Nasco HEALTHCARE
Simulaids Life/form

GERi™/KERi™
The Nursing Skills Manikins

GERi™ – LF04040U, LF04001U, LF04030U, LF04003U, LF04005U (Light)
LF04115U, LF04116U, LF04117U, LF04118U, LF04119U (Medium)

KERi™ – LF04021U, LF04020U, LF04022U, LF04023U, LF04026U (Light)
LF04120U, LF04121U, LF04122U, LF04123U, LF04124U (Medium)

INSTRUCTION MANUAL

Congratulations for choosing a ***GERi*™/*KERi*™** Nursing Skills Manikin. This realistic, fully functional, lightweight nursing manikin comes with a superior range of motion and allows you to simulate over 35 nursing and medical procedures. The quality and simple design makes this manikin easy to use and care for while teaching basic patient care techniques, so please familiarize yourself with this manual before using the manikin for training. Five-year warranty. Actual product may vary slightly from photo. Nasco reserves the right to change product color, materials, or function as needed.

Main Features on Every Basic, Complete, Advanced, Auscultation and Advanced Auscultation ***GERi*™** and ***KERi*™** Manikin:

- ***GERi*™** has an elderly appearance with skin wrinkles and folds
- ***KERi*™** has a non-age-specific appearance
- Lightweight — approximately 28 lbs.
- Full-size adult manikin — measures 58"
- Overall female appearance, with simple conversion to male with removal of wig and attachment of male genitalia
- Visual Inspection:
  - Normal and cancerous mole
  - Stage 1 sacral ulcer
  - Dilated and constricted pupils
  - Reddened skin folds
- Patient Care Simulation:
  - Bandaging and wound dressing
  - Bed baths
  - Clothing changes
  - Denture placement and removal — upper and lower
  - Ear canal irrigation, otic drops, and hearing aid placement
  - Eye irrigation
  - Finger and toe manipulation
  - Hair care washing and combing
  - Intramuscular injection sites — arm, thigh, buttock
  - Oral and nasal hygiene — lavage, gavage, and suctioning
  - Ostomy care — ileostomy and colostomy tissue maintenance and appliance application, lavage, and suctioning
  - Patient positioning
  - Patient transfer techniques
  - Pericare
  - Range of motion
  - Tracheostomy care — lavage and suctioning

Basic *GERi*™ LF04040U (Light), **LF04115U** (Medium)

Basic *KERi*™ LF04021U (Light), **LF04120U** (Medium)

LIST OF COMPONENTS	PART NUMBERS
• Male and Female Genitalia	**M: LF04109U** (Light); **F: LF04110U** (Light)
• Wig	***GERi*™: LF04087U** ***KERi*™: LF04086U**
• Dentures	**LF04085U**
• Hearing Aid	**LF04090U**
• *12 cc Syringe	
• Serial number located on back of right shoulder	

Complete *GERi*™ LF04001U (Light), **LF04116U** (Medium)

Complete *KERi*™ LF04020U (Light), **LF04121U** (Medium)

LIST OF COMPONENTS	PART NUMBERS
• Male and Female Genitalia	**M: LF04075(N)U** (Light); **F: LF04076(N)U** (Light)
• Wig	***GERi*™: LF04087U** ***KERi*™: LF04086U**
• Dentures	**LF04085U**
• Hearing Aid	**LF04090U**
• *12 cc Syringe	
• Lubricant Spray	**LF03644U**
• Fluid Drainage Basin	**SB14936U**
• Stomach Reservoir Bag	**LF04098U**
• Bladder Reservoir Bag	**LF04095U**
• Bladder Reservoir Pressure Sleeve	**LF04097U**
• 16 FR Foley Silicone Catheter	**LF01127U**
• *140 cc Syringe	
• Enema Reservoir Bag	**LF04096U**
• Serial number located on back of right shoulder	

ADDITIONAL FEATURES

- Includes all of the main features of Basic ***GERi*™/*KERi*™** with the addition of internal fluid reservoirs
- Gastrostomy procedures — lavage and gavage
- Enema administration with female genitalia
- Urinary catheterization — female and uncircumcised male genitalia
- Pap smears and douching
- Stage B prostate exam
- Nasogastric tube placement

*__Note:__ Components without part numbers listed may be available for special order. Additional supplies and parts not listed are located at the end of this manual and/or in each individual section.

Advanced *GERi*™ LF04030U (Light), **LF04117U** (Medium)
Advanced *KERi*™ LF04022U (Light), **LF04122U** (Medium)

LIST OF COMPONENTS	PART NUMBERS
• Male and Female Genitalia	**M: LF04075(N)U; F: LF04076(N)U** (Light)
• Wig	***GERi*™: LF04087U *KERi*™: LF04086U**
• Dentures	**LF04085U**
• Hearing Aid	**LF04090U**
• *12 cc Syringe	
• Lubricant Spray	**LF03644U**
• Fluid Drainage Basin	**SB14936U**
• Stomach Reservoir Bag	**LF04098U**
• Bladder Reservoir Bag	**LF04095U**
• Bladder Reservoir Bag Pressure Sleeve	**LF04097U**
• 16 FR Foley Silicone Catheter	**LF01127U**
• *140 cc Syringe	
• Enema Reservoir Bag	**LF04096U**
• Right IV Training Arm	**LF04080U** (Light), **LF04125U** (Medium)
• *1 Pint of Artificial Blood Powder	
• *2 Fluid Supply Bags (500 ml each) with 2 clamps	
• *3 cc Syringe	
• *22-ga. Needle	
• *Butterfly Set	
• *White 2-ply Towel (2)	
• Left Blood Pressure Training Arm	**LF04079U** (Light), **LF04127U** (Medium)
• Electronic Control Unit	**LF01096U**
• Sphygmomanometer	**LF01073U**
• *6 “AA” Batteries	
• Serial number located on back of right shoulder	

ADDITIONAL FEATURES

- Includes all of the main features of Basic and Complete ***GERi*™/*KERi*™** with the addition of right and left IV and BP arms
- Right IV training arm has a shoulder intramuscular injection site and features replaceable skin and veins that roll when palpated — realistic flashback confirms proper needle placement
- Left blood pressure training arm produces all five Korotkoff sounds and allows instructor to vary systolic and diastolic levels, pulse rate, volume, and auscultatory gap
- Standard right and left arms with intramuscular injection sites are also included

*__Note:__ Components without part numbers listed may be available for special order. Additional supplies and parts not listed are located at the end of this manual and/or in each individual section.

Auscultation *GERi*™ LF04003U (Light), **LF04118U** (Medium)

Auscultation *KERi*™ LF04023U (Light), **LF04123U** (Medium)

LIST OF COMPONENTS

PART NUMBERS

• Male and Female Genitalia	**M: LF04075(N)U; F: LF04076(N)U** (Light)
• Wig	***GERi***™: **LF04087U** ***KERi***™: **LF04086U**
• Dentures	**LF04085U**
• Hearing Aid	**LF04090U**
• *12 cc Syringe	
• Lubricant Spray	**LF03644U**
• Stomach Reservoir Bag	**LF04098U**
• Fluid Drainage Basin	**SB14936U**
• Bladder Reservoir Bag	**LF04095U**
• Bladder Reservoir Pressure Sleeve	**LF04097U**
• 16 FR Foley Silicone Catheter	**LF01127U**
• *140 cc Syringe	
• Enema Reservoir Bag	**LF04096U**
• SmartScope™ with Single and Dual Headpieces	**LF01144U**
• Remote Control with LCD Display	**LF01148U**
• *2 “AA” and 2 “AAA” Batteries	
• *Alcohol Pads (50)	
• *8 Sheets of Green and Blue Circle Stickers	
• *2 Laminated Key Cards	
• Serial number located on back of right shoulder	

ADDITIONAL FEATURES

- Includes all the main features of Complete ***GERi***™/***KERi***™ with the addition of auscultation torso, SmartScope™, and remote
- Six anterior heart sites with 12 heart conditions
- Five anterior, six upper posterior, four lower posterior, two mid-axillary lung sites with 12 lung conditions

*__Note:__ Components without part numbers listed may be available for special order. Additional supplies and parts not listed are located at the end of this manual and/or in each individual section.

Advanced Auscultation *GERi*™ LF04005U (Light), **LF04119U** (Medium)

Advanced Auscultation *KERi*™ LF04026U (Light), **LF04121U** (Medium)

LIST OF COMPONENTS	PART NUMBERS
• Male and Female Genitalia	**M: LF04075(N)U; F: LF04076(N)U** (Light)
• Wig	***GERi***™: **LF04087U** ***KERi***™: **LF04086U**
• Dentures	**LF04085U**
• Hearing Aid	**LF04090U**
• *12 cc Syringe	
• Lubricant Spray	**LF03644U**
• Stomach Reservoir Bag	**LF04098U**
• Fluid Drainage Basin	**SB14936U**
• Bladder Reservoir Bag	**LF04095U**
• Bladder Reservoir Pressure Sleeve	**LF04097U**
• 16 FR Foley Silicone Catheter	**LF01127U**
• *140 cc Syringe	
• Enema Reservoir Bag	**LF04096U**
• Right IV Training Arm	**LF04080U** (Light), **LF04125U** (Medium)
• *1 Pint of Artificial Blood Powder	
• *2 Fluid Supply Bags (500 ml each) with 2 Clamps	
• *3 cc Syringe	
• *22-ga. Needle	
• *Butterfly Set	
• *White 2-ply Towel (2)	
• Left Blood Pressure Training Arm	**LF04079U** (Light), **LF04127U** (Medium)
• Electronic Control Unit	**LF01096U**
• Sphygmomanometer	**LF01073U**
• 6 “AA” Batteries	**SB10828U**
• SmartScope™ with Single and Dual Headpieces	**LF01144U**
• Remote Control with LCD Display	**LF01148U**
• *2 “AA” and 2 “AAA” Batteries	
• *Alcohol Pads (50)	
• *8 Sheets of Green and Blue Circle Stickers	
• *2 Laminated Key Cards	
• Serial number located on back of right shoulder	

ADDITIONAL FEATURES

- Includes all the main features of Advanced and Auscultation ***GERi***™/***KERi***™.

*__Note:__ Components without part numbers listed may be available for special order. Additional supplies and parts not listed are located at the end of this manual and/or in each individual section.n.

