Nasco 101-7130 Lite AXEL Patient Simulator with Speech Recognition Ability User Manual

Nasco
HEALTHCARE

Alex and Axel
101-7130 — Lite, 101-7140 — Plus,
101-7150 — Pro, 101-7210 — Axel
OPERATIONS MANUAL
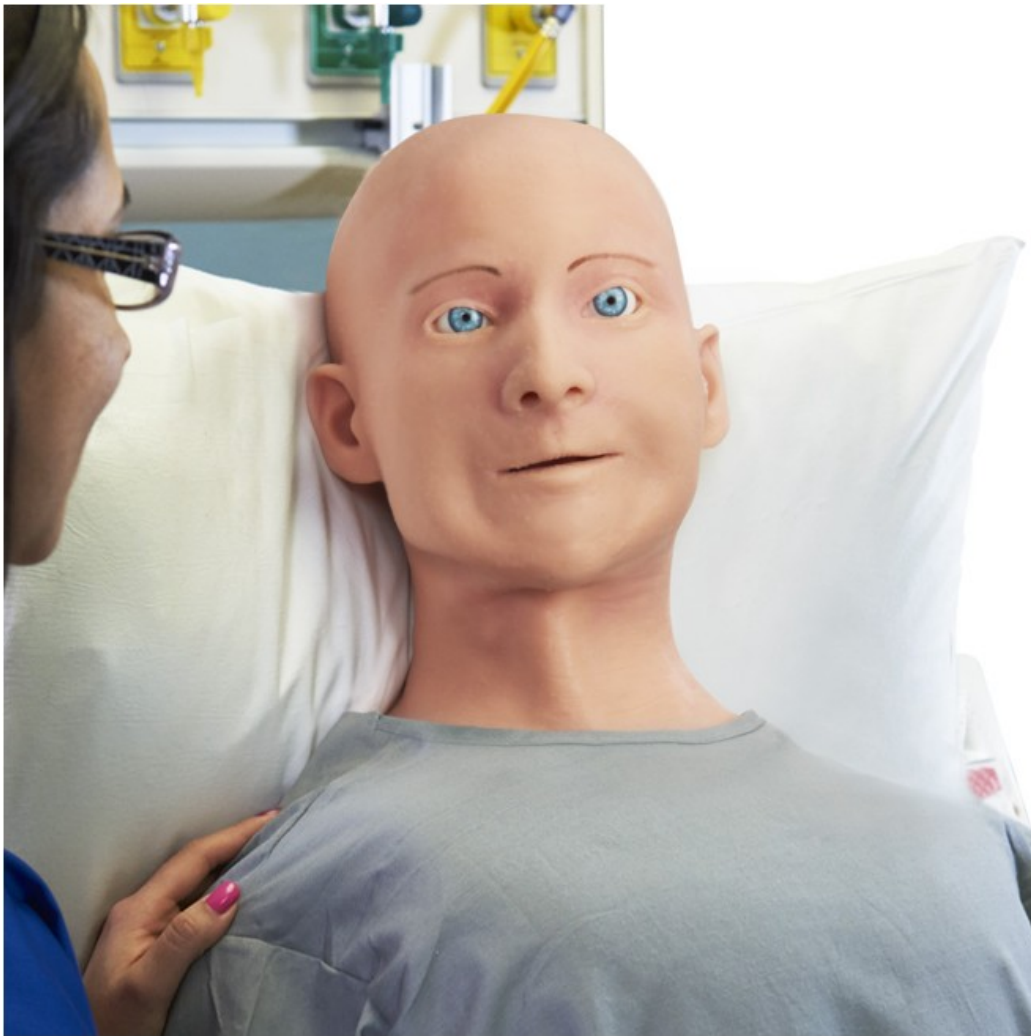
Contents

101-7130 Lite AXEL Patient Simulator with Speech Recognition Ability

The following instructions are appropriate for both ALEX and AXEL.
Some of the features will be dependent on your model that you have purchased.
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Introduction

About ALEX & AXEL
Thank you for purchasing a Nasco Healthcare simulator. Both ALEX and AXEL are completely assembled on-the-go patient simulators with built-in audio-visual solution. ALEX and AXEL will provide an interactive experience where learners can perform real-time assessments and clinical skills to meet educational requirements for current and future healthcare providers.

Time stamped log entries created for skills like

- Obtain blood pressure, including two-step blood pressure
- Feel pulses
- Listening to heart, lung and bowel sounds
- CPR –compression rate/depth & ventilations

ALEX and AXEL are equipped with abilities for intubation and observation of programmable spontaneous chest rise and fall for your respiratory needs.

As the instructor, you will be able to control vitals, configure and run scenarios, create measurable objectives, communicate to learner remotely via internal microphone and speakers, and even view and record video from the patient's perspective through the IrisCam™. All of this can be done in the cloud with a computer, tablet, or mobile phone. ALEX and AXEL must be connected to the Internet to be fully functional.

They can be connected via a wired connection (Ethernet) or a wireless connection (Wi-Fi®)

Tiers

Depending on which version you purchased, it will have different capabilities. If at any time, you would like to upgrade to a higher tier, please contact customer service.

Nasco HEALTHCARE	ALEX LITE	ALEX PLUS	ALEX PRO	AXEL
Light Skin Tone	101-7130	101-7140	101-7150	101-7210
Medium Skin Tone	101-7130M	101-7140M	101-7150M	101-7210M
Adult/Adolescent Full Body Patient Simulator	$	$$	$$$	$$
Speech Recognition (NLP)	Up to 250 questions per day	Up to 1000 questions per day	Unlimited	Manual microphone/ speaker allows facilitor and student to speak to each other.
Intubation – Oral, Nasal and Digital	Yes	Up to 250 questions a day	Yes	Yes
Palpable Pulses – Bilateral	Yes	Up to 1,000 questions a day	Yes	Yes
Carotid	Yes	Yes	Yes	Yes
Brachial	Yes	Yes	Yes	Yes
Radial	Yes	Yes	Yes	Yes
Dorsalis Pedis	Yes	Yes	Yes	Yes
Bilateral Blood Pressure (Manual & 2-step BP) with Smartscope & Smartcuff	Yes	Yes	Yes	Yes
Anterior Heart and Bowel Sounds with Smartscope	Yes	Yes	Yes	Yes
Anterior/Posterior Lung Sounds with Smartscope	Yes	Yes	Yes	Yes

Spontaneous Breathing – Synchronized with Respiratory Rate	Yes	Yes	Yes	Yes
BVM Ventilation	Yes	Yes	Yes	Yes
Patient Monitor with Vitals And Waveforms	Yes	Yes	Yes	Yes
HR, RR, ETCO2, SPO2, TEMP, BP, ECG & MAP	Yes	Yes	Yes	Yes
Virtual AED/Pacing & 12 Lead ECG	Not Available	Yes	Yes	Yes
CPR with Metrics Charting Depth, Rate & Ventilations	LOG	LIVE	LIVE	LIVE
Real-Time Remote Simulation Control	Yes	Yes	Yes	Yes
Scenarios Included with Customizable Patients	Yes	Yes	Yes	Yes
Measurable Objectives with Automated Assessment	Yes	Yes	Yes	Yes
Patient Orders	Yes	Yes	Yes	Yes
Model-Driven Physiology	Not Available	Not Available	Yes	Yes
Drug Treatments	Not Available	Not Available	Yes	Yes
Built-In Microphone and Speakers	Yes	Yes	Yes	Yes
Events, Objectives & Orders Log Entry Record	Yes	Yes	Yes	Yes
Communication Transcription Log Entry Record	Yes	Yes	Yes	Not Available
Iris Cam – Live Stream	Yes	Yes	Yes	Yes
Iris Cam – Recording	Not Available	1000 hours	Unlimited	1000 hours
Simulation Log Archive	60 days	1 year	5 years	1 year
Teamspace	Not Available	Not Available	Yes	Not Available
Cloud Connected Control	Yes	Yes	Yes	Yes
Virtual Patient	Not Available	Not Available	Yes	Not Available
Warranty	1 year	5 years	5 years	5 years
IV Arm – Optional	Optional	Optional	Optional	Optional
Female Conversion Kit – Optional	Optional	Optional	Optional	Optional

Specifications and Handling

Do not operate or store ALEX/AXEL at temperatures less than 40° F (4° C) or exceeding 104° F (40° C).

Do not operate ALEX/AXEL in a humidified environment (greater than 80% relative humidity) or introduce humidified air to the airway via ventilations. Doing so may result in electrical failures and/or mold formation in the airway.

Shipping Weight	67 lbs. (30 kg)
Shipping Dimensions	41″ H x 19.5″ W x 15″ D
ALEX/AXEL Weight	45 lbs. (20 kg)

List of Components

- ALEX/AXEL — Fully Assembled Patient Communication Simulator (101-7130/101-7140/101- 7150)

- SmartScope™ — Auscultation Device (101-8031)

- Control Tablet

- SmartScope™ Charging Cable

- Stethoscop

- SmartCuff™ Blood Pressure Cuff and Sensor (101-8032)
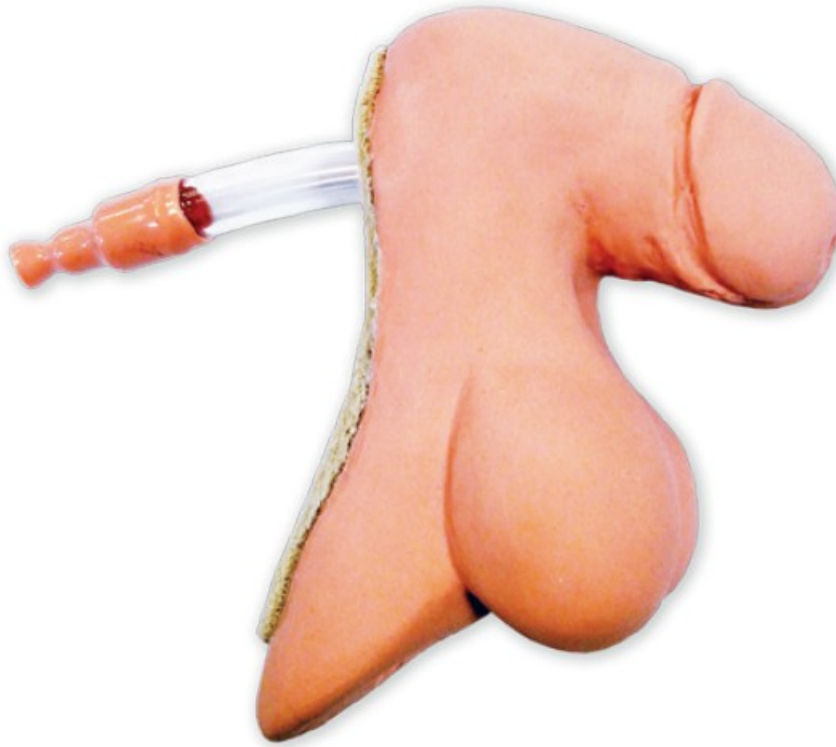
- Nasco Airway Lubricant (LF03644)

- External Power Supply

- Ethernet Cable

- Male Genitalia

Minimum System Requirements
Compatible Devices:

- Any HTML5 Compatible Device
    - Computers: Mac®/Windows® PC
    - Tablets: Android™/iPad®
    - Smartphones: Android™/iPhone®

Software Requirements:

- The current version of Google Chrome (Windows/macOS), or Microsoft Edge (Windows/macOS), or Mozilla Firefox (Windows) is recommended for optimal performance. Video capabilities are not currently supported with Apple® Safari.
- Internet Explorer is NOT currently supported.

