



**SPINAL INJECTION  
SIMULATOR  
LF01036U  
INSTRUCTION MANUAL**



***Life/form***® Products by NASCO



### **About the Simulator...**

The **Life/form**<sup>®</sup> Spinal Injection Simulator is designed to facilitate the teaching, demonstration, and performance of spinal anesthesia, spinal puncture, epidural analgesia, caudal analgesia, sacral nerve blocks, and lumbar sympathetic blocks. Every effort has been made to provide absolute realism in the simulator so that the visual and tactile sensations, in working with the unit, provide a positive transition to patient procedures.

### **Internal Structure**

The Spinal Injection Simulator consists of two basic parts. The first part, or inner core, is a clear lucite window in which the first and second lumbar vertebrae are prominently displayed. It also includes the intervertebral disc, the nerve roots, the ligamentum flavum, and lumbar sympathetic chain.

The second part of the simulator is the functional unit. This incorporates all soft tissue and bony structures from the level of the third lumbar vertebrae down to the tip of the coccyx.

### **List of Components**

1. Fluid Bag with Special Adapter
2. 2-oz. Bottle of Lubricant

### **Procedures That Can Be Performed on This Simulator**

As with all **Life/form**<sup>®</sup> Replicas and Simulators, the Spinal Injection Simulator gives students the opportunity to practice procedures that were never possible with conventional models.

A significant feature of the simulator is a precise 3-5 mm epidural space located between L2 and L5. The instruction of epidural analgesia by the loss of resistance technique can be readily accomplished. Both midline and lateral approaches may be practiced on the simulator. After epidural penetration, students may advance to spinal needles and pierce the dura mater, again experiencing a typical feeling of puncture in the fingertips. The dura can be filled with an aqueous solution. This allows visual confirmation of correct technique when the dura is entered. Fluid will exit through the spinal needle.

Cerebral-spinal fluid measurements can be taken, using a standard manometer.

Caudal anesthesia techniques may be practiced on the simulator by inserting needles into the epidural space. The spinous process of the fifth sacral vertebrae is not used in the simulator, leaving a slit-like aperture, the sacral hiatus, between the two sacral cornua.

Lumbar sympathetic and sacral nerve blocks may be practiced with good landmarks. Objective signs of complete sympathetic blocks are not possible with the unit.

A Spinal Replacement Kit with skin (LF1039UA) is also offered separately. This kit allows field changing of the simulator skin in less than five minutes. No tools are necessary.

## General Instructions for Use

All materials needed for proper function of the Spinal Injection Simulator are provided. The setup procedure is relatively simple. Fill the spinal cord in the following manner:

- A. Fill supply bag with water, making sure tubing clamp on supply line is closed. Hang supply bag approximately 18 inches above simulator.



- B. Lubricate with **Life/form**<sup>®</sup> Simulator Lubricant (LF985UA) and insert fitting, on end of supply bag tubing, directly into latex tubing extending above top of simulator.



Open tubing clamp on supply line. Fluid will flow from supply bag through supply line and into the spinal column. When fluid starts coming out of small air vent tubing, close off tube with attached cap.



- C. The brace included with the unit is designed to aid in the proper function of this simulator in the two basic positions shown.



- D. The simulator is now full and ready for continuous operation. Before starting procedures, lubricate the injection sites with **Life/form**<sup>®</sup> Simulator Lubricant (LF985UA). Ivory liquid detergent may also be used. Make no other substitutions. This will reduce surface tension, facilitate entry of the needle, and prolong the life of the simulator.

## Modification of Older Units for Spinal Replacement Kit

To properly use the spinal replacement kit, you may need to perform a small modification to your spinal injection simulator. If you have a spinal simulator with a curved window, as shown in the photo below, follow these instructions.

1. Remove the top two locking tabs that are currently on your spinal window.

2. Lay simulator down — spine up.



2. Remove any loose material from the window that may have been left from the backing of the old locking tabs.
3. Peel the backing from the two locking tabs included in the replacement kit.
4. Place the new locking tabs in the same position as the original tabs (see photo above). Press them firmly into place.

3. Remove skin flap:

- a. Put one finger of each hand under skin flap at the base and pull outwardly until skin flap is free.



- b. Remove window. There are three velcro tabs. Two on the front in each corner of window, and one on the top back of the window. Lift up on front lower tabs of the window and remove.

The modification is complete and the replacement kit can now be installed.

## Instructions for Using Spinal Replacement Kit (LF1039U)

A. Disassemble Spinal Injection Simulator

1. Remove tube from hole located on top of window.



- c. After window is removed, place one finger of each hand at top of skin flap and pull away from body.



4. Remove foam pad which will expose spinal bones and yellow ligament.



5. Remove yellow ligament by pulling it away from bone.



- B. Assembly of Removable Parts
  1. Replace yellow ligament.
  2. Replace foam pad. There are three alignment holes in back of pad which should cover the protruding bone of the vertebrae.
  3. Replace new skin flap and window.
    - a. Place top tab of skin flap into simulator.

- b. Insert bottom of skin flap at the base of simulator. Use one finger in center of lower part of flap to push into place. Replace window by aligning black sensitized tabs and lock into place.

4. Replace tube by inserting into hole in top of window. The simulator is now refurbished and ready for use.

### Care of Simulator

Store simulator in the accompanying carrying case. Never place simulator on newsprint, or any kind of printed paper or plastic as this leaves indelible stains. The simulator can be cleaned with mild soap and warm water. Use REN Cleaner (W9919UA) to remove stubborn stains. Spray soiled area and wipe with soft cloth or paper towels.

### Cautions

Do not use a hypodermic needle larger than 20-gauge. Keep needles as sharp as you would for a patient. Large bore and dull needles cause excessive wear to unit.

### Supplies/Replacement Parts For Spinal Injection Simulator

W9919UA	REN Cleaner
LF0985UA	<b>Life/form</b> <sup>®</sup> Simulator Lubricant
LF1039UA	Spinal Replacement Kit with Skin, Musculatures, and Spinal Cord

## 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  
**LF01037U** Hemodialysis Arm  
**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
- LF01121U** Advanced IV Arm  
**LF01139U** Advanced IV Hand  
**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  
**LF03965U** Deluxe "Plus" **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  
**LF06001U** **CPR Prompi**™ Adult/Child Manikin  
**LF06012U** **CPR Prompi**™ Infant Manikin  
**LF06200U** **CPR Prompi**™ Keychain Rescue Aid  
**LF06200U** **CPR Prompi**™ Rescue and Practice Aid

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