



Gaumard[®]
Simulators for Health Care Education

NOELLE[®] S550.250/S551.250/
S550.100.250
Maternal Birthing Simulator
User Guide

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1. Introduction

1.1 Specifications

NOELLE

- Weight:
 - › NOELLE: 54 lbs (24.5 kg)
- Length: 5'8" inches (172 cm)
- Power Supply:
 - › Power input: 100-240 VAC, 50/60 Hz, 500 ma/ 50 VA
 - › Power output: 12 VDC/ 2 A/ 24VA

- Weight:
 - › Birthing baby: 2 lbs (0.9 kg)
- Length:
 - › Birthing baby: 16.5" (41.91 cm)

Virtual Monitor

- The virtual monitor is standard for the S550.100.250
- Wireless connectivity: Wireless 802.11 (ad-hoc mode)

1.2 Care and Maintenance

WARNING: Damage caused by misuse is not covered by your warranty. It is critical to understand and comply with the following guidelines.

WARNING: The lubricants and other accessories provided are for use with the accompanying patient simulator only. The lubricants and other accessories are not suitable for human use or medical treatment/diagnosis and should never be used for such purposes.

General

- Ball point pens, ink, and markers permanently stain the skin.
- Do not wrap this or any other Gaumard product in newsprint.
- Marks made with ballpoint pens, ink or marker cannot be removed.
- Replacement parts are available from Gaumard Scientific or from your Distributor

IV Arm

- Only use Gaumard's provided simulated blood. Any other simulated blood containing sugar or any additive may cause blockage and/or interruption of the vasculature system.
- The use of needles larger than 22 gauge will reduce the lifetime of the lower arms' skin and veins.
- Always purge with clean water and then drain the vein reservoirs at the end of the simulation session. Doing so will retard the formation of mold and prevent clogging of the system.
- We recommend flushing veins with 70:30 solution of clean water to isopropyl alcohol (IPA) at least once per month to prolong the life of the vasculature.
- When the arm skin and/or veins require replacement, refer to the "Consumables" section of this guide. For more information regarding the replacement of veins and other consumable items please contact customer service.

Operating Conditions

- The simulator will only power on when connected to the AC power supply.
- Operating temperature: 50°-95° F (10°-35° C)
- Humidity: 5%-95% (non-condensing)

WARNING: To avoid damage to the simulator, please store and ship it in the clear poly bag provided.

Storage Conditions

- Store Simulator in a cool, dry place. Extended storage above 85 degrees Fahrenheit (29 Celsius) will cause the simulator to soften and slowly warp
- Humidity: 40%-60% (non-condensing)
- Do not stack or store heavy materials on top of the carton.

Procedures

- Do not attempt to intubate without lubricating the airway adjunct with **silicone oil** lubricant. Failure to lubricate the device will make intubation very difficult and is likely to result in damage to the simulator.
- When simulating drug administration via endotracheal tube, providers must use an empty syringe. Passing liquids into the trachea or esophagus may cause internal damage.
- Mouth to mouth resuscitation without a barrier device is not recommended, as it will contaminate the airway.
- Treat the simulator with the same precautions that would be used with a **real** patient.
- Always keep clear of the birthing mechanism while the system is on.
- Never operate the birthing mechanism without the tummy cover in place.

Cleaning

- The simulator should be cleaned with a cloth dampened with diluted liquid dish washing soap.
- Remove all traces of any lubricant.
- Do not clean with harsh abrasives.
- Do not use povidone iodine on the simulator.
- Dry thoroughly.
- The simulator is “splash-proof” but not water-proof. Do not submerge or allow water to enter the interior of the simulator.

Birth Canal Maintenance

- Ball point pens, ink and markers permanently stain the birth canal insert.
 - Do not wrap this or any other Gaumard product in newsprint.
 - The birth canal insert can be cleaned with a mild solution of soap and water. After cleaning, dust with talcum powder.
 - Store the spare birth canal in a cool, dry location.
 - Always lubricate the birth canal with silicone oil lubricant prior to delivery.
- Do not store the fetus inside the abdomen.

2. Getting Started

2.1 Overview

The NOELLE S550.100.250 teaching system permits students to appreciate the complete birthing experience from the onset of labor, to delivery, and treatment of the mother.

Airway

- Oral and nasal intubation
- Use an ET tube or LMA

Appearance

- Light skin tone is the standard simulator color; medium or dark is available at no extra cost.

Breathing

- Bilateral lung expansion with realistic chest rise.
- Accommodates assisted ventilations.
- Ventilation is measured and logged.

Circulation

- Bilateral carotid, brachial and radial pulses.
- Chest compressions are measured and logged.

Simulator

- Articulating body.
- Delivering mechanism.

Venous Access

- Bilateral venous network in forearms.
- Bilateral quadriceps and deltoid intramuscular injection sites.

2.2 Terminology

Facilitator

The person conducting the simulation; an instructor or lab staff member.

Provider

A person participating in the simulation as a healthcare provider.

2.3 Birthing Package

Check List

- 48 hour postpartum uterine assembly
- Abdomen cover with speaker attached
- Articulating birthing fetus
- Automatic birthing mechanism
- Birthing fetus face skin
- Carrying bag for neonate
- Inflatable cushion for Leopold Maneuvers
- IV filling kit
- NOELLE head and torso assembly
- Neck brace
- OMNI® 2 Tablet (tablet, charger, USB cable, Quick Start Guide)
- Postpartum hemorrhage kit
- Power supply
- Replacement Veins Set
- One Silicone lubricant
- Talcum powder
- Two vulva insert for episiotomy repair
- One birth canal
- Two mechanical adaptors
- One placenta with fragments
- Two umbilical cords
- One umbilicus
- Two Umbilical clamps
- User Guide

3. Equipment Setup

3.1 Overview

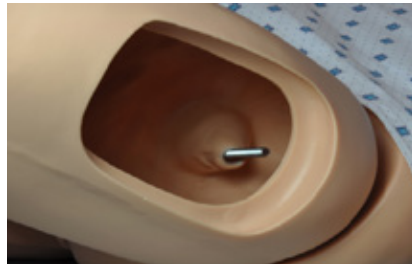
NOELLE is shipped partially assembled. The birthing fetus is fully assembled. Perform the following steps as part of the first install process.

Leg Assembly

1. Place NOELLE on a flat surface.

2. Remove the abdominal cover.

3. Remove the wing nuts, washers and springs from bolts on hips.



4. Remove IM site from each leg and slide bolt through hole.

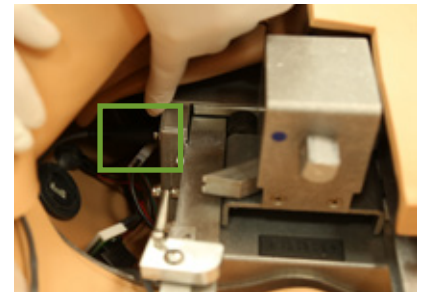
5. Reach through the IM site and attach to the bolt the washer, spring, second washer and lastly the wing nut.



6. Tighten the wing nut until the spring is compressed slightly.

Fetal Heart Rate Speaker

Connect the speaker cable, exiting NOELLE's abdominal cover, to the right side of the birthing mechanism.



Power Supply

Connect the power supply to the power input located on NOELLE's right side, and then connect the power supply to the wall outlet.



Always operate NOELLE with the power supply connected.

Connection OMNI® 2

OMNI® 2 controls NOELLE responses with the touch of a button.

