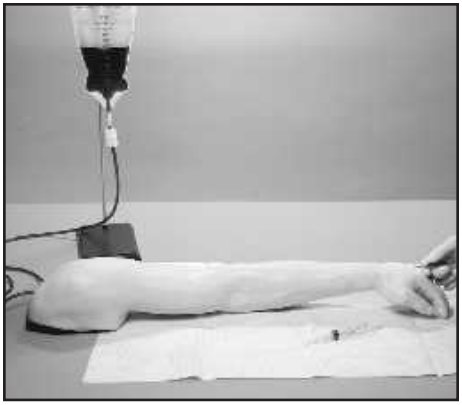
Nasco
Life/form®

ADVANCED INJECTION ARM LF01121U & LF01126U INSTRUCTION MANUAL

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 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 be replaced sooner. The Skin and Vein Kits are available through NASCO (see list of supplies).

List of Components

1. 3 cc syringe with needle
2. 12 cc syringe with needle
3. 2 IV bags
4. Needle (butterfly)
5. 2 Pinch clamps
6. Small towel
7. Large towel
8. Infusion set (butterfly)
9. Intradermal sealant

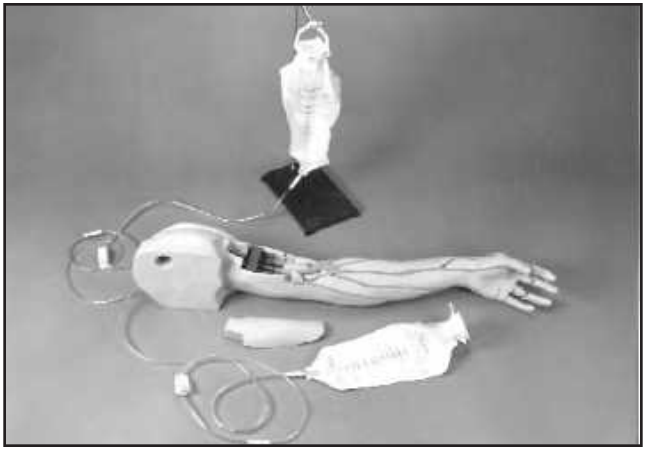


Diagram #1

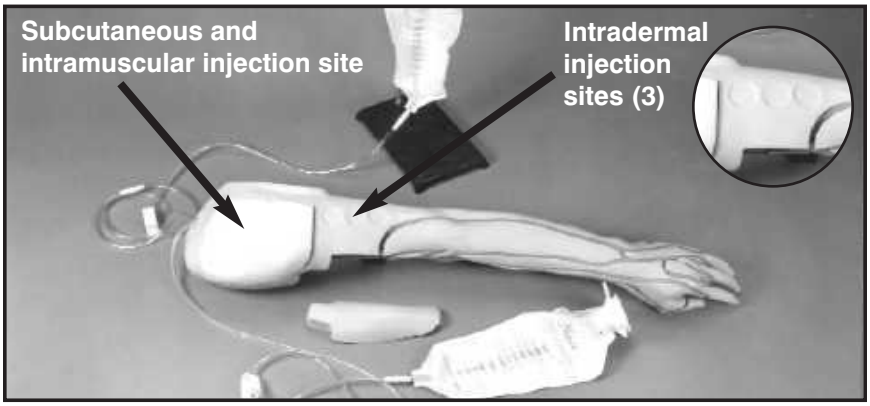


Diagram #2

Internal Structure

See Diagrams #1 and #2. (Both diagrams show the arm without the skin.)

Internally the vascular structure (rubber tubing) includes the cephallic vein, basillic, median, accessory cephallic, and meta-carpal. 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 an inlet tubing and an 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.