Connection Requirements:

- Wired or wireless (including guest networks)
- Simulator Control: 0.1 Mb/s upload and download speeds
- Full Audio/Video: 2 Mb/s upload and download speeds

Getting Started

Setup & Power On

1. Remove from the shipping container.
    - ALEX/AXEL is fully assembled prior to shipping.
    - Retain case and packaging materials to use for transportation.

2. Plug the AC adapter into the wall.

    • An AC Adapter is provided with a plug for U.S. outlets but is rated for 110V/220V and 50/60 Hz and may be used with international power outlets if the appropriate plug is used along with the provided AC adapter. Non-U.S. plugs are not included.

3. Lift T-shirt to expose the access panel on left side.

4. Plug the AC connector into the power jack on the left side of the simulator that is labeled 'Power In'.

    • ALEX/AXEL is capable of running off its internal battery for up to 8 hours when fully charged.

    • The battery comes partially charged.

    • When the battery is low, a high-pitched beeping sound will be heard from torso every 10 seconds.

5. Power on by briefly pressing the button on the left side of the simulator.

    Note: If connecting ALEX/AXEL to your network via a wired Ethernet connection, connect the cable prior to powering on.

    • The power button will turn blue to indicate that it is booting up.

    • After less than 5 minutes, the light will turn green.

    Note: Do not touch any of the pulse sites or have any conductive material such as metals close to any of the pulse sites during start up. Doing so may make the pulses non-reactive until reset.

Power Off
Shut down ALEX/AXEL when not in use for extended periods of time, even while connected to AC power.

1. To power off, briefly press the power button on the left side of the torso.

    • The power button will turn blue while shutting down.

    • The shutdown procedure may take up to 5 minutes.

    • When the shutdown procedure is complete, the power button will turn off or turn flashing purple if it is connected to a power source.

2. If the standard shutdown procedure fails and you need to power off, you can perform an emergency power off by pressing the power button for more than 5 seconds.

    WARNING: Emergency power off may corrupt computers! Only use emergency power off if absolutely necessary.

Status Indicators
The LED on the power button indicates simulator status.
A solid light indicates that simulator is running off of battery.
A flashing light indicates that simulator is currently connected to a power outlet.

Power Button LED	Indicates ALEX/AXEL is
⬤	is off.
⬤	is off, but charging.
⬤	is booting up or shutting down.
⬤	is ready for use.
⬤	failed to start up.

Connect to a Local Network

ALEX/AXEL must be connected to a local network in order to operate properly. The connection can be made via a wired Ethernet connection or a Wi-Fi® connection. The preferred method is via a wired Ethernet connection to ensure reliability and obtain the highest quality AV (audio/video) streams.

A pre-configured tablet has been provided in order to simplify the connection setup procedures.

If any additional support is needed for connecting to a local network, email us at **alexhelp@nascohealthcare.com** or call 1-833-NASCOHC (627-2642).

We are happy to help you!

Connecting ALEX/AXEL Via Wired Connection

Note: You may experience better results if you connect the Ethernet cable prior to powering ALEX/AXEL on.

1. Connect an Ethernet cable to an active network port.

2. Connect the opposite end of the Ethernet cable to the network port on the left side of ALEX/AXEL.

Note: Prior to first use, you must activate the simulator. To activate the simulator, follow the instructions in the "Activation of ALEX/AXEL and Connecting ALEX/AXEL Via Wireless Connection – Bundled Tablet" section on next page.

Activation of ALEX/AXEL and Connecting via Wireless Connection – Bundled Tablet

Every ALEX/AXEL comes with a customized tablet that can be used to activate, connect to your wireless network, and to control your simulator. To activate and/or connect to your wireless network using the tablet, follow the instructions below:

1. Follow the procedures in the "Setup & Power On" section on page 7.

2. Turn on the tablet by holding down the power button on the right side of the tablet.

3. After the tablet shows the home screen, tap the Chrome icon to open the app.

4. Follow the instructions that are shown on the tablet to complete the connection procedure.

Connecting ALEX/AXEL Via Wireless Connection — Other Wi-Fi® Devices

1. Using any Wi-Fi® device, connect to simulator Wi-Fi® network just as you would to any other network.
   • The Wi-Fi® network will be named PCS-<SimID>- PCS-A0490 – SIM ID remains ANNNN where <SimID> is the Simulator ID located on the label on the right side of ALEX/AXEL or on the back of the "Getting Started with Your Simulator" guide.
   • You must unzip the zipper on the chest skin to be able to view the label.

• The Wi-Fi® password is printed on the label. Enter the password exactly as printed; it is case sensitive.

2. Using a web browser (Google Chrome™ or Mozilla Firefox is preferred), navigate to setup.pcs.ai.

3. Follow the prompts on the screen to finish connecting to the network.
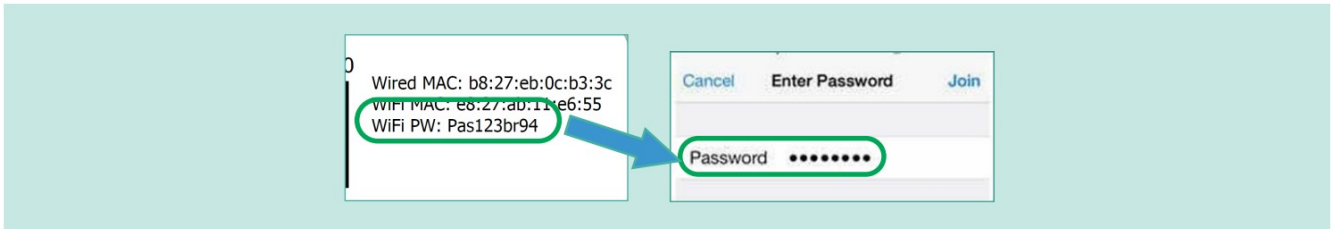
Open the Web App

ALEX/AXEL can be controlled via the Web App which is hosted in the cloud.

The URL for the Web App is **http://app.pcs.ai**.

This site can be accessed by any network connected device (computers, tablets, or smartphones).

You can be provided with a guided tour of the Web App at any time by clicking the 🔲 icon on the top right corner of the screen and selecting "Guided Tour."

External Microphone and Speakers

ALEX/AXEL can output his sound through external speakers or a headset. He can also receive audio input through an external microphone. This can be useful in a noisy setting. There are two standard 3.5 mm audio connections on the simulators access panel on his left side. Speakers and headphones should be plugged in to the upper jack, marked with the 🎧 symbol. Microphones may be connected to the lower jack, marked with the

🎤 symbol. ALEX/AXEL will automatically detect that an external audio device is connected and will output audio and/or receive audio from the external device(s) automatically.
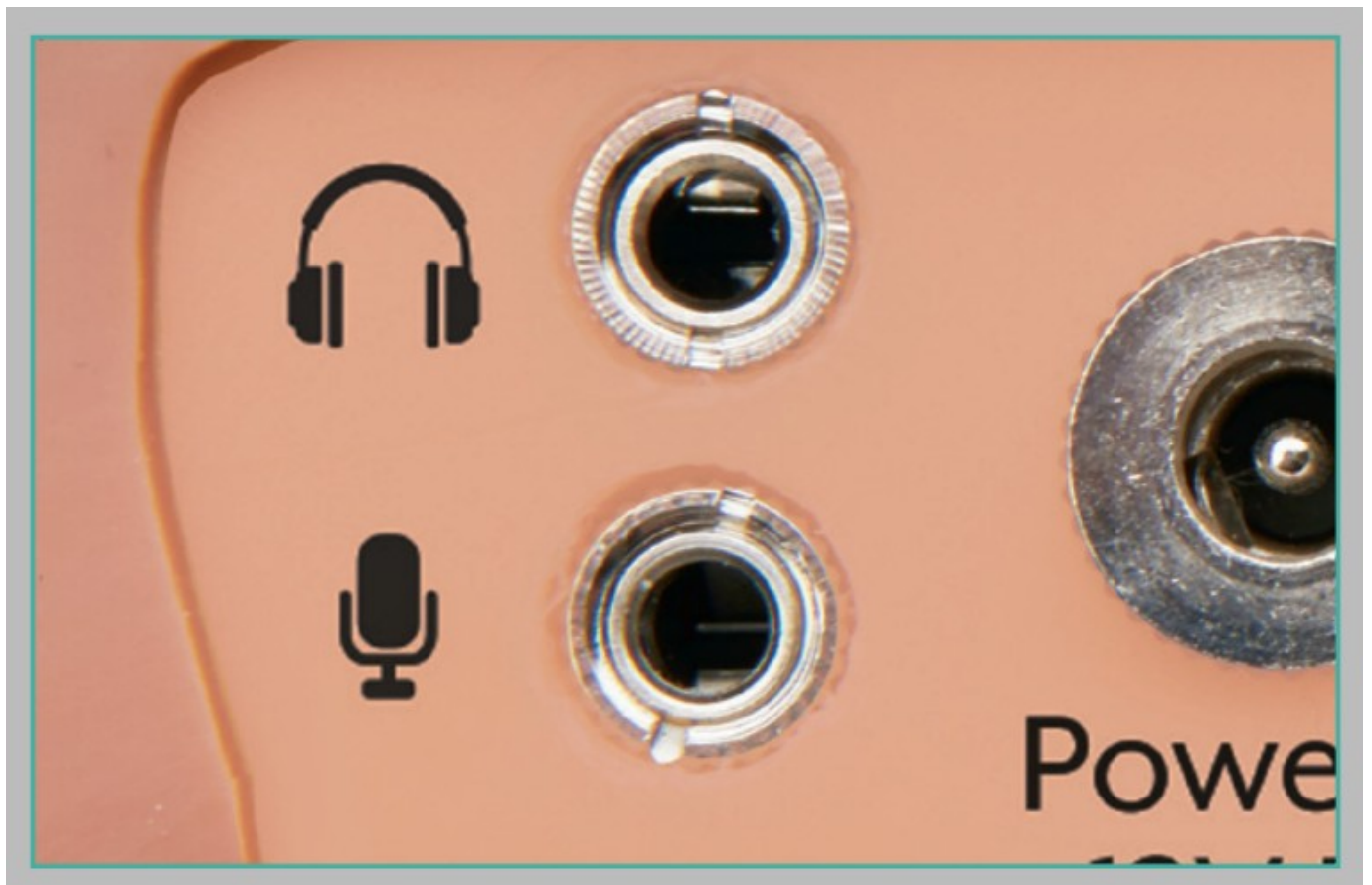
If using a headset that has audio input and output on the same device that uses a single 3.5 mm connection, a Y-Splitter adapter (not included) must be used to obtain simultaneous input and output. The type of connector should be female to 2 male.