SUPERIOR RANGE OF MOTION

GERi™/KERi™ manikins offer the most complete and realistic range of motion with no pinch points. This allows for correct patient positioning. The manikin's articulation includes:

- **Trunk** — rotation, hyperextension
- **Shoulder** — abduction, adduction, rotation, hyperextension
- **Elbow** — extension, flexion, pronation, supination
- **Wrist** — flexion, hyperextension, radial flexion, ulnar flexion
- **Fingers** — abduction, adduction, flexion (soft, lifelike material)
- **Neck** — rotation, hyperextension, lateral flexion
- **Hip** — abduction, adduction, rotation, hyperextension
- **Knee** — extension, flexion
- **Ankle** — eversion, inversion, dorsiflexion, plantarflexion
- **Toes** — abduction, adduction, flexion (soft, lifelike material)

SETUP

GERi™/KERi™ manikins are packaged with arms and legs unattached to prevent damage during shipping. Refer to the following sections for assembly instructions.

Figure 1

Arms

To attach the arms, bend the elbows backward approximately 90° to align the keyholes at the shoulders, and then push toward the shoulder of the manikin. Reverse this procedure to disassemble. *(See Figure 1.)*

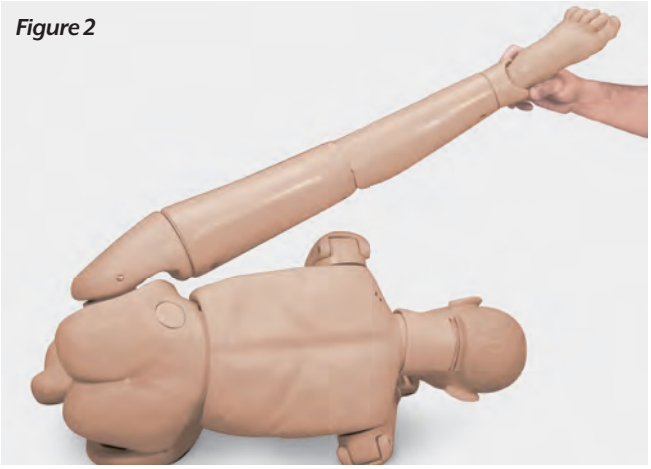


Figure 2

Legs

The legs attach to the body at the hips by bending the legs backward approximately 150° so the feet are near the shoulders and the keyholes are aligned. *(See Figure 2.)*

Head

To attach the head, position the head facing backwards and align the keyholes. Press down and turn head 180° so it is facing forward. Reverse the procedure to disassemble.

Joints

All joints may be assembled with a flat-head screwdriver. Hold the opposite end of the connector pin to prevent unproductive rotation.

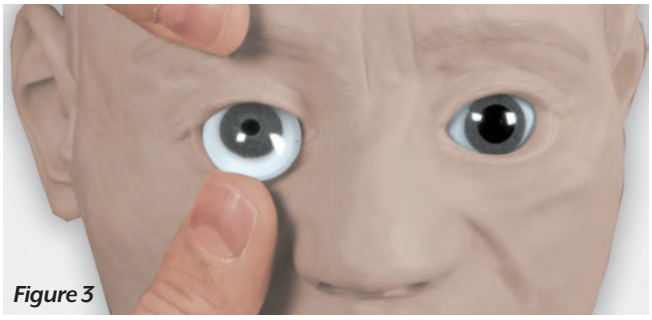


Figure 3

Eyes

The eyes come installed in the head. The eyes can be removed by creasing the skin at the outside of each eye and rolling the eye up. *(See Figure 3.)* We recommend you replace the eyes in the same sockets, the left pupil is dilated and the right pupil constricted to keep consistent with this training manual. Both eyes may be irrigated using water. Following completion of the exercise, follow the above instructions for removing the eye, dry the sockets completely with a soft cloth, and replace the eyes in their respective sockets. To keep consistent with this manual, the left pupil is dilated and the right pupil constricted.

Figure 4

ORAL HYGIENE

Tooth brushing should be simulated without water or any cleaning agents to avoid leaking into the head of the manikin and to simplify cleanup. Denture removal is accomplished by grasping the dentures and pulling forward and then down for the upper plate and forward then up for the lower plate. *(See Figure 4.)*

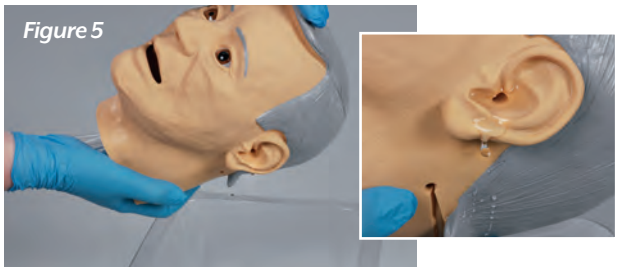


Figure 5

Figure 6

EAR CARE

Both ears may be irrigated. Nasco recommends using water to perform ear irrigation. To drain, tilt the head sideways and empty into the basin or absorbent cloth. *(See Figure 5 and inset.)*

Cotton swabs may be used gently in the ear as you would with a real patient. The manikin includes a simulated hearing aid for placement practice. *(See Figure 6.)* The simulated hearing aid will only fit in the right ear.

BED BATHS AND HAIR WASHING

To simplify cleanup, dry bed baths and shampoos are recommended to eliminate the chance of water entering the inside of the manikin. However, a soft cloth and water can be used for bathing exercises, and a mild shampoo and cool water can be used for hair washing. Avoid scrubbing any painted areas of the manikin. To dry the wig, blot with a soft towel and air dry. Do not brush the hair when wet, and never use a hair dryer or blow dryer on the wig.

MALE CATHETERIZATION

(Available with Complete, Advanced, Auscultation, and Advanced Auscultation ***GERi™/KERi™***)

The male genital insert represents an uncircumcised adult male. To prepare for catheterization exercises, use the following procedures:

1. Ensure the simulated bladder reservoir bag and fitting are attached to the urethra behind the genital insert.
2. Ensure the cloth pressure sleeve is in place over the simulated bladder reservoir bag and the hook-and-loop fastener on the pressure sleeve is attached to the hook-and-loop fastener on the genital track.
3. Fill the 140 cc syringe supplied with water. Lubricate the end of the syringe's administration tube and insert though the urethra at least 7"-8". *(See Figure 7.)*

Figure 7

4. Depress the plunger of the syringe to fill the simulated bladder reservoir bag. The bladder reservoir will hold approximately 375 cc. Fit the male or female genital back on the abdomen. *(See Figure 8.)*

Figure 8

5. Lift and push the bottom of the genital insert into the genital opening in the body. Push the top of the genital insert down and in to secure the system.

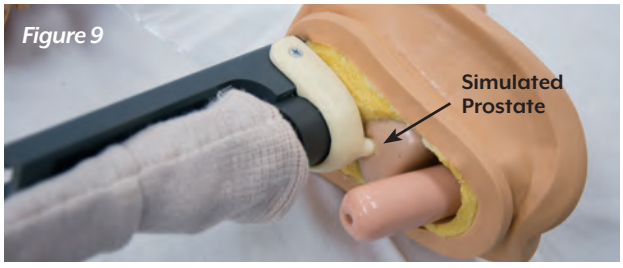
The natural restrictions of the male urinary tract have been designed into the male genital insert. Proper manipulation of the penis is required to achieve catheterization.

1. Thoroughly lubricate the 16 French Foley catheter supplied with your manikin prior to insertion.
2. The mucosal fold is approximately 2" into the urethra. Withdrawing the catheter and stretching the penis slightly will enable the catheter to advance past the first restriction.
3. The bulbous urethra is approximately an additional 2" past the mucosal fold. Elevating the penis 60° will enable the catheter to advance past the second restriction.
4. The final restriction represents the sphincter muscle where the urethra joins the bladder. Gently advance the catheter past this point until you feel a "pop" as you enter the bladder. Water will now flow through the catheter.
5. After completion of the exercise, remove the male genital insert by reversing the assembly instructions. Disconnect the bladder reservoir bag with pressure sleeve from the insert piece. Drain the reservoir thoroughly. Rinse reservoir and the outside of the penis to remove any residual lubricant.

Note: Special care should be taken when using a Foley catheter. Nasco recommends use of 16 French Foley catheters. One will be supplied with your manikin, and use of this size will avoid the possibility of leakage. Cuff inflation should only be attempted when the catheter is in the proper position inside the bladder. The cuff must also be completely deflated before the catheter is removed. The catheter should not be left inserted in the simulator for an extended period of time. Improper use of a Foley catheter may result in damage to the simulator and void the warranty.

PROSTATE EXAMINATION

(Available with Complete, Advanced, Auscultation, and Advanced Auscultation ***GERi™/KERi™***)



The male genital insert also includes the capability for digital rectal prostate palpation. *(See Figure 9.)*

The prostate gland represents stage B progression of prostatic cancer. A discrete hard nodule is palpable in the upper right quadrant, simulating a beginning state of carcinoma.

To perform a prostate examination,

1. Position the manikin following your facility's procedures.
2. Generously lubricate examination finger.
3. Insert lubricated finger into the rectum to perform examination.
4. Following the procedure, remove the male genital insert from the manikin.
5. Rinse the rectum with warm water and allow drying.

Note: The male genital insert does not have the capacity for enema administration.

FEMALE CATHETERIZATION

(Available with Complete, Advanced, Auscultation, and Advanced Auscultation ***GERi™/KERi™***)

To prepare for catheterization exercises:

1. Ensure the simulated bladder reservoir bag and fitting are attached to the urethra on the backside of the genital insert. *(See Figure 10.)*
2. Ensure the cloth pressure sleeve is in place over the bladder reservoir and the hook-and-loop fastener on the pressure sleeve is attached to the hook-and-loop fastener on the genital track.
3. Fill the 140 cc syringe supplied with water. Lubricate the end of the syringe's administration tube and insert though the urethra at least 7"-8".
4. Depress the plunger of the syringe to fill the bladder bag. The bladder reservoir will hold approximately 375 cc.
5. Gently slide the genital insert back into the body. Lift and push the bottom of the genital insert into the genital opening in the body. Push the top of the genital insert down and in to secure the system.

