



# PPH TRAINER P97 / PPH TRAINER P97-MODULE

INSTRUCTIONS FOR USE

1021568 / 1021567

# PPH TRAINER P97 / PPH TRAINER P97-MODULE

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# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## ➤ PPH TRAINER P97 VARIANTS

### **3B Scientific® PPH Trainer P97-Module 1021567**

You have purchased a basic add-on for the Birthing Simulator P90, which can be used for presenting and training in postpartum hemorrhage (PPH) and resulting complications. Postpartum hemorrhage is one of the main causes of maternal mortality. In this emergency situation, an exact diagnosis and quick action are required. The 3B Scientific PPH Trainer P97-Module allows the most critical scenarios to be realistically and inexpensively presented, and the ability to quickly recognize problems and take action in an emergency to be improved through training.



### **3B Scientific® PPH Trainer P97 1021568**

In addition to the basic version of the PPH Trainer-Module as an add-on for the existing Birthing Simulator P90, a stand-alone product variant is also available in the form of the PPH Trainer.

The instructions and application possibilities outlined here are identical for both products unless expressly indicated.



# PPH TRAINER P97 / PPH TRAINER P97-MODULE

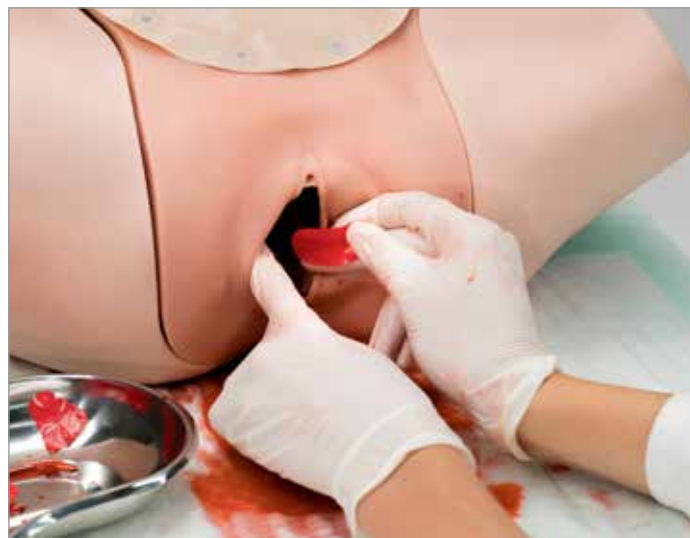
## > FUNCTIONS

The Birthing Simulator P90 as a basis for the PPH Trainer-Module, or the base unit included in the PPH Trainer, allows a generalized representation and demonstration of the female pelvic anatomy.

The PPH Trainer-Module's realistic simulation of soft tissue enables the inflatable postpartum uterus to be felt and manipulated via the abdominal wall (e.g. manual contraction), and additionally through the vagina (e.g. bimanual contraction).

The PPH Trainer-Module has 3 prefabricated bleeding points for simulation of postpartum hemorrhage. In addition to central bleeding from the uterus, bleeding due to childbirth injuries, such as cervical and vaginal ruptures can also be demonstrated.

Artificial blood provides a realistic representation and the blood volume can be controlled via an external reservoir.