Noelle can be operated using a wired connection. Please refer to the OMNI 2 user guide to set up a wired connection.

Follow the steps below to connect to OMNI® 2:

1. Turn on OMNI® 2 by pressing and holding the ON button on the right side of the tablet.

2. Select “Allow” to turn on Bluetooth for the tablet.



3. A startup screen is shown while OMNI® 2 is detecting the simulator features.

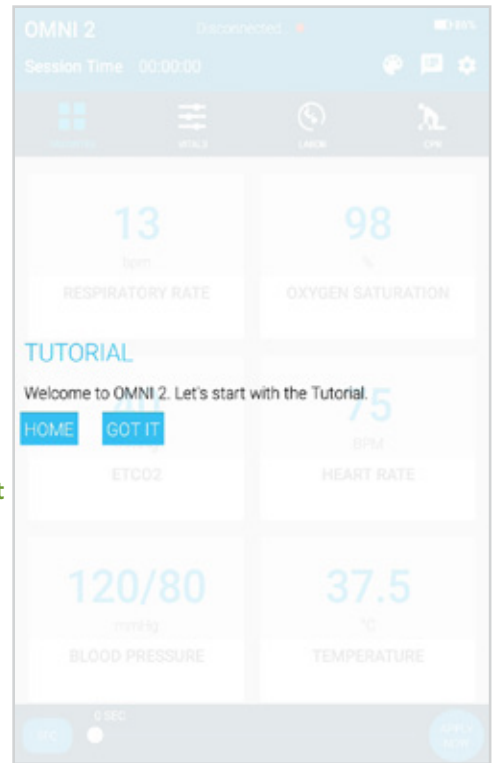


- Run through the on-screen tutorial for a brief overview of OMNI® 2's features.

Move onto the next steps in the Tutorial by selecting "GOT IT".

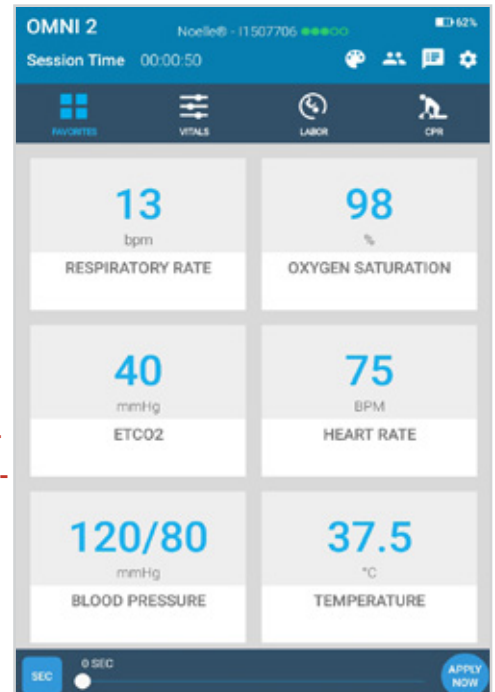
Exit the Tutorial at any time by selecting "HOME".

Please note that you have to go through the tutorial once or it will continue to appear at start-up.



After the tutorial, OMNI® 2 will automatically proceed to the Favorites Page and establish a connection to NOELLE.

WARNING: Do not connect NOELLE or OMNI® 2 to a computer. LAN network or unauthorized diagnostic equipment. Doing so will cause serious damage to the equipment.



4. Using OMNI® 2

4.1 Main Screen

OMNI® 2 opens at the Favorites Page upon start up.



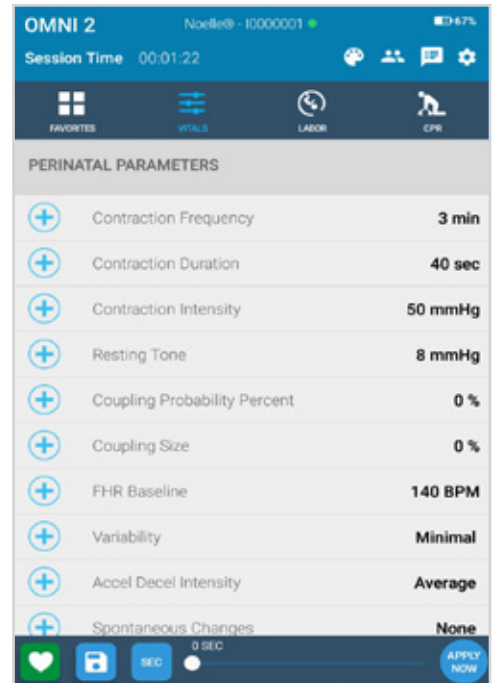
4.2 Perinatal Parameters

Change the fetal vital signs in the Vitals Page. Observe the changes on the optional Virtual Monitor. Find all the parameters in the Vitals Page.

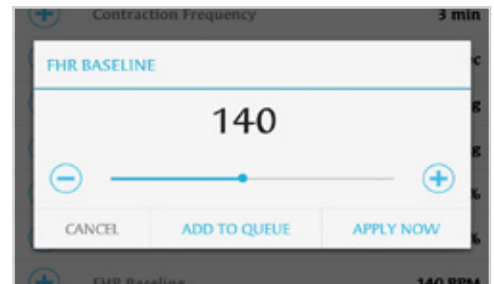


For more information on how to use the Virtual Monitor, please refer to the OMNI® 2 User Guide.

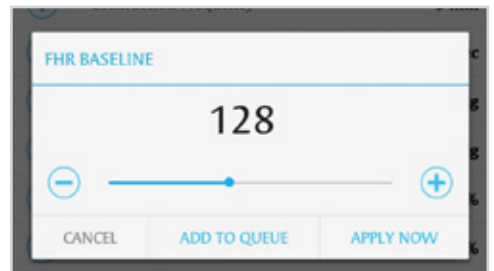
In order to change one of these parameters, follow the steps below:



1. Tap on a vital sign.



2. Adjust the value utilizing the +/- icons or the slider dot.

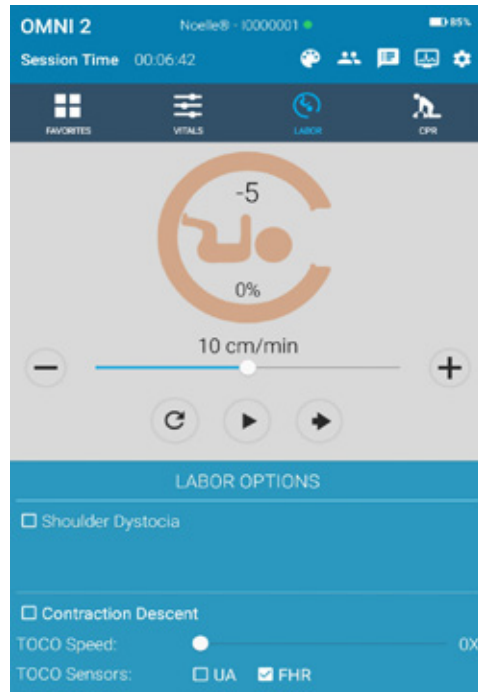


3. Select "APPLY NOW".



4.3 Labor Page

Carry out and monitor a delivery. Enable or disable shoulder dystocia and turtle signs during delivery.



Actions

Make changes to the delivery on the fly using the buttons.