6. Thoroughly lubricate the 16 French Foley catheter supplied with your manikin prior to insertion.
7. After completion of the exercise, remove the female genital insert by reversing the assembly instructions. Disconnect the bladder reservoir with pressure sleeve from the insert piece. Drain the reservoir thoroughly. Rinse the reservoir and the vagina to remove any residual lubricant.

Note: Special care should be taken when using a Foley catheter. Nasco recommends use of 16 French Foley catheters. One will be supplied with your manikin, and use of this size will avoid the possibility of leakage. Cuff inflation should only be attempted when it is in the proper position inside the bladder. The cuff must also be completely deflated before the catheter is removed. The catheter should not be left inserted in the simulator for an extended period of time. Improper use of a Foley catheter may result in damage to the simulator and void the warranty.

ENEMA ADMINISTRATION

(Available with Complete, Advanced, Auscultation, and Advanced Auscultation ***GERi™/KERi™***)

Enema Administration can only be practiced on the female genital insert. To prepare the manikin for enema administrations, follow the instructions below.

1. With the female genital insert unattached from the manikin, ensure the enema reservoir is securely attached to the inside of the rectum. *(See Figure 11.)*

Figure 11

2. Lift and push the bottom of the genital insert into the genital opening in the body. Push the top of the genital insert down and in to secure the system.
3. Position the manikin on its left side in the Sims' position.
4. Using a facility supplied enema kit, lubricate the applicator liberally and gently insert through the anus.

Note: Use water ONLY when administering an enema.

5. To simplify cleanup, you may choose to leave the applicator in place while positioning the manikin to drain, or remove applicator and position the manikin over a drainage basin. The enema reservoir will drain via gravity as soon as the manikin leaves the left Sims' position.
6. Remove the female genital insert by reversing the assembly instructions. Rinse the anus and internal enema reservoir with warm water to remove any residual lubricant.

DOUCHING, PAP SMEARS, AND VAGINAL INSPECTION

(Available with Complete, Advanced, Auscultation, and Advanced Auscultation ***GERi™/KERi™***)

The female genital insert allows for douching. Only water should be used as a douching agent. Pap smear procedures and visual inspection of the vagina and cervix may also be demonstrated.

To perform procedures:

1. Generously lubricate instrument of insertion.
2. Use water only for douching exercises.
3. Use the smallest possible speculum for Pap smear and visual inspection exercises.
4. Avoid exerting too much pressure on the vaginal walls.
5. Following completion of the exercises, remove the female genital insert by reversing the assembly instructions.
6. Rinse the vagina with warm water to remove any residual lubricant. Allow to dry before reassembling into the manikin.

GASTROSTOMY CARE LAVAGE AND GAVAGE

(Available with Complete, Advanced, Auscultation, and Advanced Auscultation ***GERi™/KERi™***)

A flanged hole simulating an abdominal incision for the insertion of a feeding tube is included on the upper torso for performing lavage and gavage. *(See Figure 12.)*

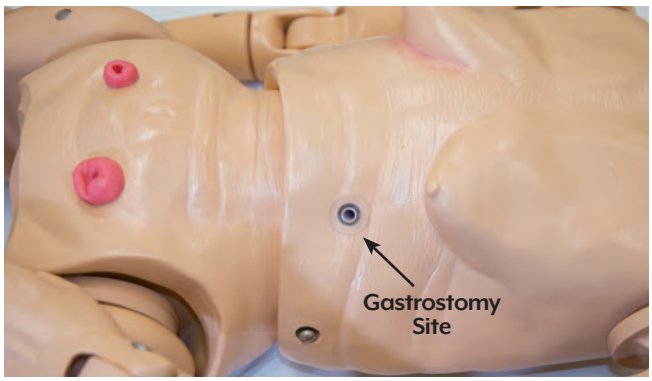


Figure 12

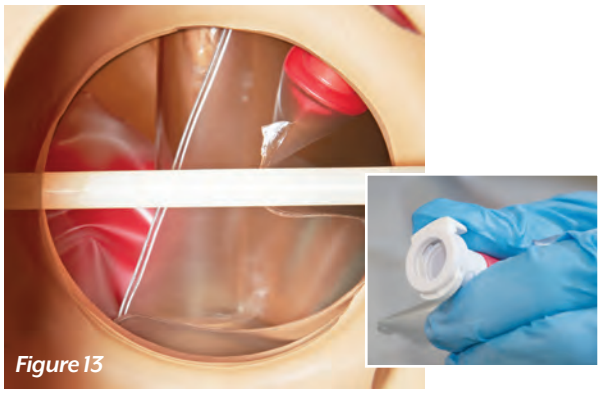


Figure 13

1. Inside the upper torso is a reservoir bag with a maximum capacity of 500 cc, which is attached to the underside of the gastrostomy opening with a two part coupler. The bag is removed by pushing in on the L-shaped button and pulling it straight away. *(See Figure 13 and inset.)*

Note: In some models, the waist pin will need to be removed for easier access.

2. To attach, simply push the coupler body (with bag attached) onto the coupler insert (part with the black O-ring) that is protruding from the underside of the gastrostomy inside the upper torso of the manikin. You will hear a slight snap when the connection is complete.

With extensive use, these two coupler parts may no longer snap. The L-shaped button will then have to be manually pulled all the way out after connecting the two parts. Test the connection by gently pulling on the coupler body to ensure it is locked.

The gastrostomy feature is designed for use with a 16 French Feeding Tube. It is recommended that the tip of the feeding tube is well lubricated before inserting.

1. Ensure the reservoir is straight and flat before attempting to simulate feeding with water.

Note: Water only should be used to perform feeding procedures.

2. Lubricate the end of the feeding tube and gently insert through the flanged hole.
3. Upon completion of the exercise, remove the reservoir, drain the liquid from the reservoir bag, and rinse the bag.
4. Ensure the bag is clean and dry prior to storing it back inside the torso. Wipe any residual lubricant from the exterior gastrostomy site with warm water and a soft cloth prior to storing the manikin.

OSTOMY CARE

(Exterior Ostomy Care available on all ***GERi™/KERi™*** models)

Colostomy and ileostomy care can be practiced on all ***GERi™/KERi™*** models, including stoma dilation, cleaning, and ostomy bag changing procedures. Irrigation can be practiced on Complete, Advanced, Auscultation, and Advanced Auscultation. Irrigation tubes should be well lubricated prior to insertion. After completion of the exercises, the stomas can be rinsed with warm water to remove any residual lubricant. The stoma reservoirs have a 20 cc fluid capacity. *(See Figure 14.)*

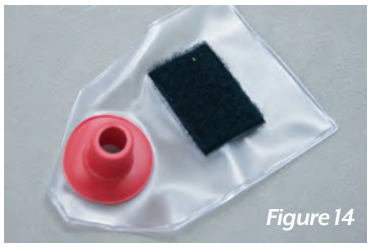


Figure 14

Removal of the internal stoma reservoirs can be achieved by:

1. Removing the genitalia and reaching through the genital cavity. The reservoir bags are attached to the underside of the stomas.
2. To remove, pull the reservoir fittings down and disconnect from the stomas. Then pull the reservoir bags from the hook-and-loop attachments. *(See Figures 15 and 16.)*

Figure 15

Figure 16

3. Rinse with water to clean. Reverse the procedure to reattach the internal stoma reservoirs. Ensure reservoirs are clean and dry prior to reattaching for storage.

TRACHEOSTOMY CARE

(Available on all ***GERi™/KERi™*** models)

The tracheostomy canal is not removable from the body. Any water administered to this site must be suctioned out after completion of the exercise. The tracheostomy canal can hold approximately 20 cc of water. Suctioning, dressing changes, tracheostomy tube placement, and cuff inflation may be practiced on the manikin. Ensure proper lubrication is completed prior to inserting tubes into the stoma site. The tracheostomy canal is not connected to the oronasal system, and access is provided only through the stoma site.

ORAL AND NASAL LAVAGE, GAVAGE, AND SUCTIONING

(Available with Complete, Advanced, Auscultation, and Advanced Auscultation ***GERi™/KERi™***)

Access to the stomach is provided through the mouth and both nostrils. The internal stomach reservoir bag has a 375 cc capacity. Only water should be used in tube feeding exercises.

1. Lubricate feeding tubes generously prior to inserting through mouth, nose, or nostrils.
2. Ensure the upper torso of the manikin is slightly elevated to prevent water backflow into the head of the manikin.
3. Introduce water only using standard facility procedures and materials.
4. Following the procedure, empty the stomach. Water may be removed by suctioning or removing the stomach reservoir bag and disconnecting it and draining it into a sink or basin.

Note: Ensure the manikin's torso remains elevated when the stomach reservoir bag contains water to continue to prevent backflow into the head of the manikin.

5. To remove the stomach, rotate the head backward 180° to align the keyholes in the neck.
6. Gently pull up head to expose three tubes with the stomach reservoir bag connected at the end. *(See Figure 17.)*

Note: The stomach reservoir bag will only come through the neck opening if less than 250 cc of water is contained in the stomach.

Figure 17

7. Following completion of the procedures, completely drain the stomach reservoir and allow drying prior to reattaching and storing inside the manikin. Wipe any residual lubricant with warm water and a soft cloth.

INTRAMUSCULAR INJECTIONS

(Available on all ***GERi™/KERi™*** models)

Intramuscular injections may be performed in inserts at the left hip, right thigh, at both deltoids of the standard arms, and left deltoid of the injectable training arm (available with Advanced and Advanced Auscultation ***GERi™/KERi™***). Inject AIR ONLY as the inserts cannot be drained in the standard arms, injection training arm, and thigh.

To remove the inserts on standard arms and thigh:

1. Compress them sideways and pull out.
2. Reverse procedure to replace.

Avoid using alcohol or similar substances to prep the injection site. Use distilled water to simulate this procedure.