General Use

SmartScope™
SmartScope™ allows you to hear body sounds coming from ALEX/AXEL as though the simulator were a real patient. The SmartScope™ is a white accessory with a red strap that can be attached to a stethoscope.

1. Audio/Output/Headphone Jack
2. Micro-USB Charging Port
3. LED Status Indicator
4. Power Button

Setting up SmartScope™

Note: When using a new SmartScope™, be sure to remove the tape that secures the activation flap.

The SmartScope™ should be attached so that either the diaphragm or the bell of the stethoscope is in contact with the top of the SmartScope™ (see picture at right).

You may use the included stethoscope or any other stethoscope that fits SmartScope™. The SmartScope™ is compatible with all stethoscopes that have a chest piece front/back thickness of 0.5″- 1.4″ (1.3-3.6 cm).

If sharing a stethoscope between users, clean the ear pieces using alcohol wipes between uses.
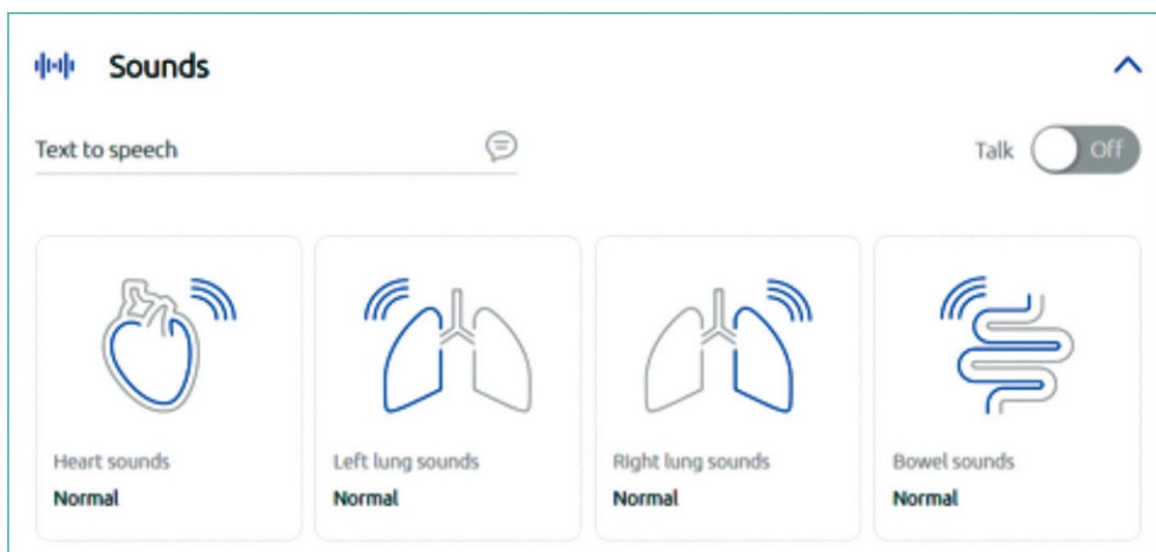
Using the SmartScope™: Sounds and Auscultation

You can hear body sounds coming from ALEX/AXEL using the SmartScope™.

ALEX/AXEL is capable of emitting heart, bowel, and lung sounds. The left and right lungs can be controlled independently.

The sounds can be changed using the Web App to simulate different conditions.

The following sound locations can be listened to on ALEX/AXEL:

Heart Sounds	Log Entries
Aortic (A)	Listened to heart sound at aortic area
Pulmonic (P)	Listened to heart sound at pulmonic area
Erb's point (E)	Listened to heart sound at Erb's point area
Tricuspid (T)	Listened to heart sound at tricuspid area
Mitral (M)	Listened to heart sound at mitral area
Additionally, both arms provide the Korotkoff sounds when checking blood pressure.	
Lung Sounds	
Right Upper Lobe (RUL)	Listened to lung sound at front/back RUL area
Right Middle Lobe (RML)	Listened to lung sound at front RML area
Right Lower Lobe (RLL)	Listened to lung sound at front/back RLL area
Left Upper Lobe (LUL)	Listened to lung sound at front/back LUL area
Left Lower Lobe (LLL)	Listened to lung sound at front/back LLL area
Bowel Sounds	
Aortic (B-A)	Listened to bowel sound at aortic area
Renal (B-R)	Listened to bowel sound at left/right renal area
Iliac (B-I)	Listened to bowel sound at left/right iliac area

To hear sounds, simply place the SmartScope™ on the anatomically appropriate auscultation sites and listen through the stethoscope ear pieces. Each time a site is auscultated, it will display on the log on the Web App.

| 00:50	👤	Heart sounds listened to at "Tricuspid" area

Blood Pressure Evaluation
ALEX/AXEL comes with SmartCuff™, a blood pressure cuff with an integrated sensor to simulate blood pressure measurement.
Place the blood pressure cuff on either arm and inflate as you would for a real patient.
The appropriate Korotkoff sounds can be heard when using the SmartCuff™ to auscultate the antecubital sites on the appropriate arm as the pressure in the blood pressure cuff changes.
The radial pulse strength will change as the pressure in the blood pressure cuff changes.
The blood pressure can be altered from the Web App.

BP SYSTOLIC	BP DIASTOLIC
132 mmHg	64 mmHg
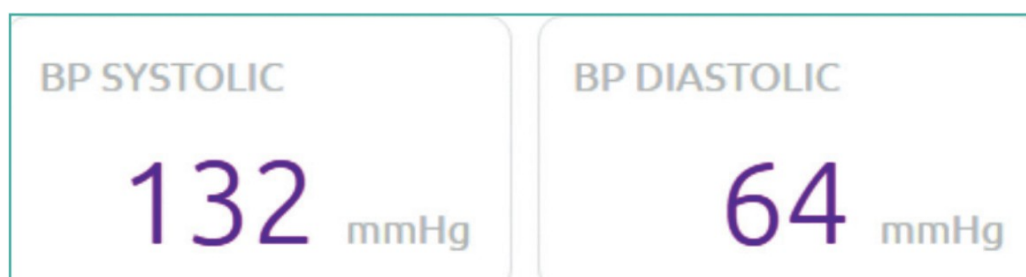
Note: The SmartCuff™ and SmartScope is not interchangeable between simulators. If you have multiple

ALEX/AXEL simulators, it is recommended to label each SmartCuff™ with the Simulator ID that it was purchased with.

Installing and Switching Genitalia

Male genitalia are included with ALEX/AXEL and female genitalia may be purchased as an upgrade kit.

The genitalia can be interchanged as needed.

To change genitalia, simply pull off the genitalia and replace it with the genitalia you would like to use.

When placing the genitalia, make sure that the tube coming off of the genitalia goes into the hole in the pelvis.

Performing Catheterization

ALEX/AXEL can be used to perform urinary catheterization on its male or optional female genitalia.

When cleaning and "sterilizing" the genitalia, use distilled water. Do not use iodine or other sterilization solutions as they may stain the simulator.

Lubricate the catheter with a water-based lubricant prior to inserting the catheter.

You may use a size 14-18 Fr straight or Foley catheter. If using a Foley catheter, do not inflate the balloon with more than 15 cc of fluid. If more than 15 cc of fluid are used for inflation, the catheter will not move freely within the bladder.

Realistic resistance will be felt as the catheter passes from the urethra to the bladder.

An inflated Foley catheter will not be able to be retracted from the bladder while inflated. Forcefully trying to remove an inflated Foley catheter may result in damage to the simulator.

Always remove the catheter immediately after training. Leaving the catheter in place for extended periods may permanently damage both the catheter and the trainer.

When training is complete, remove the genitalia and allow the lubricant to air dry before storing.

Airway

ALEX/AXEL has an anatomically accurate airway that can be intubated and ventilated. When ventilated, ALEX/AXEL will demonstrate realistic chest and stomach rise to indicate ventilation performance.

The following procedures may be performed:

- Head Tilt/Chin Lift
- Jaw Thrust
- Bag-Valve-Mask Ventilation
- Orotracheal Intubation and Ventilation
- Nasopharyngeal Airway Insertion

ALEX/AXEL represents a 5 ft. 3″ (160 cm) male patient weighing approximately 120 lbs. (54 kg). Airway adjunct size selection can be guided by these parameters, with some exceptions. See the chart below for recommended sizes and clinical recommendations for a patient of ALEX AND AXEL's size. Some recommended sizes differ from the guidelines for a typical patient of this body type to ensure adequate fit and to minimize damage to the simulator.

Device	Recommended Size for Simulator	Guidelines for 5 ft. 3″ (160 cm) adult male weighing 120 lbs. (54 kg)
Endotracheal Tube	7.5 mm or 8.0 mm	8.5 mm
Macintosh Blade Laryngoscope	#3	#3
Miller Blade Laryngoscope	#2	#2
King LTS-D	#4	#4[1]
LMA	#5	#4[1]
Combitube	37 Fr or 41 Fr	37 Fr or 41 Fr[1]
iGel®	#4	#3 – #4[2]
Bag-Valve-Mask	Adult	Adult
Nasopharyngeal Airway	6 mm	6 mm[3]

[1]Manual of Emergency Airway Management by Ron M. Walls and Michael F. Murphy, published by Lippincott Williams & Wilkins. 2012
[2]iGel Information Sheet. Intersurgical© 2016.
[3]Roberts K, Whalley H, Bleetman A The nasopharyngeal airway: dispelling myths and establishing the facts Emergency Medicine Journal 2005;22:394-396.
Notes

- Do not use any airway adjuncts aside from the types and sizes recommended above. Using other airway adjuncts or sizes may damage the airway.
- The guidelines for a patient of ALEX and AXEL's body type indicated in the chart above are provided only as a point of reference. Clinical recommendations may differ by region.
- Do not use ALEX/AXEL for rescue breathing involving human contaminants.
- Prior to performing intubation, spray the airway device with Nasco Lubricant (included). Do not spray lubricant directly into airway.
- Do not introduce fluids into the airway. Doing so may damage the simulator.

Breathing
ALEX and AXEL's respiratory rate and pattern can be altered from the Web App. Changing the respiratory rate will alter the chest rise frequency.

ALEX/AXEL is capable of breathing properly when lying flat on its back, sitting up at 90°, or anywhere in between.

Pulses

ALEX/AXEL has 8 pulse locations:

- Left/Right Pedal
- Left/Right Radial
- Left/Right Brachial
- Left/Right Carotid

Pulses are activated when they are touched and are synchronized with the ECG rhythm specified in the Web App. Pulse strength varies by palpated site (e.g., carotid pulse is stronger than pedal) and systolic blood pressure.

Each time the pulses are checked, it is logged on the Web App.

