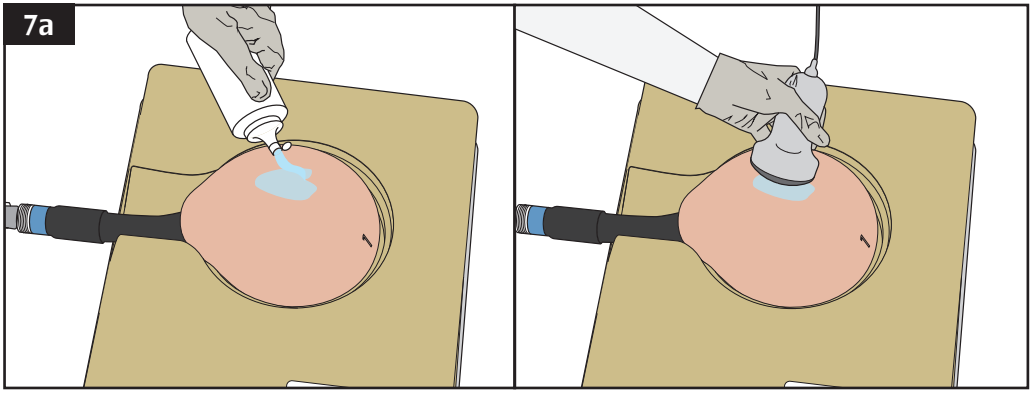
6b For high BMI simulation, also use abdominal layer two, marked "2".

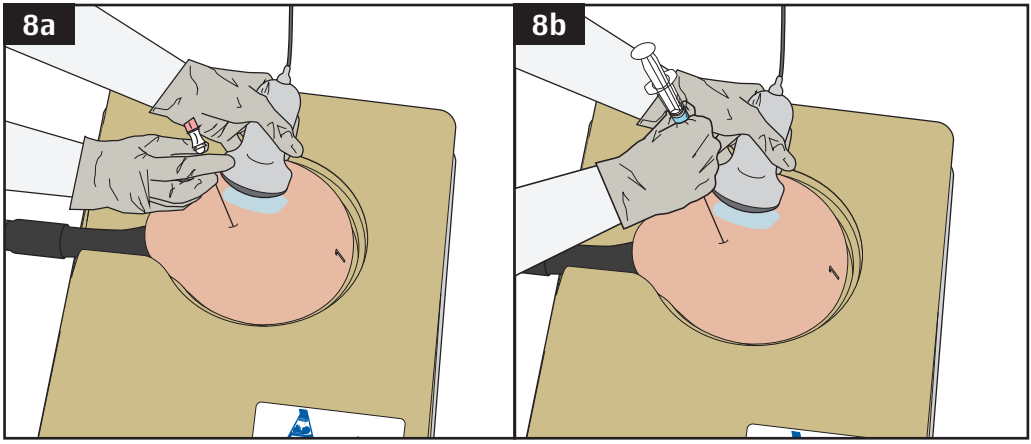
Apply ultrasound gel liberally to the underside of the abdominal layer and place this over abdominal layer one.

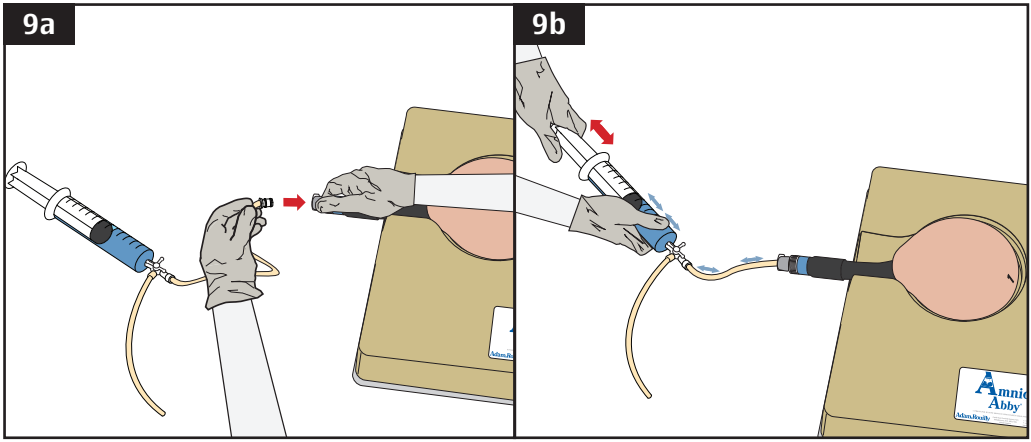
The model is now ready for use.

