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Advanced Injection Arm LF01121U & LF01126U Instruction Manual

To view the complete manual in English, Spanish, German, French, Italian, and Portuguese, please go to eNasco.com/healthcare and click on “Instruction Manuals.”



CAUTION: PRODUCT CONTAINS DRY NATURAL RUBBER!

Life/form® Products by Nasco



About the Simulator

The ***Life/form***® Advanced Injection Arm Simulator duplicates the human condition as closely as modern plastics technology allows — it is almost the real thing. Its care and treatment should be the same as with a patient; abuse or rough handling will damage the simulator — just as it would cause pain to a patient.

This unit is the simulation of the entire human arm from the shoulder to fingertips. Externally, the skin texture is realistic to touch, and the fingertips actually have fingerprints.

Although this arm will provide you with long trouble-free usage, the skin and veins can be readily replaced when needed. The outer skin is easily peeled off, revealing the "core" and veins, providing, literally, a brand new arm. The life of the replaceable skin and veins will be prolonged by utilizing smaller needle sizes (such as 20- to 25-gauge). However, if instruction with larger needle sizes is required, this can be done; the skin and veins will merely need to be replaced sooner. The Skin and Vein Kits are available through Nasco (see list of supplies).

List of Components

- 3 cc syringe with needle
- 12 cc syringe with needle
- 2 IV bags
- Needle (butterfly)
- 1 pinch clamp
- Small towel
- Infusion set (butterfly)
- Intradermal sealant
- Synthetic arterial blood

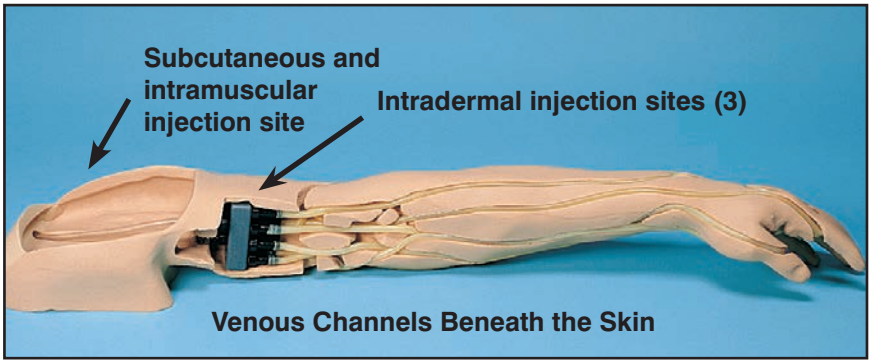

Figure 1



***Life/form*® Realism**



Internal Structure

(See Figure 1.) Diagram shows the arm without the skin.

Internally the vascular structure (rubber tubing) includes the basilic, median, accessory cephalic, and metacarpal veins. This venous system is constructed of special self-sealing rubber tubing, with the lumen being the approximate size of a human vein. This vascular structure has inlet tubing and outlet tubing at the shoulder, and it is via these tubes that the venous system is filled. Thus, the techniques of blood drawing and starting intravenous infusions may be practiced on the Advanced Injection Arm.

General Instructions for Use

The Advanced Injection Arm comes with all of the supplies necessary to perform most procedures.

