

Dedicated to Delivery  
*Nasco* **Life/form**®

**Articulating Legs with  
Intraosseous Infusion Simulator  
LF03840U  
Instruction Manual**



ISO 9001 and  
ISO 13485

Dedicated to Delivery  
*Nasco*  
**Plastics**

Products are manufactured using a quality management system certified as being in conformity with ISO 9001 and ISO 13485.



**Life/form**® Products by Nasco

**Life/form**®  
**5**  
Year  
Warranty



### About the Simulator

Designed to attach easily to any **Life/form**® Adult **CRiSis**™, **CPARLENE**®, “Airway Larry,” or Adult Airway Management torsos or manikins, the Articulating Legs with IO will enhance training of intraosseous infusion procedures using B.I.G™ and EZ-IO™ devices or almost any other infusion devices available.

### List of Components

- A.** Pelvic Piece
- B.** Pelvic Cap
- C.** Assembled Left Articulating Leg with Hip Joint, Upper Leg, Lower Leg, Ankle, and Foot
- D.** Assembled Right Articulating Leg with Hip Joint, Upper Leg with Intramuscular Injection Insert, IO Lower Leg, Ankle, and Foot
- E.** Hardware Assembly (4 screws and 4 nuts)
- F.** 10 Simulated Bones
- G.** Piece of Wax
- H.** 2 Small Towelettes
- I.** 60 cc Syringe with Tubing Assembly
- J.** Tube of Lubricating Jelly, 4 oz.
- K.** Bottle Liquid Lubricant, ½ oz.
- L.** Leg Skin Pads (4)
- M.** Pint Bottle with Blood Powder
- N.** 15-Gauge IO Needle
- O.** Black Shorts (1 pair)

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



Figure 1

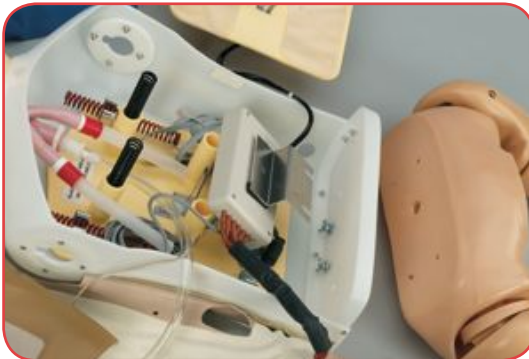


Figure 3

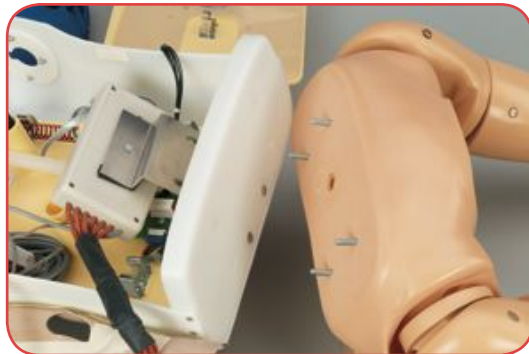


Figure 4

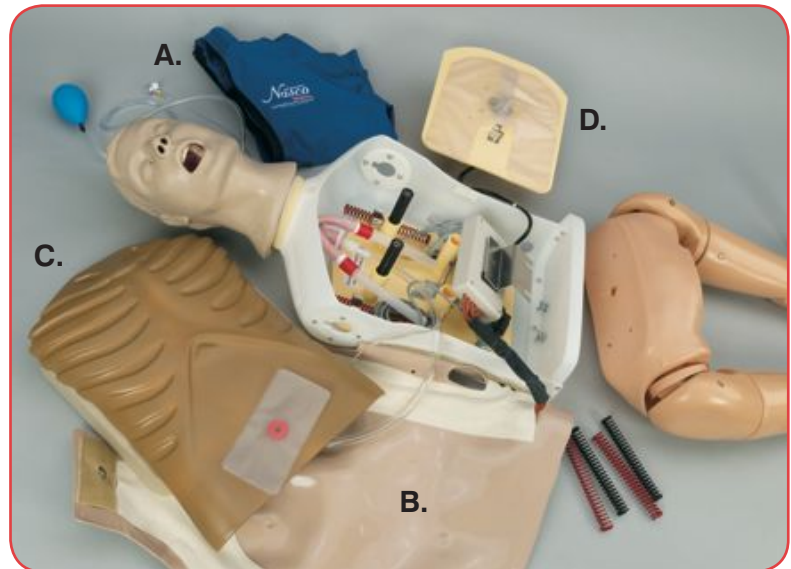


Figure 2

## Setup

### Attaching the Legs

1. Match up the keyhole on the pelvic piece with the keyhole toward the top of the hip joint piece. **(See figure 1.)**
2. Align the keyholes and slide the assembled leg into the pelvic piece.
3. Turn the leg down to a normal position making sure the keyholes are misaligned. If the leg is not turned, the leg may disconnect from the pelvic piece.
4. Attach the other leg using the same method.