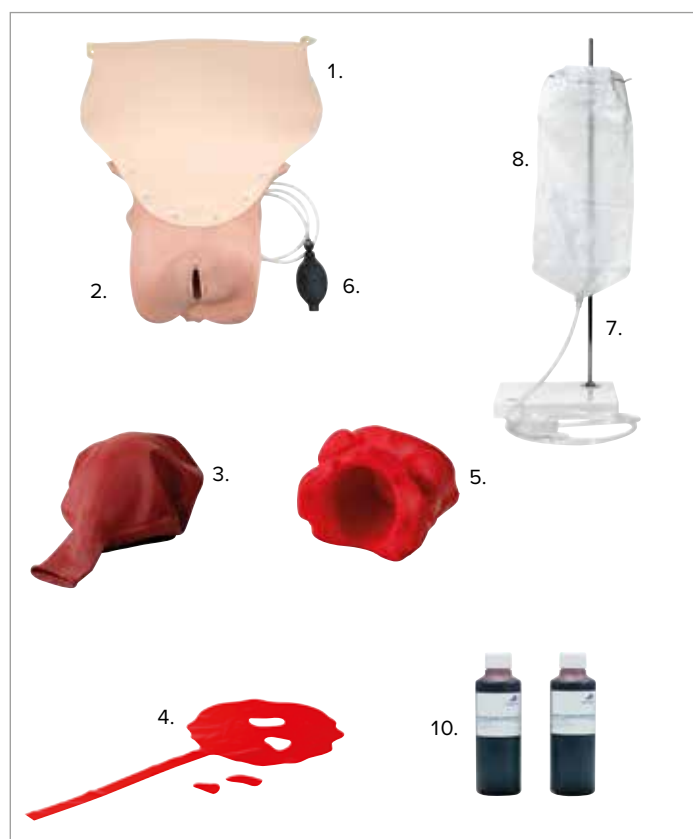


# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## ► SCOPE OF DELIVERY

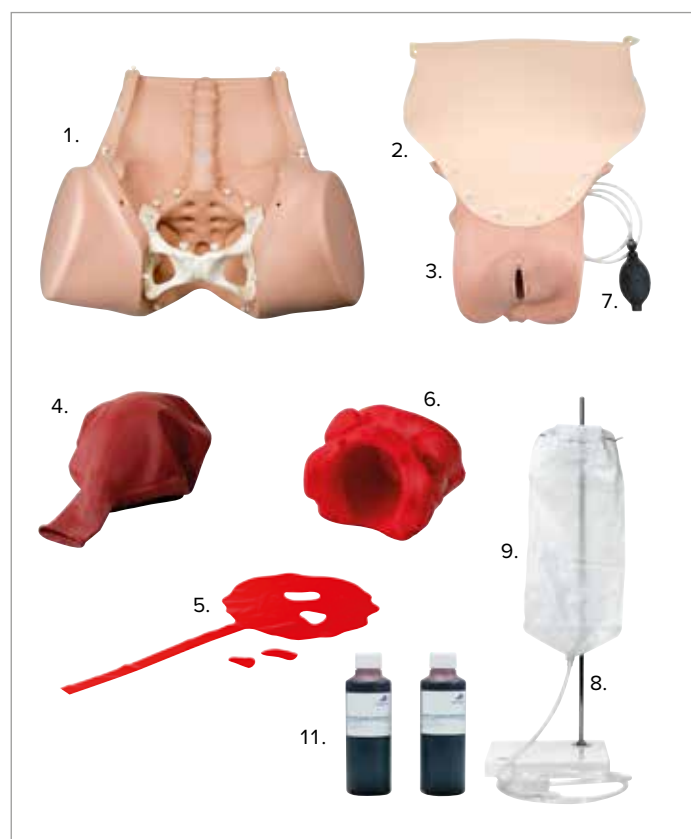
### 3B Scientific® PPH Trainer-Module P97 1021567

1. Abdominal wall (soft PVC film with foam backing)
2. Vaginal unit made of silicone
3. Postpartum uterus with foam core (inflatable)
4. 2 placentas (film)
5. Pelvic insert (foam)
6. Inflation bulb with tube
7. Stand
8. Bag and tube (incl. tube clamp)
9. Filling funnel (not shown here)
10. 2x blood concentrate (250 ml each, incl. measuring cap)



### 3B Scientific® PPH Trainer P97 1021568

1. Base unit
2. Abdominal wall (soft PVC film with foam backing)
3. Vaginal unit made of silicone
4. Postpartum uterus with foam core (inflatable)
5. 2 placentas (film)
6. Pelvic insert (foam)
7. Inflation bulb with tube
8. Stand
9. Bag and tube (incl. tube clamp)
10. Filling funnel (not shown here)
11. 2x blood concentrate (250 ml each, incl. measuring cap)



# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## > ASSEMBLING AND INSTALLING THE PPH TRAINER-MODULE



### Note:

The PPH Trainer-Module should only be used in conjunction with the Birthing Simulator P90 (Basic or Pro) and should be seen as an add-on for this. Alternatively, a stand-alone product is available in the form of the PPH Trainer P97, which already has a base unit.

### Abdominal Wall with Vaginal Unit

The abdominal wall and vaginal unit are attached together to the base unit by means of phantom fasteners. These can be connected and disconnected easily and as often as necessary without the use of tools.



### Note:

Unfasten the abdominal wall and vaginal unit by lifting them with equal pulling force. Always pull near to the connector, so that the force acts directly on the connector without the material becoming fatigued or damaged. Avoid sudden pulling or tearing.



