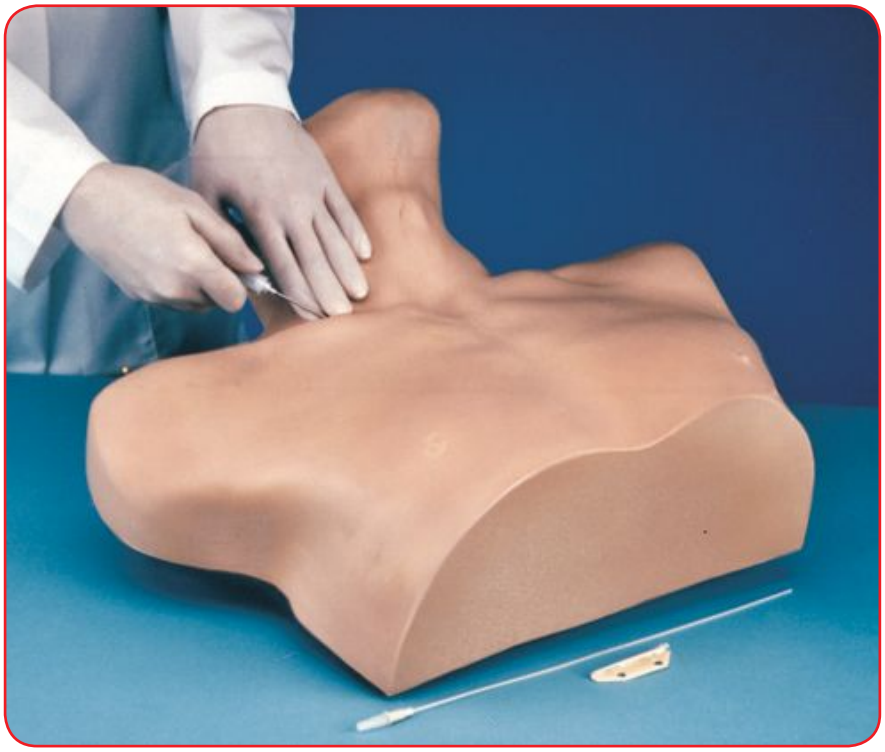
Dedicated to Delivery

Nasco Life/form®

Central Venous Cannulation Simulator LF01087U Instruction Manual



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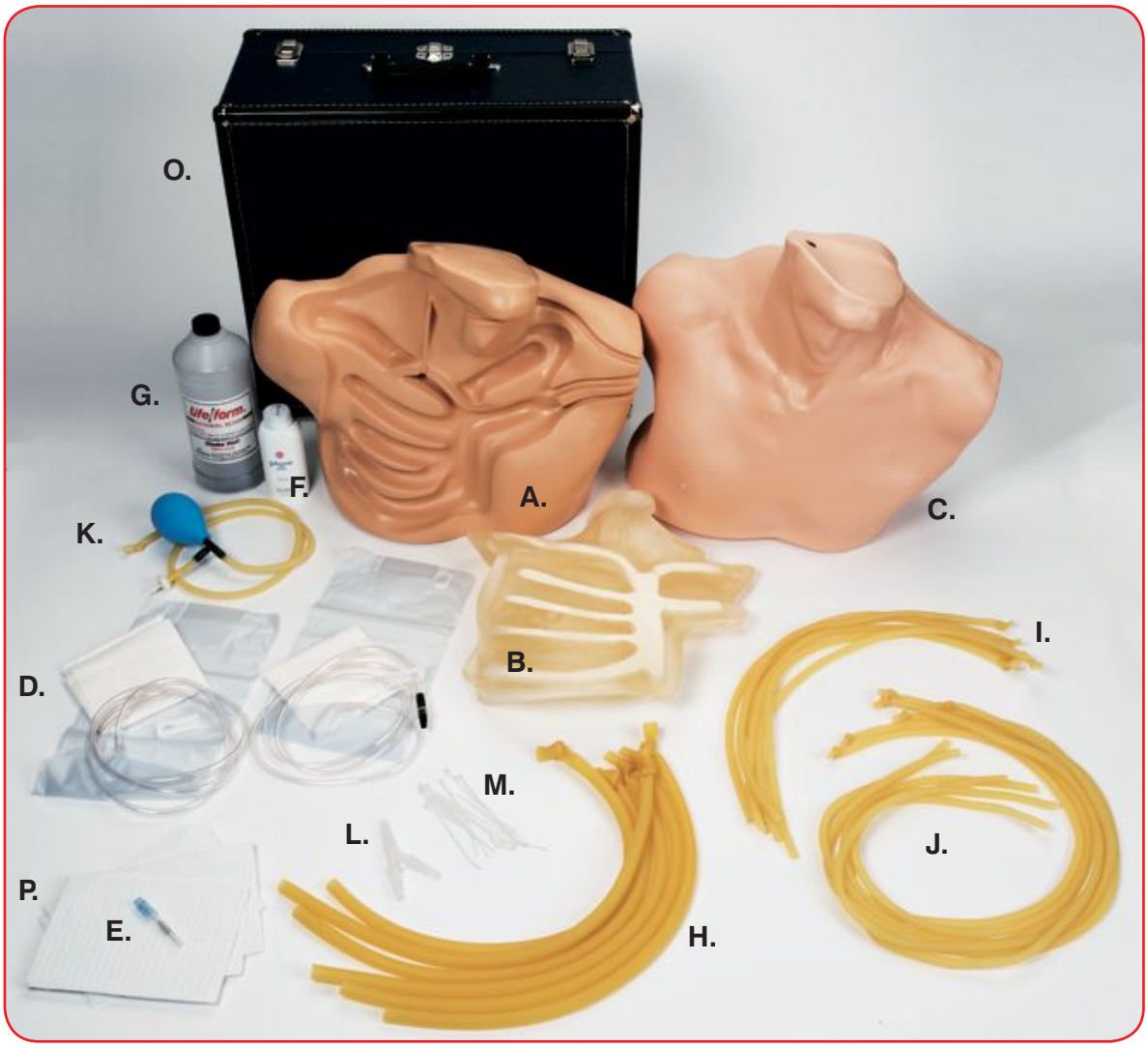
Products are manufactured using a quality management system certified as being in conformity with ISO 9001 and ISO 13485.

