Nasco
HEALTHCARE
Simulaids Life/form

101-7130U — Lite
101-7140U — Plus
101-7150U — Pro

ALEX

ALEX Instructions for Use

Contents

Introduction

About ALEX

Thank you for purchasing ALEX, a first of its kind patient communication simulator from Simulaids.

ALEX will provide you with an interactive experience where trainees can have real-time dynamic dialogue with a simulator. In addition to speaking with ALEX, trainees will be able to intubate the realistic airway; observe chest rise and fall; perform CPR; check blood pressure; listen to heart, lung, and bowel sounds; and feel pulses.

As the instructor, you will be able to control all of ALEX's vitals, configure and run scenarios, communicate with students remotely, and even view and record video from the patient's perspective through ALEX's IrisCam™. All of this can be done in the cloud with a computer, tablet, or mobile phone.

ALEX can speak and understand English, Spanish, and French and is learning new languages all the time.

ALEX must be connected to the Internet to be fully functional. He can be connected via a wired connection (Ethernet) or a wireless connection (Wi-Fi®).

ALEX Tiers

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

	Lite	Plus	Pro
All Physiological Features	✔	✔	✔
Cloud-Connected Control	✔	✔	✔
Advanced Speech Features	Up to 250 questions a day	Up to 1,000 questions a day	Unlimited
IrisCam™	✔	✔	✔
IrisCam™ Recording	⛔	1,000 hours	Unlimited
Simulation Log Archive	60 days	1 year	5 years
API for AV/Center Management Integration	⛔	Logs & Physio Events	Logs & Physio Events, Live Video
Warranty Included	1 year	5 years + pre-shipping	5 years + pre-shipping
30-Day Free Returns	✔	✔	✔

Specifications and Handling

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

Do not operate ALEX 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 Weight	45 lbs. (20 kg)

List of Components

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

- SmartScope™ — Auscultation Device (101-8031U)

- Control Tablet

- SmartScope™ Charging Cable

- Stethoscope

- SmartCuff™ Blood Pressure Cuff and Sensor (101-8032U)

- Nasco Airway Lubricant (LF03644U)

- External Power Supply

- Ethernet Cable

- Male Genitalia

- Getting Started with Your Simulator
- Conversations with ALEX

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™ or Mozilla Firefox is recommended for optimal performance. Video capabilities are not currently supported with Apple® Safari or Microsoft® Edge.
- Internet Explorer is NOT currently supported.

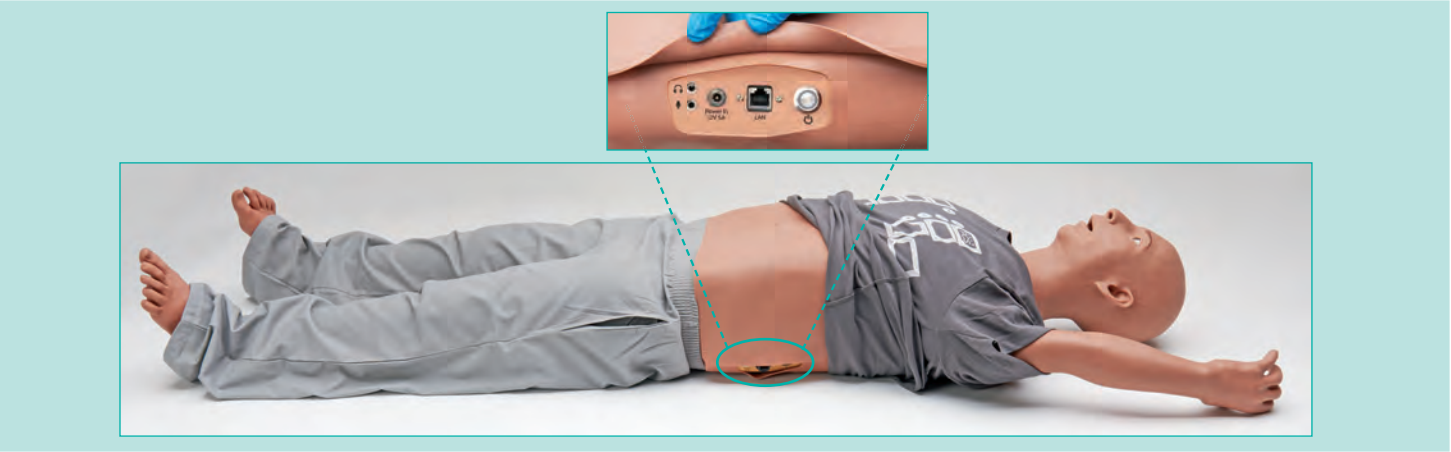
Connection Requirements:

- 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 ALEX from the shipping container.
   - ALEX is fully assembled prior to shipping.
   - Retain ALEX's case and packaging materials to use for transportation.
2. Plug the AC adapter into the wall.
   - ALEX's 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 ALEX's T-shirt to expose the access panel on ALEX's left side.