Ultrasound gel is required to ensure a realistic sonographic image and must be applied to all components before use.

During Use







Ultrasound Procedures

7a As with a real patient, the simulator will require ultrasound gel to be applied to the outside of the abdominal layer before an ultrasound probe is used to ensure a good sonographic image.

Invasive Procedures and Sampling

8a Invasive procedures such as amniocentesis or Chorionic villus sampling (CVS) may be performed using the model.

It is recommended that 22 gauge (or smaller) needles which are new, sharp and unbent are used to avoid accelerated wear of the model.

Due to the special sonographic and self-sealing properties of the simulated fetal sac, some leakage after use with needles is normal.

8b Fluid samples can be taken from the simulated fetal sac, e.g. during amniocentesis. Note that the tissue can be accessed but due to the nature of the material, samples cannot be taken e.g. for Chorionic villus sampling (CVS).

Varying Liquor Volume

9a Between procedures, the fluid volume of the simulated fetal sac can be altered to allow simulation of a variety of scenarios as described on page 15.

Connect the filling line and syringe to the simulated fetal sac using the connector, ensuring the connector clicks into place. We recommend ensuring that the filling line and syringe already contain some water to avoid the possibility of air entering the simulated fetal sac.

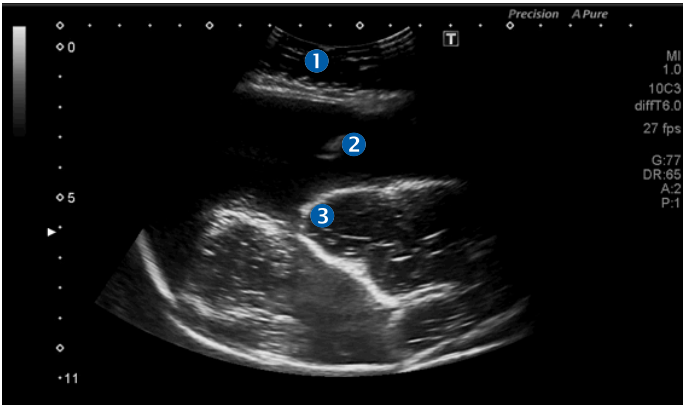
9b Using the syringe, withdraw or add water to increase the amniotic fluid volume. When finished, disconnect the filling line and syringe.

Do not overfill the fetal sac beyond the limit of approximately 400ml

Avoid injecting air into the fetal sac during filling. Air degrades the sonographic properties of the model and must be removed before use.

During Use

10a



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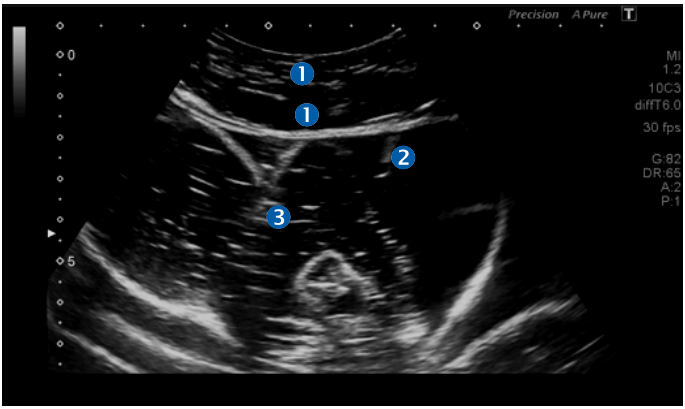