CPR

You may perform chest compressions on ALEX/AXEL at any time to train on CPR.

When you begin chest compressions, the chest movement will temporarily stop until chest compressions are no longer being performed.

Once CPR is started, there will be a log entry that can be clicked to see data on chest compression rate and depth.
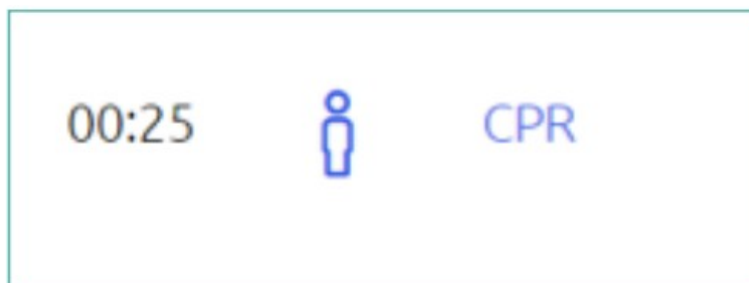
If ventilations are being performed during CPR, there will be a ventilation indicator shown on the same chart.

IrisCam™

ALEX/AXEL can stream and record live high definition video from the IrisCam™ in the right eye. More information on viewing and recording the video can be found on the ALEX help website. For more information, email us at alexhelp@nascohealthcare.com or call 1-833-NASCOHC (627-2642). We are happy to help you!

Speech and Audio Communication with ALEX and AXEL

Push to Talk

The instructor can speak into a microphone or webcam connected to the instructor device and the audio will be relayed by ALEX/AXEL to facilitate patient learner communication.

More information on "push to talk" can be found on the help website. For more information, email us at **alexhelp@nascohealthcare.com** or call 1-833-NASCOHC (627-2642). We are happy to help you!

Speaking with ALEX (only available on ALEX tiers)

1. Briefly touch your palm to ALEX's shoulder to activate his conversation abilities.

   • You will feel a vibration and a "be-beep" sound indicating that ALEX is now listening to you.

   • ALEX's conversation can be activated by touching either shoulder except the shoulder of the optional IV arm.

   • ALEX will continue listening to you until you touch your palm to the shoulder again or say "OK, thank you,

   ALEX." When the conversation is no longer active, you will hear a "be-boop" sound.

2. Ask ALEX questions as though you were communicating with a real patient.

3. ALEX will respond to you.

    • ALEX's responses will differ based on what type of patient is being simulated.

    • The questions that ALEX hears and the responses are logged on the ALEX Web App.
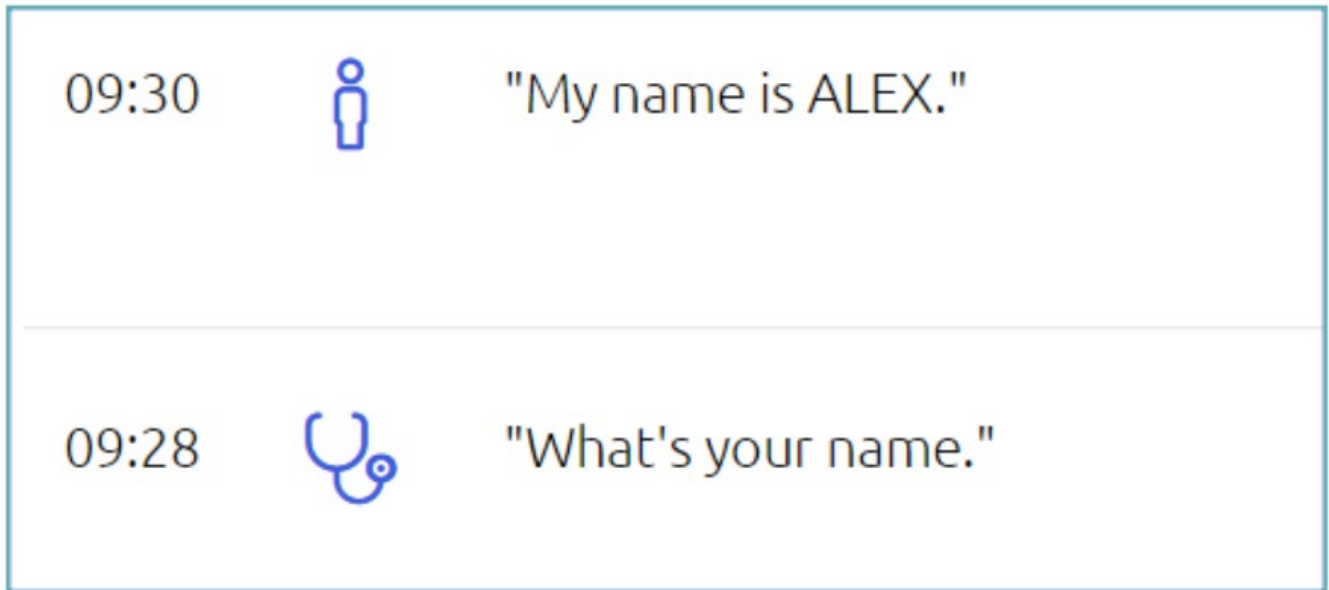
For more information about speaking with ALEX, review the "Conversations with ALEX" document, included with ALEX.

Text to Speech (only available on ALEX tiers)

The instructor can type phrases into the web app and ALEX will speak them to the trainee. More infor-mation on "text to speech" can be found on the help website. For more information, email us at **alexhelp@nascohealthcare.com** or call 1-833-NASCOHC (627-2642). We are happy to help you!

Care and Maintenance

Cleaning Instructions

Most cleaning can be performed with a soft cloth, mild soap, and warm water. Avoid over-washing face as it may remove some of the coloring.

Stubborn stains can be treated using Nasco Cleaner (not supplied; LF09919U, see Additional Supplies/Replacement Parts Section for ordering details) and a soft cloth.

Stains caused by makeup, ink, and newsprint are indelible and cannot be removed. Avoid contact with these substances and do not apply cosmetics or Betadine® solution to the manikin.

Avoid exposing ALEX/AXEL legs to any liquids.

Storage Instructions

When not in use, be sure that simulator is turned off and not plugged in after being fully charged.

Store in a cool, dry environment between 65° F to 85° F (15° C to 29° C). If storing below 65° F, place in a warmer environment for 15 minutes prior to use to ensure that the plastics do not get damaged.

Do not store with any fluids still in the optional IV arm. Flush the arm with water and drain the arm fully after each use and allow to air dry completely.

If storing for a long period of time (1 month or longer), remove the battery from the SmartCuff™. Failure to remove the battery during long term storage may cause the battery to leak and damage the SmartCuff™.

Preparing for Transportation

When transporting ALEX/AXEL, place the simulator in the included storage case. ALEX/AXEL fits into the storage case by placing the head at the top of the case with the supplied foam between the head and the case. The foam should be folded over the simulator's head and secured by folding the legs on top of the torso.
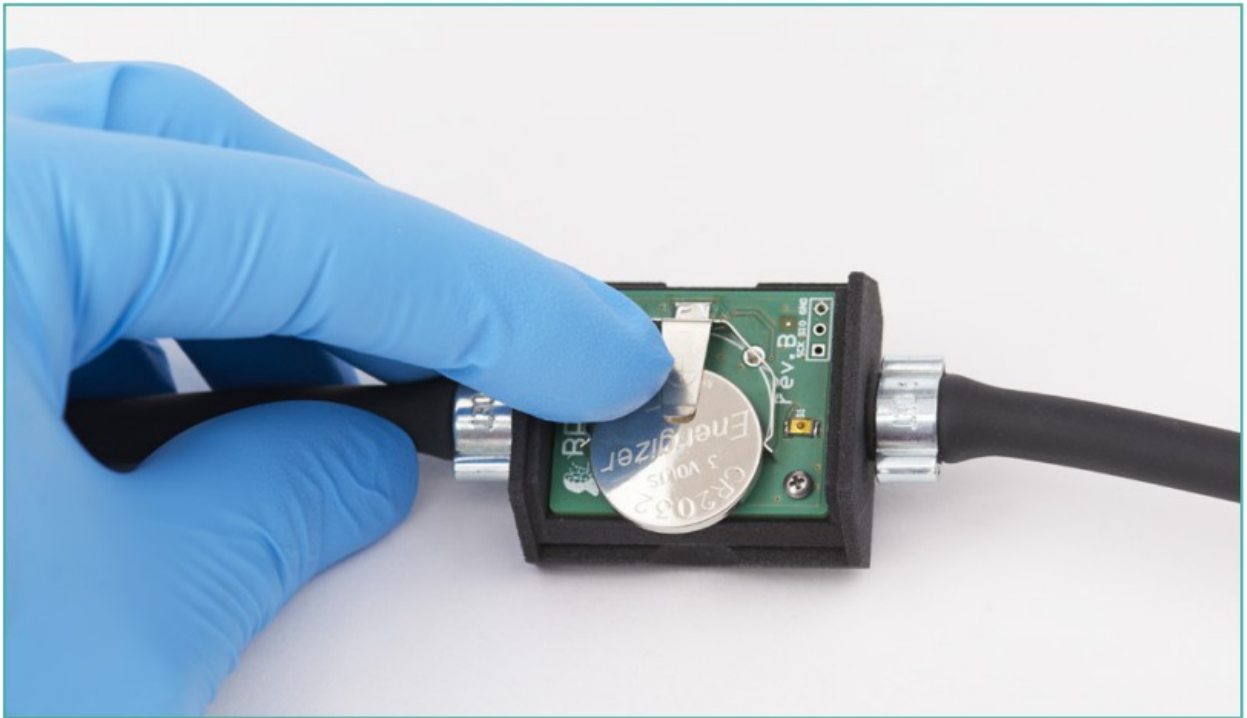
Replacing the SmartCuff™ Battery