Buttons	Function
	Increase or Decrease the current labor duration
	Increase or Decrease the current labor duration
	Reset birthing mechanism to initial position
	Play the delivery
	Push to end
<input type="checkbox"/> Shoulder Dystocia	Activate or deactivate Shoulder Dystocia
	Generate Turtle Signs

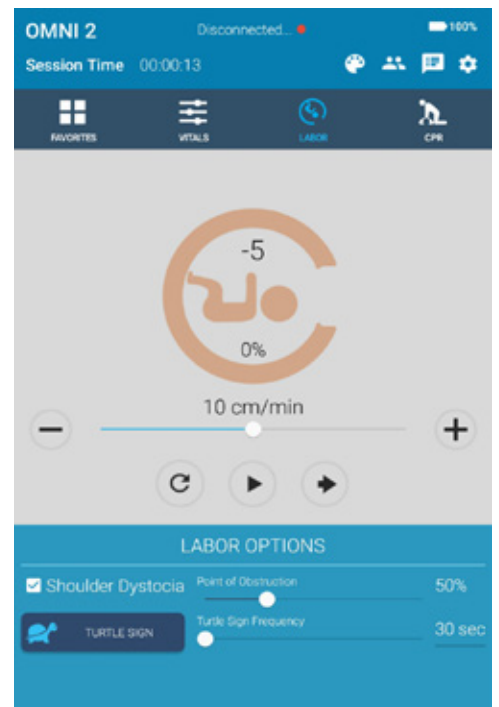
Feedback Graphics

The diagram below is a representation of the delivery of the fetus through the birth canal. The percentage and the -5 values will change in correspondence to the movement of the motor.



Dystocia Menu

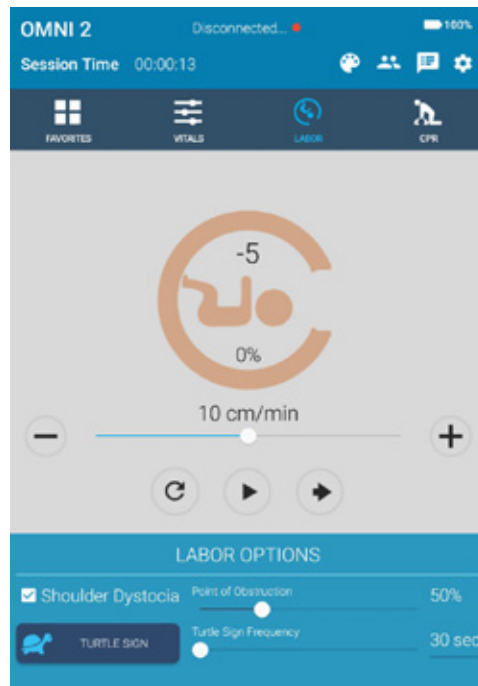
Check the Shoulder Dystocia option to activate the condition. When shoulder dystocia is checked, labor submenus will appear.



These options provide a quick way to generate turtle signs any-time.



The percentage specifies when the shoulder dystocia will be applied. When the percentage is set to 50%, the fetus will display a shoulder dystocia when it is about 50% through the labor cycle.



The timer on the right specifies how long until the next turtle sign. The slider dot can adjust the time anywhere between 30 to 120 seconds.



5. Working with NOELLE

5.1 Airway

Nasal and Oral Intubation

The nose is patent, permitting feeding exercises or passage of a nasal/tracheal catheter.

The trachea extends to the bronchi and lungs. Lungs expand normally permitting realistic chest rise.



Airway management techniques can be practiced on NOELLE including BVM, nasal/oral intubation, and suctioning. Endotracheal tubes, NG tubes and LMAs can be used. Use the Sellick maneuver if needed to bring the vocal folds into view.

Procedure	Recommended Device Size
Intubation (Blade size)	Miller 4 or MAC 3.5
LMA	Size 4
Nasal Intubation	8 Fr catheter
Oral Intubation	ETT 7.0 or 7.5 no cuff

WARNING: Do not introduce liquids when performing nasal and oral intubation. Doing so can permanently damage the system.
Always lubricate tubing prior to performing any nasal or oral intubation.

5.2 Breathing

Ventilation

Use a normal size adult BVM which will seal around the mouth and nose. The ribs have normal anatomic landmarks and the lungs expand normally permitting realistic chest rise.



WARNING: Do not perform mouth to mouth ventilation. Doing so may lead to molding of the airway. The airway itself cannot be sanitized or cleaned.

Ventilations are measured and logged.

For more information on the CPR Page, please refer to the OMNI® 2 User Guide.



Compression

Chest compressions are measured and logged, showing the instructor exactly how facilitators are performing.

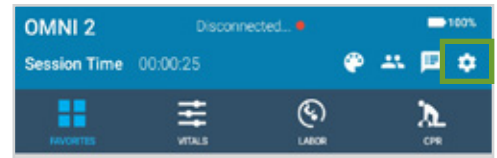


Calibration

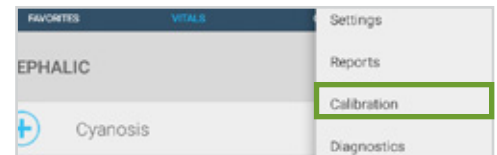
Before running a CPR scenario, please make sure to calibrate the compressions.

Perform the following to calibrate the compressions:

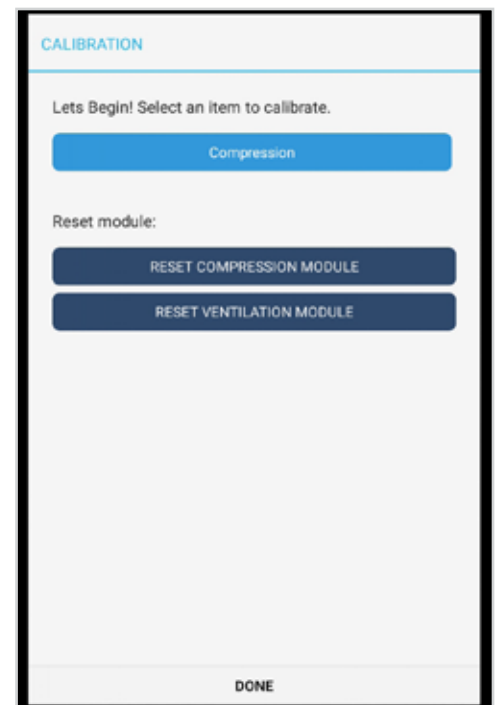
1. Tap the Gear on the upper-right of the screen



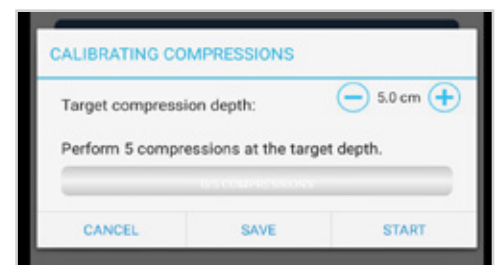
2. Select "Calibration"



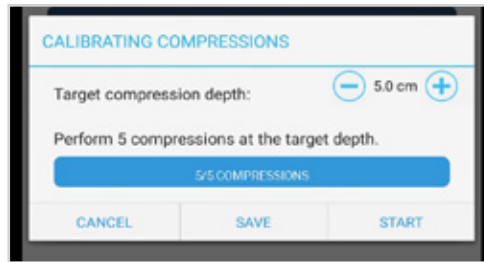
3. Select "Compression" once the Calibration window appears



4. Adjust the Target compression depth and tap "START"



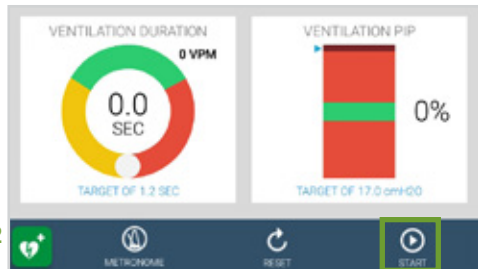
5. After completing 5 compressions click “CANCEL”, “SAVE”, or “START”



6. Tap “SAVE” if you are satisfied with the calibration and ready to do CPR.

7. Tap “Start” to begin a CPR session.

For more information about the CPR monitoring and reporting, refer to the OMNI® 2 User Guide.