4. Plug the AC connector into the power jack on the left side of the simulator that is labeled 'Power In'.
   - ALEX is capable of running off its internal battery for up to 8 hours when fully charged.
   - The battery for ALEX comes partially charged.
   - When the battery is low, a high-pitched beeping sound will be heard from ALEX's torso every 10 seconds.
5. Power ALEX on by briefly pressing the button on the left side of the simulator.

   Note: If connecting ALEX to your network via a wired Ethernet connection, connect the cable to ALEX prior to powering on.
   - ALEX's 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 ALEX's 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 when not in use for extended periods of time, even while connected to AC power.

1. To power ALEX 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 ALEX, you can perform an emergency power off by pressing the power button for more than 5 seconds.

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

Status Indicators

The LED on the power button indicates ALEX's status.

A solid light indicates that ALEX is running off of battery.

A flashing light indicates that ALEX is currently connected to a power outlet.

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

Connect ALEX to a Local Network

ALEX 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 with ALEX in order to simplify the connection setup procedures.

If any additional support is needed for connecting to a local network, refer to http://help.pcs.ai.

Connecting ALEX Via Wired Connection

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

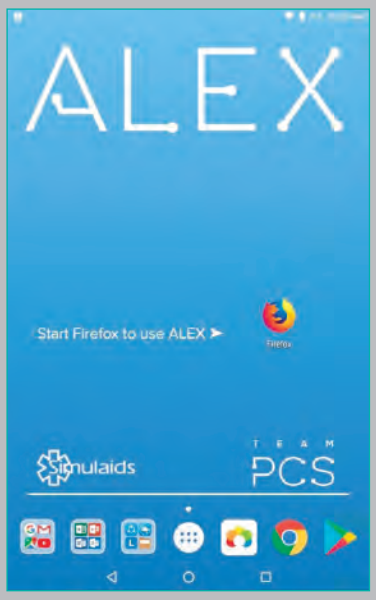
1. Connect an Ethernet cable to an active network port.
2. Connect the opposite end of the Ethernet cable to the network port on the left side of ALEX.

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

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

Every ALEX comes with a customized tablet that can be used to activate ALEX, connect ALEX to your wireless network, and to control ALEX. To activate and/or connect ALEX 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 Firefox icon to open the app.



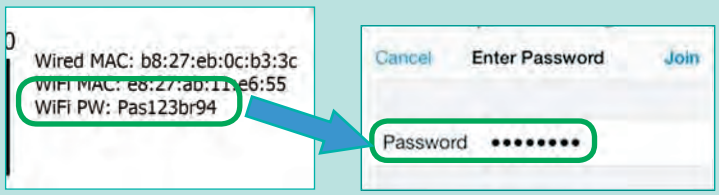
4. Follow the instructions that are shown on the tablet to complete the connection procedure.

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

1. Using any Wi-Fi® device, connect to ALEX's Wi-Fi® network just as you would to any other network.
   - The Wi-Fi® network will be named "Alex<SimID>" where <SimID> is the Simulator ID located on the label on the right side of ALEX 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 ALEX to the network.



Open the ALEX Web App

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

The URL for the ALEX 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 ALEX 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 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 ALEX's 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 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™

ALEX's SmartScope™ allows you to hear body sounds coming from ALEX 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) Volume Adjustment

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).

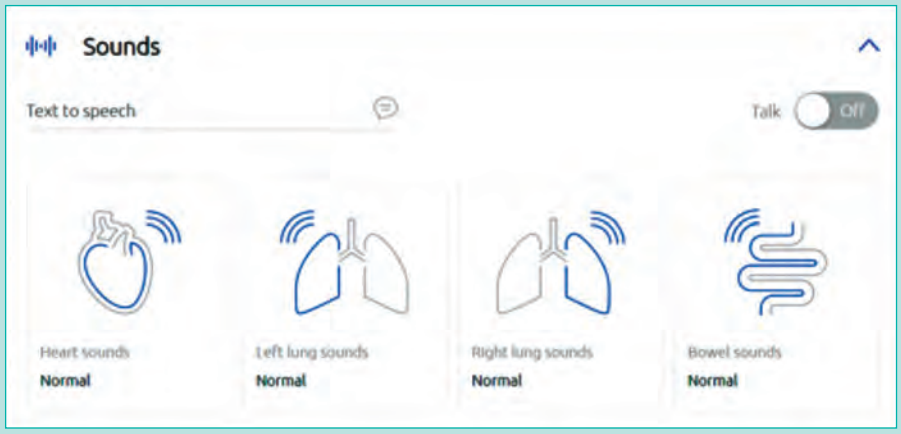
If sharing a stethoscope between users, clean the ear pieces using alcohol wipes between uses.

Using the SmartScope™: Sounds and Auscultation

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

ALEX 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 ALEX Web App to simulate different conditions.