The SmartCuff™ operates off of a replaceable CR2032 battery. With typical usage, the battery will last 3 to 6 months. To replace the battery:
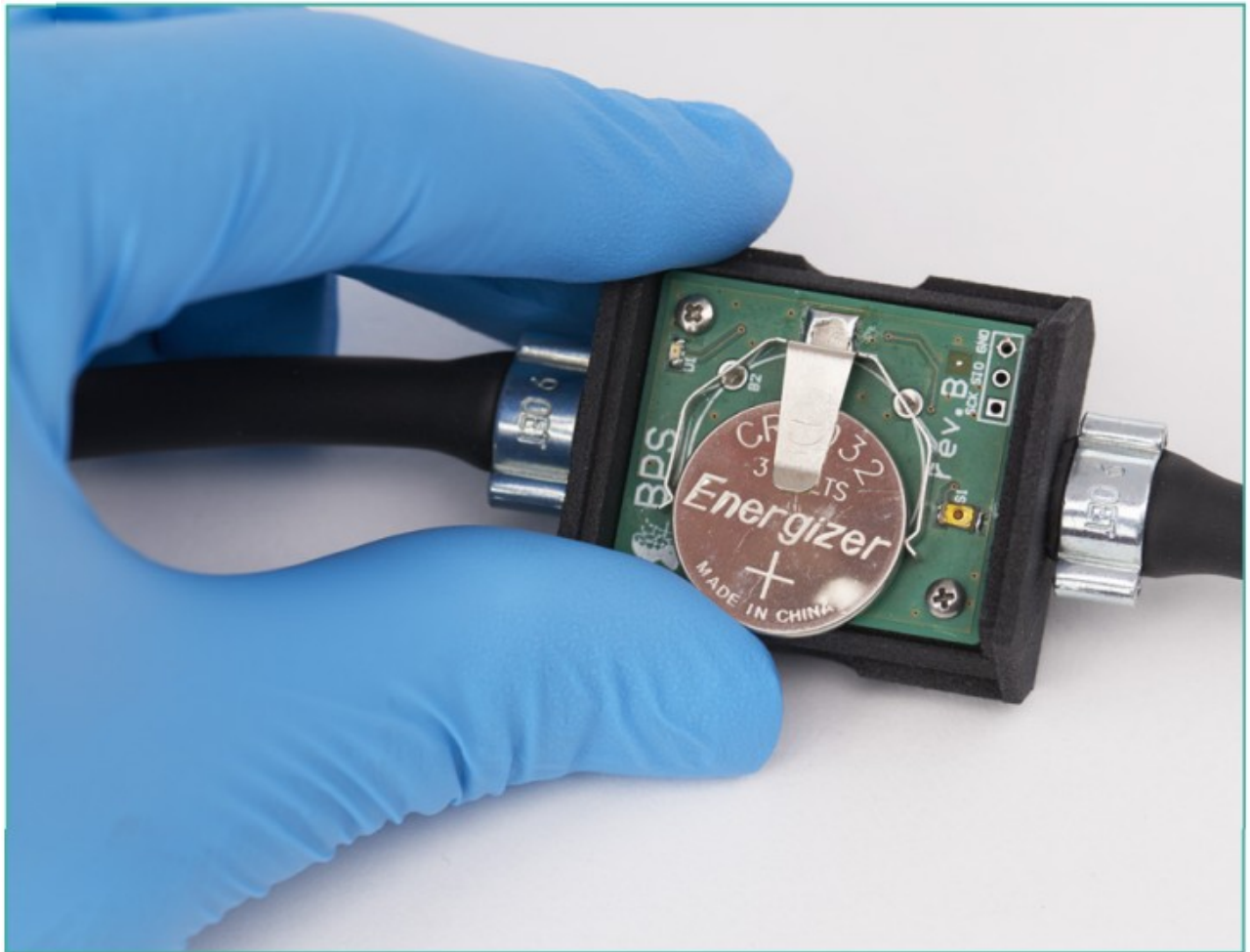
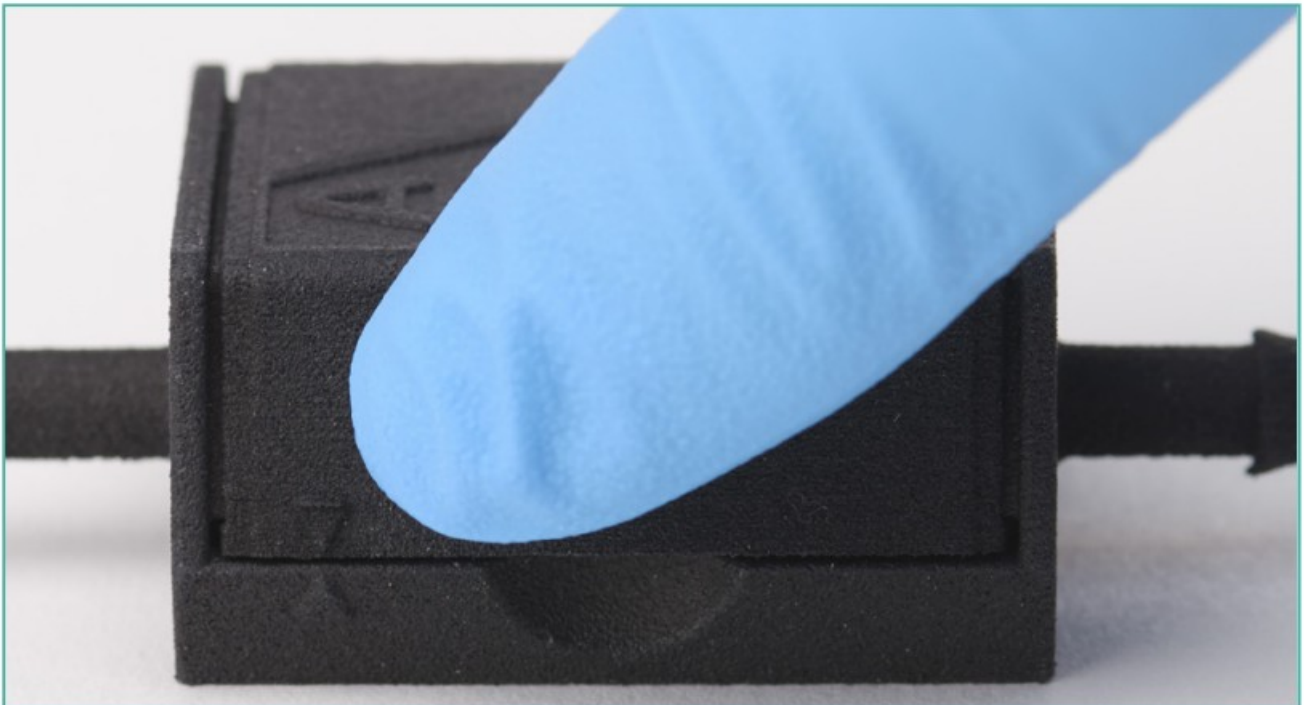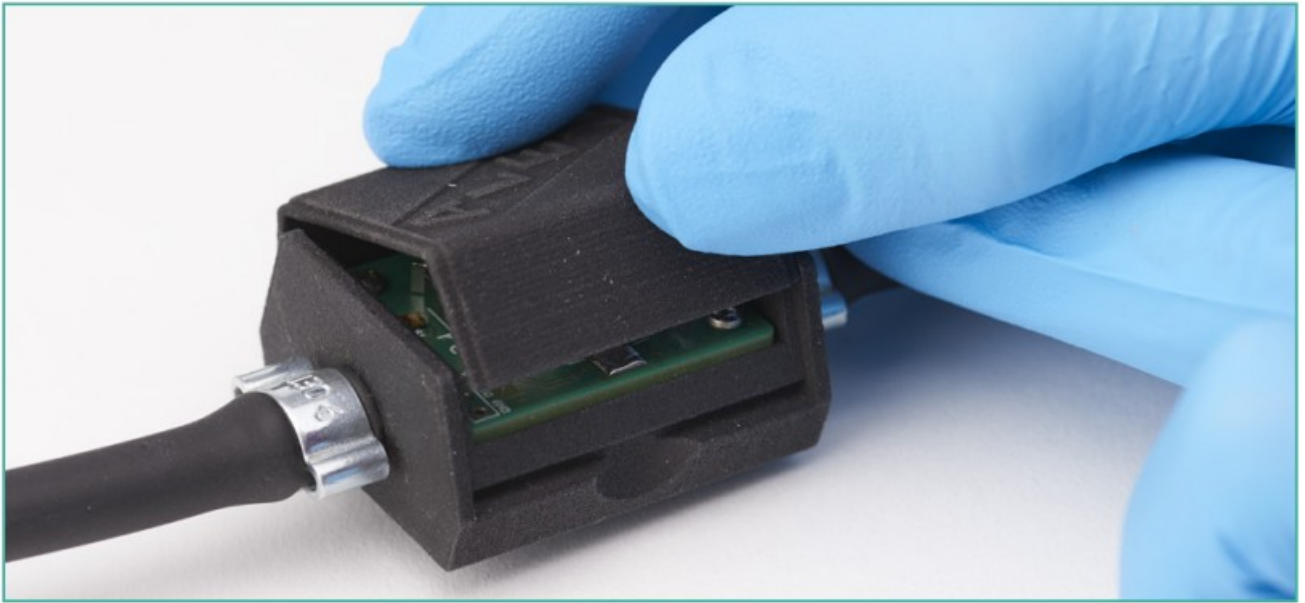1. Pry the top off of the SmartCuff™ sensor.

2. Remove the old battery from the SmartCuff™ sensor.

3. Insert the new battery with the positive side facing up.

4. Replace the lid of the SmartCuff™ sensor. Line up the arrows at the corner of the lid with the arrows on the base of the sensor to ensure proper orientation.

Replacing and Changing Arms
Right arm may be replaced in order to change from the standard ALEX/AXEL arm to an optional IV arm or to replace a damaged arm.
Removing a Standard Arm