5.3 Circulation

Bilateral Pulses

NOELLE's palpable pulses (bilateral carotid, brachial, radial) can be simulated by pumping the squeeze bulb located beneath NOELLE lower left arm.



Injection Site

The injection sites are located on the deltoids and quadriceps.

Bilateral IV Arm

NOELLE has bilateral IV training arms that can be used for bolus or intravenous infusions as well as for drawing fluids.



WARNING: Do not attempt to fill IV system without the drain connector in place.

Always leave the drain port connected when injecting fluids into the system.

Use only Gaumard's provided simulated blood. Any other simulated blood brand containing sugar or any additive may cause blockage and/or interruption of the vasculature.

Always flush the IV system with distilled water at the end of every simulation.

Instructions for Use

1. First, locate the fill syringe with tubing and the drain tube with pinch-clamp. Fill the syringe with the desired fluid -- water or simulated blood.



2. Connect the syringe with tubing to one port and the drain tube with clamp to the other port as shown.



3. Leave the drain tube clamp opened and depress the syringe until all air has been pushed from the IV system and fluid runs from the drain.



4. To simulate a patient with no accessible peripheral IV sites, connect only the syringe. Pull the plunger to create suction, which will collapse the veins. Disconnect the syringe tube from the arm port while maintaining suction. The port will seal, and the veins will remain collapsed.

5.4 Hospital Care Capabilities

Bandaging

The fingers and toes of NOELLE are separated to permit bandaging exercises. The surface of the simulator is smooth and resistant to water, oil and liniments.

Ear

The ear cavity may be filled with about 10 mL of fluid.

Eyes/Ophthalmologic Exercises

- Dilated left pupil
- The head has separately inset and removable eyes, permitting:
- Administration of orbital medicines, including drops/ointments into the conjunctival sac
- Removal of foreign bodies
- Eye irrigation

Teeth and Tongue

NOELLE is supplied with fixed upper and lower dentures. The tongue may be moved gently from side to side.

Hygienic Care

NOELLE's hair can be shampooed; bathing exercises and head draping may also be practiced.

Range of Movement

NOELLE's head and jaw articulate. The legs and arm articulate in a normal fashion.

5.5 Obstetrics

The NOELLE birthing mechanism offers the ability to demonstrate a variety of obstetric techniques including:

- Fetal palpation
- Vaginal delivery
- Shoulder dystocia
- Cesarean delivery
- Complete, frank and footling breech deliveries
- External version
- Cord prolapse
- Placenta previa
- Vacuum or forceps delivery

Automatic Birthing Mechanism and the OMNI® 2

NOELLE is supplied with an electromechanical system to automatically deliver the fetus using the OMNI® 2 tablet. The system, configured with the OMNI® 2, provides internal rotation, linear motion to “crowning”, and a second rotation to present the fetal shoulders parallel to the longitudinal axis of the vulva.

Leopold Maneuvers

Practice Leopold Maneuvers with NOELLE.

1. Retract the birthing mechanism and remove the articulating birthing baby.



2. Place elevating pillow within simulator.

3. Route the inflation bulb outside NOELLE through any space provided on the left side.



4. Inflate the elevating pillow.

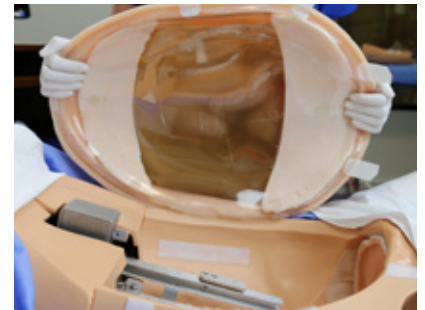
5. Lubricate the fetus and elevating pillow.
6. Place birthing fetus in the vertex, breech, or transverse position onto the elevating pillow and lift fetus anteriorly using squeeze bulb.



7. Secure the abdominal cover into place with the velcro.
8. Lift the fetus anteriorly using the squeeze bulb if necessary.
9. Conduct the four Leopold Maneuvers.

Optional Leopold Maneuvers

NOELLE has an optional silicone Leopold Maneuver abdominal cover. The fetus float freely inside an amniotic sack which provides tactile feedback and resistance when performing the Leopold Maneuvers or external version exercise.



WARNING: Always remove the cover at the end of the palpation exercise to prevent damage to the simulator. The weight of the palpation cover can add unnecessary stress to NOELLE's midsection if left installed for more than two hours.

To set up the Leopold Maneuver cover, simply secure the cover into place with the velcro. Perform the maneuvers on the silicone cover.



The fetus can be set up in Noelle's abdominal cavity and birthed for a scenario.

Please refer to the Normal Labor and Delivery Section to set up NOELLE for a birth.



Dilating Cervix

As the fetus proceeds down the birth canal it pushes against a simulated uterus/cervix. Students can measure birth descent and cervical dilation which may be used to plot the progress of labor.



Normal Labor and Delivery

To complete a normal delivery, follow the instructions below:

1. Remove the abdominal cover.
2. Lubricate the articulating birthing fetus.



WARNING: Always lubricate the baby and the birth canal prior to every delivery. Poor lubrication may damage the birth canal, fetus, and the birthing mechanism.

3. Lubricate the vulva and cervix internally and externally using silicone lubricant.



4. Attach the umbilical cord to the baby.



WARNING: Route the cord so that it does not bind in the mechanism. The umbilical cord can be wrapped around the fetal neck or coiled out of the way.

5. Attach the umbilicus to the placenta.



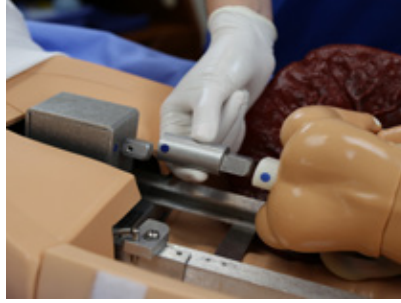
6. Lubricate the placenta and umbilicus.



7. Place the placenta against the abdominal wall.



8. Connect the cylindrical adapter, with blue markers aligned, to the automatic birthing mechanism.



9. Attach the fetus to the birthing mechanism.

Ensure that the marker of the automatic birthing mechanism aligns with the markers of the mechanical adapters and the birthing fetus.

10. Position the baby so that its head faces toward the left side of the simulator. This is ROA or right occipital position.



Placing the fetus in the right occipital anterior (ROA) position at the beginning of the simulation will result in a “nose down” crowning followed by shoulder rotation. Placing the fetus in the left occipital posterior (LOP) position will result in a “nose up” presentation.

Any other delivery position may be chosen; however, take care that the fetal shoulders are aligned with the long axis of the vulva insert.

WARNING: If the fetal shoulders are NOT aligned with the vulva, binding may occur.