### Note:

Installation of the PPH add-on must be started from the lowest connector inside the birthing simulator (coccyx). After installation of the soft tissue insert, this connector pin is difficult to access!

The combination of the abdominal wall and vaginal unit is attached to the birthing simulator using 13 phantom fasteners. A phantom fastener consists of a closure socket and a closure pin. With the abdominal wall mounted, the connection is invisible (apart from the fasteners on the top of the torso).

1. Place the birthing simulator on a non-slip surface, e.g. a table.
2. First connect the phantom fastener inside the birthing simulator (coccyx, see Fig. 7).
3. Slot the pelvic insert into the pelvis from above (observe correct orientation; see Fig. 13).
4. At the same time, lift the pelvic insert near the coccyx with a flat hand to avoid detaching the phantom fastener (see Fig. 8).
5. Insert the vaginal unit into the pelvis from below.
6. Pull the upper end of the vaginal unit (hook-and-loop surface) carefully from above as far as it will go.
7. Attach the two fastening straps to the screws in the abdomen (see Fig. 9).
8. Feed the inflation bulb tube into the small opening (on the right when viewed from above; see Fig. 10) as far as it will go.
9. To use the bleeding points, make sure that the desired bleeding point has been selected before closing the abdominal wall (see instructions in „PPH Scenarios“ section).
10. Connect the remaining phantom fasteners of the vaginal unit and the abdominal wall to the abdominal cavity working upward (see Fig. 11).
11. To connect the fasteners to the top of the torso, pull down firmly on the flap (see Fig. 12).



Fig. 7



Fig. 8



Fig. 9

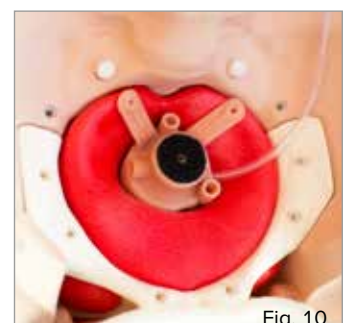


Fig. 10



Fig. 11

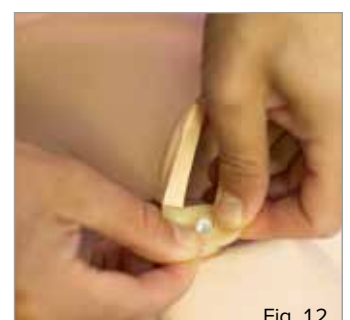


Fig. 12



# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## Pelvic Insert



### Note:

The pelvic insert (red, see Fig. 13) is not an accurate representation of the anatomical structures in the pelvis, but ensures the appropriate positioning of the vaginal unit.



Fig. 13

The pelvic insert supports the vaginal unit and also enables the ischial spine to be felt through the vagina.

For correct use, please observe the instructions on installing the abdominal wall with vaginal unit.

# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## Uterus

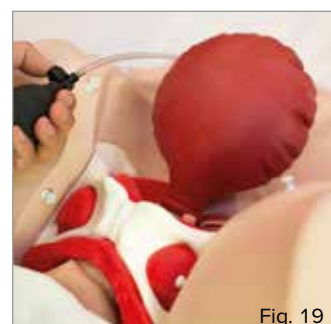
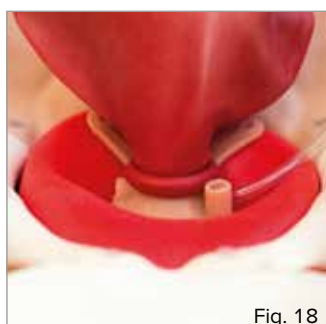
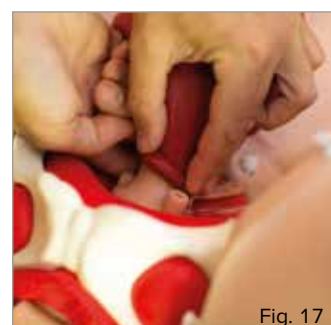
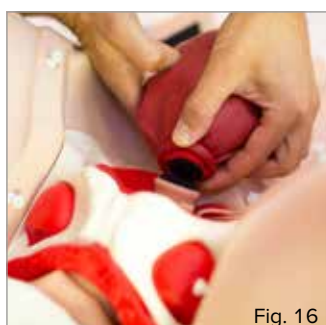


### Note:

The uterus can be adjusted in terms of size and characteristics using the inflation bulb in order to perform realistic palpation and manipulation maneuvers. The uterus consists of a firmer foam core surrounded by a flexible balloon skin.