1. Rotate right arm upwards and past his head until you encounter resistance.

2. Pull the arm out of the torso, being careful not to pull on the cables connecting the arm to the torso. Place the arm next to ALEX/AXEL.
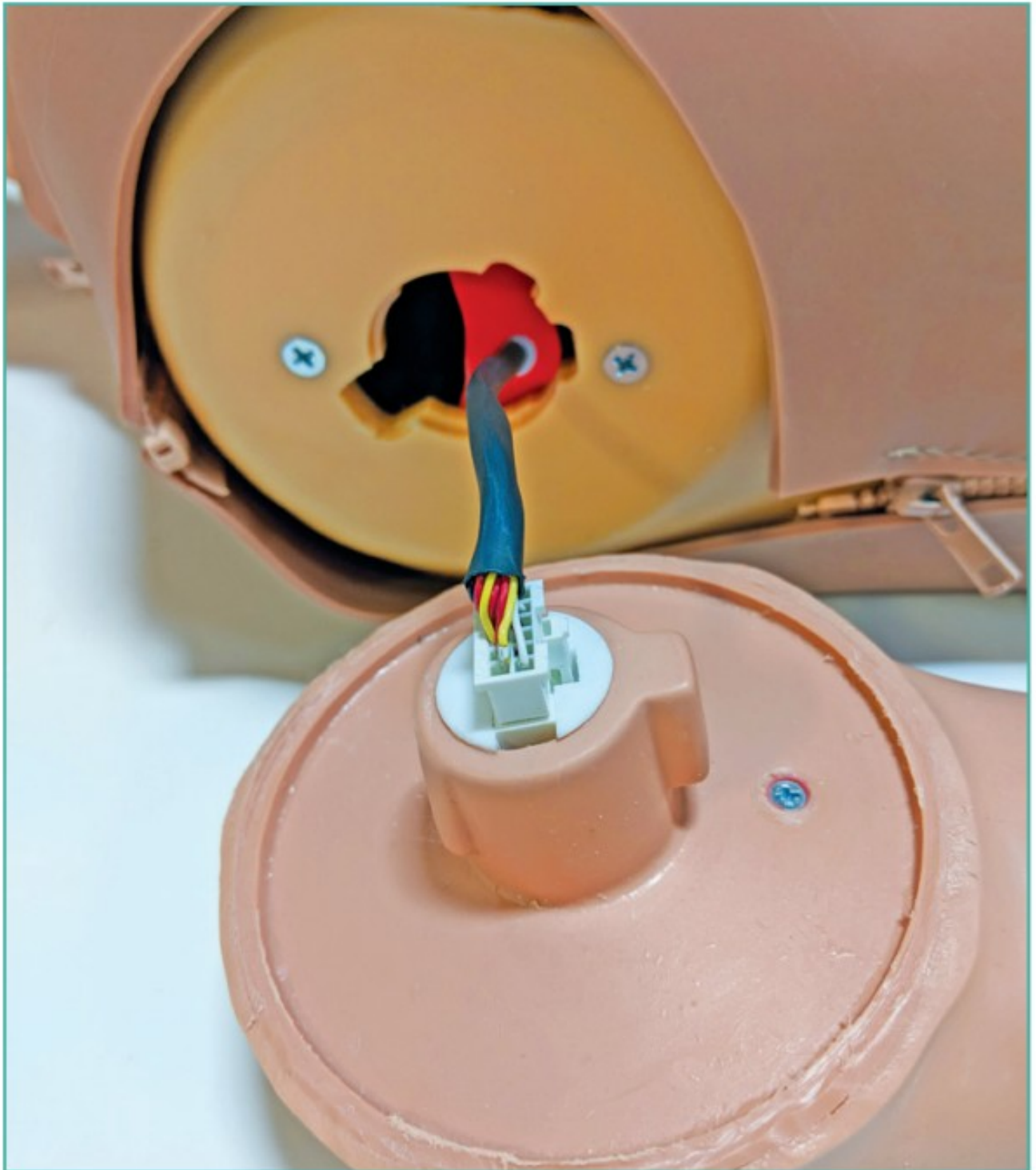
3. Disconnect the white cable connector by pushing down on the tab at the top and pulling.
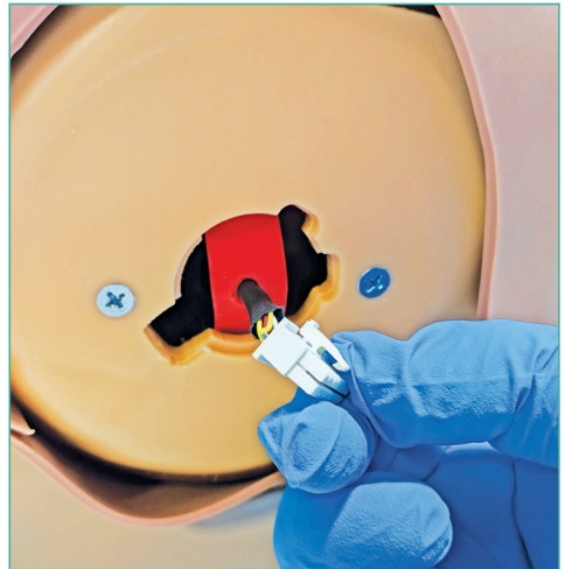
Removing an IV Arm

1. Rotate right arm upwards and past his head until you encounter resistance.

2. Pull the arm out of the torso.

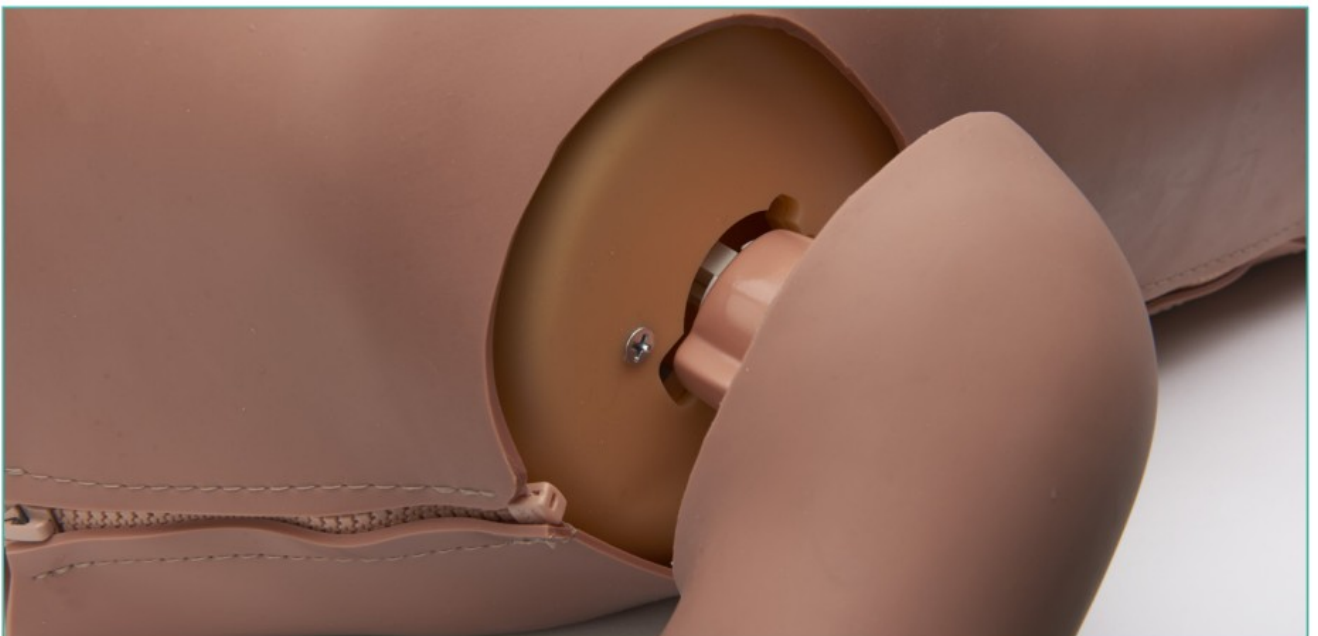**Installing a Standard Arm**

1. If the arm connector is inside of the torso, pull it out of the torso.
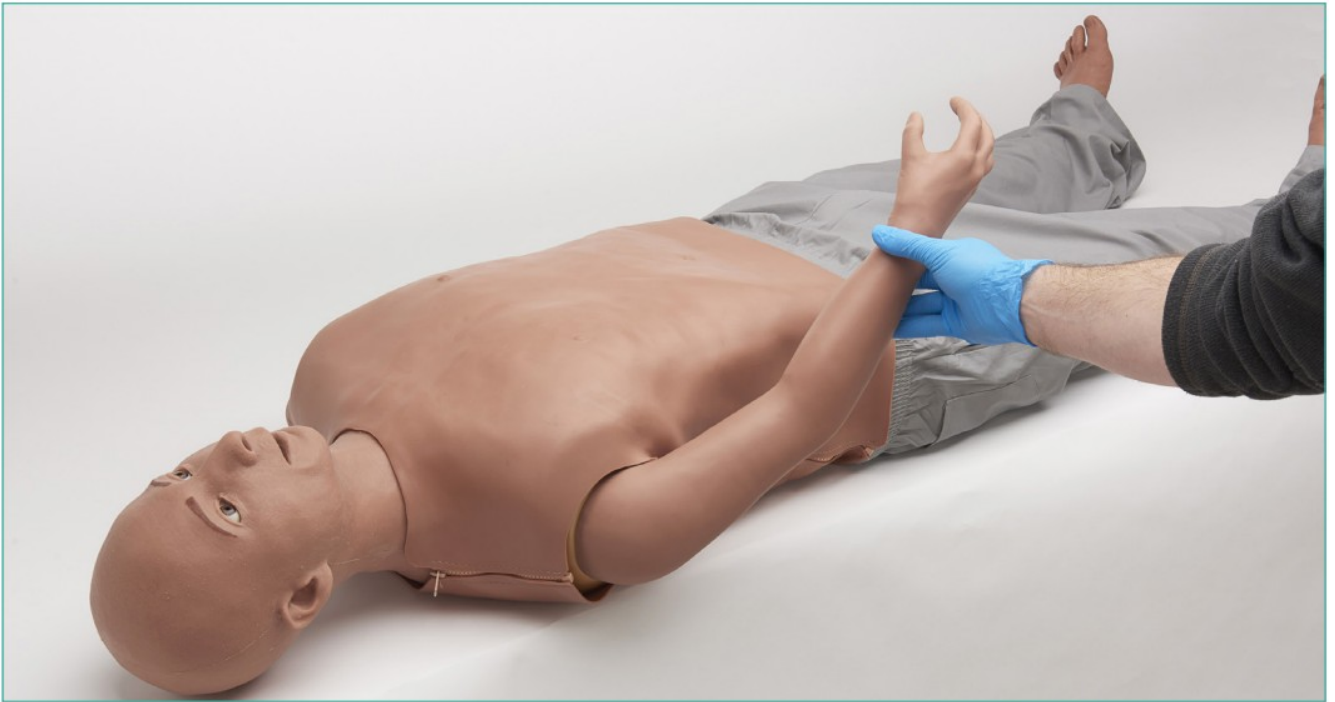

2. Connect the arm connector to the new arm. Press the connector in until you hear a click.

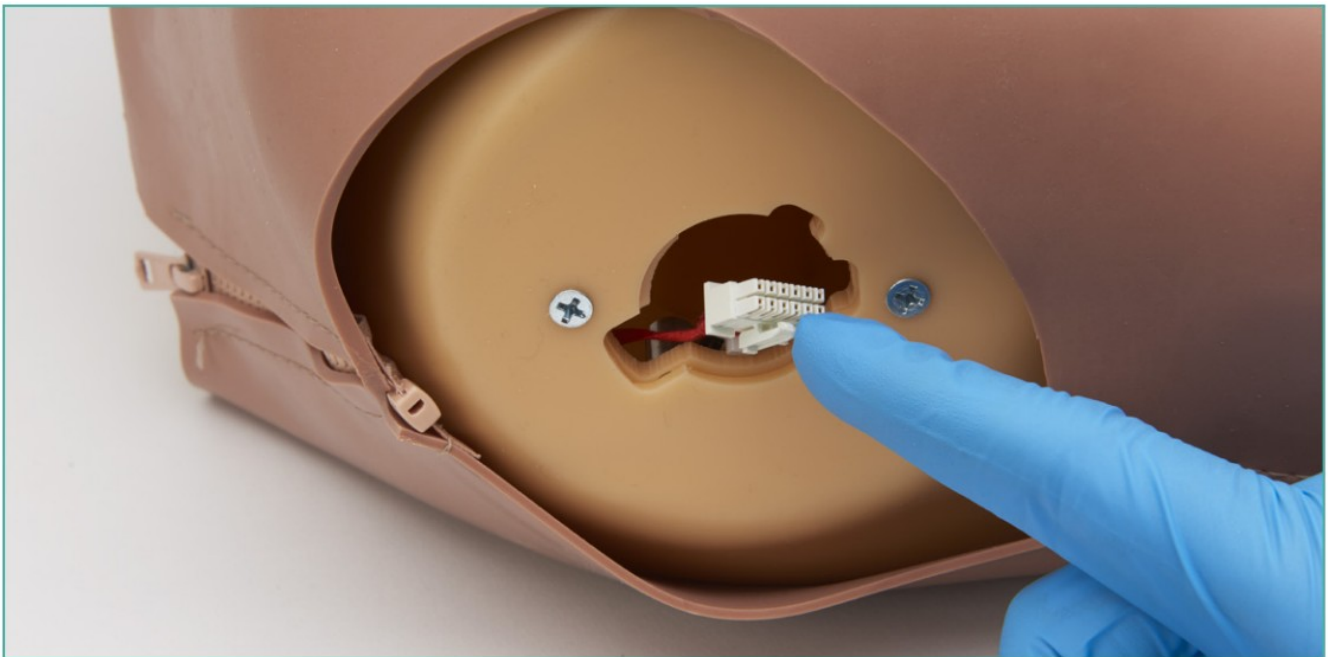3. Place the arm back into the arm socket, lining up the bump on the arm with the indent on the opening.