The following sound locations can be listened to on ALEX:

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 ALEX Web App.

The volume of the sounds can be decreased by pressing the blue button on the SmartScope™. The volume starts out at the maximum level. Pressing it once will set it to the lowest level and subsequent presses will continue to increase the volume until it reaches the maximum volume again. Pressing the blue button again after you reach the maximum volume will set the volume to the minimum setting. There are 16 different volume settings. Alternatively, you can turn the SmartScope™ off by holding down the blue button and when you turn it back on it will automatically be set to the maximum volume setting.

Note: Do not hold down the blue button while the bottom of the SmartScope™ is in contact with a surface. Holding the blue button and depressing the activation flap on the bottom of the SmartScope™ at the same time will un-pair the SmartScope™ from your ALEX.

Blood Pressure Evaluation

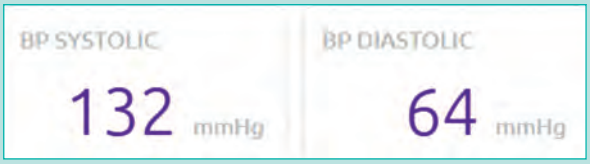
ALEX comes with SmartCuff™, a blood pressure cuff with an integrated sensor to simulate blood pressure measurement.

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 ALEX Web App.



Note: The SmartCuff™ is not interchangeable between simulators. If you have multiple ALEX 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 and female genitalia may be purchased as an upgrade kit. The genitalia can be interchanged as needed.

To change genitalia, simply pull the genitalia off of ALEX 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 ALEX's pelvis.

Performing Catheterization

ALEX 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 from ALEX and allow the lubricant to air dry before storing.

Airway

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

The following procedures may be performed on ALEX:

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

ALEX 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's size. Some recommended sizes differ from the guidelines for a typical patient of ALEX's body type to ensure adequate fit and to minimize damage to the simulator.

Device	Recommended Size for ALEX 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.

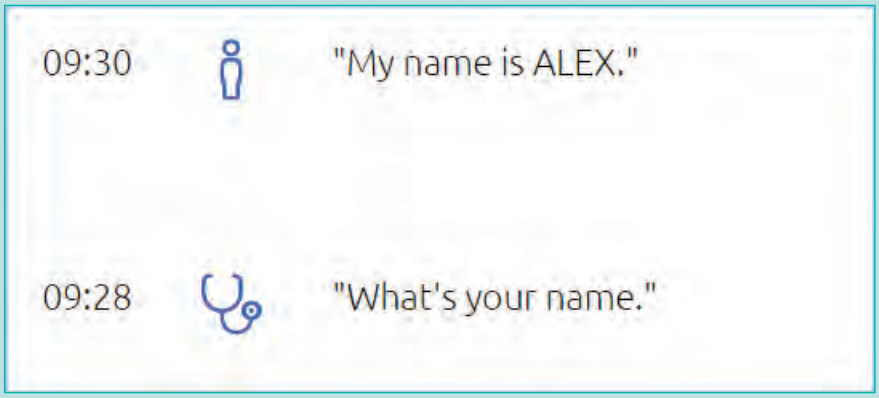
Notes

- 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'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 for rescue breathing involving human contaminants.
- Prior to performing intubation, spray the airway device with Nasco Lubricant (included). Do not spray lubricant directly into ALEX's airway.
- Do not introduce fluids into the airway. Doing so may damage the simulator.

Speaking with ALEX

Once a patient session has been started with ALEX, you may have a dialog with him.

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.

Breathing

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

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

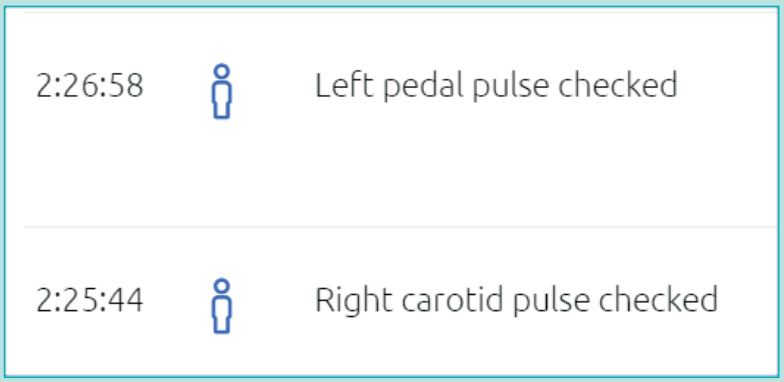
Pulses

Alex 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 ALEX 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 ALEX Web App.

