



**Female Retrofit Kit**  
**for Laerdal SimMan 3G**  
**Laerdal Product No.**

**212-55290**

**212-55300**

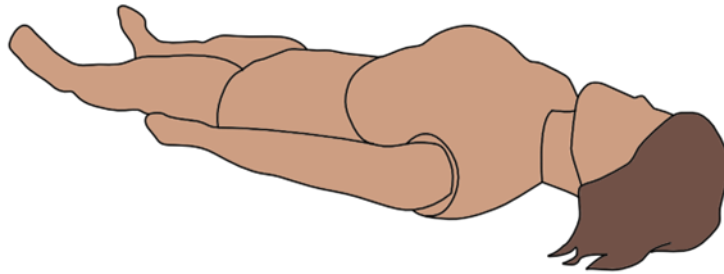
**212-55310**

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## 1 SYSTEM SUMMARY

This document covers the installation, use, and maintenance of the Female Retrofit Kit depicted in **Figure 1**.



**Figure 1. Female Retrofit Kit (installed)**

SIMETRI developed the Female Retrofit Kit to help address training gaps that lead to preventable deaths mainly caused by chest trauma on the battlefield in female casualties. In order to make soldiers more comfortable with providing care to women, and more capable of reacting without delay in life-threatening situations, trainees should be given the opportunity to work with realistic female anatomy during training. Steps on how to assemble, use, and maintain this system are detailed in the sections below.

## 2 INSTALLATION INSTRUCTIONS

### 2.1 Supplies

There are no additional supplies required to install the Female Retrofit Kit on the Laerdal SimMan 3G manikin outside the contents of the Makeup Kit.

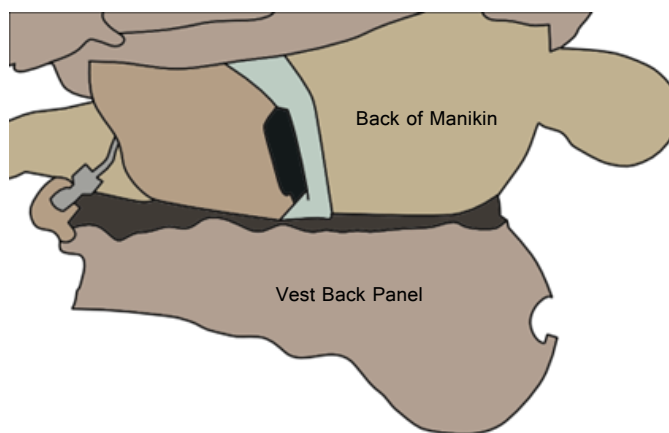
### 2.2 Environment

A dry and climate-controlled environment is ideal for installing the Female Retrofit Kit on the Laerdal SimMan 3G manikin. If not in the ideal environment, be cautious to avoid allowing any fluids, heavy moisture, or excessive dirt within the system.

### 2.3 Procedure

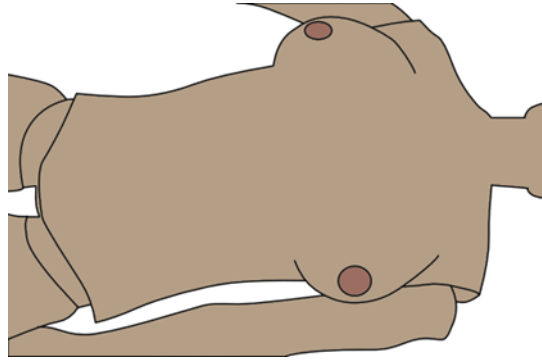
Before installing the Female Retrofit Kit, you must first remove the existing Laerdal chest skin from the manikin using the zippers.

The Female Retrofit Kit comes in two pieces, a back panel, and a top panel. Place the back panel of the Female Retrofit Kit Vest on a flat surface, exterior side down. Roll the Laerdal manikin directly on top of the Female Retrofit Kit Vest back panel, aligning the torso as illustrated in **Figure 2**.



**Figure 2. Lay Back Panel of Female Retrofit Kit Vest on a Flat Surface**

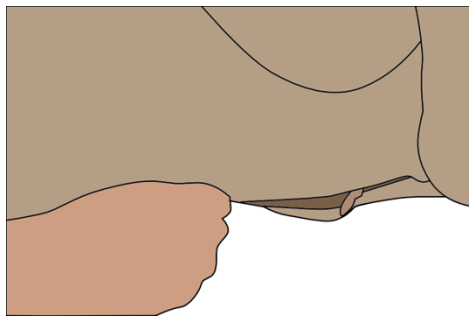
Once the manikin is laying down, place the top panel of the Female Retrofit Kit Vest on the chest of the manikin as depicted in **Figure 3**.