When the abdominal wall is open, the uterus can be connected to the vaginal unit and inserted into the abdominal cavity. The size is adjusted using the inflation bulb (via connection to the vaginal unit).

1. Remove the abdominal wall before you insert the uterus into the abdominal cavity.
2. Roll the open end of the uterus balloon back until the foam core with the hook-and-loop surface becomes visible (see Fig. 14).
3. Ensure that the bulge of the rolled-up open end is slightly above the shaft of the foam core (see Fig. 15).
4. Connect the uterus to the upper end of the vaginal insert using the hook-and-loop fastener (ensuring the correct orientation of the uterus: The gap in the foam core is pointing toward the spine of the base unit (see Fig. 16).
5. Roll the bulge over the edge of the vaginal unit (see Fig. 17).
6. Make sure that there is an airtight overlap all the way around (see Fig. 18).
7. Test the function by fully inflating the uterus once and then letting the air out via the outlet valve (see Fig. 19).





# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## Placenta



### Note:

The supplied placenta with umbilical cord provides a very simplified illustration. The focus of the trainer is on the assessment of the postpartum hemorrhage.

The placenta can be inserted via the vagina and has tear-off sections.

By removing the tear-off sections, the trainee can be taught to recognize incompleteness when manually removing and assessing the placenta.

1. Put the placenta film down flat on an even surface (see Fig. 20).
2. Remove parts of the placenta at the cutout points according to the desired scenario.
3. Fold the placenta film once along the longitudinal axis.
4. Fold the flat, upper part to the size of a chestnut.
5. Insert the placenta into the vagina and secure it between the cervix and vaginal wall.
6. Position the umbilical cord end of the placenta inside the vaginal entrance or outside the vagina.



Fig. 20

## Blood Reservoir with Stand

The stand with blood reservoir serves to supply the PPH Trainer-Module with the appropriate blood volume.

1. Undo the nut and the ribbed washer from the thread of the stand rod.
2. Push the stand rod with the thread through the opening in the stand base from above (the flat washer and upper nut are located on the surface of the stand base).
3. Slide the ribbed washer over the thread of the stand rod (on the underside of the stand base).
4. Screw the nut onto the thread of the stand rod.
5. Screw the nut by hand until the stand rod is securely attached to the stand base.
6. Place the stand on a solid, even surface.
7. Undo the two hooks by turning the small knurling wheel.
8. Slide the upper hook to approx. 2 cm below the upper end of the stand rod and secure it by tightening the knurling wheel.
9. Make sure the hook is pointing toward the front right corner of the stand base (see Fig. 21).
10. Slide the lower hook to directly beneath the upper hook and again secure it by tightening the knurling wheel.
11. Make sure the lower hook is pointing toward the back left corner of the stand base (see Fig. 21).
12. Hang the reservoir bag on the hooks via the appropriate openings (the volume scale should be on the left-hand side, see Fig. 22).



Fig. 21



Fig. 22

# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## ➤ PERFORMING PPH SCENARIOS

### INTRODUCTION

The following pages are primarily aimed at the assistants who prepare for the demonstrations and exercises with the PPH Trainer-Module or PPH Trainer, and who assist with these. The procedure during various bleeding scenarios and some commonly occurring complications will be outlined. The implementation of the training scenarios always depends on the individual syllabus of the relevant teaching establishment. These instructions therefore do not provide a comprehensive lesson plan, but should instead be referred to as the technical basis. For better illustration of the processes inside the birthing simulator, the abdominal wall has been omitted in some of the figures.

### PREPARING FOR PPH SCENARIOS

#### Securing the Birthing Simulator

The non-slip feet of the Birthing Simulator P90 and the base unit of the PPH Trainer P97 provide an easy way of securing the devices. Place the base unit with the rubber feet on a non-slip surface, e.g. a table.



#### Note:

The PRO version of the Birthing Simulator P90 can additionally be secured to a table, bed or other surface using the safety strap. Proceed according to the instructions for the Birthing Simulator P90.

#### Filling the Blood Reservoir



#### Note:

When using liquids, ensure that the area around the trainer will not get damaged and have some absorbent cloths on hand if necessary. For all the preparation steps, hold the closure clamp on the tube of the blood reservoir bag closed.