INJECTABLE TRAINING ARM

(Available on Advanced and Advanced Auscultation ***GERi™/KERi™*** or as a modular or add-on to all other models)

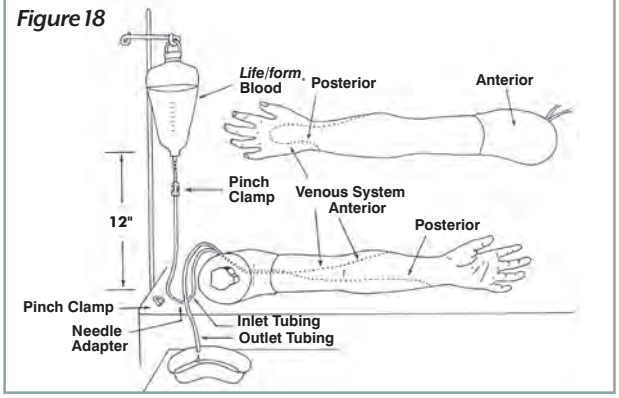
CAUTION: PRODUCT CONTAINS DRY NATURAL RUBBER!

INTERNAL AND EXTERNAL STRUCTURE

The outer skin is easily peeled off, revealing the "core" and veins. The skin and veins can be readily replaced when needed. Using smaller gauge needles will prolong the life of the original skin and veins. Replacement parts are available and listed at the end of this manual. The internal vascular structure begins at the shoulder and continues under the arm, crosses the antecubital fossa forearm, makes a loop in the back of the hand, and then returns to the underarm. This venous system is constructed of special, natural dry rubber, with the lumen being the approximate size of an adult human vein. *(See Figure 18.)*

This vascular structure has inlet and outlet tubing at the shoulder. It is via these tubes that synthetic blood is infiltrated, thus allowing practice in techniques of blood drawing and starting intravenous infusions.

Figure 18



SETUP

A. Filling the Venous System and Preparing the Arm for Blood Draws

1. Prepare the synthetic blood by filling the pint bottle containing the synthetic blood concentrate with distilled water.
2. Be sure the clamp on the IV tubing is closed, and pour the synthetic blood into one of the provided fluid supply bags. This will be IV Bag A. Fill to 500 cc maximum.
3. Hang IV Bag A no more than 18" (45.72 cm) above the level of the arm.
4. Attach the tubing on IV Bag A to one of the shoulder tubes. Since this is a single tube loop system it does not matter which tube you use. This will now be the inlet tube.

Figure 19

5. Use the second shoulder tube for draining; this will be the outlet tube. With the outlet shoulder tube in the basin (included), a sink, or attached to the second IV Bag or IV Bag B, make sure the clamp on the drain tube is open. If using IV Bag B, ensure the clamp on IV Bag B is also open. "Flush" the vascular system with synthetic blood by slowly opening the clamp on IV Bag A. Allow the system to flush with synthetic blood until the air bubbles are no longer seen passing through the outlet shoulder tubing into the basin, sink, or IV Bag B. *(See Figure 19.)*
6. Close the clamp on the outlet shoulder tube and, if using IV Bag B to close off the blood outlet, the system is now filled and pressurized. Be sure to leave the clamp on IV Bag A open.

The arm is ready to practice drawing blood. Synthetic blood can be drawn anywhere along the pathway of the vein.

B. Preparing the Arm for Intravenous Infusions

1. Start with an "empty" unpressurized arm. Close the clamp at the end of IV Bag A and then fill with distilled water, 500 cc maximum. Hang IV Bag A not more than 18" (45.72 cm) above the arm.
2. Ensure one of the tubes leading from the shoulder of the Injectable Training Arm is fitted with a clamp. Attach fitting end of IV Bag A to the shoulder tubing with the clamp. Attach the fitting end of IV Bag B to the remaining shoulder tube.

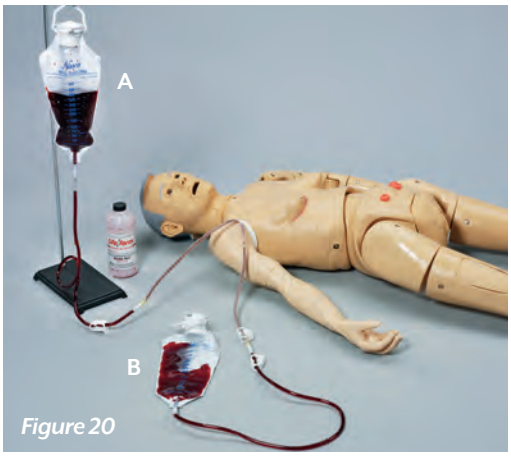


Figure 20

3. With IV Bag B laying on the surface and IV Bag A hanging, open the clamps on both bags and the arm tube. Allow fluid to flow through the Injectable Training Arm until air bubbles are no longer seen flowing into IV Bag B. Close the clamp on IV Bag B, the system is now pressurized. *(See Figure 20.)*
4. Insert IV needle (butterfly) in vein. "Flashback" will indicate proper insertion.
5. Close the clamp on IV Bag A and the clamp on the arm tube. Disconnect IV Bag A from the shoulder tubing. You may now use IV Bag A as the infusion supply.
6. Cleanse the IV site with distilled water and insert IV needle or butterfly.
7. Connect IV Bag A with the latex connector to the IV needle or butterfly tubing. *(See Figure 21.)*

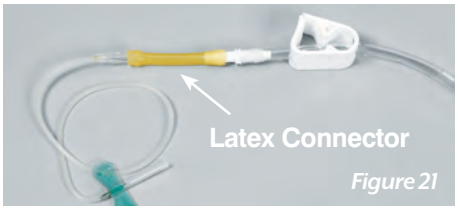


Figure 21

8. To start the IV flow, open the clamps on both IV Bags A and B.

Proof of proper procedure will be evidenced by the flow of fluid from IV Bag A. Control flow rate with the clamp on IV Bag A. A third IV Bag (not supplied) can be used for the infusion of fluid. This will enable bags A and B to remain attached to the arm.

If a more realistic experience is desired, with "blood flashback" instead of water when inserting the butterfly into the lumen of the vein, use the following procedure, C.

C. Recommended Procedure for Simultaneous IV Infusions and Drawing Blood

1. Follow the procedure for setting up your IV Arm to draw blood, Procedure A, and using IV Bag B as the drain bag.
2. Once the arm is pressurized and full of blood, open the clamps on IV Bags A and B.
3. Obtain a third IV Bag (not supplied), IV Bag C, and ensure the clamp is closed and fill with distilled water. Hang IV Bag C according to your desired flow rate.
4. Cleanse the IV site with distilled water and insert IV needle or butterfly. A realistic blood flashback will be evidenced with proper insertion.
5. Connect IV Bag C to the IV needle or butterfly with the latex connector and open the clamp to IV Bag C. *(See Figure 22.)*

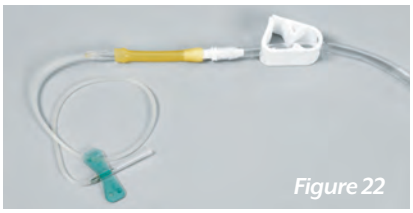


Figure 22

6. IV Bag B, when full, may be easily switched with A.

USER HELP GUIDE FOR THE INJECTABLE TRAINING ARM

1. Follow procedures and ensure clamps are open on appropriate fluid supply/IV bags and/or shoulder tubes.
2. Look over your equipment prior to use. IV tubes will kink at the clamp site with repeated use. Routinely move clamps up or down the tube to reduce the probability of kinks. When kink occurs, slide the clamp to a new position and, with fingers, massage tubing at pinched site to restore lumen. Replacement fluid bags are available. Removing clamps prior to storage is recommended.
3. Check to ensure hanging bags are hung to the appropriate height. Hanging the supply bags slightly higher for bags not producing enough pressure can create just enough gravitational force on the fluid to facilitate flow.
4. If a venous system clog is suspected, try using a large 50 cc syringe to force distilled water through the tubing.
5. Check the venous system tubing for kinks. First, lubricate the outside of the arm skin generously with Ivory® liquid dishwashing detergent. Peel the skin back to the knuckles, being careful NOT to remove the skin from the fingers. Examine all the tubing for possible kinks. Replace the skin and infiltrate the system again.

CARE AND MAINTENANCE

After each use of the Injectable Training Arm, follow these procedures:

1. Disconnect IV bags, remove infusion needles, and flush the venous system using distilled water and 12 cc syringe.
2. Simulated blood can be returned to its bottle and reused.
3. Rinse IV bag containing simulated blood with distilled water, flushing through tubing into a sink or basin.
4. Remove pinch clamps from IV bags and injectable training arm shoulder tubing.
5. Wash the outside of the injectable training arm with mild liquid detergent, such as Ivory® dishwashing soap. Stubborn stains may be washed with Nasco cleaner. Dispense Nasco cleaner on clean, soft, dry cloth and gently wipe soiled area.
6. Remove excess water from the venous system by raising the hand, lowering the shoulder, and draining it into a sink or basin.
7. Allow the arm to dry completely before storing.

To prevent causing harm to the Injectable Training Arm, use the following recommendations:

1. Use distilled water rather than alcohol, Betadine®, or other skin preparing substances to simulate preparing the puncture site.
2. Small diameter needles, 20-gauge to 25-gauge, should be used to extend the life of the skin and veins.
3. Synthetic blood will stain the soft skin of the injectable training arm, clothes, most soft surfaces, and some hard surfaces. Please use caution.
4. Ink and newsprint will cause an indelible stain to the injectable training arm. DO NOT place the injectable training arm on printed surfaces or plastic.
5. Follow Care and Maintenance instructions carefully.

CAUTIONS

1. This synthetic blood is specially formulated to be compatible with the self-sealing veins and plastics used in manufacturing the injectable training arm.
2. NEVER use synthetic blood for intramuscular injection.
3. DO NOT use dull or burred needles, these will cause leaks in the system. Burred needles will cause permanent damage.
4. DO NOT allow synthetic blood to dry on the simulator — it may stain the skin.
5. Use only 500 cc of infusion fluid. Larger amounts will increase the pressure of the venous system, resulting in leaks.
6. DO NOT clean the simulator with solvents or corrosive materials as they will damage it.
7. DO NOT use for subcutaneous injection. Nasco's Intradermal Injection Simulator (LF01008U) is specifically designed for intradermal injection training and practice.