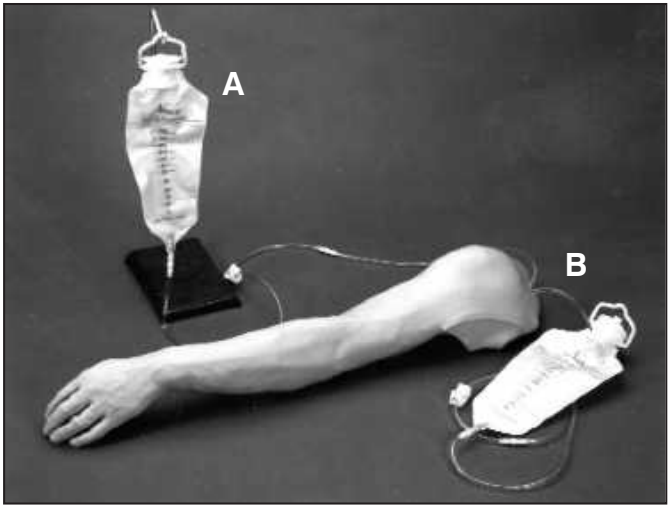


Diagram #3

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 and 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 Diagram #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 Diagram #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 IV's 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 Diagram #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 as shown in Diagram #4 with IV bag A and IV bag B. 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. One half 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 Diagram #2.) 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.

Precedures 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, 3/8" to 1/2" 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 metal 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 REN Cleaner (W09919U), 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 Bag

LF01022U Fluid Supply Stand

W09919U REN Cleaner

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LF01123U	Black Skin & Vein Replacement Kit
LF01122U	White Skin & Vein Replacement Kit
LF01124U	Vein Replacement Kit
LF01130U	Fluid Bag
LF01022U	Fluid Supply Stand
W09919U	REN Cleaner

Other Available Life/form® Simulators

LF00698U Adult Injectable Arm (White)
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
LF00997U Adult Injectable Arm (Black)
LF00999U Pediatric Injectable Head
LF01008U Intradermal Injection Arm
LF01012U Heart Catheterization (TPN)
LF01019U Ear Examination
LF01020U Supplementary Ear Set
LF01025U Male Cath-Ed I
LF01026U Female Cath-Ed II
LF01027U Peritoneal Dialysis
LF01028U Suture Practice Arm
LF01036U Spinal Injection
LF01053U Cross-Sectional Anatomy, Torso, Head
LF01054U Cross-Sectional Anatomy, Head
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 Intraosseous Infusion Simulator
LF01142U Auscultation Trainer
LF01162U Venatech IV Trainer
LF03000U **CPARLENE®** Series
LF03601U Adult Airway Management Trainer
LF03602U Adult Airway Management on Manikin
LF03603U Adult Airway Management Head Only
LF03609U Child Airway Management Trainer
LF03610U Child Airway Management Trainer Head Only
LF03611U Child Defibrillation Chest Skin
LF03612U Child IV Arm
LF03613U Child Blood Pressure Arm
LF03614U Child Intraosseous Infusion/ Femoral Access Leg Only
LF03615U Complete Child ***CRiSis™*** Update Kit
LF03616U Child ***CRiSis™*** Manikin
LF03617U Deluxe Child ***CRiSis™*** Manikin with Arrhythmia Tutor
LF03620U PALS Update Kit
LF03621U Infant Airway Management Trainer Head Only
LF03622U Intraosseous Infusion Right Leg
LF03623U Infant Airway Management Trainer
LF03626U Child Femoral Access Injection Pad Replacement
LF03632U Child Intraosseous Infusion/ Femoral Access Leg on a Stand
LF03633U Child Airway Management Trainer with Torso
LF03693U **Basic Buddy** CPR Manikin
LF03699U "Airway Larry" Airway Management Trainer
LF03720U **Baby Buddy** Infant CPR Manikin
LF03953U ***CRiSis™*** Manikin
LF03955U Deluxe ***CRiSis™*** Manikin
LF04001U ***GERi™*** Nursing Manikin
LF04020U ***KERi™*** Nursing Manikin
LF04021U ***KERi™*** Basic Manikin
LF04022U ***KERi™*** Advanced Manikin
LF04030U ***GERi™*** Advanced Manikin
LF04040U ***GERi™*** Basic Manikin

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