WARNING: Products may contain dry natural rubber.

Life/form® 5 Year Warranty

Life/form® Products by Nasco



Project Consultant

The design and assembly of this simulator would not have been possible without the cooperation and expertise furnished to us by:

- Forrest M. Gridley, M.A., P.A.-C.
- Division of Urology, Department of Surgery
- Physician Assistant Program
- Emergency Medical Services Program
- University of Wisconsin-Madison

About the Simulator

The ***Life/form***® Central Venous Cannulation Simulator is anatomically and functionally correct; it is designed to instruct medical personnel in the practice of central venous cannulation. The simulator incorporates superficial anatomical detail and functional accuracy to simulate the clinical experience.

List of Components

- **A.** Torso Base
- **B.** Muscle Bone Insert
- **C.** Skin Overlay
- **D.** 2 Fluid Bags, 1,500 ml
- **E.** 22-gauge Needle
- **F.** Baby Powder
- **G.** 1 qt. ***Life/form***® Venous Blood
- **H.** 6 Subclavian Tubes (20")
- **I.** 6 Internal Jugular Veins (20")
- **J.** 6 External Jugular Veins (34")
- **K.** 1 Carotid Pulse Tubing
- **L.** 1 “Y” Connector
- **M.** 12 Strapping Ties
- **N.** Instruction Manual (Not Pictured)
- **O.** Hard Carry Case
- **P.** 4 Small White Towelettes

General Information About the Simulator

Procedures Which May Be Performed

A. Subclavian Vein Approaches

1. Infraclavicular
2. Supraclavicular

B. Internal Jugular Vein Approaches

1. Anterior
2. Central
3. Posterior

C. External Jugular Approach

The external jugular vein portion of the simulator can be set up alone in the simulator or in conjunction with the other vein systems if desired.

In addition, the Central Venous Cannulation Simulator offers other features that extend the application of this instructional aid to include demonstration of anatomical landmarks for:

1. Pericardiocentesis
2. Thoracentesis

D. Replicate Bilateral Carotid Pulse (Manual)

Figure 1

Figure 2

Preparing the Simulator for Use

Inspect the contents to be certain all necessary components are included (see “List of Components”).

Generously powder the torso base of the simulator if desired for a less sticky surface to ease tubing into simulator. Following this, powder the muscle bone insert if desired. ***(See figures 1 & 2.)***

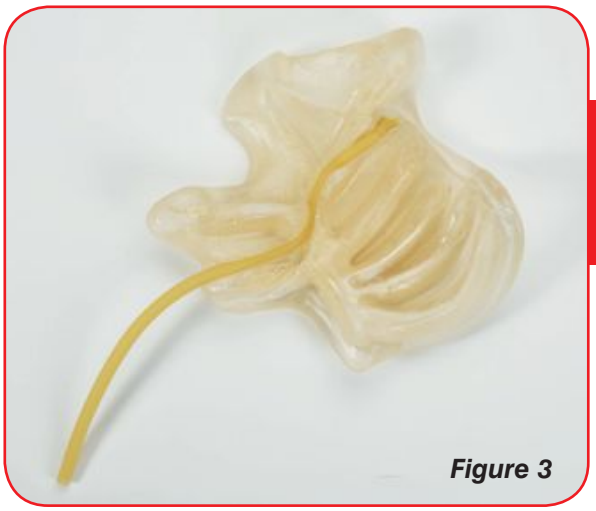


Figure 3

With the muscle bone insert lying upside down (sternum touching table), locate the subclavian vein tubing (letter H in list of components and components image). This is the largest diameter tube supplied. It is knotted at the end. Place into the simulator with the knotted end inside the muscle bone insert. ***(See figure 3.)***