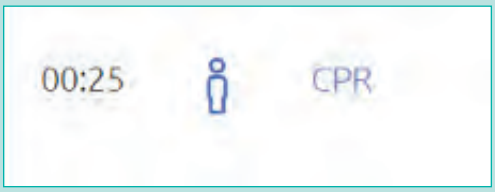


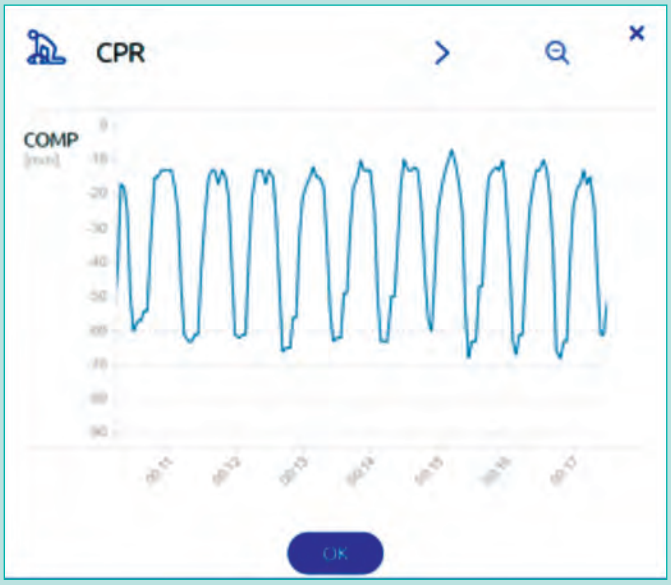
CPR

You may perform chest compressions on ALEX 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 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, help.pcs.ai.

Text to Speech

The instructor can type phrases into the ALEX web app and ALEX will speak them to the trainee.

More information on “text to speech” can be found on the ALEX help website, help.pcs.ai.

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.

More information on “push to talk” can be found on the ALEX help website, help.pcs.ai.

Care and Maintenance

Cleaning Instructions

Most cleaning can be performed with a soft cloth, mild soap, and warm water. Avoid over-washing ALEX's 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's legs to any liquids.

Storage Instructions

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

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

Do not store ALEX 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 ALEX 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™.

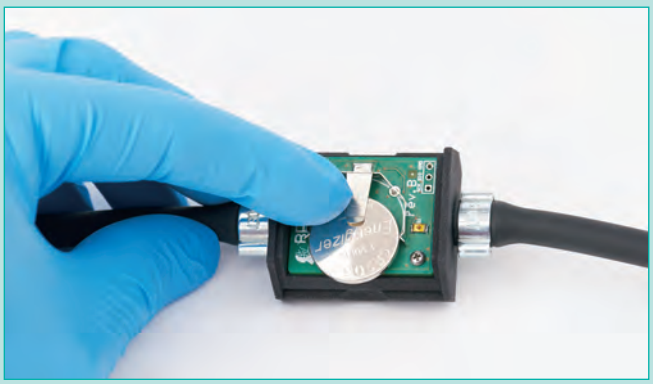
Preparing for Transportation

When transporting ALEX, place the simulator in the included storage case. ALEX 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 ALEX's head and secured by folding the legs on top of the torso.

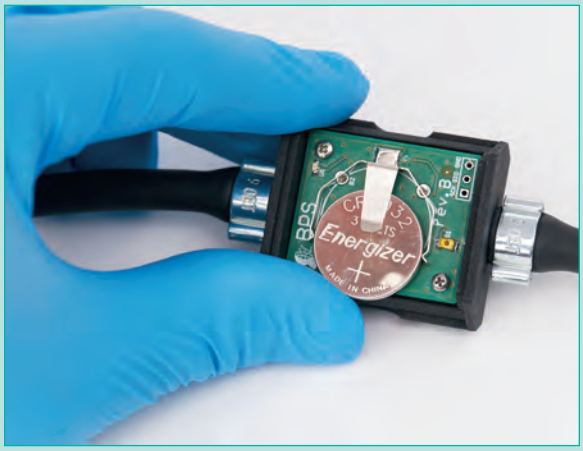
Replacing the SmartCuff™ Battery

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

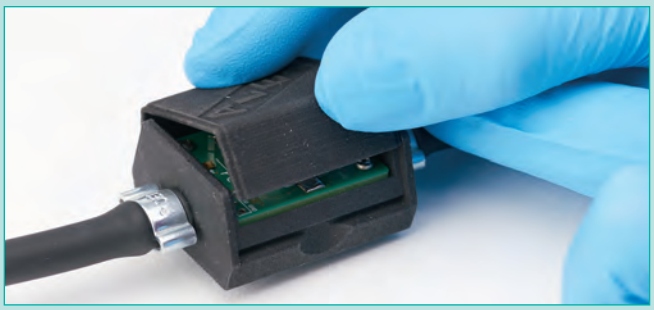
1. Pry the top off of the SmartCuff™ sensor.
2. Remove the old battery from the SmartCuff™ sensor.