SUPPLIES/REPLACEMENT PARTS FOR INJECTABLE TRAINING ARM

LF04081U	Skin and Vein Replacement Kit (Light), LF04126U (Medium)
LF00845U	***Life/form***® Blood, 1 Quart
LF00846U	***Life/form***® Blood, 1 Gallon
LF01099U	Vein Tubing Sealant Kit
LF09919U	Nasco Cleaner
LF01130U	IV Fluid Supply Bag Set: 500 ml Supply Bag, Tubing, Clamp and Connector
LF00996U	Vinyl Adhesive, 2 tubes (1 oz. each)
LF01117U	Butterfly Set (Pkg. of 12)

BLOOD PRESSURE SIMULATOR ARM

(Available on Advanced and Advanced Auscultation ***GERi***™/***KERi***™ or as an update or add-on to all other models)

CAUTION: PRODUCT CONTAINS DRY NATURAL RUBBER!

The Left Blood Pressure Simulator Arm has digitally recorded blood pressure sounds that can be varied by pulse rate and volume. The different Korotkoff phases can be identified and an optional auscultatory gap can be selected. A palpable radial pulse is present in the wrist.

GENERAL INSTRUCTION FOR USE

Installing the Batteries

1. Take the Blood Pressure Electronic Control Unit out of the box and turn it over, placing it face down onto a padded work surface.
2. Locate the "Open" compartment on the back of the panel where the batteries are to be installed.
3. Place your thumb or index finger on the "Open" compartment and push up. *(See Figure 23.)*
4. This will open the battery compartment. The compartment is marked as to the positions of the batteries "+" or "-".

Figure 23

5. Install 6 "AA" batteries as indicated by the orientation diagram embossed in the bottom of the bracket.

Note: It is recommended that alkaline batteries be used for increased battery life.

6. After the batteries have been properly installed, reassemble the Electronic Control Unit by reversing the disassembly procedures.

Turning the Electronic Control Unit On

1. Place the unit face up on the padded work surface.

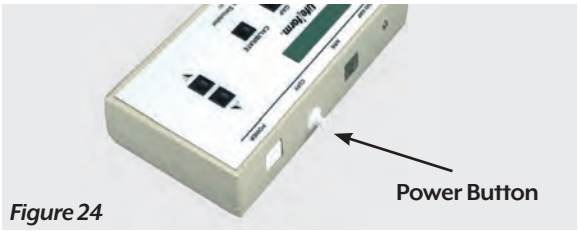


Figure 24

2. Press the power button on the top right of the unit. *(See Figure 24.)*
3. Observe the display and verify that a readable display is present.

Note: The control box has a battery saving feature that will turn the unit off after approximately 8-10 minutes if no keys are used within that period of time.

Connecting the Arm, Electronic Control Unit, and Sphygmomanometer

1. Locate the end of the pressure line attached to the sphygmomanometer that is assembled with a male luer fitting.

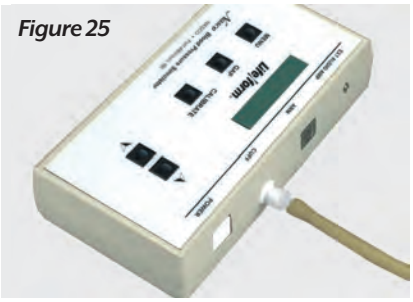


Figure 25

2. Attach this end of the pressure line to the female luer fitting assembled at the top of the electronic control unit marked CUFF. *(See Figure 25.)*

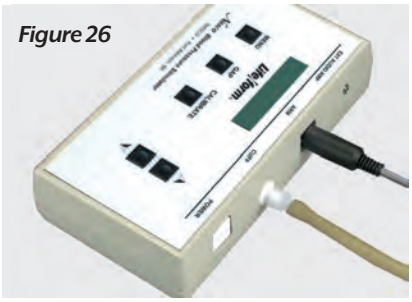


Figure 26

3. Locate the cable that extends from the blood pressure simulator arm and plug into the top of the Electronic Control Unit using the jack labeled ARM. *(See Figure 26.)*

At this point, the blood pressure simulator is ready for use. The unit has been factory calibrated for use with accessories included. No further calibration adjustments are necessary at this time. If the unit is to be used with a sphygmomanometer other than the one supplied, or when recalibration is necessary, see the section titled Calibration Procedures.

Electronic Control Unit Function

Under the display window are three buttons: Menu, Gap, and Calibrate. *(See Figure 27.)*

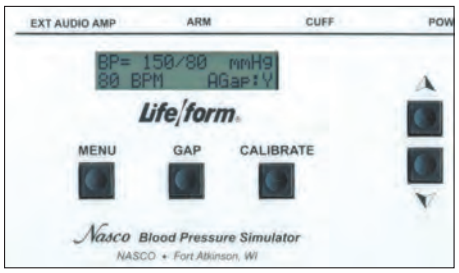


Figure 27

Setting Systolic and Diastolic Pressure

1. Press the Menu Key once.

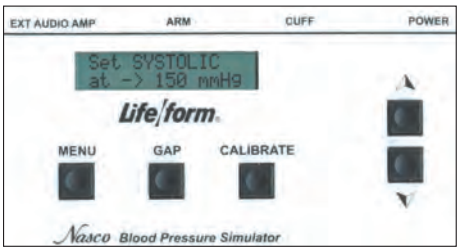


Figure 28

2. The "Set SYSTOLIC" pressure menu will display in the Electronic Control Unit window. *(See Figure 28.)*
3. Use the up or down arrow keys, located to the right of the menu button, to adjust the systolic pressure.
4. Press the Menu key a second time.

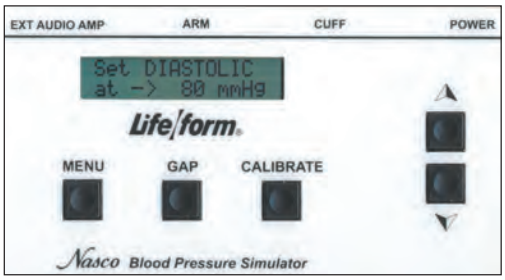


Figure 29

5. The "Set DIASTOLIC" pressure menu will display in the Electronic Control Unit window. *(See Figure 29.)*
6. Use the up or down arrow keys located to the right of the menu button to adjust the diastolic pressure.

The systolic and diastolic pressures can be set anywhere from 0-300 mmHg.

Setting the Heart Rate

1. Press the Menu Key a third time.

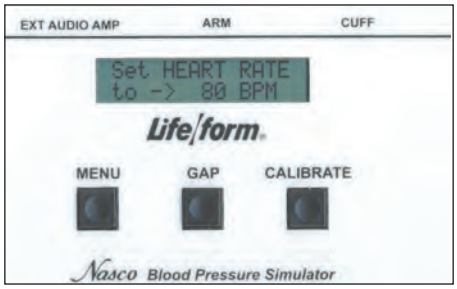


Figure 30

2. The "Set HEARTRATE" menu will display in the Electronic Control Unit window. *(See Figure 30.)*
3. Use the up or down keys located to the right of the menu button to adjust the heart rate. The heart rate can be set from 0-300 beats per minute.

Setting the Palpable Pulse

Figure 31

The palpable pulse is found at the radial location. *(See Figure 31.)*

Palpations can be felt upon start-up of the unit or after blood pressure and heart rate settings have been made. The palpable pulse is delicate and should be palpated lightly. Pressing too hard will damage the pulse feature.

1. Press the Menu key a fourth time.
2. The "Set PALPATION" menu will display in the Electronic Control Unit window.
3. "Pulse ON" is defaulted.

Use the down arrow key to the right of the menu key to set palpation to "pulseless."

NOTE: The palpation can be set to either on or pulseless. When the pulseless setting is used, the diastolic and systolic pressures will automatically be set to 0.

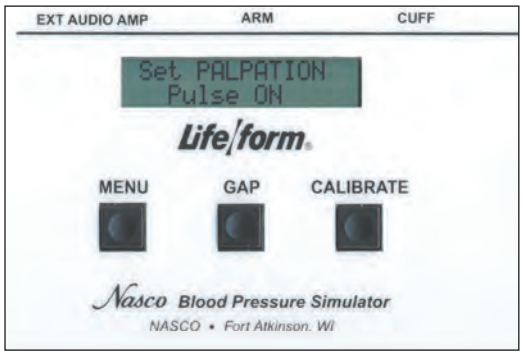


Figure 32

4. Use the up arrow key to the right of the menu key to set palpation as "Pulse ON." *(See Figure 32.)*

Note: During an actual blood pressure reading, the palpable pulse will automatically turn off when the cuff is inflated and surpasses the systolic set point. It will turn on when the cuff is deflated 20 mmHg below the diastolic set point. This function allows students to clearly hear Korotkoff sounds.

Setting the Auscultatory Gap

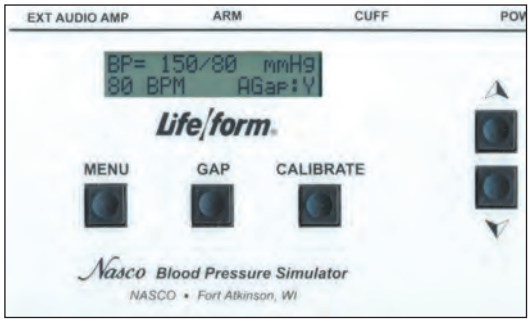


Figure 33

This function is included to simulate the gap that is sometimes present between phases 1 and 2 in which no audible sound is noted.

1. Locate the GAP Key to the right of the MENU Key.
2. Press the GAP Key to set the function on (Y=Yes) or off (N=No).
3. When the key is pressed, a message will briefly appear that the auscultatory gap is enabled or disabled.
4. The Main display will show AGap:Y (or ON) *(See Figure 33.)* or AGap:N (or OFF).

Setting the Volume

The arrow keys also control the volume of the sounds present in the arm.

1. From the main menu, press the up arrow key to increase the volume.
2. Press the down arrow key to decrease the volume.

The volume levels can be adjusted from level 1 (the lowest volume) to level 7 (the highest volume).

Performing a Blood Pressure

1. Verify the pressure line tubing from the sphygmomanometer and the audio line from the arm are properly connected to the electronic control unit. (See above connection instructions)
2. Apply the sphygmomanometer cuff and gauge to the arm according to facility procedures.
3. Place the stethoscope to the arm according to facility procedures.
4. Set the systolic and diastolic pressure to the desired levels.
5. Select the auscultatory gap.
6. Select the heart rate to the desired setting.