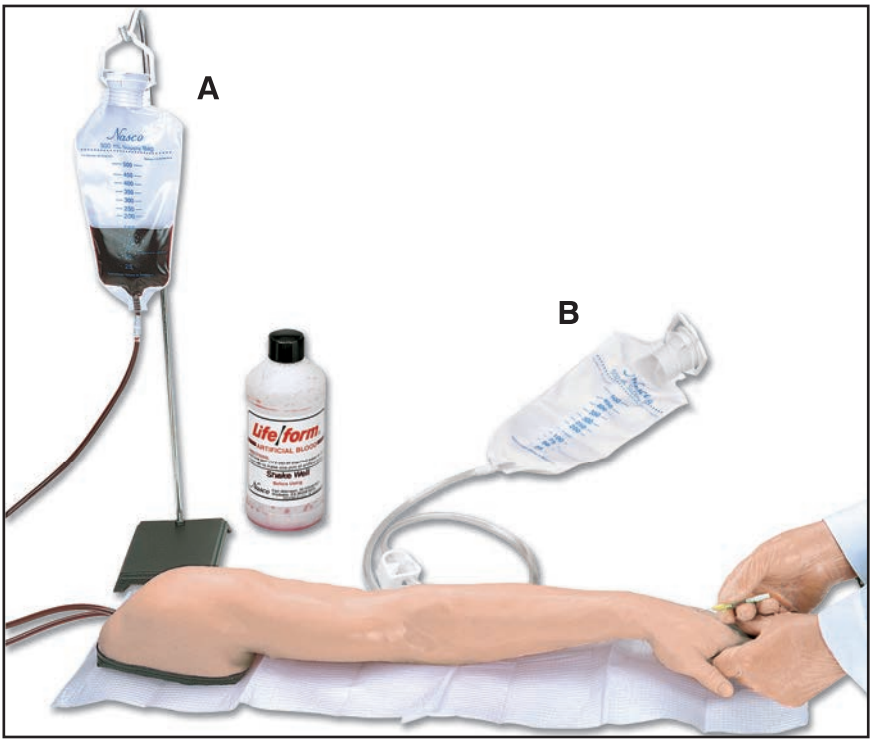

Figure 2

A. PREPARING THE SYNTHETIC BLOOD

1. Add 1 pint of distilled water to the synthetic blood concentrate.
2. Be sure the clamp on the IV tubing is closed, and hang the bag no more than 18" above the level of the arm.
3. Attach the fitting end of the IV tubing to one of the shoulder tubes. (Make sure the arm is palm down at this point.)
4. With the other shoulder tube attached to the second supply bag, gradually "flush" the vascular system with synthetic blood by slowly opening the clamp. Allow some "blood" to pass through the system until the air bubbles have been eliminated. Close the clamp and then turn the arm over so it is palm up. Slowly open the clamp to allow some blood to pass through and to remove any remaining air that is trapped in the system.
5. Once the system is filled, close the clamp on the blood outlet tube. The venous system is now full of "blood" and pressurized. Be sure to leave the clamp on the inlet tubing opened.
6. The arm is now ready to practice drawing "blood." "Blood" can be drawn anywhere along the pathway of the vein. ***(See figure 1.)*** **Distilled water** should be used to prepare the sites. Synthetic blood will actually be aspirated once the vein is properly punctured.
7. Small diameter needles (20- to 25-gauge) should be used.

B. PREPARING THE ARM FOR INTRAVENOUS INFUSIONS

1. Close the tubing clamp at end of IV bag A, then fill with water (distilled water is recommended), and hang not more than 18" above the arm. ***(See figure 2, page 3.)***

2. Appropriate intravenous infusion needles (or butterflies) should be used, and distilled water is recommended as an infusion.

3. The self-sealing simulated veins lend themselves very well to the practice of starting IV infusions, and IVs can be started anywhere along the pathways of the simulated veins. Cleanse the sites with distilled water only.

4. Attach fitting end of the tubing from bag A into one of the shoulder tubing ends. (Make sure the arm is palm down at this point.)

5. Attach the other shoulder tubing end to fluid bag B, and “flush” the vascular system by opening both clamps. Allow infusion (water) to pass through the system until air bubbles are eliminated. Shut off the flow with a pinch clamp. Now turn the arm over so it is palm up. Slowly open the clamp to allow water to pass through and to remove any remaining air that is still trapped. Again, shut off the flow with the pinch clamp. The venous system is now full and pressurized.

6. Insert IV needle or butterfly in vein. “Flashback” will indicate proper insertion.

7. Close clamp on tubing from bag A and remove.

8. Attach needle or butterfly to tubing from bag B with latex adapter. Open clamp on tubing from bag B. ***(See figure 3.)***

Proof of proper procedure will then be evidenced by the flow of infusion fluid from IV bag B. Control flow rate with clamp on tubing from bag B. This fluid can be used over. If a more realistic experience is desired with “blood flashback” instead of water when inserting butterfly into lumen of vein, use procedure C.

C. RECOMMENDED PROCEDURES FOR SIMULTANEOUS IV INFUSIONS AND DRAWING BLOOD

Use two IV Bag Kits.