Attaching the legs to the pelvic piece first can make assembling the legs to a torso less challenging. Do not place the pelvic cap into the pelvis at this point

### Attaching the Pelvic Piece to a Life/form® Torso

1. Remove:
  - A. Jacket
  - B. Chest skin
  - C. Chest plate
  - D. Upper compression plate to have access to the 4 screw holes. Compression springs may also be removed and set aside if needed. **(See figure 2.)**

**Note:** Added caution should be taken not to damage electronic components.
2. If applicable, loosen the wing nuts on the load box. Slide it up and set to the side. **(See figure 3.)**

**Note:** Extreme caution should be used when manipulating electronic components.
3. If applicable, remove the existing lower body by unscrewing the wing nuts, removing the washers and sliding the legs and screws away from the torso shell. Replace the washers and wing nuts for future use with this lower body.
4. Align the 4 screw holes on the top of the pelvis with the bottom of the torso shell. Place a screw inside of the pelvic cavity and attach up through the hole on the bottom the torso shell. **(See figure 4.)**

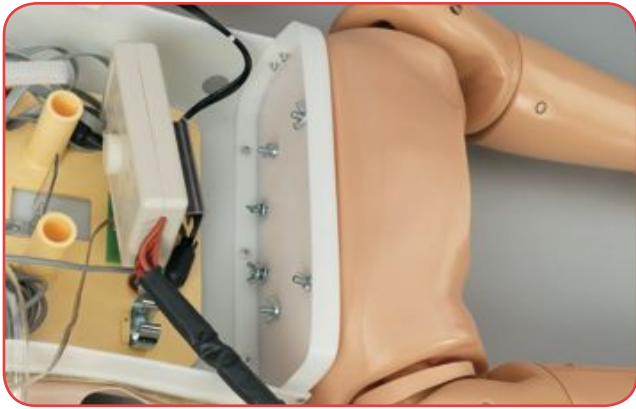


Figure 5

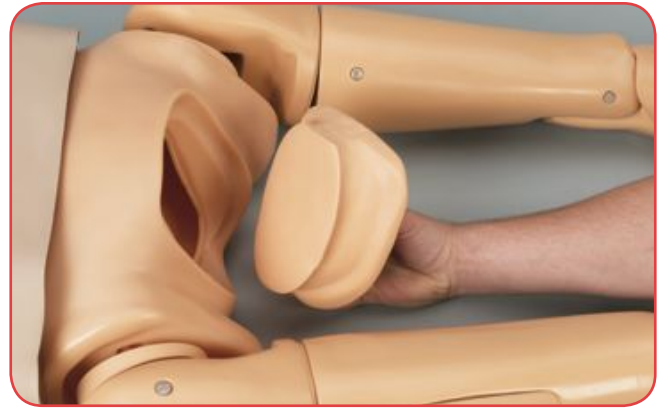


Figure 6

5. Secure the screw with a nut on the inside of the torso shell.
6. Tighten down the nuts finger tight. **DO NOT OVER TIGHTEN.** (See figure 5.)
7. Replace load box, compression springs, upper compression plate, chest plate, chest skin, and clothing.
8. Attach the pelvic cap. (See figure 6.)
9. Place black shorts onto the simulator.



Figure 7

### General Instructions for Use

Your full-size emergency simulation manikin is ready for use. Ensure all applicable functions of your torso have been returned to an operational state.

### Thigh Injection Site

Intramuscular injections may be performed in right thigh insert. Inject AIR ONLY as the insert cannot be drained. (See figure 7.)

### To remove the thigh insert:

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



Figure 8



Figure 9

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

### Using the Intraosseous Leg

1. Prepare the blood mixture:
  - a. Add 1¼ cups of tap water to the pint bottle with blood powder and one full tube of lubricating jelly. (See figures 8 and 9.)
  - b. Shake vigorously for 30 seconds until contents are mixed completely.