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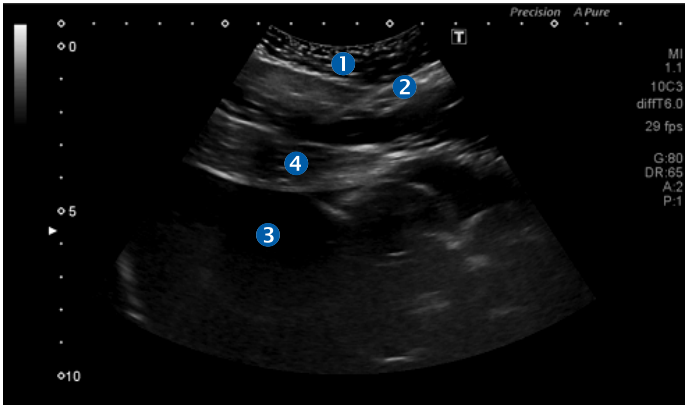


Sonographic Image/Simulated Scenario Variation

As with a real patient, the simulator may require some adjustment of sonographic gain, frequency, contrast and depth to achieve the desired image dependent on the type of ultrasound equipment used.

10a Sonographic Image example of an "easy" amniocentesis using only abdominal wall layer 1 and a normal liquor volume.

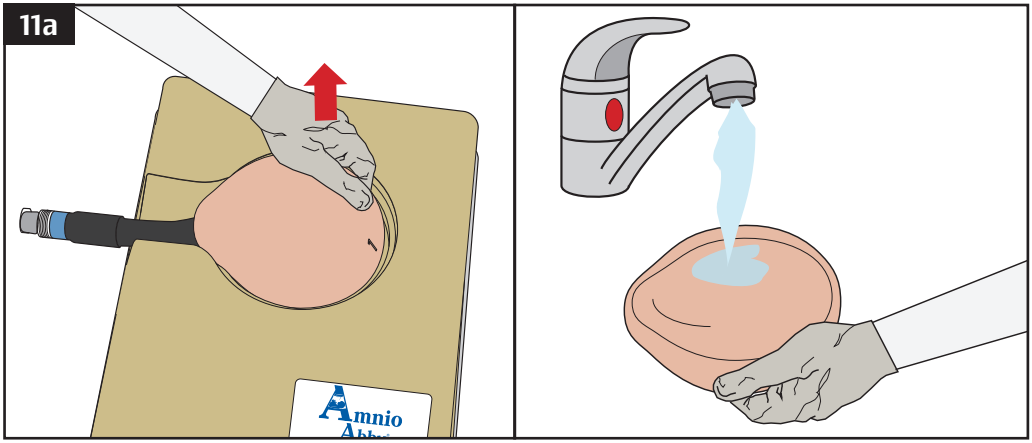
10b Sonographic Image example of an "difficult" amniocentesis using only abdominal wall layer 1 with a reduced liquor volume.

10c Sonographic Image example of a "difficult" Chorionic villus sampling (CVS) procedure using both abdominal wall layers 1 and 2 an anterior placenta.

1. Abdominal wall layer
2. Needle
3. Fetus
4. Placenta

After Use

11a



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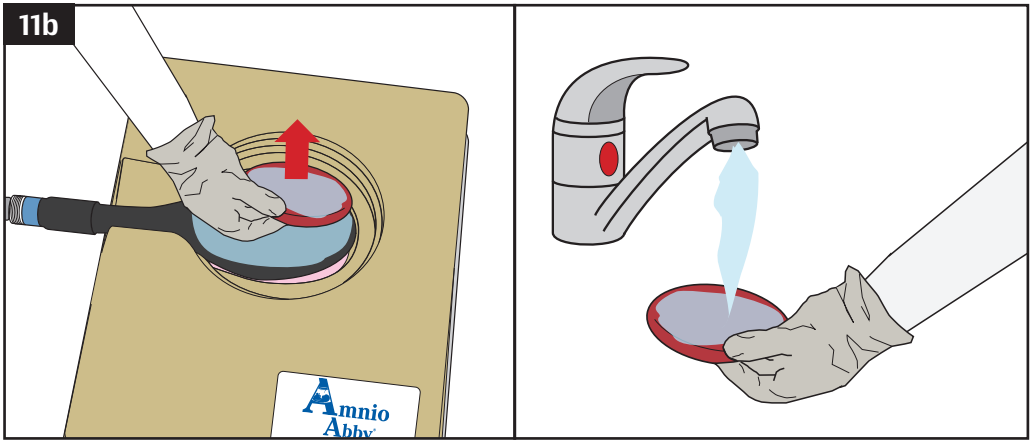