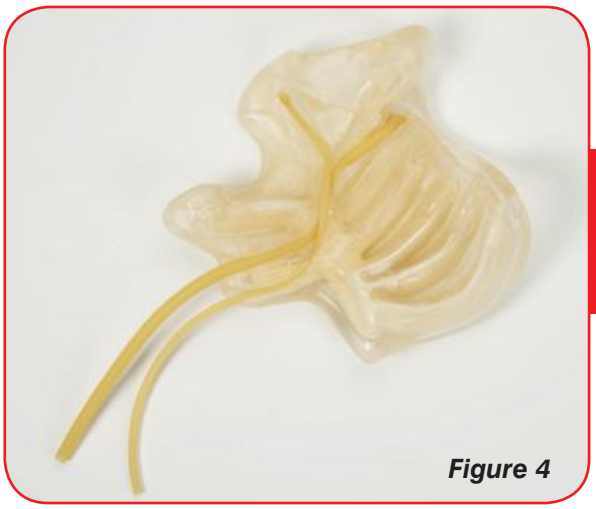
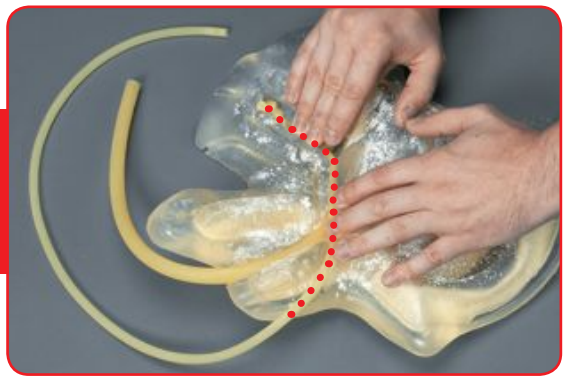
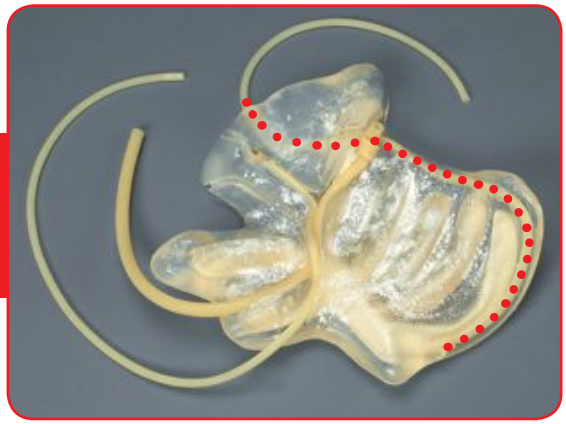


Figure 4



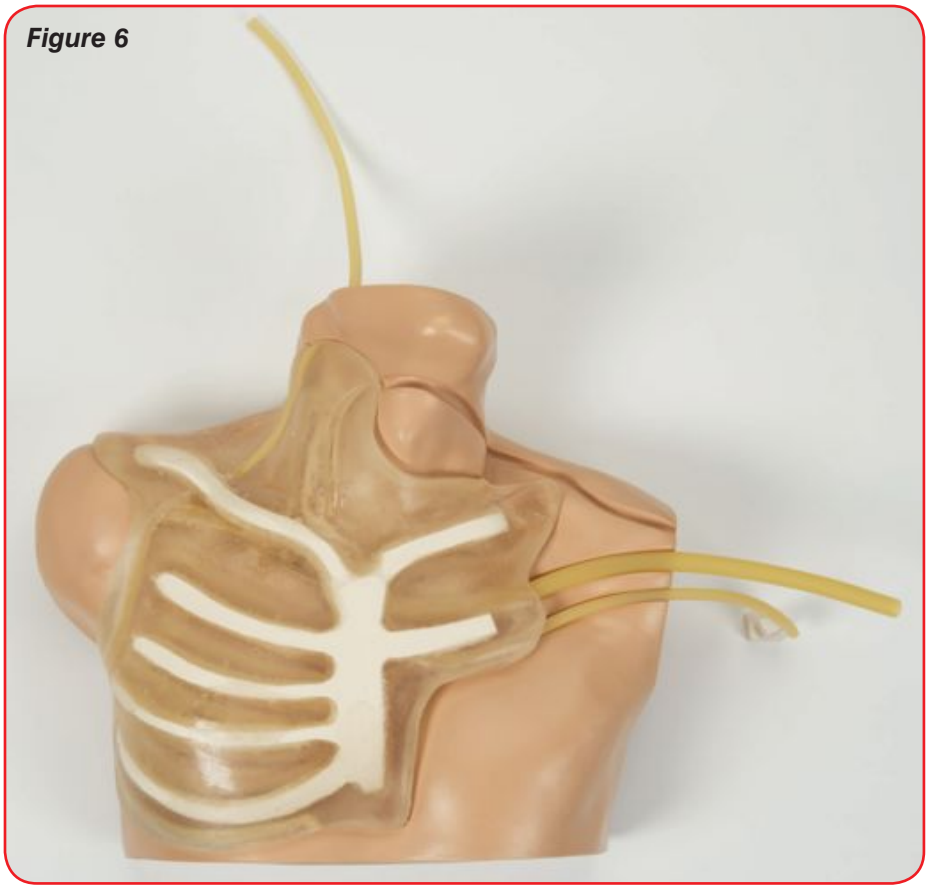
Next, position the internal jugular vein tubing (letter I in the list of components). This tube is short and small in diameter. Insert tubing over the top of the subclavian vein tubing, keeping the knot inside the muscle bone insert. Both the subclavian and internal jugular fit into "grooves" or "channels." ***(See figure 4.)***