**Figure 3. Align Top Panel of Female Retrofit Kit Vest**

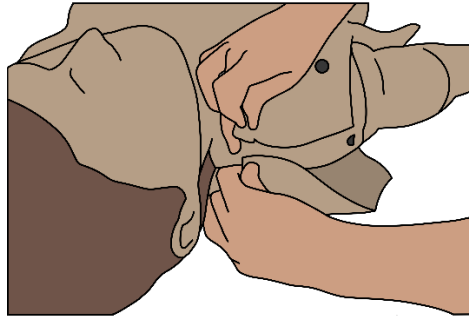
Adjust the Female Retrofit Kit Vest for alignment as necessary, making sure all openings match up and the side power panel is accessible.

Line up the zippers on the sides and shoulders to secure the front panel to the back panel of the vest. Zip up the side zippers as shown in **Figure 4**.



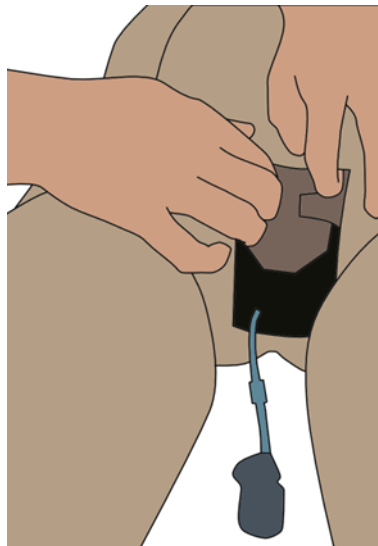
**Figure 4. Close Side Zippers**

Additionally, make sure the arms are placed through the armholes of the Vest and then zip the two top shoulder zippers closed (**Figure 5**).



**Figure 5. Close Top Shoulder Zippers**

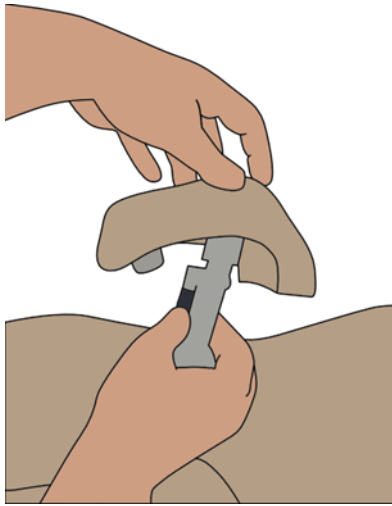
Locate the two pelvic attachment tabs of the Female Retrofit Kit Vest and slide them in between the skin holders located inside the manikin's genitalia region. This adjustment holds the pelvic attachment tabs in place to further secure the Female Retrofit Kit Vest on the torso (**Figure 6**).



**Figure 6. Tuck in Pelvic Tabs**

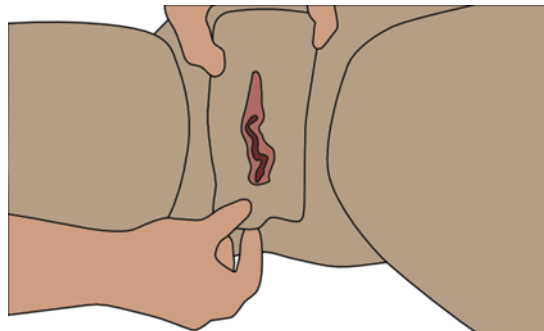
Locate the urethra valve inside the pelvic cavity of the manikin. The tubing on the back of the Female Vagina must first be attached to the urethra valve located inside the manikin. Gently screw the two parts together by rotating the valve to the white attachment until secured in place. Using the screws on the back of the Female Retrofit Kit Vagina, gently twist the vagina until it is screwed

into the urethra valve as shown in **Figure 7**.



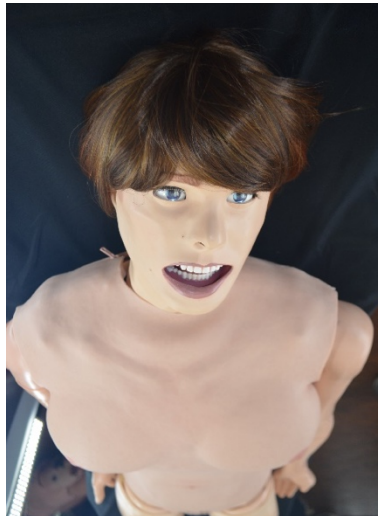
**Figure 7. Attach Vagina to Urethra Valve**

Then install the simulated Female Vagina by squeezing the sides while inserting it into the pelvic opening as depicted in **Figure 8**.



**Figure 8. Secure Vagina in Pelvic Cavity**

Next, use the Makeup Application Instructions in **Section 5** to apply the makeup and wig to the manikin. **Figure 9. Laerdal SimMan 3G Head with Makeup and Wig** shows what the head will look like with makeup and wig properly applied.



**Figure 9. Laerdal SimMan 3G Head with Makeup and Wig**



## **3 USER INSTRUCTIONS**

### **3.1 Set Up**

Inspect the Female Retrofit Kit for tears, dirt, and debris, following the instructions in Section 4 if any are found. Confirm all zippers are closed completely and the Female Retrofit Kit skin is not stretched or folded. Apply moulage, trauma tattoos, and simulated blood in accordance with the training protocol or scenario being used.