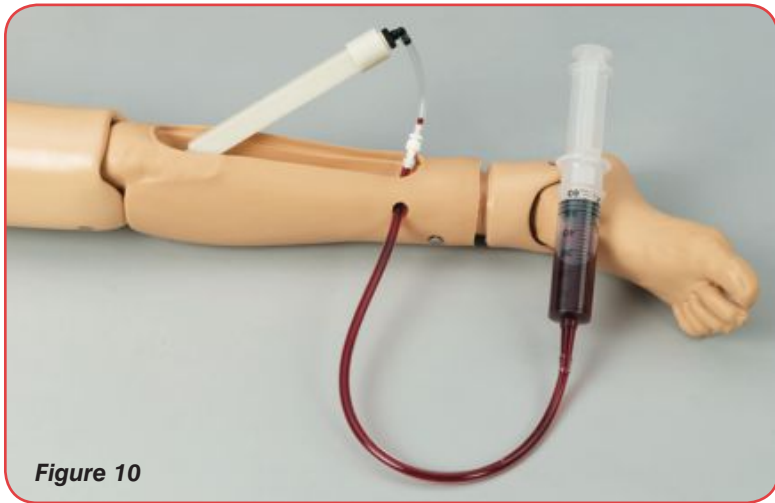


Figure 10

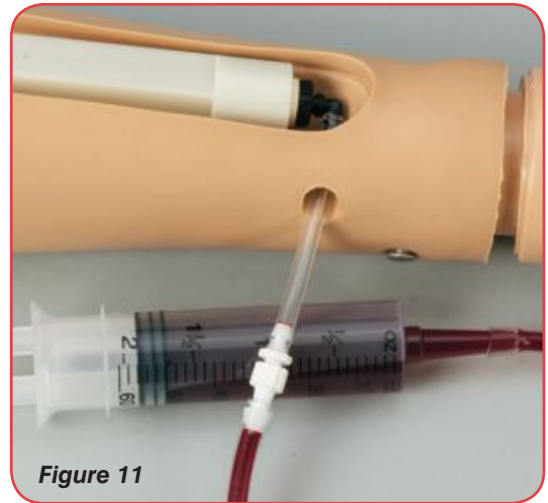


Figure 11

2. Place simulator on a flat surface such as a tabletop.
3. Fill the 60 cc syringe by placing the tubing end of the syringe into the pint bottle of blood mixture and drawing the blood mixture up into the syringe.
4. The tubing end then goes through the hole in the side of the right IO lower leg and attaches to the swivel end of the simulated bone. **(See figure 10.)**
5. Place a simulated bone inside of the right IO lower leg. Use the supplied lubricant as needed on the outside of the simulated bone to ease the bone into the right IO lower leg. The swivel end of the simulated bone should be pointing toward the hole. **(See figure 11.)**
6. Place the skin pad on top of the simulated bone. Adjust skin pad as needed for a snug fit over the simulated bone. **(See figure 12.)**