Figure 5



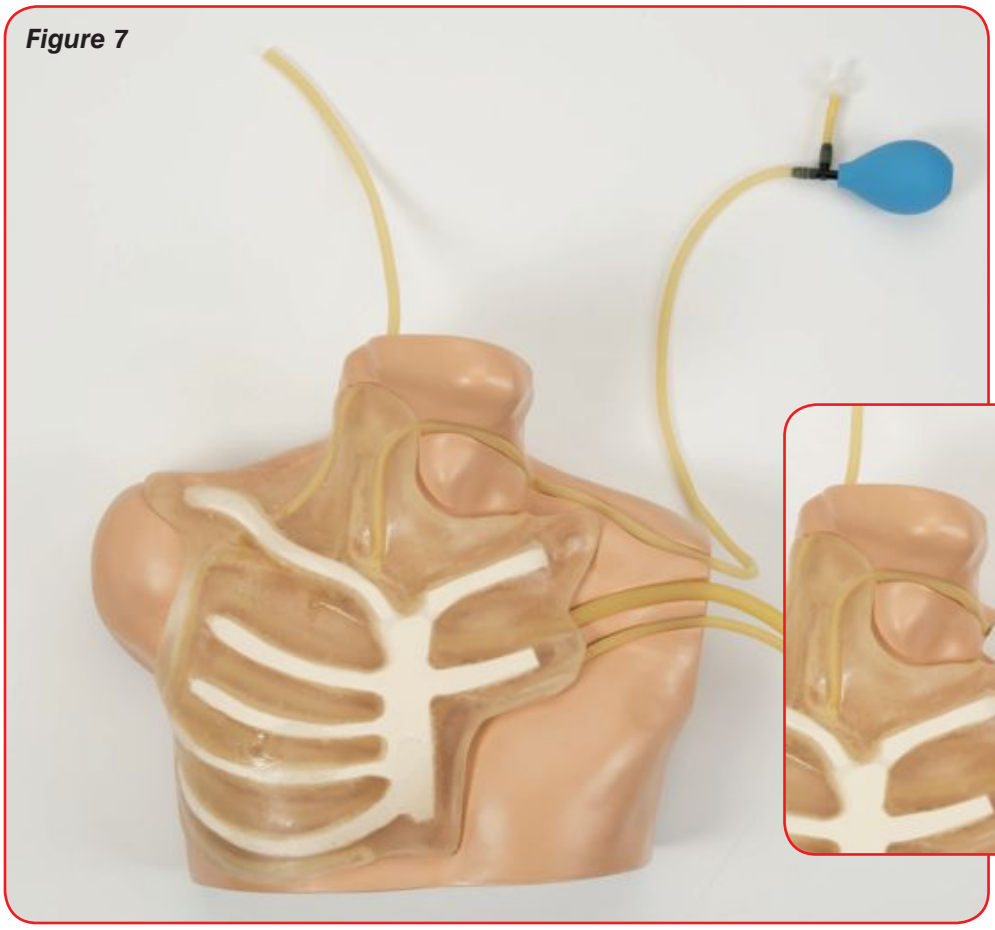
Finally, position the external jugular vein, starting with the knotted end at the lower edge. Run the vein along the outside edge and through the hole to the front side of the muscle bone insert. Continue following the vein channel on the front side. ***(See figure 5.)***

Figure 6



Making sure all tubes are properly positioned and held in place, “invert” the muscle bone insert and position in the torso base. Place the open end of the external jugular vein through the hole in the jaw of the torso base. ***(See figure 6.)***

Figure 7



Position the carotid pulse tubing into the channel on the outside of the muscle bone insert. ***(See figure 7.)*** Applying tape (not included) to the carotid pulse tubing will help hold the tubing in place on the torso base. ***(See figure 7 insert.)***