Hook up and install IV bag A and IV bag B. ***(See figure 2.)*** Make sure the arm is lying palm down.

1. Begin with synthetic blood in IV bag A. Open clamp on both A and B to pressurize system. “Flush” system by allowing “blood” to flow into container B until bubbles in tubing disappear. Close the clamp on bag A and turn the arm over so it is palm up. Open clamp A and allow blood to flow until any remaining bubbles in the tubing disappear. Then regulate blood flow from bag A (using clamp). System is now full of “blood” and pressurized. “Blood” can now be drawn anywhere along the pathway of the vein.

2. Intravenous infusion — Insert butterfly into lumen of vein. Proof of correct insertion is evidenced by flashback of “blood.” Insert end of IV tubing into butterfly. Adjust flow to desirable rate with clamp. With this arrangement the IV bag B, when full, may be easily switched with A. **NOTE**: Always regulate flow of “blood” from bag on fluid supply stand, and open the other clamp.

D. INTRAMUSCULAR INJECTIONS

The procedure for administering intramuscular injections can be practiced in the area of the deltoid. Prep the site with distilled water only. These injections can be done utilizing the appropriate needle and syringe. ½ cc of distilled water may be injected, however, we **recommend** utilizing air as injectant since the distilled water cannot be drained, but must evaporate from the arm. Synthetic blood must NEVER be used for injections.

E. INTRADERMAL INJECTIONS

Use a 3 cc syringe with a 25-gauge needle for this procedure.

Internal Structure

The arm features three spots for practicing intracutaneous injections. All are located on the outer aspect of the upper arm. ***(See figure 2, page 3.)*** If fluid is properly injected, a characteristic skin welt will form. The welt is removed by drawing the fluid after practice. Each site is reusable by dozens of students. We recommend you use distilled water as an injection fluid.

Procedures That Can Be Performed

Intradermal or intracutaneous injections involve the injection of small amounts of material into the substance of the skin. This procedure is used for diagnostic procedures, allergy tests, and administration of regional anesthetics.

A 25-gauge needle, ⅜" to ½" long, is generally used and inserted at a 10° to 15° angle to the skin. Fluid is then injected to produce a small bleb just under the skin, which causes a visible welt of the outer skin surface. Remove fluid from the welt by reinserting a needle without the syringe attached.

Care of the Intradermal Sites

Puncturing the skin with needles forms small slits or cuts, which will eventually lead to deterioration. Should leakage occur, inject the supplied sealant fluid into the blister dot. Allow to set overnight before withdrawing excess fluid and using that site again.

Care of Simulator

After each class use, disconnect bags and return synthetic blood to storage container. Reconnect one IV bag to the system. Fill the bag with tap water and flush the venous system, allowing the open end to drain into a sink or basin. When the system runs clean, close the clamp and remove the IV bag. Excess water may be removed from the arm by raising the hand, lowering the shoulder, and draining it into a sink or basin. Wash outside of arm with Ivory® liquid detergent and water. Always remove the pinch clamps from shoulder tubing and drain excess water from veins before storing.

Ordinary stains can be removed by washing with soap and warm water. Newsprint, similar printed paper, or plastic will permanently stain the simulator if prolonged contact occurs. Stubborn stains may be removed with Nasco Cleaner (LF09919U) simply by dispensing it on the area and wiping with a soft cloth or paper towel.

Cautions

1. This synthetic blood is specially formulated to be compatible with the self-sealing veins and plastics used in manufacturing the arm.

2. NEVER use synthetic blood for intramuscular injection.

3. DO NOT use dull or burred needles, as these will cause leaks in the system. Burred needles will cause permanent damage. Use **smaller needles** (20- to 25-gauge).

4. DO NOT allow “blood” to dry on simulator — it may stain arm.

5. Use only 500 cc of infusion fluid, as a larger amount will also increase the pressure of the venous system, resulting in leaks.