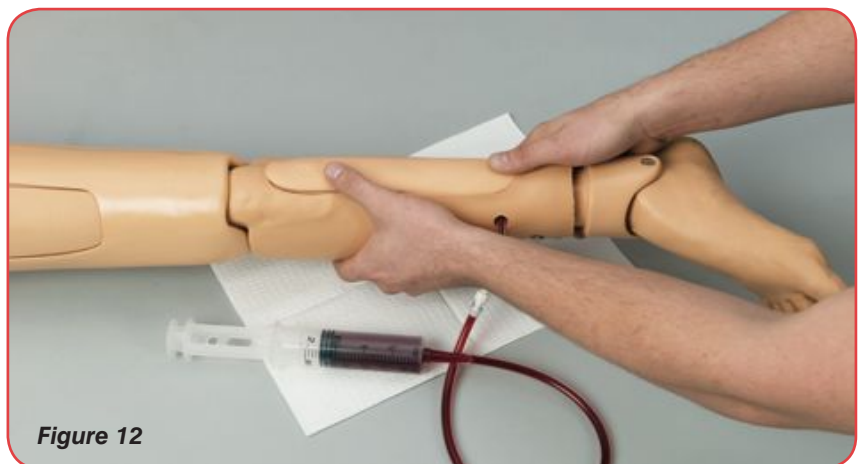


Figure 12

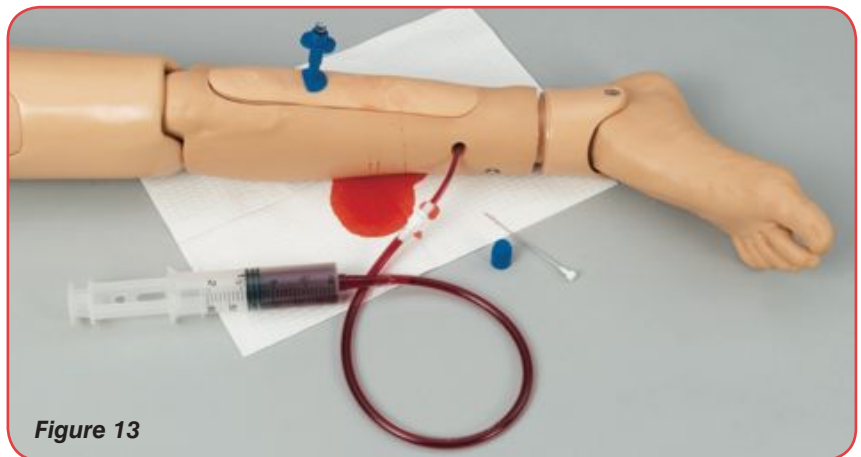


Figure 13

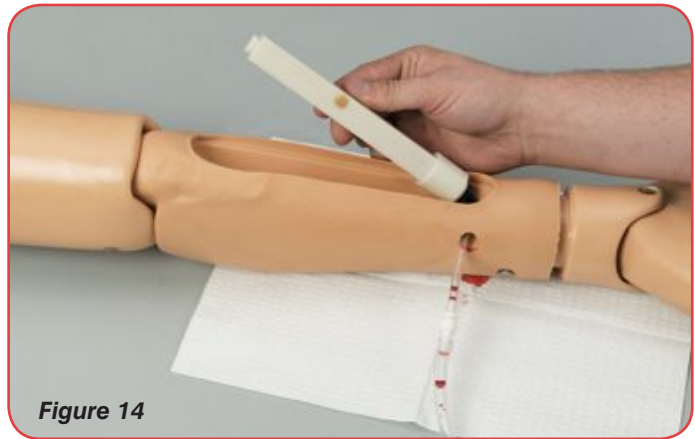
**Important:**

7. Make your first needle insertion into the bone and remove the needle stylus. Proper needle insertion and pressure applied to the syringe will allow blood to flow through the tubing and fill the bone. **(See figure 13.)**
8. When you observe the blood flowing up through the needle, the bone is completely charged. Each new bone will need to be charged in this same manner.
9. Correct subsequent insertions will produce an immediate flow of liquid through the needle.
10. To reduce the pressure being placed on the bone, pull the plunger on the syringe back once verification of proper placement has been made. This will decrease the amount of blood that may leak from the bone.

### Using the Wax Piece:

The bones have been designed so all four sides can sustain multiple punctures.

1. To change sides, remove the skin pad.
2. Pull back slightly to retain any remaining blood mixture in the syringe.
3. Remove the bone from the right IO lower leg wipe clean and dry.
4. Remove a small piece of the wax and work with your fingers until soft.
5. Rub the softened piece of wax back and forth across the bone holes until they are sealed. **(See figure 14.)**
6. A thin layer of wax left on the bone surface over the holes will help in sealing. The bone structure may be punctured until four sides have been completely punctured, then the bone may be discarded.



### Special Note

The right IO lower leg duplicates a procedure that requires a great deal of pressure to be placed on both the simulator and the needle or device being used. Extreme caution should be taken to avoid pushing the needle or device completely through the simulated bone, injuring the person performing the procedure or damaging equipment. Nasco cannot be responsible for injuries or equipment damages resulting from improper use of the simulator.

### Care and Maintenance

Nasco recommends the use of Nasco Cleaner LF09919U for cleaning the articulating legs, pelvic piece, and pelvic cap.

**CAUTION:** Soap and water may be used to clean the pelvic region, legs, right IO lower leg, and feet. **DETACH** the articulating legs from the torso to clean with soap and water. Soap and water will damage electronics inside of the torso. Make sure legs and pelvic area are completely dry before re-attaching to a torso; water or moisture may damage even basic torsos.

Ink, ball-point pen, and other printed paper or plastic will leave an indelible stain when in contact with the simulator. Blood mixture will stain clothing and some surfaces.

### Intraosseous Infusion Cleanup Procedures:

1. Remove leg skin pad and use paper towels to completely wipe the skin pad and right IO lower leg, removing any blood mixture or lubricating agent.
2. Remove and discard any simulated bones that have been charged with blood mixture.
3. Depress the syringe and any remaining blood mixture back into the pint bottle.
4. Recap the blood mixture bottle tightly to save for future use.
5. Use clean tap water to flush and clean syringe and tubing.
6. Allow to dry completely prior to storing.