Figure 7 insert

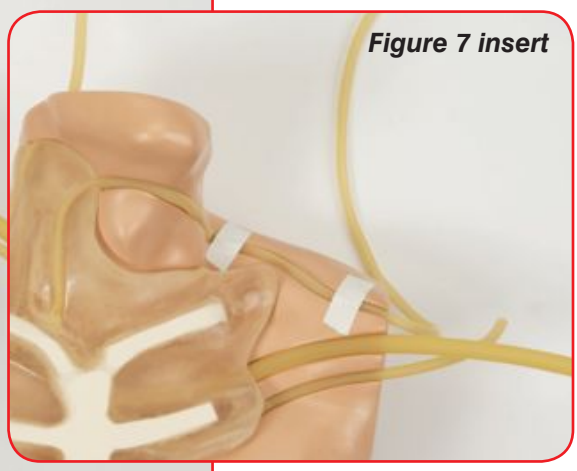
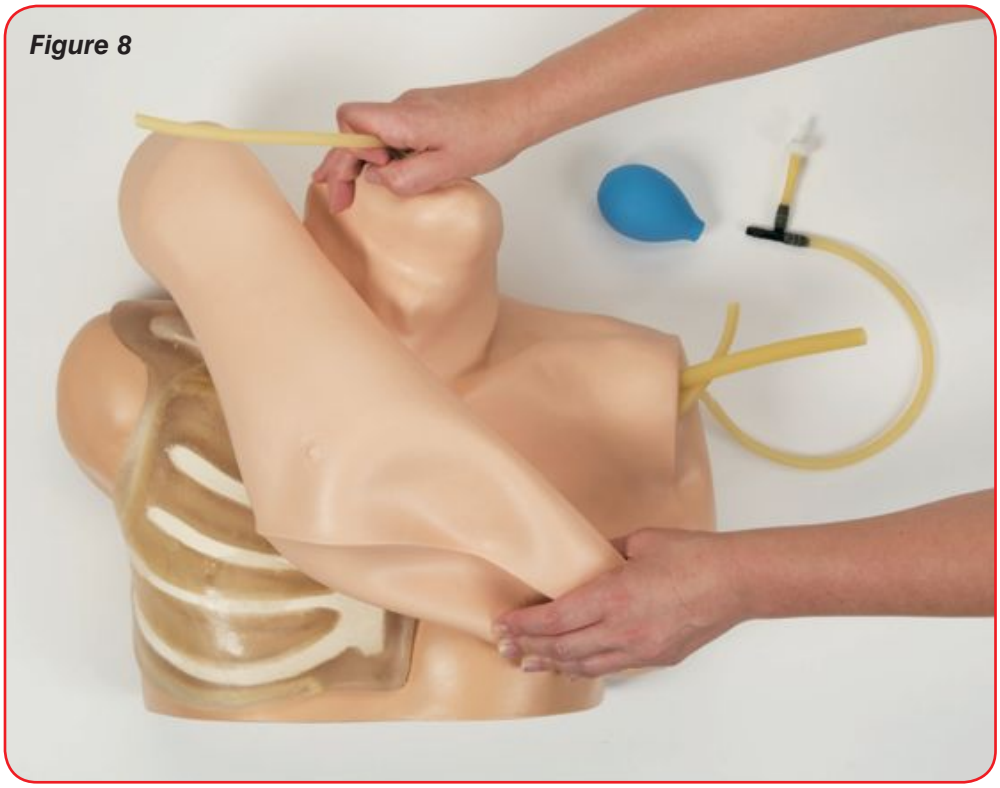
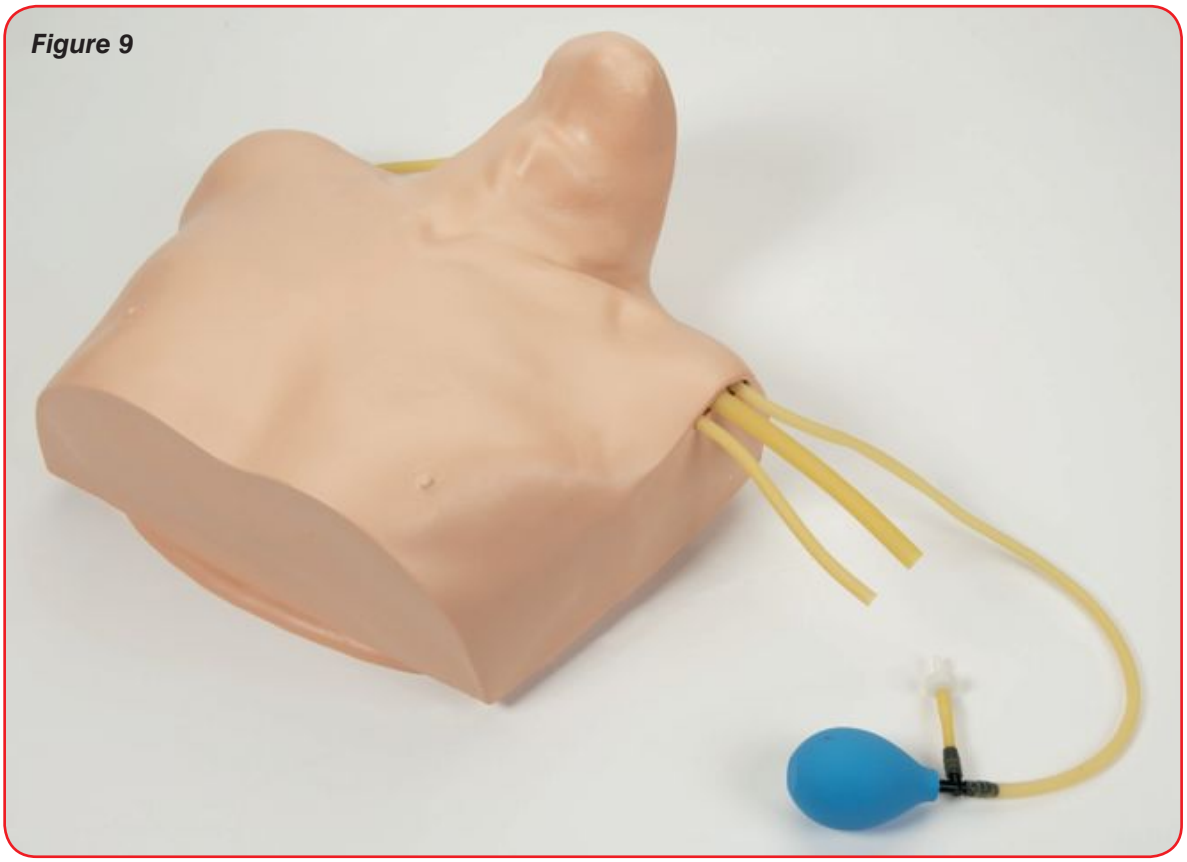