Note: The electronic control unit will default to the last levels previously set. It is important to go through all menus and program the electronic control unit with each training session as desired. A standard stethoscope will work with the blood pressure simulator, one is not provided.

Low Battery Indicator

When the battery supply diminishes to a level near the point the unit will no longer function properly, a “low batt” message will display on the systolic pressure menu when the systolic pressure reaches above 20 mmHg. At this point, the batteries should be replaced as soon as possible to ensure proper operation of the unit. Refer to the section “Installing the Batteries” for more information.

Calibration Procedures

1. Follow the setup procedures.
2. Apply the cuff to the simulated arm.
3. Set the electronic control unit systolic pressure to 150 mmHg and set the diastolic pressure to 70 mmHg.
4. Proceed with performing the blood pressure and note the differences between the gauge and what was set on the electronic control unit.

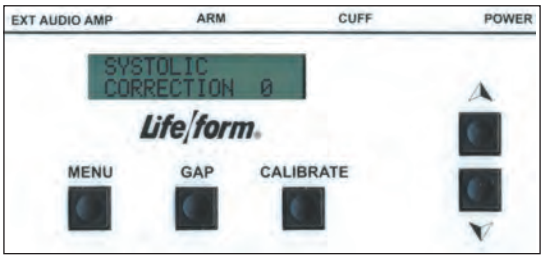


Figure 34

5. Set the systolic correction by pressing and holding the CALIBRATE key to the right of the GAP key. *(See Figure 34.)*
6. Using the arrow keys, set the correction. For example, if the blood pressure reading for systolic pressure was 148 mmHg, the systolic correction would be +2 and the up arrow key would be pressed until +2 would display in the window.

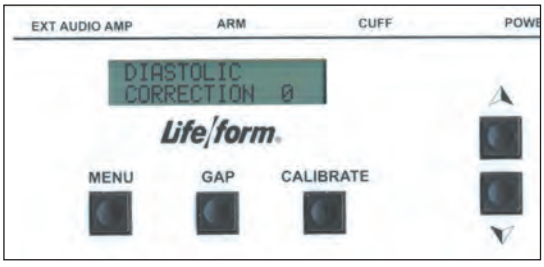


Figure 35

7. Press the MENU key from the Systolic Correction window to change to the Diastolic Correction window. *(See Figure 35.)*
8. Using the arrow keys, set the correction. For example, if the blood pressure reading for diastolic pressure was 72 mmHg, the diastolic correction would be -2 and the down arrow would be pressed until -2 would display in the window.
9. Press the MENU key. The “CALIBRATION COMPLETE” message will appear and the main menu window will be displayed.

Preparing Your Sphygmomanometer for Use with Blood Pressure Simulator

In the event the supplied sphygmomanometer would cease to operate, any standard sphygmomanometer can be adapted for use with the blood pressure simulator. It is recommended that a child-size cuff continue to be used.

1. Disconnect the sphygmomanometer from the pressure line connected to the electronic control unit. The pressure line can be left connected to the electronic control unit.
2. Remove the T-fitting included with the assembled sphygmomanometer.
3. Obtain a new sphygmomanometer.

Figure 36

4. Using a scissors, carefully cut the tube of the sphygmomanometer about 2" from the gauge. *(See Figure 36.)*

Figure 37

5. Take the T-fitting and insert the horizontal ends between the two ends of the cut tubing of the new sphygmomanometer. *(See Figure 37.)*

Figure 38

6. Assemble the free end of the pressure line tubing, still connected to the electronic control unit, to the free end of the T-fitting. *(See Figure 38.)*
7. Connect the newly modified sphygmomanometer to the child-size cuff.
8. Follow the calibration instructions to calibrate with the electronic control unit and blood pressure simulator.

SUPPLIES/REPLACEMENT PARTS FOR BLOOD PRESSURE SIMULATOR

LF01189U	Speaker System
LF01096U	Electronic Control Unit with Sphygmomanometer
LF01125U	Electronic Control Unit Only
LF01073U	Child Size Cuff and Gauge with Pressure Line Tubing
SB10828U	"AA" Batteries, 2 pack

THE AUSCULTATION SIMULATOR AND SMARTSCOPE™ WITH WIRELESS REMOTE CONTROL

The auscultation feature duplicates heart and lung conditions selected by the instructor via wireless remote control with LCD Display. Palpation is required to correctly identify the auscultation locations.

Heart

Sounds are detected at 6 anterior locations with 12 heart conditions:

01	Normal	07	S3 Gallop
02	Aortic Regurgitation	08	S4 Gallop
03	Pulmonary Stenosis	09	Systolic Click
04	Mitral Stenosis	10	Atrial Septal Defect
05	Holosystolic	11	PDA
06	Mid-systolic	12	VSD

Lungs

Sounds are detected at 5 anterior, 6 upper posterior, 4 lower posterior, and 2 mid-axillary locations. With 16 lung conditions:

01	Normal Lungs	09	Cavernous
02	Normal Vesicular	10	Bronchovesicular
03	Wheezes	11	Bronchial
04	Mono Wheeze	12	Pulmonary Edema
05	Fine Crackle	13	Infant
06	Coarse Crackle	14	Friction Rub
07	Rhonchi Crackle	15	Egophony
08	Stridor	16	Pectoriloquy

Setup

1. Locate your SmartScope™ and Remote Control with LCD display.
2. Locate included "AA" and "AAA" batteries.
3. Install 2 "AA" batteries into SmartScope™ and 2 "AAA" batteries into the remote control. The compartments are marked as to the positions of the batteries "+" or "-".
4. Press the red power button on the remote control. This turns on the remote control and sends a signal to activate the SmartScope™.
5. After the unit is activated, the LCD display on the remote control will be in the "status" mode, displaying the current menu settings for the heart and lung conditions.

Note: Powering on one remote control will activate and control all SmartScopes™ and manikins simultaneously within a 100-foot range. Multiple remotes operating within this range will cause complications and signal confusion.

GENERAL INSTRUCTIONS FOR USE

Selecting New Heart and Lung Conditions

1. Activate remote control and SmartScope™ using instructions above.
2. Press either the heart or lung button. This will put the display into menu mode.
3. Select a condition by using the number buttons or the scroll button to view the conditions in sequence.
4. When the desired condition is viewed on the LCD display, press the enter button to activate.
5. Heart and lung sounds are heard simultaneously. Check the main screen to ensure the desired sounds are being heard. For example, when hearing normal heart sounds and normal lung sounds, the LCD display will read: HS= (01) LS= (01).

Listening to Selected Heart and Lung Sounds

1. Follow the instructions above to activate remote control, SmartScope™, and select desired sounds.
2. Place the earpieces of the SmartScope™ in ears angled in a forward position.
3. Place the diaphragm of the SmartScope™ over the appropriate sites on the manikin.
4. Use included laminated key cards for location instruction.
5. For additional location instruction, use the green color-coded stickers for lung sites found and the blue color-coded stickers for the heart sites found.
6. Correct placement of the SmartScope™ is required to hear the sounds. Moving the SmartScope™ slowly across the area will help locate the sensor in the torso so that the sounds can be heard.

Note: The SmartScope™ is only for use with the Auscultation feature. It is not a standard stethoscope.

Using the Amplified Speaker (purchased separately LF01189U)

1. Locate the SmartScope™ and speaker cord included with the 30-watt amplifier/speaker.
2. Plug the speaker cord into the speaker jack on top of the SmartScope™ box.
3. Plug the amplifier/speaker into the 110V power source.
4. When the speaker is connected, the SmartScope™ earpieces will not work; sounds will only be amplified through the speaker.
5. Select the desired heart and lung sounds following the instructions above.
6. Place the diaphragm of the SmartScope™ over the appropriate sites on the manikin.

Note: The remote has a battery saver mode that shuts the unit down after eight minutes if the remote is left on the same setting. To prevent this shutdown, select a different heart or lung sound within the eight-minute time period.

CARE AND MAINTENANCE FOR AUSCULTATION FEATURE

1. Prior to storing equipment, ensure the batteries in the remote control and SmartScope™ are removed.
2. Adhesive remaining on the manikin from use of the blue and green location stickers can be removed using Nasco cleaner. Apply Nasco Cleaner to a clean, soft, dry cloth and wipe residual adhesive. Be cautious not to over-wipe painted areas.
3. Newsprint, ballpoint pen, and printed plastics will leave an indelible mark.
4. Alcohol prep pads are included to sterilize SmartScope™ earpieces between users.

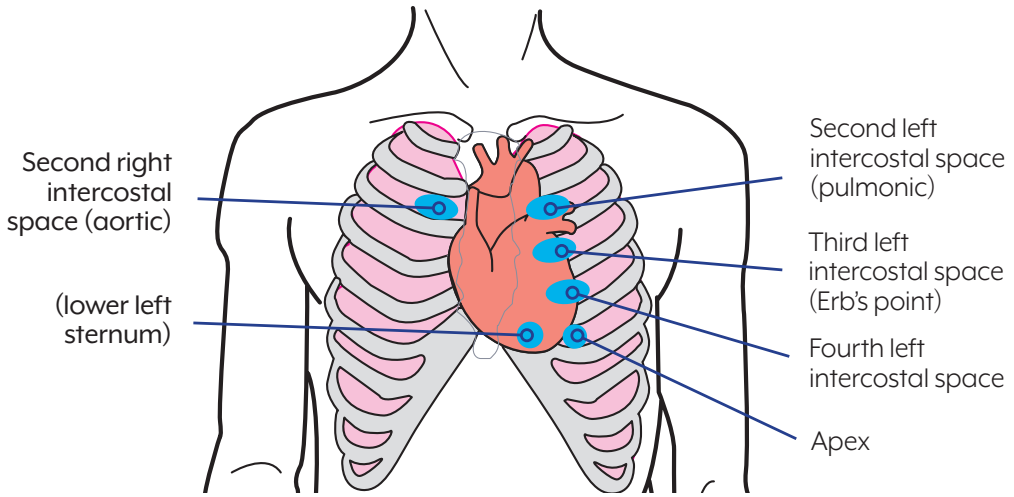
AVAILABLE SUPPLIES

LF01144U	Additional SmartScope™
LF01148U	Replacement Remote Control
LF01170U	Adult Tracheostomy Tube
LF01189U	110V 30-watt Amplifier/Speaker with speaker cord
LF01189EXU	220V 30-watt Amplifier/Speaker with speaker cord
LF03480U	Alcohol Pads (Pkg. of 100)
LF09919U	Nasco Cleaner
SB10828U	"AA" Batteries, 2 pack
SB27438U	"AAA" Batteries, 4 pack