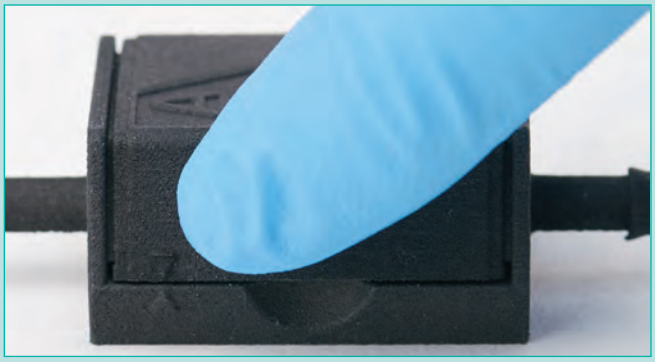


3. Insert the new battery with the positive side facing up.



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

ALEX's right arm may be replaced in order to change from the standard ALEX arm to an optional IV arm or to replace a damaged arm.

Removing a Standard Arm

1. Rotate ALEX's 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.

3. Disconnect the white cable connector by pushing down on the tab at the top and pulling.

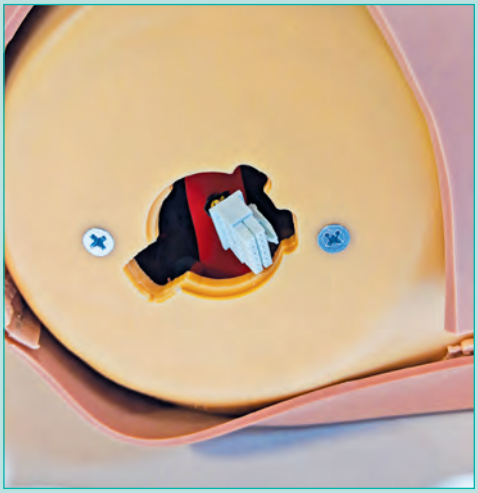
Removing an IV Arm

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