11. Attach the Fetal Heart Rate Speaker to the side of the motor and put the abdominal cover in place.

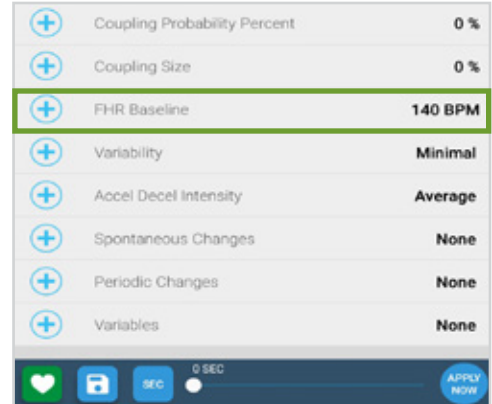


WARNING: Please make sure that the fetal heart rate speaker cable is out of the way of the birthing mechanism.

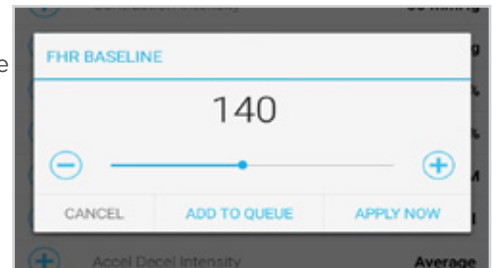
12. Connect OMNI® 2 to NOELLE.

Refer to the Equipment Set Up section to connect.

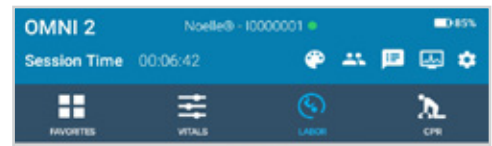
13. Select desired fetal heart rate using the OMNI® 2 Vitals Page by pressing + or - button or the slider, tap “Apply Now” to accept the value.



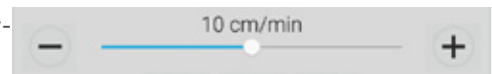
14. You may adjust the heart rate at any time during the delivery to simulate episodes of bradycardia or tachycardia.



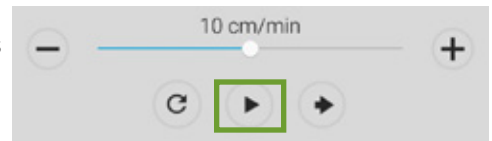
15. Navigate to the Labor Page.



16. Adjust the speed of the delivery by adjusting the cm/min either by tapping the +/- or with the slider button.

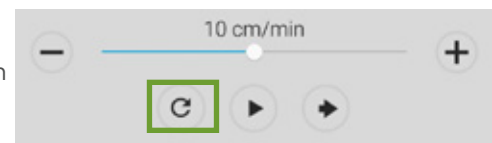


17. After confirming the settings for the labor, tap the Play button to begin the delivery.



The birthing cycle can be paused at any point and then resumed.

To return the birthing mechanism to its initial position, select the reset button.



Note that the fetus rotates internally as it moves forward after the head is delivered and before the shoulders are delivered.

In the event the birthing baby binds in the birth canal, the mechanism will pause and back up. If this occurs, remove the abdominal cover, PAUSE the birthing mechanism from the OMNI® 2. Disconnect the fetus from the labor motor and reset the labor motor. Start the delivery again.

During delivery, fetal heart tones can be heard by placing the bell of a conventional stethoscope on the abdomen.



Change the fetal heart rate using OMNI® 2 by accessing the Vitals Page.

The cervix dilates as the fetal head moves down the birth canal. Crowning of the fetal head can be seen.



Mouth and nose suctioning can be simulated.



External fetal rotation aligns shoulders with the longitudinal axis of the vulva.



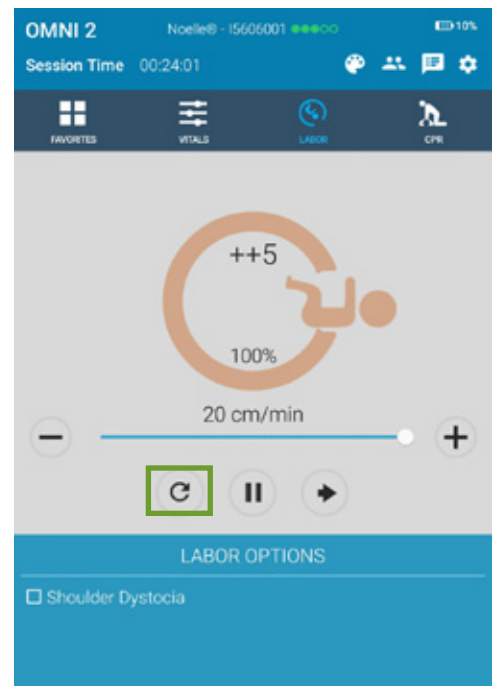
18. Deliver the fetus.



19. Practice umbilical cord clamping and cutting on the consumable cords.



20. Reset the labor motor.



21. Birth the placenta.

For more information on the placenta, please refer to Section 5.5 Placenta Delivery.



Vacuum-Assisted Delivery

Vacuum-assisted delivery may be practiced with the NOELLE simulator using a vacuum cup.

1. Begin the vacuum-assisted delivery by inserting the soft scalp over the skull of the birthing fetus.



Placing the soft scalp over the skull improves the vacuum seal between the fetal head and the vacuum.

2. Lubricate the fetus as described in the Normal Labor and Delivery section.
3. Connect NOELLE to OMNI® 2.
4. Select Play from the Labor page.



OMNI® 2 will load with predetermined settings. Fetal heart rate of 140 BPM, delivery speed of 10 cm.min and the dystocia feature off.

Activating the delivery mechanism will move the fetus down the birth canal.

5. Select the Pause button as soon as the cervix is fully dilated.

6. Use the manual vacuum pump to attach the cup to the skull and apply traction with each contraction.

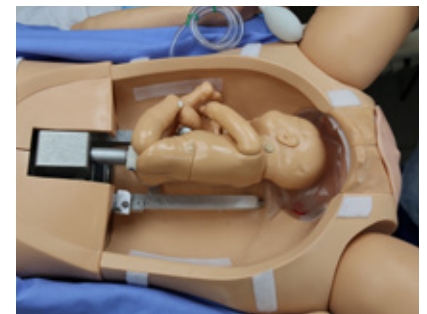


7. Await the next contraction that may be simulated by the OMNI® 2.
8. Select the play button, then the pause button again to move the fetus slightly down the birth canal.

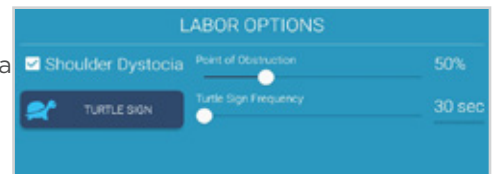
Shoulder Dystocia

Noelle may be used to practice the resolution of dystocia using episiotomy techniques, the McRobert's maneuver, suprapubic pressure, posterior arm sweep, or elbow-knee delivery.

1. To demonstrate shoulder dystocia, place the fetal baby in the ROA position.



2. Connect NOELLE to OMNI® 2.
3. Set the labor duration by pressing the “+” or “-” buttons.
4. Activate dystocia by tapping “Shoulder Dystocia”. Dystocia enables the “turtle signs”.



Activate or deactivate dystocia at any time during the delivery.

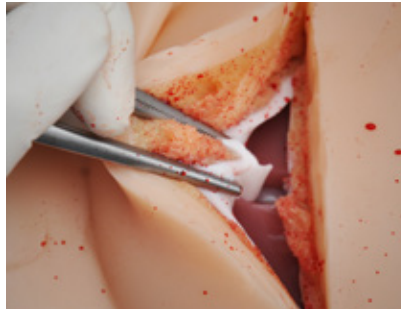
5. Students must use various maneuvers to deliver the baby.
6. If the fetus cannot be delivered, the Instructor can uncheck the Shoulder Dystocia box which will cause the fetus to resume the movement down the birth canal.