#### Tip:

With the PPH Blood Reservoir Pro (available as an option), the capacity can be increased to 2300 ml. The blood loss volume can also be preselected and the blood flow speed regulated precisely.

In a „dry“ state, the PPH Trainer-Module is suitable for use in presentations and for supporting theoretical teaching content. For comprehensive training, the use of the blood reservoir with artificial blood is recommended.

The capacity of the blood reservoir bag is 1500 ml.

For a realistic blood color, we recommend adding 250 ml of blood concentrate to 2 l of water (mixing ratio 1:8).

For an individualized color, add the blood concentrate to the water in small amounts while continuously stirring, until the desired color is achieved.

1. Remove the transport cover on the blood concentrate bottle.
2. Unscrew the measuring cap on the blood concentrate bottle.
3. Mix the desired volume of water with the blood concentrate in a suitable container.
4. Stir vigorously until a uniform color is achieved.
5. Insert the filling funnel into the top of the blood reservoir bag (see Fig. 23).
6. Open out the filling funnel until there is a sufficiently wide opening.
7. Before pouring liquid into the blood reservoir bag, make sure that the bag is securely attached to the stand and that the closure clamp on the tube is closed firmly (see Fig. 24).
8. Fill the liquid to the desired mark.



Fig. 23



Fig. 24

# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## > PPH SCENARIOS



### Tip:

For simulating the various PPH scenarios, it is always recommended to work in pairs. The assistant controls and monitors the volume and speed of blood loss outside of the birthing simulator, and also holds the simulator still if necessary. A second person observes and assesses the performance of the trainee.



### Note:

With the basic version of the PPH Trainer-Module or the PPH Trainer, only one of the three different bleeding points can be controlled at any given time. To change the bleeding points, please proceed according to the following instructions.

**CAUTION:** When altering the blood inlet, always close the tube clamp completely.

### Central Bleeding from the Uterus

Uterine atony is the most common cause of postpartum hemorrhage. In addition, a coagulation disorder can be responsible for increased blood loss.

By selecting the appropriate blood inlet, central blood loss from the uterus can be simulated using the PPH Trainer-Module.

Once the situation has been assessed by the trainee, appropriate intervention measures can be implemented.

The success of the manual or bimanual contraction by the trainee can be controlled by the assistant using the inflation bulb.

The blood flow is also controlled by the assistant once the trainee has implemented the appropriate intervention measures.

1. Remove the abdominal wall by unfastening the phantom connectors (the phantom connectors under the vaginal opening can remain fastened; see Fig. 25)
2. Feed the open end of the blood reservoir tube into the left opening (viewed from above) of the vaginal insert (see Fig. 26).
3. Insert the tube into the opening as far as it will go.
4. Ensure the firm fit of the tube.
5. Check the correct fit (airtight) of the uterus (red) on the vaginal insert (see Fig. 18).
6. Start pumping up the uterus using the inflation bulb. Ensure that the circumference is increasing evenly and centrally.
7. In order to contract the uterus, let air out via the outlet valve.
8. Press the outlet valve button until sufficient air has escaped to achieve the desired characteristics of the uterus.
9. Before starting the training session, connect the phantom fasteners of the abdominal wall and the vaginal insert.
10. The blood supply and contraction of the uterus (depending on the desired training scenario) can now be controlled from outside (position the blood reservoir so that the tube is not under tension to avoid it slipping out).