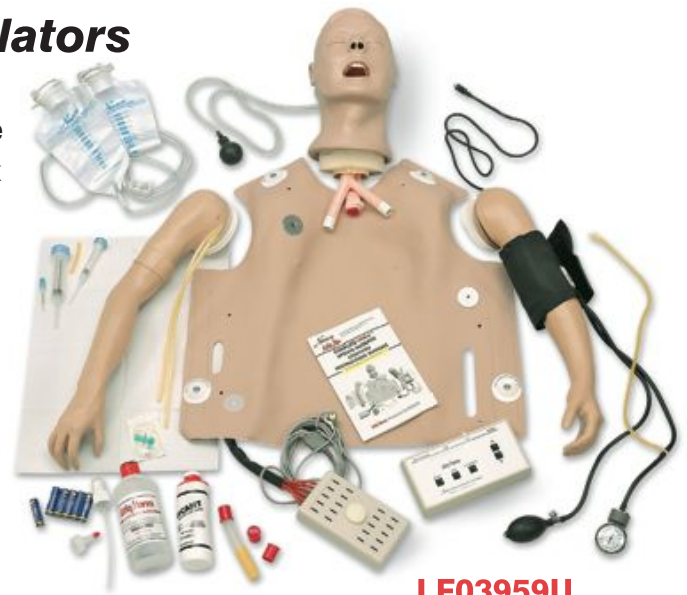
## Supplies/Replacement Parts

<b>LF00845U</b>	Replacement <i>Life/form</i> ® Venous Blood, 1 quart
<b>LF01111U</b>	Blood Mixture Components (includes pint bottle with blood powder and 4-oz. tube of lubricating jelly)
<b>LF01116U</b>	Lubricating Jelly, 4 oz.
<b>LF03831U</b>	Replacement Adult I/O Bones (includes wax, ½-oz. liquid lubricant, and 10 bones with threaded swivel)
<b>LF03841U</b>	Replacement Adult I/O Skins Pads, Articulating Legs (4 skins)
<b>LF04045(N)U</b>	Left Foot
<b>LF04046(N)U</b>	Right Foot
<b>LF04052(N)U</b>	Right Leg Injection Site
<b>LF04060(N)U</b>	Left Hip Joint
<b>LF04061(N)U</b>	Hip
<b>LF04062(N)U</b>	Left Upper Leg
<b>LF04065(N)U</b>	Right Hip Joint
<b>LF04066(N)U</b>	Right Upper Leg
<b>LF04067(N)U</b>	Left Lower Leg
<b>LF04069(N)U</b>	Ankle
<b>LF04094(N)U</b>	Complete Left Leg
<b>LF09919U</b>	Nasco Cleaner

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## Other Available *Life/form*® Simulators

- LF03670U** ECG Simulator
- LF03711U** Full Manikin with Memory and Printer, White
- LF03811U** Full Manikin with Memory and Printer, Black
- LF03933U** Full Manikin with Light Controller, White
- LF03813U** Full Manikin with Light Controller, Black
- LF03714U** Torso with Light Controller, White
- LF03814U** Torso with Light Controller, Black
- LF03715U** Torso with Electronic Connections, White
- LF03815U** Torso with Electronic Connections, Black
- LF03716U** Basic **CPARLENE**® Torso, White
- LF03816U** Basic **CPARLENE**® Torso, Black
- LF03943U** Basic **CPARLENE**® Full Manikin
- LF03953U** Complete **CRiSis**™ Manikin
- LF03952U** Complete **CRiSis**™ Manikin with Advanced Airway
- LF03965U** Complete **CRiSis**™ Manikin with Auscultation
- LF03986U** Complete **CRiSis**™ Manikin with Auscultation and Advanced Airway
- LF03955U** Deluxe **CRiSis**™ Manikin with Interactive ECG Simulator
- LF03987U** Deluxe **CRiSis**™ Manikin with Advanced Airway
- LF03966U** Deluxe **CRiSis**™ Manikin with Auscultation
- LF03984U** Deluxe **CRiSis**™ Manikin with Auscultation and Advanced Airway
- LF03956U** Deluxe “Plus” **CRiSis**™ Manikin with ECG and CPR Monitoring
- LF03988U** Deluxe “Plus” **CRiSis**™ Manikin with Advanced Airway
- LF03968U** Deluxe “Plus” **CRiSis**™ Manikin with Auscultation
- LF03985U** Deluxe “Plus” **CRiSis**™ Manikin with Auscultation and Advanced Airway
- LF03957U** **CRiSis**™ Manikin Torso
- LF03982U** **CRiSis**™ Manikin Torso with Advanced Airway
- LF03958U** Deluxe **CRiSis**™ Manikin Torso
- LF03983U** Deluxe **CRiSis**™ Manikin Torso with Advanced Airway
- LF03959U** **CRiSis**™ Update Package
- LF04084U** Edema Foot
- LF04041U** Pressure Ulcer Foot



**LF03959U**



**LF04084U**



**LF04041U**



**LF03943U**

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