WARNING: Do not place the fetus in the LOA position as it will attempt to birth with its shoulders at right angles to the axis of the vulva causing undo stress on the delivery mechanism.

Optional Cesarean Delivery

Demonstrate a C-section using NOELLE. Remove the metal snaps just above the pubic bone and birth the baby between the stomach cover and the pubic bone. To complete this procedure follow the steps below.

1. Retract delivery mechanism.
2. Insert inflatable cushion and fetus.
3. Attach abdominal cover using the velcro.
4. Birth the neonate between the stomach cover and pubic bone.



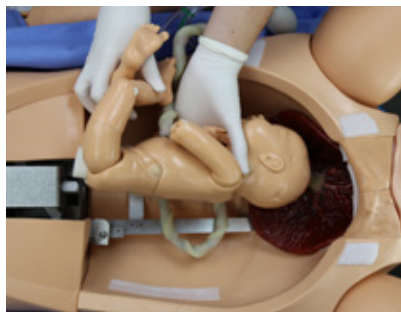
Prolapse of the Umbilical Cord

Simulate prolapse of the umbilical cord by positioning cord on a critical position and decreasing the fetal heart rate from the OMNI® 2 tablet.



Placenta Previa

To simulate placenta previa with NOELLE, place the placenta in the desired position to simulate the condition, with the maternal side against the uterine wall or the cervical os. Then place the fetus within the uterine cavity with the presenting part closest to the placenta.



WARNING: This is for demonstration only. Do not birth the fetus with the placenta covering the cervix opening.

Breech Birth

To simulate breech presentations with the Noelle:

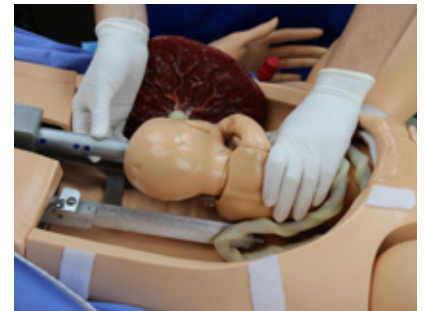
1. Fully retract the birthing mechanism.

2. Remove the fontanelle plug from the fetus.



3. Lubricate the fetus and birth canal.

4. Insert the birthing mechanism into the fetal head using two adapters.



Please note that only one adapter is used for a normal birth. Two adapters should be used for a breech delivery.

5. Place the fetal legs in either an extended position to simulate “foot-ing” delivery or retract the legs for a “frank” delivery.

6. Press “Play” in the Labor Page.

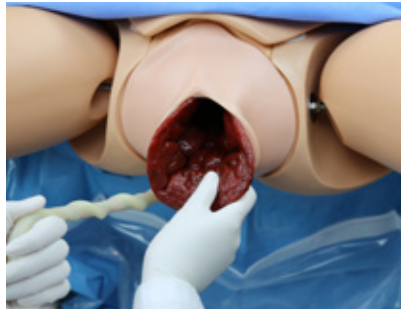
7. Deliver the fetus.



Placenta Delivery

1. Birth the placenta.

The placenta supplied with NOELLE may be positioned so that it births spontaneously, or requires either modest cord traction or manual removal.



In addition, note that the placenta is designed with two removable placental fragments. These fragments are attached to the body of the placenta with Velcro®.



You may reverse one or both fragments causing one or both to birth with the placenta or remain affixed to the uterine wall.



2. Inspect the placenta for retained fragments.

3. If retained fragments are noted, the student must retrieve them.



5.6 Postpartum Activity

Fundal Massage and Postpartum Hemorrhage

1. Retract the delivery mechanism and place the elevating cushion inside the abdominal cavity.
2. Attach the large postpartum uterine assembly to the proximal end of the vagina.



The postpartum uterine assembly consists of a thin outer uterine skin and a smaller, harder inner uterus. It also contains a filling tube to stream the simulated blood through the assembly and out the vulva. The white Velcro patch on the fundus may be used to position the uterus at various orientations within the abdominal cavity.

3. Use the squeeze bulb attached to the fundus to inflate the space between the two uteri, expanding the soft external skin sufficient to simulate a “boggy” uterine condition.
4. Lift the uterus anteriorly using the elevating pillow.
5. A syringe can be used to insert simulated blood to the post partum uterine assembly.
6. Attach the abdominal cover to NOELLE’s torso.

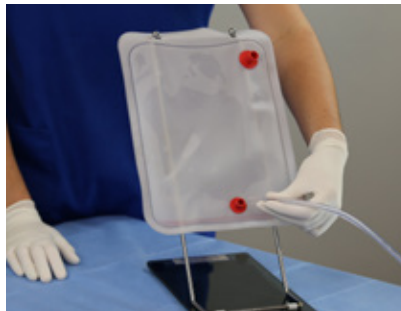


Additionally, the postpartum uterine assembly permits the continuous infusion of fluid using an external reservoir. Follow the instructions listed below to set up the external postpartum reservoir.

1. Hang the external reservoir on the stand.



2. Attach the filling tube to the bottom port of the external reservoir.



3. Connect the uterus to the external reservoir.



Ensure that the clamp is twisted closed before connecting the hoses.

WARNING: After every simulation, untwist the clamp to prevent damage to the tubing.



4. Fill up the external reservoir with simulated blood or water.



To vary the postpartum bleeding, attach the tube with squeeze bulb to the upper port of the external reservoir and depress the squeeze bulb.



Simulate pharmacologic interventions with NOELLE's bilateral injection sites.

Episiotomy Repair

Remove the fully dilated vulva used during delivery and select one of the two episiotomy repair modules. Velcro a repair module into place. Use a “000” size suture and small curved needle to repair the surgical incision or repair.



“000” sized sutures are recommended to extend the life of the repair modules.



6. Noelle Neonatal Care

This section is for the S550 package only.

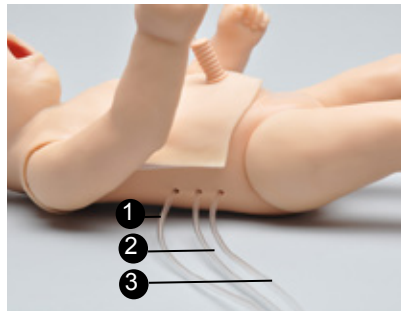
6.1 Overview

The full size neonate supplied with the S550 NOELLE is a resuscitation baby with:

- Patent umbilical cord
- Realistic airway with tongue, vocal folds, trachea, and esophagus
- Articulated head, neck, jaw, arms and legs
- Heart, lungs, ribs, stomach and liver
- Bilateral lung expansion with realistic chest rise

The filling and drainage tubes of PEDI Blue are located on the right side of the neonate.

- Tube ① - fill the umbilical cord system.
- Tube ② - drain the umbilical cord system.
- Tube ③ - drain gastric contents introduced orally.



Perform BVM or CPR

Conduct oral or nasal intubation plus suctioning. Bilateral lung expansion is perceived with realistic chest rise.

Practice BVM techniques using an “infant” sized mask having a thick seal. When intubating, use a Miller 1 blade and an uncuffed 2.5 mm endotracheal tube (ETT) with appropriate stylet.