Figure 8



Apply the skin overlay to the torso, beginning at the neck. At this point, feed the external jugular vein through the hole in the top of the skin overlay. Disconnect the pulse bulb on the carotid pulse tubing. Pull the ends of all three tubes through the opening in the skin located on the simulator's left shoulder. ***(See figure 8.)***

Figure 9



Be sure all tubing is still in the channels, and reconnect the pulse bulb. ***(See figure 9.)***

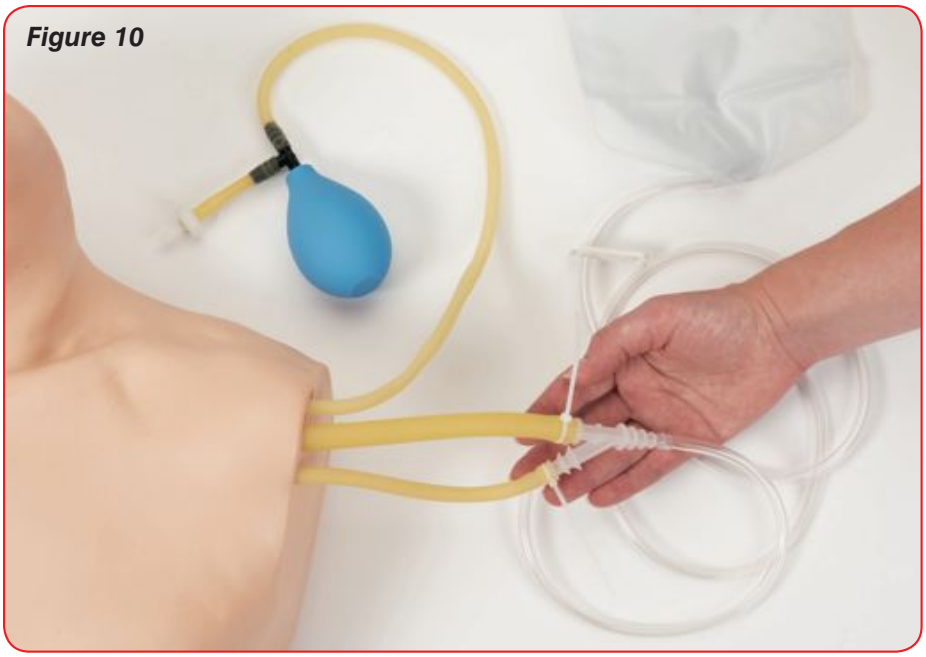


Figure 10

Now attach the subclavian and internal jugular veins from the shoulder to the top of the “Y” connector. After attaching the subclavian and the internal jugular to the “Y” connector, apply the strapping ties to ensure a tight seal of the tubing to the connector. Attach the fluid bag with the open tube to the bottom of the “Y” connector. These ties will remain in position until the tubing is changed. To remove them, simply cut them off. ***(See figure 10.)***