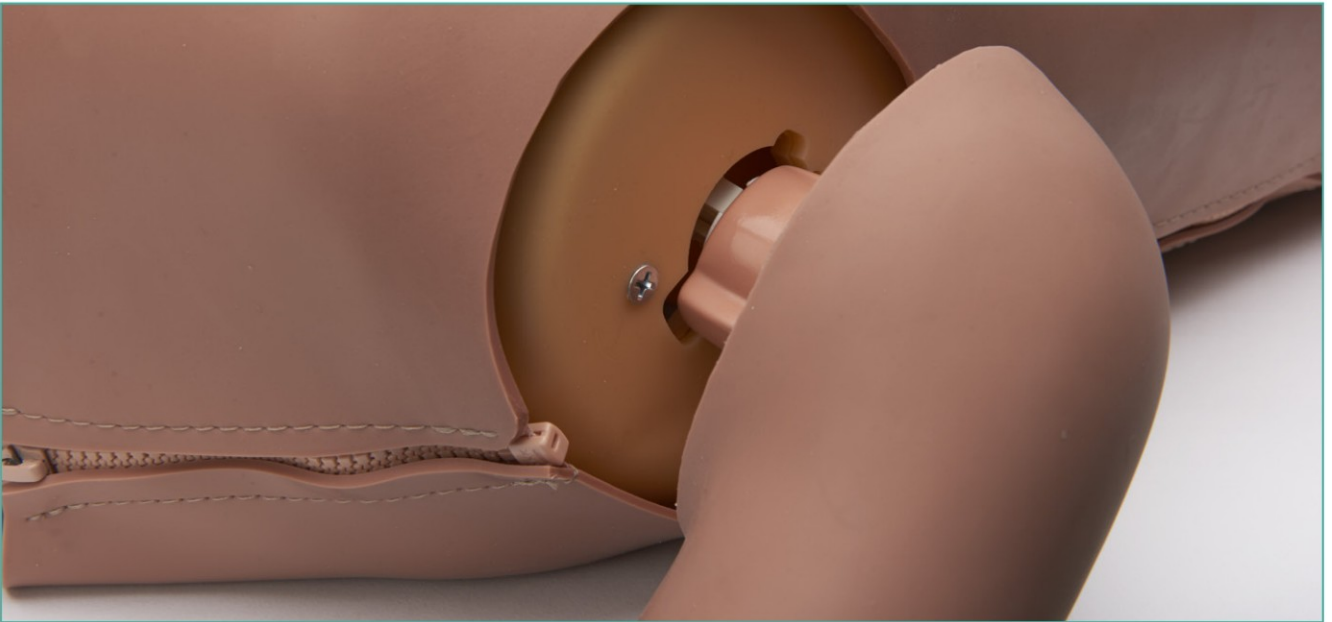4. Rotate the arm to lock it in to place.
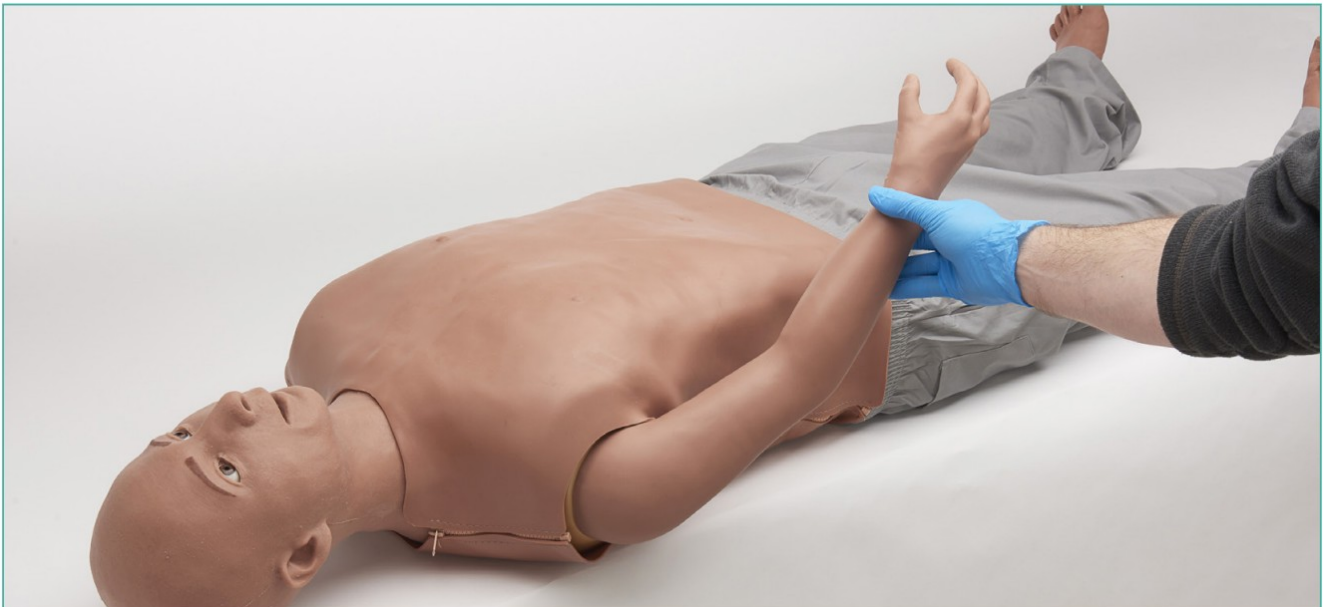
Installing an IV Arm

1. If the arm connector is outside of the torso, push it inside of the torso.

2. Place the arm back into the arm socket, lining up the bump on the arm with the indent on the opening.

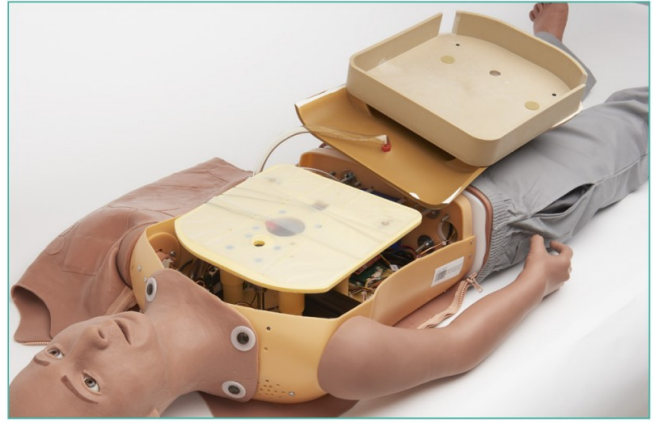3. Rotate the arm to lock it into place.

Replacing Lungs
Lungs may be replaced when necessary.

1. Remove overlay by unzipping the side and shoulder zippers.

2. Remove chest plate by flipping it over and leaving it on pelvis. The chest plate is secured in place by a snap on the lower stomach that can be removed by pulling straight up.
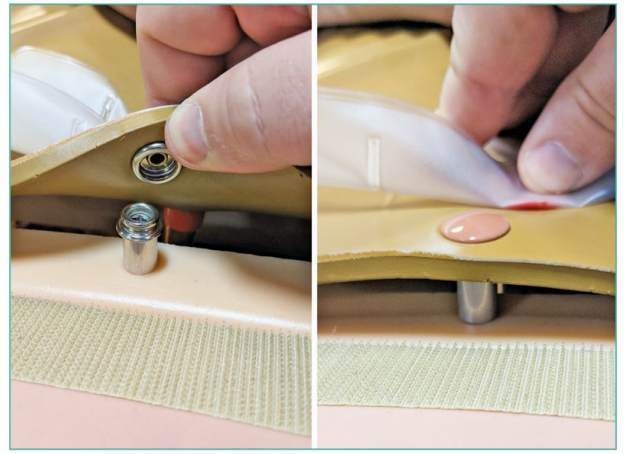
3. Pull up on the lung bag connection points to remove the old lung bag.

4. Install the new lung bags by aligning the connection point to the holes on the yellow plate and pressing them in tightly.

5. Flip the chest piece plate over to return it to the proper position. Snap the lower stomach back in to place.

6. Zip up simulator's overlay.

Replacing Leg "Skins"

Legs are wrapped in a spandex-like material that can be easily replaced if stained and/or torn.
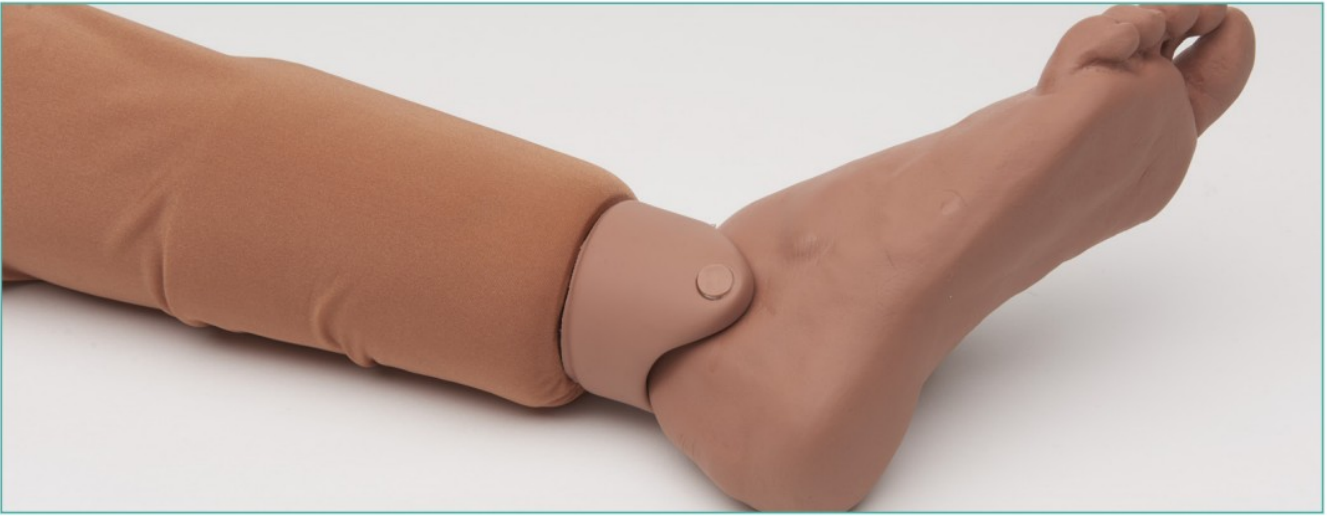

1. Untuck the material from the pelvis.

2. Roll the material down the leg and pull it off of the foot.

3. Pull the new material on to the leg over the foot. Pull the material up the leg. The material should end just above the ankle.