WARNING: Before inserting ET, NP, or OP tubes always lubricate the distal end of the tube with provided lubricant. Failure to do so will damage the airway.

Nasogastric Tube Feeding

For added realism, fluids may be introduced via a nasogastric tube into the stomach reservoir. Use tube 3 to drain these contents.

Umbilical Cord

The umbilical cord remains patent for several hours after birth and may be used to infuse medications in a critically ill neonate. The neonate supplied with NOELLE has a patent umbilicus for use in such training.



Generate palpable umbilical pulses using the squeeze bulb.

Umbilical Catheterization

The umbilical cord can be filled with 2-3 cc of water using the syringe provided. Students can insert a lubricated umbilical catheter.

Directions for Use

1. Place the end of tube 2 into a drainage container and open the adjustable clamp.
2. Fill the fluid dispensing syringe with water.
3. Connect the syringe to tube 1 and release the water. Allow water to flow through the system and into the drainage container.
4. Once the water is seen draining, close the adjustable clamp.

For catheterization, use an umbilical catheter.

5. Perform umbilical catheterization exercises.

WARNING: Lubricate the distal tip of the catheter before inserting in umbilical cord.

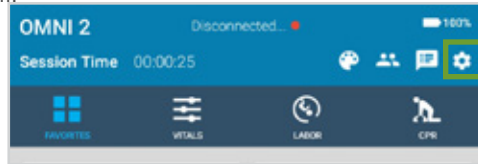


7. Virtual Monitor Setup

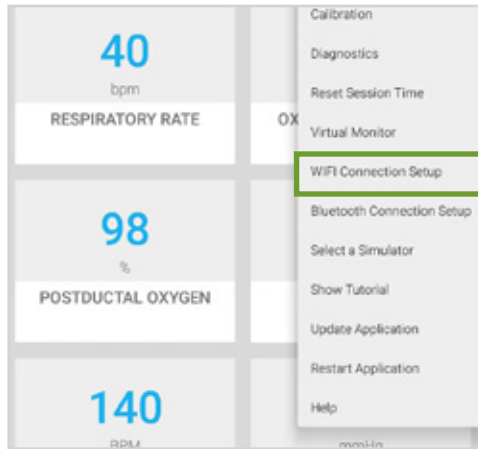
A patient virtual monitor is standard with Noelle S550.100.250. Follow the steps below in order to activate this feature:

1. Connect the router to the wall.

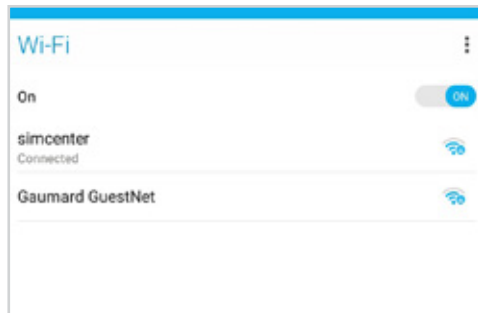
2. Tap the gear on the top right of the screen.



3. Select "WIFI Connection Setup".



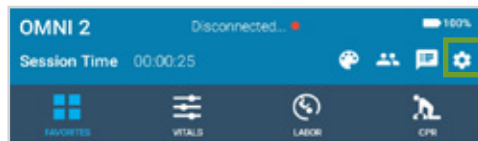
4. Connect to a wireless network.



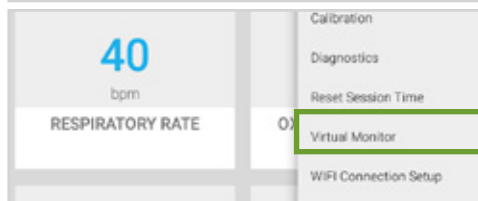
5. Exit the page by tapping the back button.



6. Tap the gear on the top right of the screen.



7. Select "Virtual Monitor".



Follow steps 9-10 if the activation code input was not performed correctly.

- Verify that the serial number corresponds to the manikin.



- Input a valid activation code.

The activation code is case-sensitive.

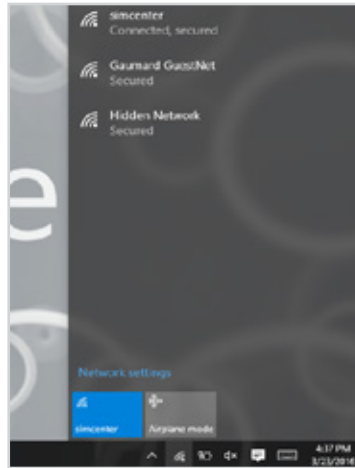
Note that the activation code here is just an example. It is not a valid code.

- Take note of the OMNI® IP address and OMNI® port number.

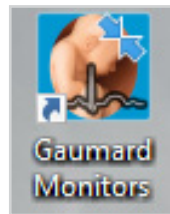
- Select "CONNECT".



- Ensure that the monitor is connected to the same network as OMNI® 2.

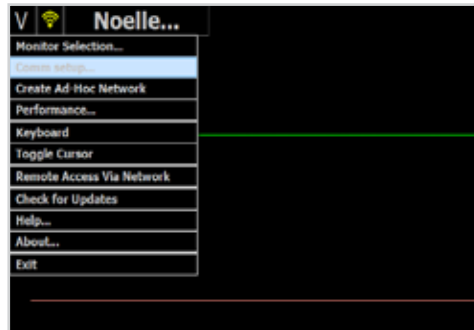


- Once WIFI connectivity is confirmed, open the Gaumard Monitors software.

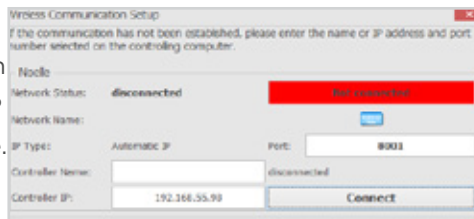


If connection is not established, please follow the steps below:

- Tap the V on the top left and then select “Comm Setup”.

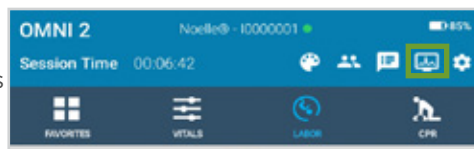


- Verify that the IP address in the “Wireless Communication Setup” matches the OMNI® IP and OMNI® Port noted before.



- Select “Connect”.

The Vital Signs Monitor icon will appear on the top right when it is connected.



Please refer to the OMNI® 2 User Guide for more information on using the Virtual Monitor.

8. Appendix

8.1 Consumables and Replacements

Selected Parts List

Contact Gaumard Scientific for a complete list of consumables and replacement parts and their prices.