6. DO NOT clean the simulator with solvents or corrosive material, as they will damage it.

7. Nasco Vein Tubing Sealant Kit (LF01099U) will extend the useful life of the tubing.

Supplies/Replacement Parts for Injectable Training Arm

LF00845U	***Life/form***® Arterial Blood, 1 quart
LF00846U	***Life/form***® Arterial Blood, 1 gallon
LF01099U	Vein Tubing Sealant Kit
LF01123U	Black Skin & Vein Replacement Kit
LF01122U	White Skin & Vein Replacement Kit
LF01124U	Vein Replacement Kit
LF01130U	Fluid Supply Bag
LF01022U	Fluid Supply Stand
LF09919U	Nasco Cleaner
LF01105U	***Life/form***® IV Arm Set-Up & Troubleshooting DVD
LF01104U	***Life/form***® IV Arm Skin & Vein Replacement DVD

Other Available *Life/form*® Simulators

LF00698U Adult Injectable Arm (White)
LF00855U Male Catheterization
LF00856U Female Catheterization
LF00901U Prostate Examination
LF00906U Ostomy Care
LF00929U Surgical Bandaging
LF00957U Enema Administration
LF00958U Pediatric Injectable Arm
LF00961U Intramuscular Injection
LF00984U Breast Examination
LF00995U Arterial Puncture Arm
LF00999U Pediatric Injectable Head
LF01005U First Aid Arm
LF01008U Intradermal Injection Arm
LF01012U Heart Catheterization (TPN)
LF01019U Ear Examination
LF01027U Peritoneal Dialysis
LF01028U Suture Practice Arm
LF01034U Suture Practice Leg
LF01036U Spinal Injection
LF01037U Hemodialysis Practice Arm
LF01038U Episiotomy Suturing Set
LF01042U Suture Kit
LF01062U Pelvic, Normal & Abnormal
LF01063U Stump Bandaging, Upper
LF01064U Stump Bandaging, Lower
LF01069U Cervical Effacement
LF01070U Birthing Station
LF01082U Cricothyrotomy
LF01083U Tracheostomy Care
LF01084U Sigmoidoscopic Examination
LF01087U Central Venous Cannulation
LF01095U Blood Pressure Arm
LF01108U Infant Intraosseous Infusion
LF01121U Advanced IV Arm
LF01131U Venipuncture and Injection Arm
LF01139U Advanced IV Hand
LF01142U Auscultation Trainer
LF01143U Testicular Exam
LF01152U Male & Female Catheter
LF01155U Advanced CPR Dog
LF01162U Venatech IV Trainer
LF01174U NG Tube & Trach Skills
LF01184U Venatech IM & Sub Q
LF01193U Special Needs Baby
LF03000U **CPARLENE®** Series
LF03601U Adult Airway Management Trainer with Stand
LF03602U Adult Airway Management Manikin
LF03609U Child Airway Management Trainer with Stand
LF03616U Child ***CRiSis***™ Manikin
LF03617U Deluxe Child ***CRiSis***™ Manikin with Arrhythmia Tutor
LF03620U PALS Update Kit
LF03623U Infant Airway Management Trainer with Stand
LF03632U Child Intraosseous Infusion/ Femoral Access Leg on a Stand
LF03633U Child Airway Management Trainer Torso
LF03693U **Basic Buddy®** CPR Manikin
LF03699U "Airway Larry" Airway Management Trainer
LF03709U Infant ***CRiSis***™ Manikin
LF03720U **Baby Buddy™** Infant CPR Manikin
LF03750U Fat Old Fred
LF03760U Airway Management/Cricoid Pressure Trainer
LF03770U Chest Tube
LF03953U ***CRiSis***™ Manikin, Complete
LF03955U Deluxe ***CRiSis***™ Manikin
LF03956U Deluxe "Plus" ***CRiSis***™ Manikin
LF03965U Adult ***CRiSis***™ Auscultation Manikin
LF03966U Adult ***CRiSis***™ Auscultation Manikin with ECG Simulator
LF04000U ***GERi***™/***KERi***™ Manikin Series
LF04200U Adult Sternal Intraosseous Infusion
LF06001U CPR Prompt® Adult/Child Manikin
LF06012U CPR Prompt® Infant Manikin
LF06200U CPR Prompt® Keychain Rescue Aid
LF06204U CPR Prompt® Rescue and Practice Aid

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