GENERAL INSTRUCTION FOR CARE OF YOUR BASIC, COMPLETE, ADVANCED, AUSCULTATION, AND ADVANCED AUSCULTATION *GERI™/KERI™* MANIKIN

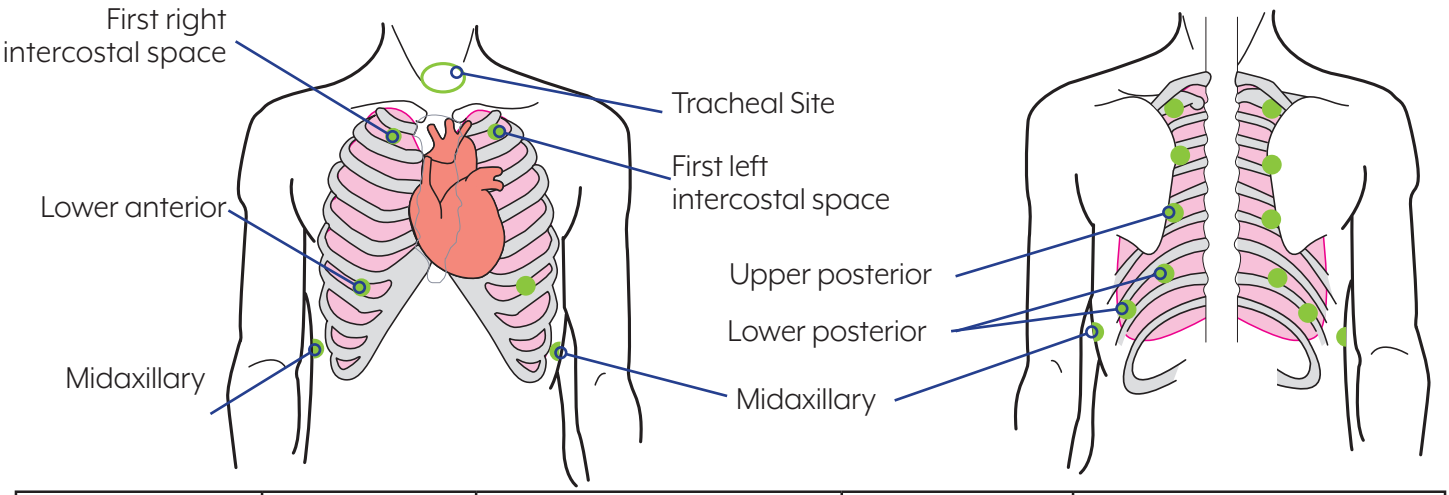
1. Most cleaning can be done with a soft cloth, mild soap, and warm water. Avoid over-washing the painted areas on the manikin.
2. Stubborn stains can be treated by using Nasco Cleaner and a soft cloth.
3. Stains caused by make-up, ink, and newsprint are indelible and cannot be removed. Avoid contact with these substances and do not apply cosmetics or Betadine® solution to the manikin.
4. Follow cleaning, care, storage, and maintenance guidelines in each section of this manual.
5. It is recommended that batteries are removed from the Electronic Control Unit (equipped with the Blood Pressure Simulator), remote control, and SmartScope™ (equipped with the Auscultation feature) prior to storing your equipment for future use.

Anterior Heart Sites



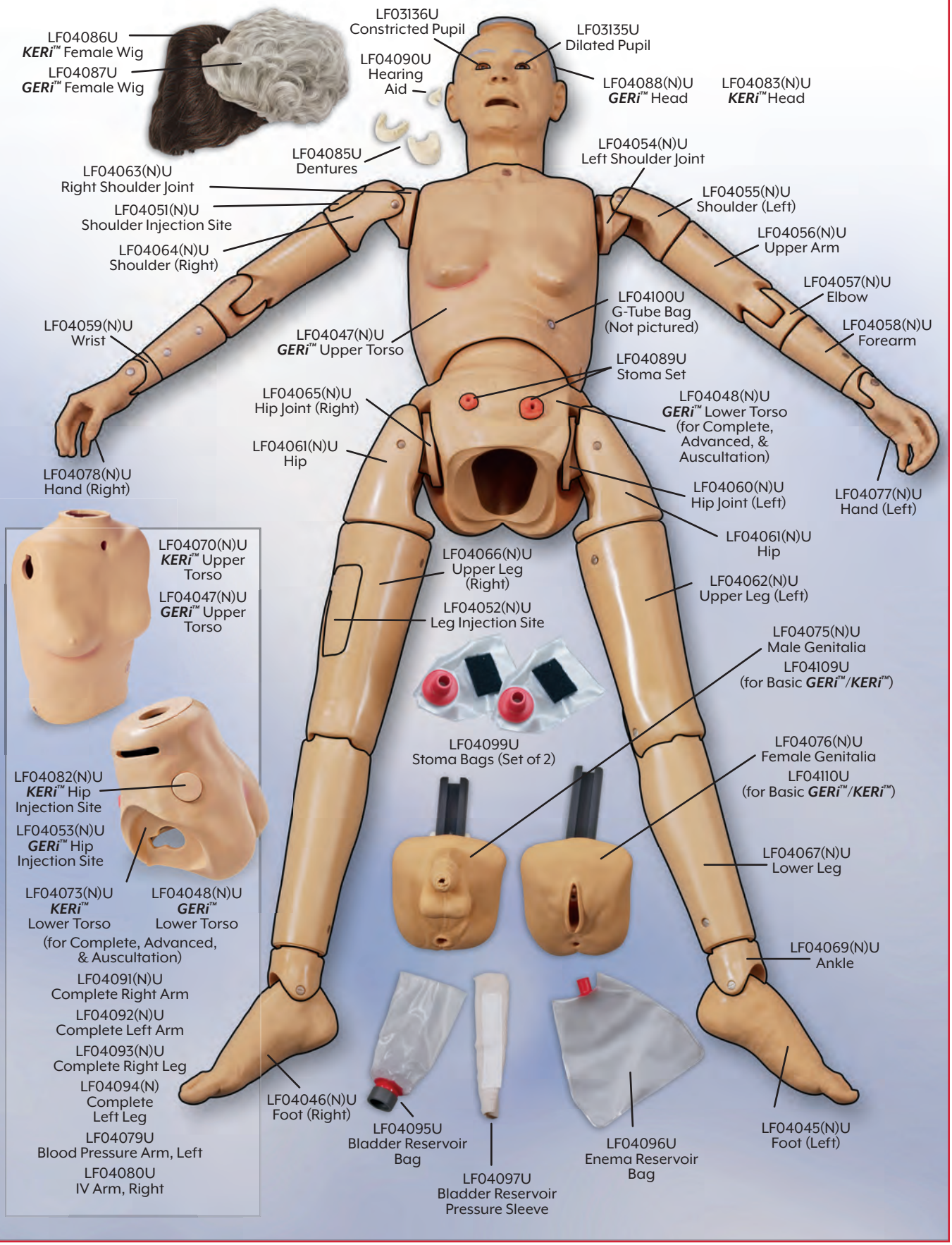
	Aortic Second Right Intercostal Space	Pulmonic Second Left Intercostal Space	Erb's Point Third Left Intercostal Space	Fourth Left Intercostal Space	Lower Left Sternum	Apex
1. Normal	Normal, S2 Accentuated	Normal, S2 Accentuated	Normal, S2 Accentuated	Normal	Normal	Normal
2. Aortic Regurgataion	Ejection Sound, Loud Mid systolic & soft early diastolic murmur	Ejection sound, mild systolic murmur, early diastolic blowing murmur			Normal	Normal
3. Pulmonary Stenosis	Normal	Moderate 4th sound, harsh late peaking systolic murmur, soft late pulmonic 2nd sound	Normal	Normal	Normal	Normal
4. Mitral Stenosis	Normal	Normal	Severe held expiration, tachycardia: opening snap .03 seconds after loud 2nd sound	Constrictive Pericarditis/ knock. Inspiratory augmentation indicates a gallop of right ventricular origin	Normal	Held expiration, tachy-cardia: opening snap, mid diastolic & presystolic murmurs, loud 1st sound
5. Holosystolic Murmur	Normal	Normal	Normal	Normal	Patient has mitral regurgitation & frequent premature ventricular contractions. Murmur is crescendo-decresendo with late peaking. Soft S3 in mid diastole.	
6. Midsystolic Murmur	Normal	Normal	Normal	Normal	Patient with hypertrophic cardiomyopathy has a murmur that begins after S1 and ends before S2	
7. S3 Gallop	Normal	Normal	Normal	Normal	Patient has a readily heard third heart sound. S3 occurs later in diastole than the opening snap.	
8. S4 Gallop	Normal	Normal	Normal	Normal	Patient with left ventricular hypertrophy has a fourth sound (S4) that is not heard on every cycle. The sound is presystolic about .1 second before S1.	
9. Midsystolic Click	Normal	Normal	Normal	Normal	Patient has mitral prolapse which produces a mid systolic click heard during inspiration.	
10. Atrial Septal Defect	Normal	Respiration: mid systolic murmur, fixed split 2nd, soft 3rd, breath sounds with inspiration	Normal	Respiration: mid systolic murmur, fixed split 2nd, mid diastolic murmur	Normal	Normal
11. Patent Ductus Arteriosus	Normal	Continuous murmur	Normal	Continuous murmur	Normal	Normal
12. Ventricular Septal Defect	Normal	Normal	Holosystolic murmur with late crescendo		Normal	Normal