2. Pull the arm out of the torso.

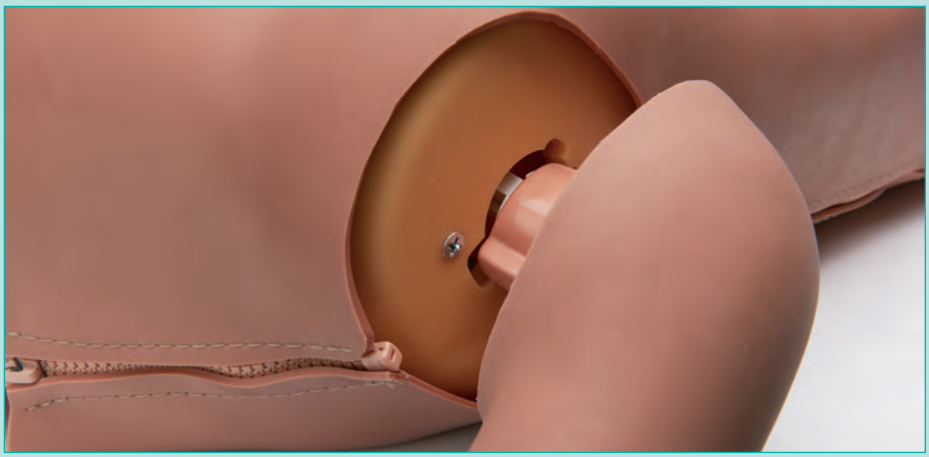
Installing a Standard Arm

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

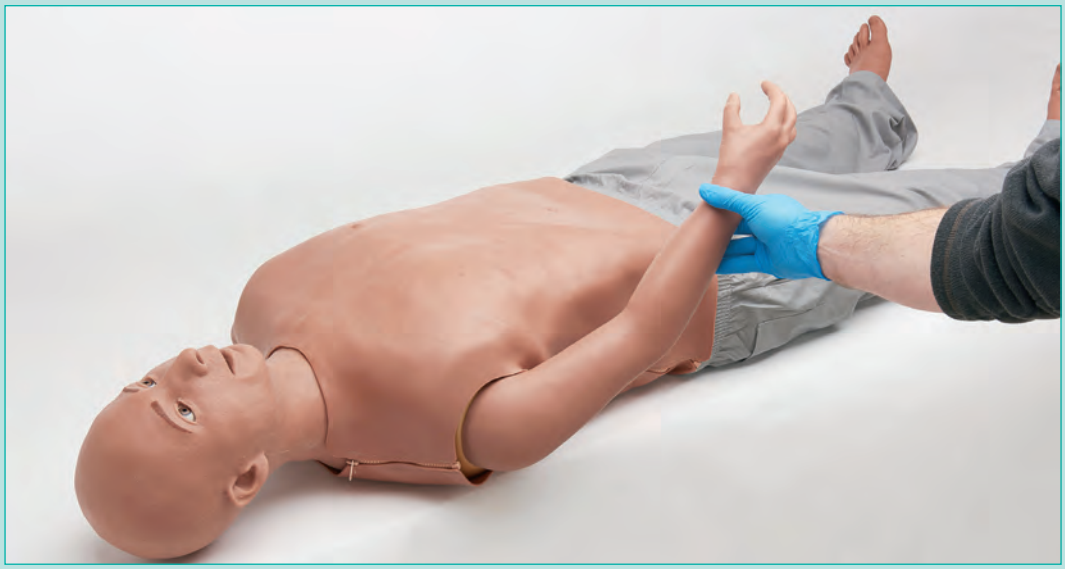


2. Connect the arm connector to the new arm. Press the connector in until you hear a click.

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

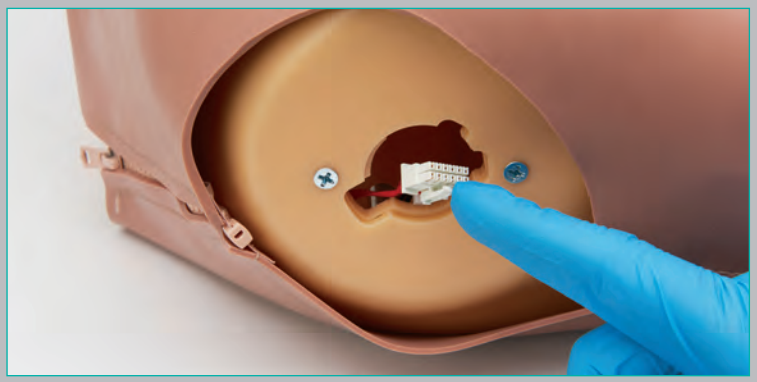


4. Rotate the arm to lock it in to place.

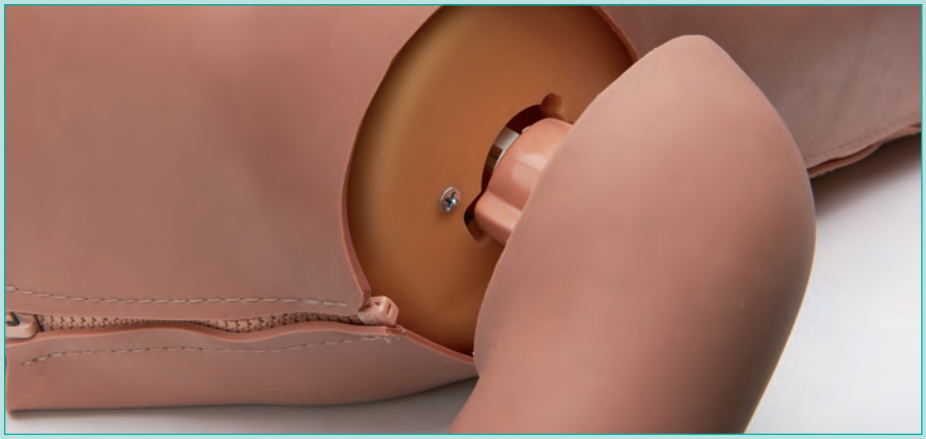


Installing an IV Arm

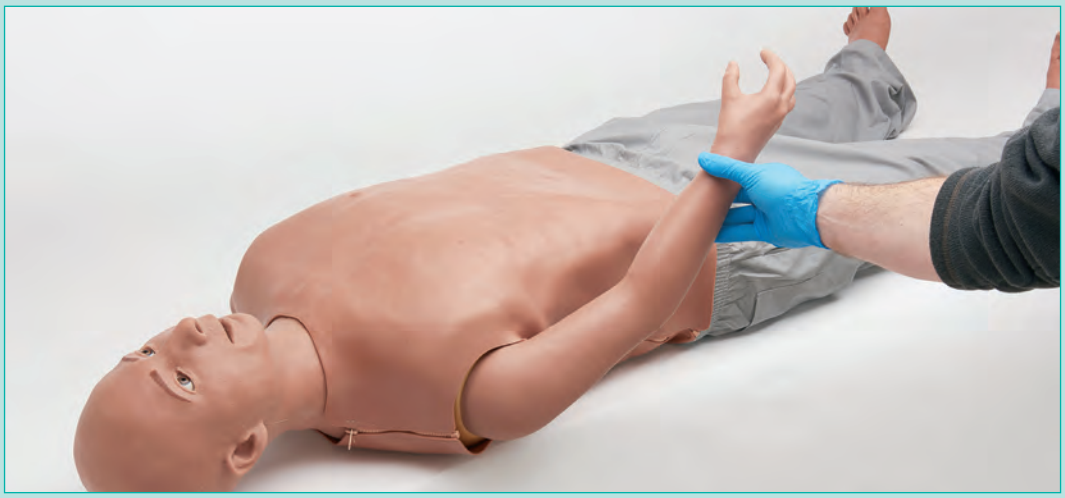
1. If the arm connector is outside of the torso, push it inside of the torso.