4. Tuck the material back underneath the pelvis.

Charging the SmartScope™
The SmartScope™ battery can be recharged using the included micro-USB cable. The cable can be charged via any USB port or an AC power adapter (used by most mobile phones).

- A light that is flashing green and amber on the SmartScope™ indicates that the battery is low.
- A slowly flashing green or orange light on the SmartScope™ indicates that the battery is charging.
- There is no indicator that the Smartscope™ is fully charged.

The SmartScope™ battery lasts 5-8 hours of continuous use when fully charged.

Troubleshooting

Issue	Cause	Solution
Korotkoff sounds not heard when SmartCuff " pressure is increased.	Using SmartCuff- from another simulator.	Use the SmartCuff " that came with the unit you are working with. Each SmartCuff" is paired to a single ALEX/AXEL.
	SmartCuff " battery needs replacement.	Inflate the cuff to 150 mmHg and observe the LED indicator. If the LED does not turn on, replace the battery (refer to "Replacing the SmartCuff " Battery").
	Blood pressure being taken from IV arm.	Sounds are not supported us-ing the IV arm. Use a standard arm to measure the blood pressure.
No sounds heard from SmartScope".	Volume set too low.	Press the blue button on the stethoscope to cycle through the volume settings.
	SmartScope " not charged (in- dicated by no LED illumination on the side).	Recharge the SmartScope".
	Using SmartScope" from another ALEX/AXEL.	Use the SmartScope " that came with the unit you are working with. Each Smart-Scope" is paired to a single ALEX/AXEL.
No sounds heard from SmartScope" on torso, but sounds still heard on antecubital.	Using a chest skin from an- other ALEX/AXEL.	Use the chest skin that came with the simulator you are working with. Each chest skin is paired to a single ALEX / AXEL.

No sounds heard from SmartScope" from	Using an arm from another ALEX or AXEL.	Use the arm that came with the ALEX you are working with. Each arm is paired to a single ALEX/AXEL.
antecubitalsite(s),butsounds heard on torso.	Listening to sounds on an IV arm.	Sounds are not supported on the IV arm. Use a standard arm to listen to the antecubital sounds.
Single pulse site not working.	Pulse site was being touched or in close contact with a conductive object during start up.	Verify that there are no con-ductive objects close to the pulse locations, and the pulses are not being touched, and then restart ALEX/AXEL.
Poor video quality.	Slow connection between Unit and the PCS server.	Use an Ethernet cable to con-nect to the network instead of Wi-Fi®.
Poor conversation responses — logs show inaccurate questions. (only available on ALEX tiers)	Ambient noise or questions are not loud enough.	Reduce ambient noise and/or speak louder and directed at ALEX's right leg.
No conversation responses	ALEX is not in conversation mode.	Touch ALEX's shoulder to activate conversation mode.
	ALEX's microphone is unplugged.	Remove ALEX's pants and verify that the microphone is plugged in.
No video displayed on Web	Slow connection between simulator and the server.	Use an Ethernet cable to connect to the network instead of Wi-F r).

App.	Non-supported web-browser used.	Use Firefox or Chrome" to access the Web App.
Power LED does not flash when plugged in.	Plug not fully plugged in.	Verify that the plug is fully plugged into the wall, the power adapter, and ALEX/ AXEL.
Power LED stays blue or turns red after powering on.	Simulator's main computer could not start up.	Power simulator off and then back on.
Simulator status is unavailable on Web App when ALEX/AXEL is turned on.	Network connection.	Contact customer service.
		Power simulator off and then back on.
		Attempt to connect via a wired connection (if using Wi-Fi®).
		Verify that the wired connection is fully plugged into the port and into ALEX/AXEL.
		Connect to a different Wi-Fi® network (see "Connecting ALEX/AXEL Via Wireless Connection").
	Restricted network access.	Verify that another device can connect to **https://app.pcs.ai**. If it can connect, then contact your local network/IT team and inform them that you are trying to connect ALEX/AXEL over a wired or wireless network connection and provide them with the appropriate MAC address that is located on the simulator ID sticker.
	Web server down.	If no devices can access **https://app.pcs.ai** from your network, then contact **help@pcs.ai** and our team will determine if there is a server outage.
	Network firewall/blacklist.	If there is no server outage, then there is likely a firewall/blacklist blocking access to the Web server. Contact your local network/IT team for assistance.
Blood cannot be aspirated from IV arm.	Clamp not opened.	Verify that the clamp is opened.
	Kinks in the tubing of IV arm.	Verify that the clamp is opened.
	Tubing has been pinched shut by the constant pressure of pinch clamps.	Slide the pinch clamp to a new position and manipulate tubing with fingers to restore the lumen. Replace the IV tubing.
	Insufficient pressure generated by gravity.	Raise the IV bag higher.
	Clogged line.	Use a large 50 cc syringe to force fluid through the tubing.
Unilateral chest rise when ventilating.	Improper airway adjunctpositioning.	Verify correct intubation positioning and depth.
	Air leakage from one l	Verify the connection from the airway to the lung is secure.

	ung.	Inspect the lung to see if any leaks can be seen or heard. If a leak can be identified, attempt to patch it and/or replace the lung. Refer to the Replacement Parts section on page 34 for ordering information.
No chest rise when ventilating.	Improper airway adjunct positioning.	Verify correct intubation positioning and depth.
	Air leakage from both lungs.	Verify the connections from the airway to the lungs are secure.
		Inspect the lungs to see if any leaks can be seen or heard. If leaks can be identified, attempt to patch it, and/or replace the lung(s). Refer to the Replacement Parts section on page 34 for ordering information.
	Air leakage from silicone airway.	Inspect the silicone airway for any holes or tears. If damage is observed, contact customer service.
No stomach inflation when ventilating.	Air leakage from stomach bag.	Verify the connections from the airway to the stomach are secure.
		Inspect the stomach bag to see if any leaks can be seen or heard. If leaks can be identified, attempt to patch it and/or replace the stomach bag. Refer to the Replacement Parts section on page 34 for ordering information.
SmartCuff™ pressure won't hold.	Leak in the airline or cuff.	Contact customer service to obtain a replacement.
ALEX/AXEL does not appear to be breathing.	Not able to communicate with the PCS server.	Refer to "Simulator status is unavailable on Web App when simulator is turned on" troubleshooting section.
	There is no active patient for this ALEX/AXEL.	Start an active patient from the Web App.

Clothing Measurements

Measurement	Inch	cm
Torso Length	19″	48
Sleeve Length	25.5″	65
Chest	39.5″	100
Inseam	27.5″	70
Waist	39.5″	100
Head Circumference	21.5″	55
Neck Circumference	14.5″	37
Foot Length	9.5″	24
Shoe Size	Men's 6.5	Men's Euro 39/UK 6

Warnings
Defibrillation and Pacing

- Do not defibrillate ALEX/AXEL or connect the simulator to an external pacing device. Doing so will void any warranty.

Rescue Breathing

- This manikin is not intended for rescue breathing techniques involving human contaminants. If contamination occurs, use CDC type protocols and agents to ensure that the airway is free from biological agents before use or storing. To accomplish this decontamination procedure, it is best to remove the head and airway from the manikin. Email our Customer Service Department at alexhelp@nascohealthcare.com to obtain instructions.

Ink Transfer/Indelible Marks

- Do not place simulator in contact with any printed paper or plastic. The ink will transfer and cause an indelible stain. Similar inks, such as ballpoint pen, will also cause an indelible stain.

Electronics

- Do not allow water or any other fluids to come into contact with any of the exposed electrical components of the simulator.

Power Supply

- Only operate ALEX/AXEL using the power supply that was provided with the simulator.

Grabbing by the Limbs

- Do not pick up or drag ALEX/AXEL by the limbs or head.

Dry Natural Rubber

- The tubing used for the IV Arm contains latex. Caution should be exercised for users with latex sensitivity when touching these parts.

Where to Find Additional Help
Additional information about ALEX/AXEL can be found on the help website, **help.pcs.ai**.
For assistance with ALEX/AXEL, you may reach our customer service team:

Technical Help Website:	**help.pcs.ai**
Help Email Address:	**alexhelp@nascohealthcare.com**
Customer Service Number:	1-833-NASCOHC (627-2642)

Additional Supplies/Replacement Parts

101-7110L	ALEX/AXEL Replacement Arm Left
101-7110R	ALEX/AXEL Replacement Arm Right
101-7110LM	ALEX/AXEL Replacement Arm Left Medium
101-7110LR	ALEX/AXEL Replacement Arm Right Medium
101-8029	ALEX/AXEL IV Arm
101-8029M	ALEX/AXEL IV Arm Medium
101-8031	SmartScope™
101-8032	SmartCuff™
101-8038	ALEX/AXEL Male Genitalia
101-8038M	ALEX/AXEL Male Genitalia Medium
101-8039	ALEX/AXEL Female Genitalia
101-8039M	ALEX/AXEL Female Genitalia Medium
101-7119	ALEX/AXEL Male Replacement Overlay
101-7119M	ALEX/AXEL Male Replacement Overlay Medium
101-7115	ALEX/AXEL Lung Bag
101-7116	ALEX/AXEL Stomach Bag
101-7117	Universal ALEX/AXEL Replacement Skin/Tubing
101-7117M	Universal ALEX/AXEL Replacement
101-7160	Skin/Tubing Medium
101-7160M	ALEX/AXEL Female Accessory Kit
101-7161	ALEX/AXEL Female Accessory Kit Medium
101-7161M	Replacement Female Overlay
LF09919	Replacement Female Overlay Medium
101-7120	Nasco Cleaner
101-7162	Replacement Tablet
101-7163	Blonde Wig
101-7164	Brunette Wig
	Black Wig

Documents / Resources

Nasco 101-7130 Lite AXEL Patient Simulator with Speech Recognition Ability [pdf] User Manual
101-7130 Lite AXEL Patient Simulator with Speech Recognition Ability, 101-7130, Lite AXEL Patient Simulator with Speech Recognition Ability, Speech Recognition Ability, Recognition Ability

References

- **PCS.ai**
- **Care.com: Find Child Care, Babysitters, Senior Care, Pet Care and Housekeeping**
- **PCS Support Center**
- **Nasco Healthcare - Supporting Frontline Healthcare Workers**
- **PCS.ai**
- **PCS.ai**

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