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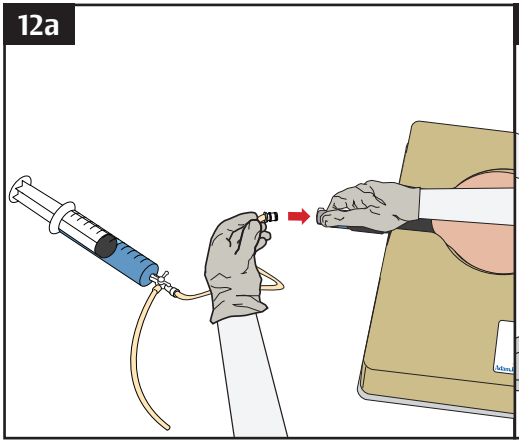

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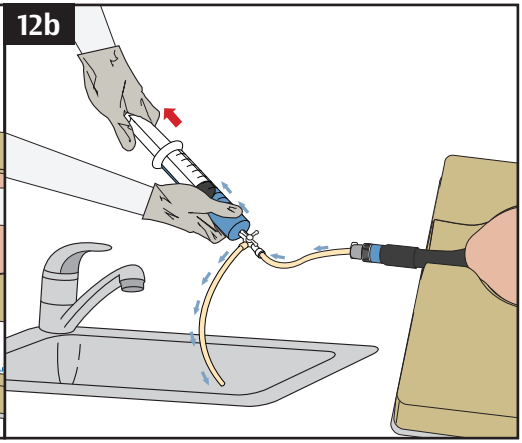


After use, the model must be disassembled, cleaned and dried and stored in the storage cover and case to ensure a long service life.

Remove and Clean the Abdominal Wall Layers and Placenta

11a After use, remove the abdominal wall layers. Use a cloth or towel to remove ultrasound gel or clean with warm soapy water and dry thoroughly.

11b Remove the separate placenta. Use a cloth or towel to remove ultrasound gel or clean with warm soapy water and dry thoroughly.

Drain the Simulated Fetal Sac

Do not leave or store the simulator with liquid inside the simulated fetal sac. When training has finished, use the supplied sac filling syringe to empty the fetal sac.

12a To drain the simulated fetal sac, connect the filling line and syringe if not already connected.

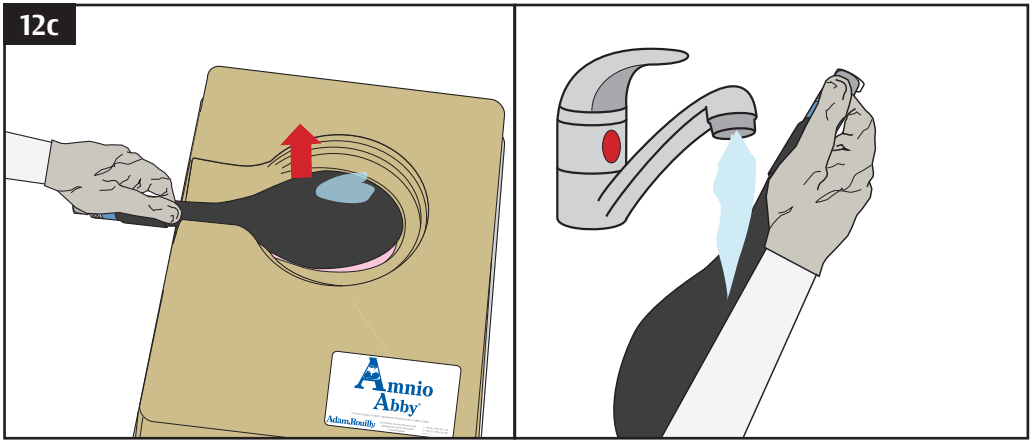
12b Using the syringe, withdraw water from the simulated fetal sac. Use the 3-way stopcock so that it is orientated to empty the syringe to discard the water via the filling tube.