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



3. Rotate the arm to lock it in to place.

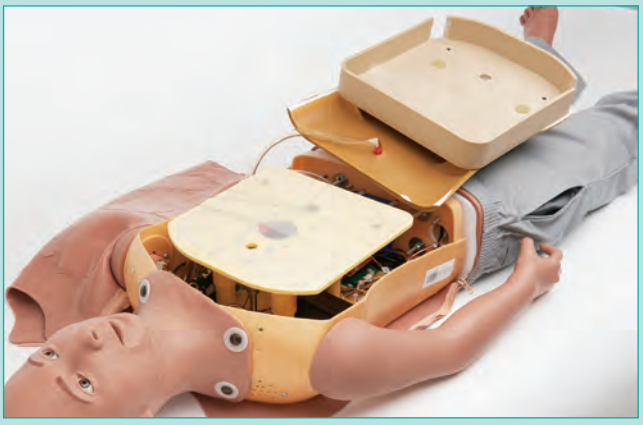


Replacing Lungs

ALEX's lungs may be replaced when necessary.

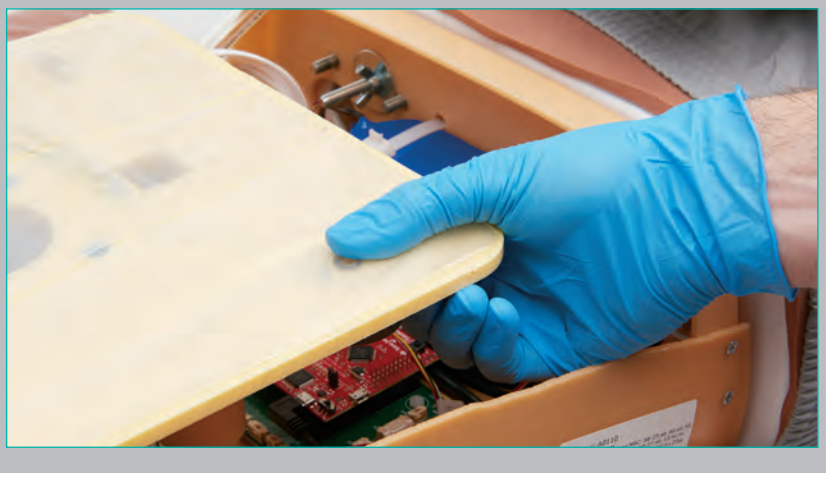
1. Remove ALEX's overlay by unzipping the side and shoulder zippers.

2. Remove ALEX's chest plate by flipping it over and leaving it on ALEX's pelvis. The chest plate is secured in place by a snap on the lower stomach that can be removed by pulling straight up.

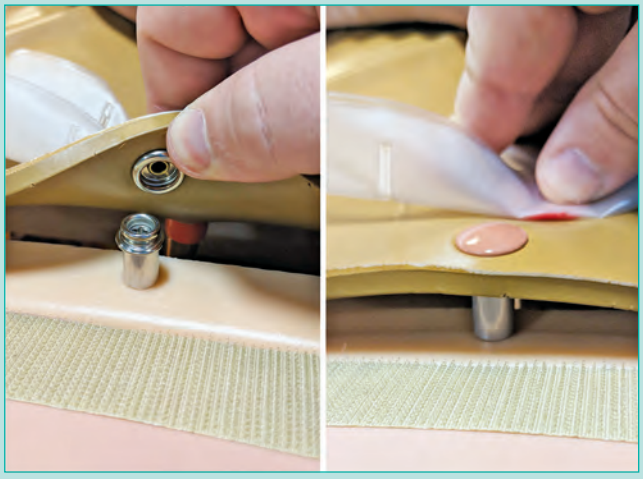


3. Pull up on the lung bag connection points to remove the old lung bag.

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 ALEX's overlay.

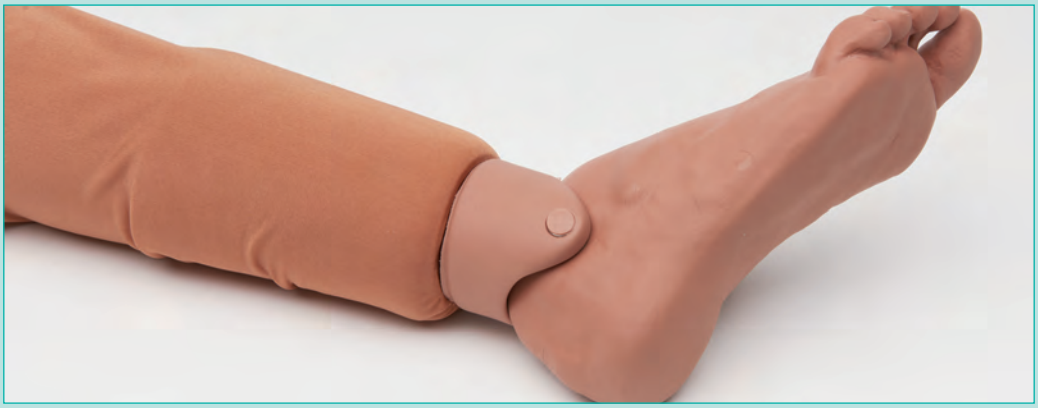
Replacing ALEX's Leg "Skins"