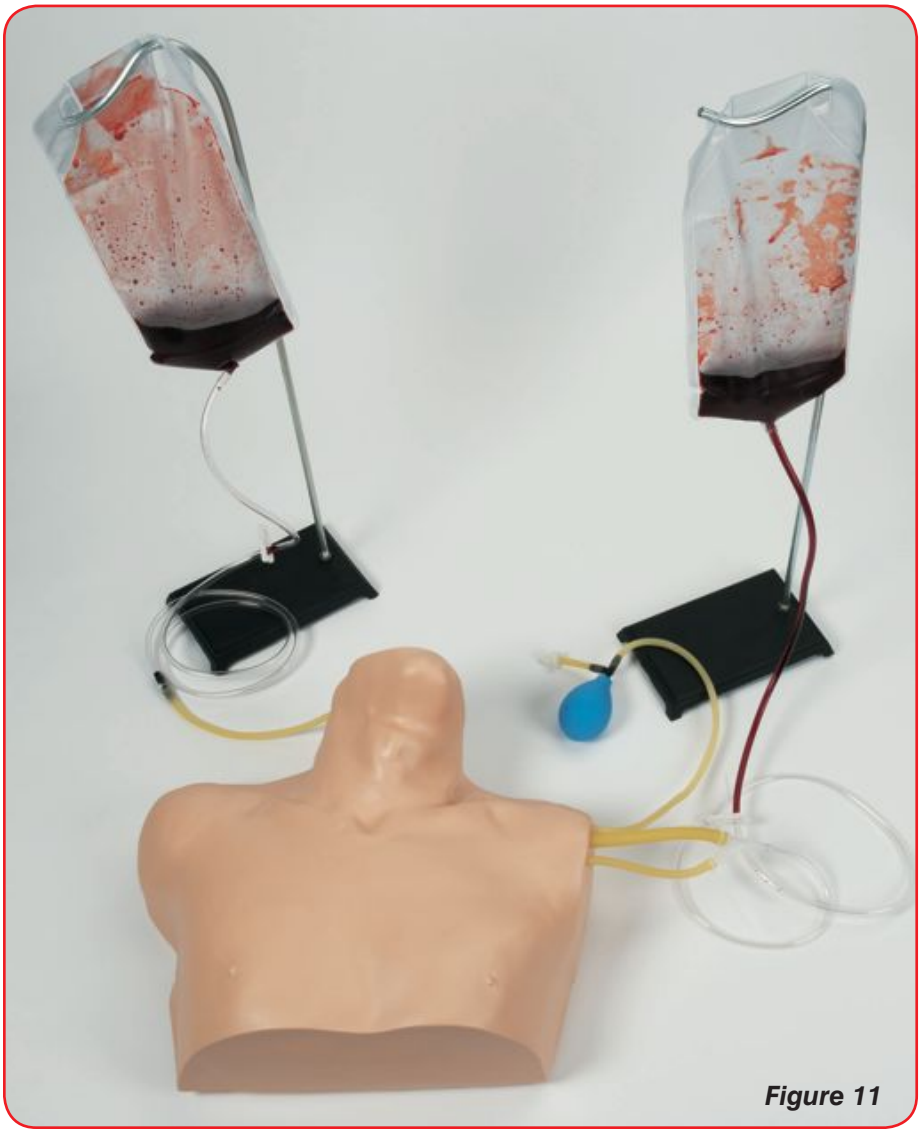


Figure 11

The external jugular vein is set up with its own fluid bag. Connect the fluid bag with the straight connector to the external jugular vein. Do not use strapping ties to permanently attach the vein to the connector, as it will be disconnected after each use for easier installation later. ***(See figure 11.)***

Mix the blood solution according to the instructions on the bottle. Close the slide clamps on both fluid bags. Pour contents into the bag, seal the top of the fluid bag, and hang on an IV stand. (sold separately.) The bottom of the fluid bag should not be more than 12" to 14" above the simulator. ***(See figure 11.)***

Figure 12

The simulator is almost ready to use. All that remains is to charge the veins with blood. To do this, remove the skin from the right shoulder areas — enough to reveal the "knotted ends" of the subclavian and internal jugular. Insert the 22-gauge needle into the tubing of the subclavian, very close to the knot. ***(See figure 12.)***

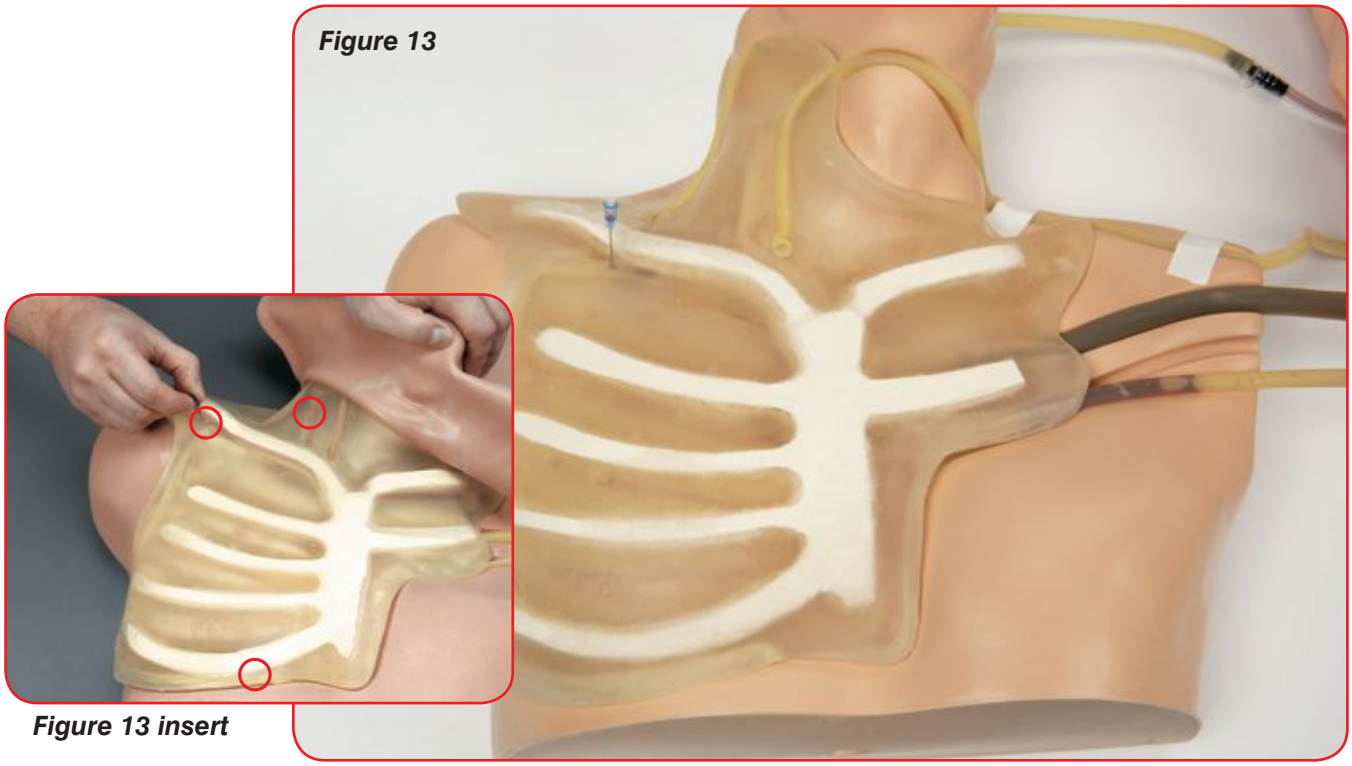


Figure 13

Figure 13 insert

Open the slide clamps on the fluid bag. When the air is released completely, simulated blood will flow from the top of the needle. ***(See figure 13.)*** Remove the needle at this point and repeat the procedure at the knotted end of the internal jugular. Replace the skin. ***(See figure 13 inset.)***

Use of the Simulator

This booklet does not propose to outline a particular procedure to be followed. Rather, it is recommended that a procedural manual and the instructor's directions be followed. This will eliminate confusion and best serve the individual instructor and curriculum.