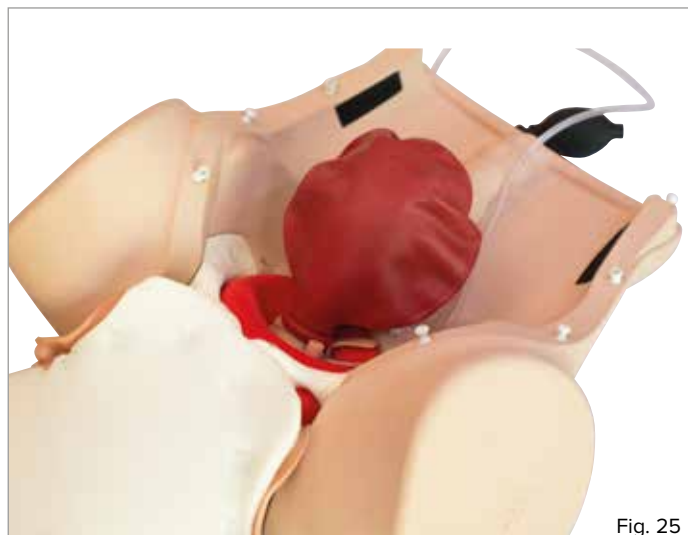


Fig. 25

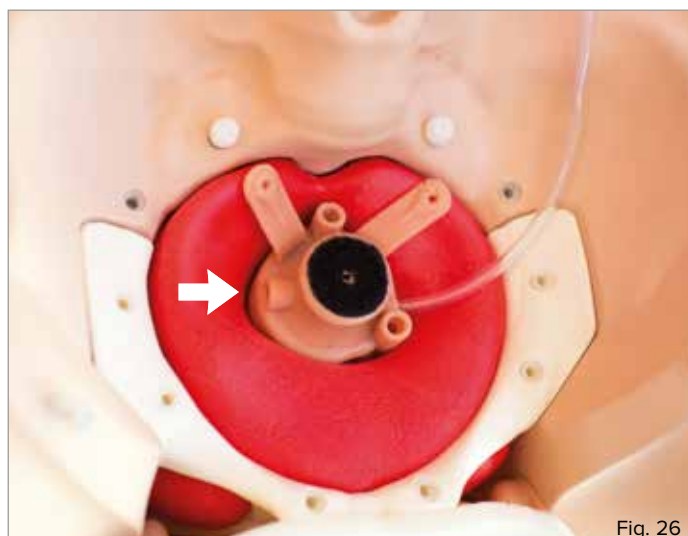


Fig. 26



### Note:

As a possible intervention measure, catheterization (CH 14 max.) of the urinary bladder can also be indicated.

# PPH TRAINER P97 / PPH TRAINER P97-MODULE

## Bleeding Due to a Vaginal Rupture

A vaginal rupture is a childbirth injury that can lead to increased blood loss. This must be recognized and, in real-life cases, treated with the appropriate wound care.

In the case of the training scenario, the blood flow can be stopped by the assistant once the trainee has theoretically described the appropriate intervention measures.

1. Remove the abdominal wall by unfastening the phantom connectors (the phantom connectors under the vaginal opening can remain fastened; see Fig. 25).
2. Feed the open end of the blood reservoir tube into the upper right opening (viewed from above, see Fig. 27) of the vaginal insert.
3. Insert the tube into the opening as far as it will go.
4. Ensure the firm fit of the tube.
5. Before starting the training session, connect the phantom fasteners of the abdominal wall and the vaginal insert.
6. The blood supply can now be controlled from outside (position the blood reservoir so that the tube is not under tension to avoid it slipping out).

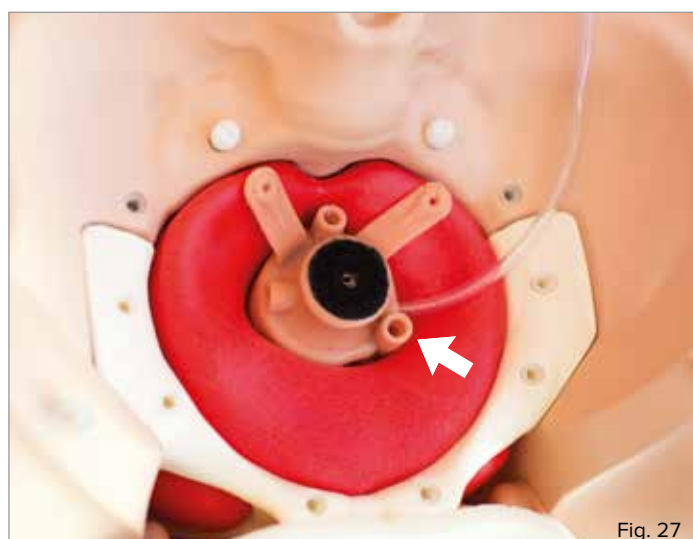


Fig. 27

## Bleeding Due to a Cervical Rupture

A cervical rupture is a childbirth injury that can lead to increased blood loss. This must be recognized and, in real-life cases, treated with the appropriate wound care. In the case of the training scenario, the blood flow can be stopped by the assistant once the trainee has theoretically described the appropriate intervention measures.