ALEX's 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 terminate 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 ALEX.	Use the SmartCuff™ that came with the ALEX you are working with. Each SmartCuff™ is paired to a single ALEX.
	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 using 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 (indicated by no LED illumination on the side).	Recharge the SmartScope™.
	Using SmartScope™ from another ALEX.	Use the SmartScope™ that came with the ALEX you are working with. Each SmartScope™ is paired to a single ALEX.
No sounds heard from SmartScope™ on torso, but sounds still heard on antecubital.	Using a chest skin from another ALEX.	Use the chest skin that came with the ALEX you are working with. Each chest skin is paired to a single ALEX.

Issue	Cause	Solution
No sounds heard from SmartScope™ from antecubital site(s), but sounds heard on torso.	Using an arm from another ALEX.	Use the arm that came with the ALEX you are working with. Each arm is paired to a single ALEX.
	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 conductive objects close to the pulse locations, and the pulses are not being touched, and then restart ALEX.
Poor video quality.	Slow connection between ALEX and the ALEX server.	Use an Ethernet cable to connect to the network instead of Wi-Fi®.
Poor conversation responses – logs show inaccurate questions.	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 ALEX Web App.	Slow connection between ALEX and the ALEX server.	Use an Ethernet cable to connect to the network instead of Wi-Fi®.
	Non-supported web-browser used.	Use Firefox or Chrome™ to access the ALEX 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.

Issue	Cause	Solution
Power LED stays blue or turns red after powering on.	ALEX's main computer could not start up.	Power ALEX off and then back on.
		Contact customer service.
Simulator status is unavailable on ALEX Web App when ALEX is turned on.	Network connection.	Power ALEX 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.
		Connect to a different Wi-Fi® network (see "Connecting ALEX 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 over a wired or wireless network connection and provide them with the appropriate MAC address that is located on the ALEX ID sticker.
	ALEX 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 ALEX server. Contact your local network/IT team for assistance.

Issue	Cause	Solution
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 there are no kinks in the tubing.
	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 adjunct positioning.	Verify correct intubation positioning and depth.
	Air leakage from one lung.	Verify the connection from the airway to the lung is secure.
		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.

Issue	Cause	Solution
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 does not appear to be breathing.	ALEX is not able to communicate with the ALEX server.	Refer to "Simulator status is unavailable on ALEX Web App when ALEX is turned on" troubleshooting section.
	There is no active patient for this ALEX.	Start an active patient from the ALEX 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 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@simulaids.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 using the power supply that was provided with the simulator.

Grabbing by the Limbs

- Do not pick up or drag ALEX 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 can be found on the ALEX help website, help.pcs.ai.

For assistance with ALEX, you may reach our customer service team:

Technical Help Website:	help.pcs.ai
Help Email Address:	alexhelp@simulaids.com
Customer Service Number:	1-888-9-ALEXPCS (2539727)

Additional Supplies/Replacement Parts

101-7110LU	ALEX Replacement Arm Left
101-7110RU	ALEX Replacement Arm Right
101-7110LMU	ALEX Replacement Arm Left Medium
101-7110LRU	ALEX Replacement Arm Right Medium
101-8029U	ALEX IV Arm
101-8029MU	ALEX IV Arm Medium
101-8031U	SmartScope™
101-8032U	SmartCuff™
101-8038U	ALEX Male Genitalia
101-8038MU	ALEX Male Genitalia Medium
101-8039U	ALEX Female Genitalia
101-8039MU	ALEX Female Genitalia Medium
101-7119U	ALEX Male Replacement Overlay
101-7119MU	ALEX Male Replacement Overlay Medium
101-7115U	ALEX Lung Bag
101-7116U	ALEX Stomach Bag
101-7117U	Universal ALEX Replacement Skin/Tubing
101-7117MU	Universal ALEX Replacement Skin/Tubing Medium
101-7160U	ALEX Female Accessory Kit
101-7160MU	ALEX Female Accessory Kit Medium
101-7161U	Replacement Female Overlay
101-7161MU	Replacement Female Overlay Medium
LF09919U	Nasco Cleaner
101-7120U	Replacement Tablet
101-7162U	Blonde Wig
101-7163U	Brunette Wig
101-7164U	Black Wig

16 Simulaids Drive
Saugerties, NY 12477
1.800.431.4310
nascohealthcare.com • Email: info@simulaids.com