Repeat this process until the simulated sac is completely empty.

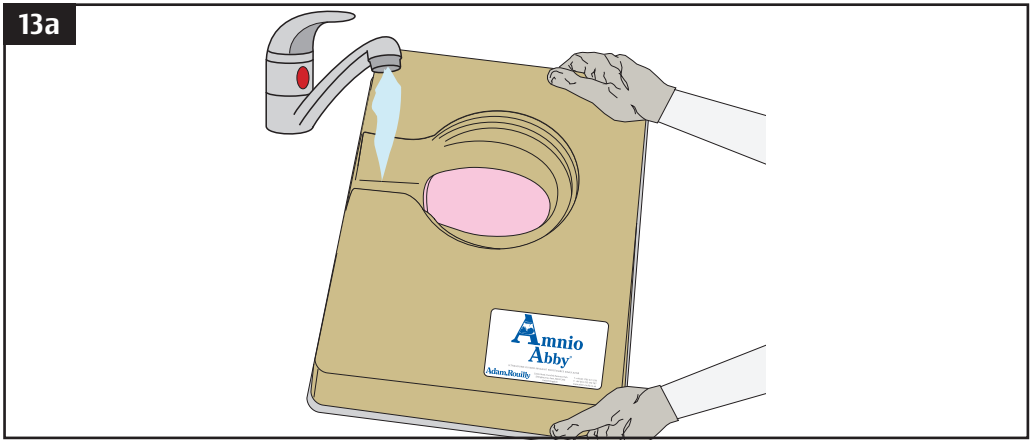
Continues, please see next page...

After Use

12c

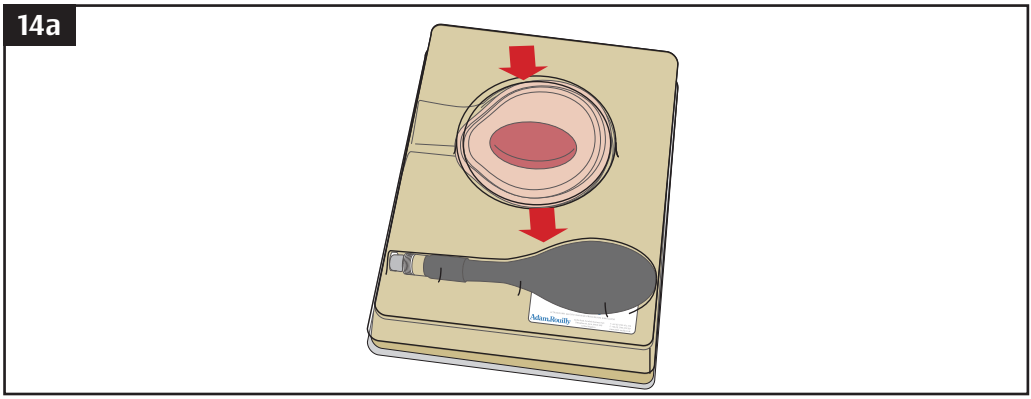


13a



Storage and Transportation

14a



Drain the Simulated Fetal Sac (Continued)

12a Remove the simulated fetal sac from the base. Use a cloth or towel to remove ultrasound gel or clean with warm soapy water and dry thoroughly.

Clean the Base

13a Use a cloth or towel to remove ultrasound gel from the base, or clean sparingly with warm water and dry thoroughly.

Refit all Components into the Storage Cover

14a Once all the components are dry, replace the simulated sac, abdominal layers and separate placenta back into position inside the storage cover.

Replace the cover on top of the base and store in the supplied carrying case.

Do not store the simulator near heat or where it may experience extremes in temperature and humidity.

2 Year Guarantee

All products manufactured by Adam,Rouilly are covered by our full 2 Year Guarantee. This guarantee applies to models which have been used correctly and covers durability and functionality.

Adam,Rouilly

As part of our policy of continual product development, the specification of products may alter without prior notice.

Adam,Rouilly has over 100 year's experience in providing quality medical models and simulators.

Should you require any further information please contact our Sales Department who will be pleased to help with your enquiry.

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