Item	Type	Code
Birth Canal (Light, Medium, Dark)	Consumable	S550.100.971.(D/L/M)
Placenta with detachable fragments	Replacement	
Umbilical Cords (Set of 2)	Consumable	
Umbilical Cord Studs (Set of 2)	Consumable	
Oil-Based Silicone Lubricant	Consumable	
Episiotomy Repair (Light, Medium, Dark)	Consumable	
Power Supply	Replacement	S550.100.968
Replacement Veins Set	Consumable	S550.100.810
Arm Skin (Light, Medium, Dark)	Replacement	S550.100.813.(D/L/M)

8.2 Replacing the Veins

To replace the veins used in the lower arms, gather the following items:

- Replacement vein set
- Silicone oil
- Heat gun or blow dryer
- Hemostat (Optional)

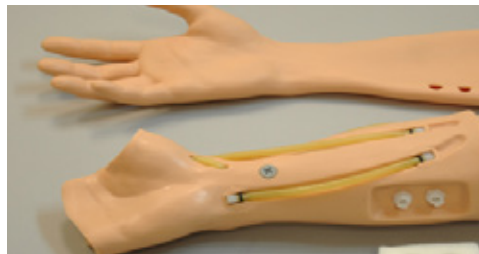
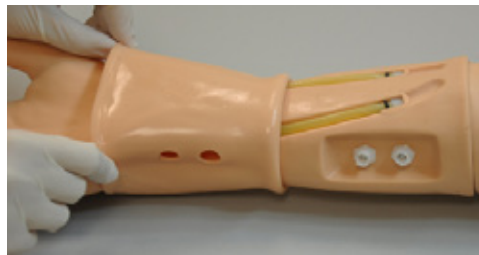
Replacement Instructions

1. Turn off the simulator.

2. Gently heat the arm skin.



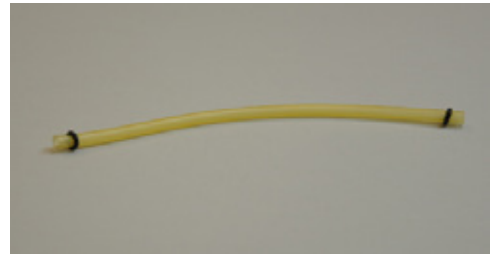
3. Pull back the skin from the lower arm and remove it completely.



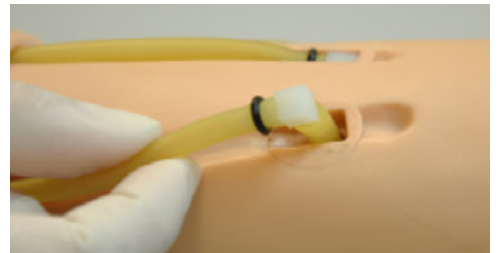
4. To replace the anterior veins of the arm, gently pull out the veins from each white connector.



- Remove both black rings on the tubes and place them on the replacement veins.



- Insert the replacement veins to each white connector, and secure the veins with the black rings.



- To replace the dorsal vein of the hand, gently pull out the vein from the white connectors.



- Once removed, attach one end of the replacement vein to one of white connectors.



- Feed this vein through the hole. You may use a hemostat to help you pull out the vein.

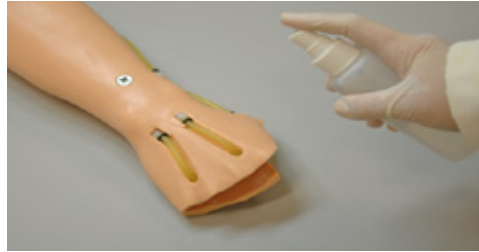


- Attach the other end of vein to the second white connector, and secure both ends of the vein with the black rings.

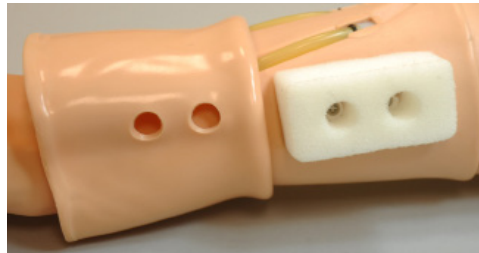
- Heat the skin.



12. Apply small amounts of silicone oil on the lower arm to aid the skin placement.



13. Place the skin over the hand. Stop half way and insert the foam covering the IV fill and drainage ports.



14. Pull the skin all the way up.



8.3 Troubleshooting

Communication/Power Issues

Communication with the simulator cannot be established

Controlling tablet is too far away from simulator	Minimize the distance between simulator and the tablet. Should not be over 10 meters away
More than one device is paired	Open Bluetooth Connection Setup. Select the Gear to the right and click “Forget” the unwanted connection.
Manikin is not paired	Disconnect the simulator from the power supply, disconnect OMNI Link (if applicable), turn off bluetooth on OMNI 2 tablet. Plug the simulator and OMNI Link back in and turn on bluetooth.
Power supply is not connected to simulator	Ensure that the power supply is connected to the simulator

Labor Motor

Labor motor is not descending or not resetting to initial position	Tap the Gear on the top right and select Calibration. Reset the labor motor from that menu
--	--

Miscellaneous Issues

CPR is not detected

Compression sensor is not calibrated	Tap the Gear on the top right and select Calibration. Calibrate the compressions
Ventilations are not detected	Tap the Gear on the top right and select Calibration. Reset the Ventilations sensor.

9. Warranty

9.1 Exclusive One-Year Limited Warranty

Gaumard warrants that if the accompanying Gaumard product proves to be defective in material or workmanship within one year from the date on which the product is shipped from Gaumard to the customer, Gaumard will, at Gaumard's option, repair or replace the Gaumard product.

- This limited warranty covers all defects in material and workmanship in the Gaumard product, except:
 - › Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product;
 - › Damage resulting from failure to properly maintain the Gaumard product in accordance with Gaumard product instructions, including failure to properly clean the Gaumard product; and
 - › Damage resulting from a repair or attempted repair of the Gaumard product by anyone other than Gaumard or a Gaumard representative.

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This limited warranty applies only to the first purchaser of the product and is not transferable. Any subsequent purchasers or users of the product acquire the product "as is" and this limited warranty does not apply.

This limited warranty applies only to the products manufactured and produced by Gaumard. This limited warranty does not apply to any products provided along with the Gaumard product that are manufactured by third parties. For example, third-party products such as computers (desktop, laptop, tablet, or handheld) and monitors (standard or touch-screen) are not covered by this limited warranty. Gaumard does not provide any warranty, express or implied, with respect to any third-party products. Defects in third-party products are covered exclusively by the warranty, if any, provided by the third-party.

- Any waiver or amendment of this warranty must be in writing and signed by an officer of Gaumard.
 - › In the event of a perceived defect in material or workmanship of the Gaumard product, the first purchaser must:
 - › Contact Gaumard and request authorization to return the Gaumard product. Do NOT return the Gaumard product to Gaumard without prior authorization.
 - › Upon receiving authorization from Gaumard, send the Gaumard product along with copies of (1) the original bill of sale or receipt and (2) this limited warranty document to Gaumard at 14700 SW 136 Street, Miami, FL, 33196-5691 USA.

If the necessary repairs to the Gaumard product are covered by this limited warranty, then the first purchaser will pay only the incidental expenses associated with the repair, including any shipping, handling, and related costs for sending the product to Gaumard and for sending the product back to the first purchaser. However, if the repairs are not covered by this limited warranty, then the first purchaser will be liable for all repair costs in addition to costs of shipping and handling.

9.2 Extended Warranty

In addition to the standard one year of coverage we offer a range of service plans through our Gaumard Cares program. For more information about Gaumard Cares service planes please contact customer service.

10. Contact Gaumard

10.1 Contacting Technical Support

Before contacting Technical Support you must:

1. Have the simulator's serial number
2. Have access to the simulator for possible troubleshooting as needed

Technical Support:

Email: support@gaumard.com

USA: 800-882-6655

INT: 01-305-971-3790

10.2 General Information

Sales and Customer Service:

E-mail: sales@gaumard.com

USA: 800-882-6655

INT: 01-305-971-3790

Fax: 305-667-6085

Post:

Gaumard Scientific
14700 SW 136 Street
Miami, FL 33196-5691
USA

Office Hours:

Monday-Friday, 8:30am - 4:30pm EST (GMT-5, -4 Summer Time)



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