Care of the Simulator

1. Cleaning is recommended after each use. The torso and muscle bone section may be washed in lukewarm water and mild soap. Use Nasco Cleaner (LF09919U) to remove stubborn stains from the simulator. Simply spray soiled area and wipe clean with a soft cloth or paper towel.
2. Dust the torso base and muscle bone insert with baby powder before each use as desired.
3. When replacing veins and carotid pulse tubing, keep the squeeze bulb adapters and connectors from old tubing.

Cautions

1. DO NOT leave the tubes in the simulator for storage purposes. Keep tubing away from the simulator torso, skin, and muscle bone insert. Failure to comply with this warning will result in damage, which will not be covered under warranty.
2. DO NOT allow any newsprint or plastic to come into contact with the simulator. Ink of any type will cause indelible stains.
3. DO NOT mark on the simulator in any way.
4. Solvents or corrosive materials will damage the simulator.
5. Maintain the slide clamps in the open position when simulator is not in use to prevent kinking in the tubing.

Supplies/Replacement Parts

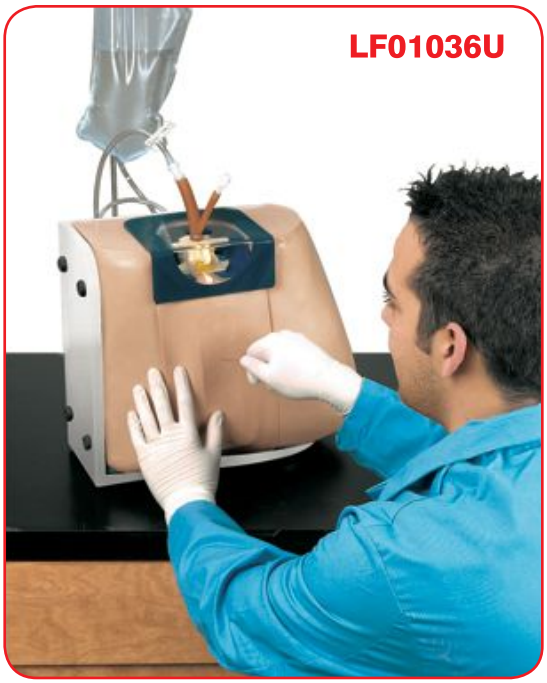
LF00845U	Quart of ***Life/form***® Venous Blood
LF00846U	Gallon of ***Life/form***® Venous Blood
LF01022U	Fluid Supply Stand
LF01078U	Replacement Kit: 6 Subclavian Veins, 6 Internal Jugular Veins, 6 External Jugular Veins, 1 Carotid Pulse Tubing, 12 Strapping Ties, and 1 Skin Replacement
LF01079U	CVC Skin Replacement
LF01093U	CVC Muscle Bone Replacement
LF01098U	Fluid Administration Set: 1500 ml Fluid Bag with Fitting
***LF01099U**	Vein Tubing Sealant
***LF01112U**	Skin Repair Kit
LF01113U	Replacement Tubing Kit (6 Sets): Subclavian Vein, Internal Jugular Vein, External Jugular Vein, 12 Strapping Ties, and "Y" Connector
LF09919U	Nasco Cleaner

***Not for sale outside the U.S.A.

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

Other Available Life/form® Simulators

LF00698U Adult Injectable Arm (Light)
LF00958U Pediatric Injectable Arm
LF00961U Intramuscular Injection
LF00995U Arterial Puncture Arm
LF00999U Pediatric Injectable Head
LF01012U Heart Catheterization (TPN)
LF01027U Peritoneal Dialysis
LF01036U Spinal Injection
LF01037U Hemodialysis Practice Arm
LF01042U Suture Kit
LF01095U Blood Pressure Arm
LF01108U Infant Intraosseous Infusion
LF01121U Advanced IV Arm
LF01131U Venipuncture and Injection Arm
LF01139U Advanced IV Hand
LF01142U Auscultaion Trainer
LF03000U **CPARLENE®** Series
LF03601U Adult Airway Management Trainer with Stand
LF03602U Adult Airway Management Trainer
LF03609U Child Airway Management Trainer with Stand
LF03616U Child ***CRiSis***™ Manikin
LF03617U Deluxe Child ***CRiSis***™ Manikin
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 Bariatric CPR Manikin
LF03770U Chest Tube
LF03953U ***CRiSis***™ Manikin, Complete
LF03955U Deluxe ***CRiSis***™ Manikin
LF03956U Adult ***CRiSis***™ Auscultation Manikin
LF03966U Adult ***CRiSis***™ Auscultation Manikin with ECG Simulator


LF01036U

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Nasco Fort Atkinson
901 Janesville Avenue, P.O. Box 901
Fort Atkinson, Wisconsin 53538-0901
1.800.558.9595
eNasco.com • E-mail: lifeform@eNasco.com