Anterior/Posterior Lung Sites

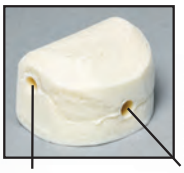


	Tracheal Site	First Left & Right Intercostal Sites	Upper Posterior Lung Sites	Lower Posterior Lung Sites Two Midaxillary Sites 2 Lower Anterior Sites
1. Normal Lung	Tracheal	Bronchovesicular	Normal Vesicular	Normal Vesicular
2. Normal Vesicular	Tracheal	Bronchovesicular	Normal Vesicular	Normal Vesicular
3. Wheezes	Wheeze	Wheeze	Wheeze	Wheeze Lower Volume
4. Mono Wheeze	Mono Wheeze	Mono Wheeze	Mono Wheeze	Mono Wheeze Lower Volume
5. Fine Crackle	Fine Crackle	Fine Crackle	Fine Crackle	Fine Crackle
6. Coarse Crackle	Coarse Crackle	Coarse Crackle	Coarse Crackle	Coarse Crackle
7. Ronchi	Ronchi	Ronchi	Ronchi	Ronchi
8. Stridor	Stridor	Stridor	Stridor Lower Volume	Stridor Lower Volume
9. Cavernous	Cavernous	Cavernous	Cavernous	Cavernous
10. Bronchovesicular	Tracheal	Bronchovesicular	Normal Vesicular	Normal Vesicular
11. Bronchial	Bronchial	Bronchial	Normal Vesicular	Normal Vesicular
12. Pulmonary Edema	Pulmonary Edema	Pulmonary Edema	Pulmonary Edema	Pulmonary Edema
13. Infant	Infant	Infant	Infant	Infant
14. Friction Rub	Tracheal	Bronchovesicular	Friction Rub	Friction Rub
15. Egophony	Egophony	Egophony	Egophony	Egophony
16. Pectoriloquy	Pectoriloquy	Pectoriloquy	Pectoriloquy	Pectoriloquy

Life/form® GERi™ and KERi™ Replacement Parts



Life/form® GERi™ and KERi™ Hardware Guide

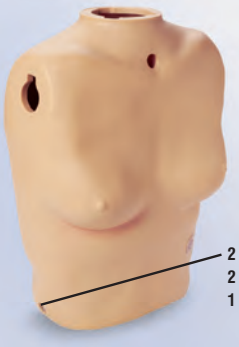


Replacement Neck Pivot
LF04106U
1 – 2¾" screw post
1 – 3½" screw post
2 – flesh-colored screws

2¾" screw post with flesh-colored screw
3½" screw post with flesh-colored screw

Complete Single Arm Hardware Set
LF04108U
2 – 1¾" screw post
2 – 2¼" screw post
1 – 2½" screw post
1 – 3¼" screw post
1 – 5" screw post
6 – flesh-colored screws
2 – washers

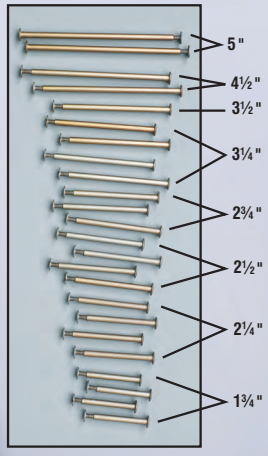
3¼" screw post with screw
2½" screw post with screw
2¼" screw post with screw
2¼" screw post with screw
1¾" screw posts with screw
1¾" screw post with screw & 1 washer
1 washer with 1¼" slotted screw
5" screw post with screw
3¼" screw post with screw
2½" screw post with screw
2¼" screw post with screw
2¼" screw post with screw
1¾" screw post with screw
1 washer with 1¼" slotted screw
1¾" screw post with screw & 1 washer
5" screw post with screw



2 – washers
2 – ¼" slotted screws
1 – 7¾" nylon bar

Complete Single Leg Hardware Set
LF04107U
1 – 2½" screw post
1 – 2¾" screw post
1 – 3¼" screw post
1 – 4½" screw post
1 – 5" screw post
5 – flesh-colored screws
2 – washers

4½" screw post with screw
3¼" screw post with screw
2½" screw post with screw
2¾" screw post with screw



Hardware Example

Replacement Waist Pin
LF04103U
1 – 7¾" nylon bar
2 – washers
2 – ¼" slotted screws

Complete Manikin Hardware Set
LF04072U
2 – 1" slotted screw
4 – 1¾" screw post with screw
4 – 2¼" screw post with screw
4 – 2½" screw post with screw
3 – 2¾" screw post with screw
4 – 3¼" screw post with screw
1 – 3½" screw post with screw
2 – 4½" screw post with screw
2 – 5" screw post with screw
6 – washers
24 – anodized screws

Supplies for *Life/form*® *GERi*™ and *KERi*™ Manikins

Ankle
Sh. wt. 0.69 lbs.
LF04069(N)U

Arm, Complete Right
Sh. wt. 3.50 lbs.
LF04091(N)U

Arm, Complete Left
Sh. wt. 3.50 lbs.
LF04092(N)U

Arm, Upper
Sh. wt. 2.25 lbs.
LF04056(N)U

Bladder Reservoir
Sh. wt. 0.19 lbs.
LF04095U

Bladder Reservoir Sleeve
Sh. wt. 0.02 lbs.
LF04097U

Blood
LF00845U Quart. Sh. wt. 0.38 lbs.
LF00846U Gallon. Sh. wt. 0.88 lbs.

Blood Pressure Arm, Left
Sh. wt. 13 lbs.
LF04079U Light
LF04127U Medium

Blood Pressure Arm Hinge Replacement
Sh. wt. 0.38 lbs.
LF03351U

Carry Case, Hard
Sh. wt. 28 lbs.
LF03465U

Carry Case, Soft
Sh. wt. 7 lbs.
LF03468U

Enema Reservoir Bag Replacement
Sh. wt. 0.04 lbs.
LF04096U

Fluid Supply Bag
500 ml. Sh. wt. 0.31 lbs.
LF01130U

Fluid Supply Stand
5" x 8" (13 x 20 cm) base, 5/16" steel hooked rod.
Sh. wt. 4 lbs.
LF01022U

Foley Catheter. 16 FR. 5 cc.
LF01127U Each. Sh. wt. 0.25 lbs.
LF01128U Pkg. of 10. Sh. wt. 0.63 lbs.

LF01130U

LF00846U

Foot, Right
Sh. wt. 1.75 lbs.
LF04046(N)U

Foot, Left
Sh. wt. 1.75 lbs.
LF04045(N)U

Genitalia (Basic), Male
Sh. wt. 0.69 lbs.
LF04109U

Genitalia (Basic), Female
Sh. wt. 0.69 lbs.
LF04110U

Genitalia (Complete, Advanced, & Auscultation), Male
Sh. wt. 4.25 lbs.
LF04075(N)U

Genitalia (Complete, Advanced, & Auscultation), Female
Sh. wt. 4.25 lbs.
LF04076(N)U

Hardware Replacement Set
Sh. wt. 0.38 lbs.
LF04072U

Head, *GERI*™
Sh. wt. 3.50 lbs.
LF04088(N)U

Head, *KERI*™
Sh. wt. 4.50 lbs.
LF04083(N)U

Elbow
Sh. wt. 1.25 lbs.
LF04057(N)U

Forearm
Sh. wt. 0.31 lbs.
LF04058(N)U

Hand, Right
Sh. wt. 0.75 lbs.
LF04078(N)U

Hand, Left
Sh. wt. 0.75 lbs.
LF04077(N)U

Hip
Sh. wt. 1.25 lbs.
LF04061(N)U

Hip Injection Site for *KERI*™
Sh. wt. 0.69 lbs.
LF04082(N)U

Hip Injection Site for *GERI*™
Sh. wt. 0.63 lbs.
LF04053(N)U

Hip Joint, Left
Sh. wt. 0.50 lbs.
LF04060(N)U

Hip Joint, Right
Sh. wt. 0.50 lbs.
LF04065(N)U

IV Arm, Right
Sh. wt. 15 lbs.
LF04080U Light
LF04125U Medium

IV Skin & Vein Replacement Kit
Sh. wt. 1.75 lbs.
LF04081U Light
LF04126U Medium

Leg, Complete Right
Sh. wt. 8 lbs.
LF04093(N)U

Leg, Complete Left
Sh. wt. 5.50 lbs.
LF04094(N)U

Leg Injection Site
Sh. wt. 0.69 lbs.
LF04052(N)U

Leg, Lower
Sh. wt. 1.25 lbs.
LF04067(N)U

Leg, Upper Left
Sh. wt. 1.50 lbs.
LF04062(N)U

Leg, Upper Right
Sh. wt. 2.25 lbs.
LF04066(N)U

Lubricant Kit
2-oz. bottles. Pkg. of 6. Sh. wt. 0.88 lbs.
LF00985U

Nasco Cleaner
Use to remove stubborn stains from ***Life/form***® simulators.
12-oz. bottle. Sh. wt. 0.88 lbs.
LF09919U

Replacement Blood Pressure Cuff
Sh. wt. 1.25 lbs.
LF01073U

Shoulder Injection Site
Sh. wt. 0.25 lbs.
LF04051(N)U

Shoulder, Left
Sh. wt. 0.50 lbs.
LF04055(N)U

Shoulder, Right
Sh. wt. 0.50 lbs.
LF04064(N)U

Shoulder Joint, Right
Sh. wt. 0.31 lbs.
LF04063(N)U

Shoulder Joint, Left
Sh. wt. 0.31 lbs.
LF04054(N)U

Speaker System for Blood Pressure Arm and Auscultation Manikin
110V AC. Sh. wt. 10 lbs.
LF01189U

Stoma Set
Sh. wt. 0.31 lbs.
LF04089U

Stomach Bag Replacement
Sh. wt. 0.06 lbs.
LF04098U

Torso, Lower, *KERI*™
Sh. wt. 5 lbs.
LF04073(N)U

Torso, Lower, *GERI*™
Sh. wt. 5.50 lbs.
LF04048(N)U

Torso, Upper *KERI*™
Sh. wt. 4.25 lbs.
LF04070(N)U

Torso, Upper *GERI*™
Sh. wt. 5 lbs.
LF04047(N)U

Wrist
Sh. wt. 0.19 lbs.
LF04059(N)U

Other Available Life/form® Simulators

LF01280U Micro-Preemie, Light
LF01281U Micro-Preemie, Dark
LF01400U Newborn Nursing Skills and ALS Simulator
LF01420U C.H.A.R.L.I.E. Neonatal Resusciltation Simulator with Interactive ECG Simulator

LF01280U

LF01400U

LF01420U

Actual product may vary slightly from photo. Nasco reserves the right to change product color, materials, supplies, or function as needed.

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