1. Remove the abdominal wall by unfastening the phantom connectors (the phantom connectors under the vaginal opening can remain fastened; see Fig. 25).
2. Feed the open end of the blood reservoir tube into the lower middle opening (viewed from above, see Fig. 28) of the vaginal insert.
3. Insert the tube into the opening as far as it will go.
4. Ensure the firm fit of the tube.
5. Before starting the training session, connect the phantom fasteners of the abdominal wall and the vaginal insert.
6. The blood supply and contraction of the uterus (depending on the desired training scenario) can now be controlled from outside (position the blood reservoir so that the tube is not under tension to avoid it slipping out).

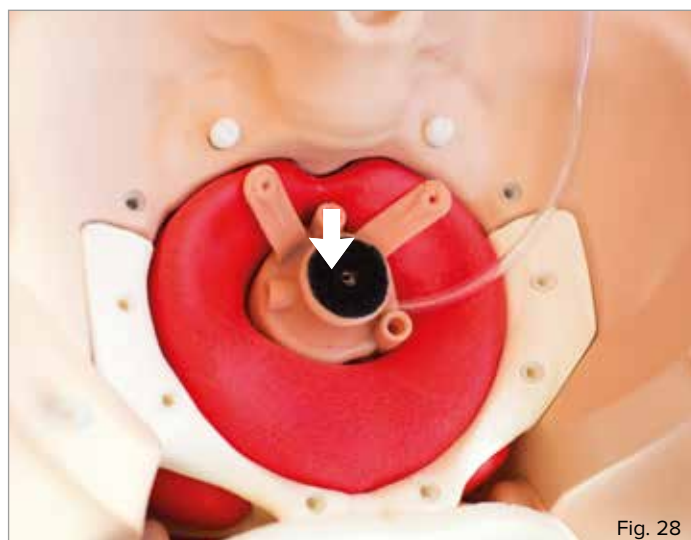


Fig. 28

## › SETTING THE VOLUME AND SPEED OF BLOOD LOSS



**Note:**

The volume and speed of blood loss are controlled centrally regardless of the choice of bleeding point.

There is usually some postpartum bleeding after the birth. It is primarily the blood volume that determines whether it is considered as a normal case or a complication. Correct estimation of the blood volume by the trainee is a crucial skill that must be learned and practiced. The PPH Trainer-Module provides the possibility to control the blood volume using the volume scale on the blood reservoir bag. The speed can be adjusted manually using the closure clamp.

1. Fill the blood bag with the desired volume of artificial blood as described in the section „Filling the Blood Reservoir.“
2. Open the closure clamp completely (see Fig. 29) for the maximum outflow of blood (800 ml/min; maximum bleeding time for 1500 ml blood = approx. 1.5 min).
3. Monitor the fill level of the blood reservoir bag to check the blood loss volume.
4. Refill the artificial blood accordingly to guarantee continuous blood flow.



Fig. 29

## › CLEANING AND CARE

The surfaces of the trainer can be cleaned with a damp cloth.

After using artificial blood, please rinse thoroughly with clean water until no more colored residue can be seen.

The vaginal unit can be rinsed under running water.

When doing so, make sure that the foam backing of the abdominal skin does not come into contact with water.

The pelvic insert and the core of the uterus are also foam parts. Please keep these away from water and moisture as well.

Please ensure that all the parts are dry before being put away.



**Note:**

Please do not use detergents containing solvents, as these could damage the surface.

Labelling and marking the surface should be avoided, as this can lead to permanent discoloration.

# PPH TRAINER P97 / PPH TRAINER P97-MODULE

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## > TECHNICAL DATA

Dimensions of the PPH Trainer P97 + base unit (excluding stand): Trainer (HxWxD) 24.2 x 52 x 44 cm

Dimensions of the PPH Trainer P97-Module (excluding stand): Trainer (HxWxD) 20 x 32 x 44 cm

Weight of the PPH Trainer P97 + base unit: 5.2 kg

Weight of the PPH Trainer P97-Module: 1.8 kg

Operating temperature: 0°C to +30°C

Storage temperature: -10°C to +40°C

## > ORDER LIST

Art. No.	Replacement parts and consumables
1021572	Pack of 10 blood concentrates (10 x 250 ml)
1021573	Pack of 5 replacement blood reservoir bags
1021574	Pack of 10 replacement placentas
1021577	Replacement abdominal wall with vaginal unit
1021576	Uterus for PPH Trainer
1021578	Pelvic foam for PPH Trainer

## > IMPRINT



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