### **3.2 Removal**

Remove the Vagina before attempting to remove the Female Retrofit Kit Vest. Lightly squeeze the Vagina and slowly remove it from the pelvic opening, then unscrew the vagina attachment from the manikin's urethra valve.

Pull out the Female Retrofit Kit Vest's two pelvic attachment tabs from inside the manikin. Unzip the side and top shoulder zippers on the Female Retrofit Kit Vest. Remove the top panel of the Female Retrofit Kit Vest, then roll the manikin over to one side to take out the back panel of the Female Retrofit Kit Vest.

To remove the wig, simply tug on the hair and the wig will come off from the head of the manikin. Remove the leftover wound tape from the head skin.

To remove makeup from the face, begin by using 99% isopropyl alcohol provided in the makeup kit and a cotton round to clean makeup from the face. Follow makeup instructions in **Section 5** of this report for more makeup removal details.

## **4 MAINTENANCE**

### **4.1 Supplies**

The only supplies required to maintain the Female Retrofit Kit are a cleaning cloth or paper tissue, and soap and water. For the Makeup Kit, all the needed supplies are included in the carrying case.

### **4.2 Environment**

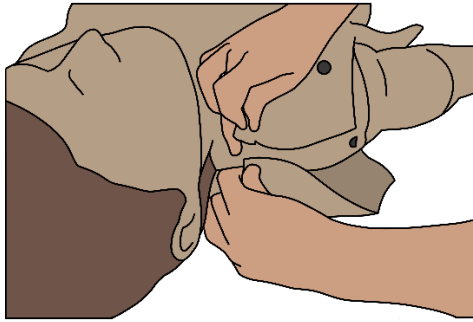
A dry and climate-controlled environment is ideal for maintaining the Female Retrofit Kit on the Laerdal SimMan 3G manikin. If not in the ideal environment, be cautious to avoid getting any fluids, heavy moisture, or excessive dirt within the system.

### **4.3 Procedure**

To maintain the Female Retrofit Kit, all supplies should be stored in a sealed container. If a silicone wound has been applied to the Female Retrofit Kit Vest, pull the wound off from the vest; rinse the wound with soap and water to remove any leftover simulated blood if you would like to reuse it for another application. To remove any leftover adhesive on the wound, place a small amount of alcohol on a cotton round and wipe clean. To clean the Female Retrofit Kit Vest, wipe its surface with a small amount of alcohol.

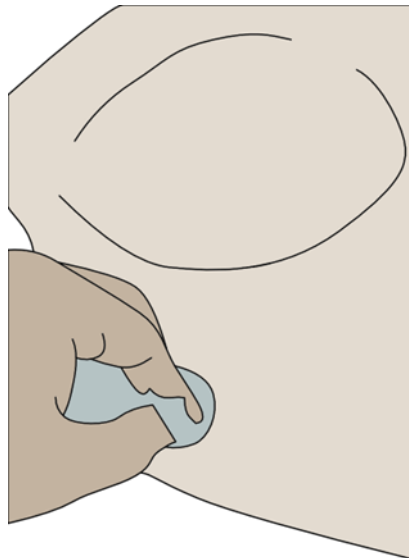
### **4.4 Refurbishment**

If the Female Retrofit Kit were to be cut into during use, the following steps describe the procedure to refurbish incisions of the skins on the Female Retrofit Kit Vest. Remove the Female Retrofit Kit Vest from the Laerdal manikin torso and unzip the front panel from the back panel of the vest (**Figure 10**).



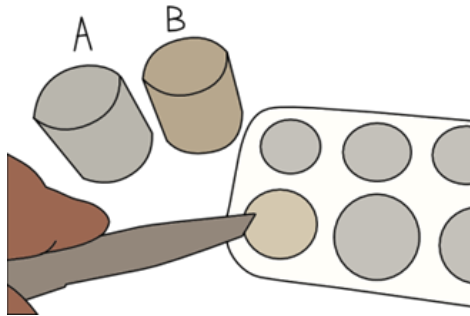
**Figure 10. Unzipping Female Retrofit Kit Vest**

Lay the front panel of the vest on a flat surface as seen in **Figure 11** and using a 99% alcohol-soaked paper towel or cloth, wipe away any dirt or debris from the surface.



**Figure 11. Lay Front Panel of Vest on Flat Surface and Wipe Clean**

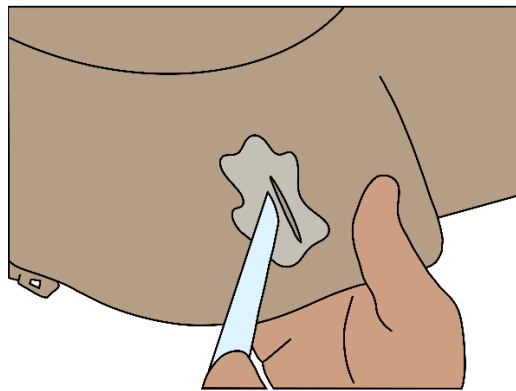
To prepare the adhesive, use a Plastic Palette Knife to scoop out a fingertip amount of Part A from the jar. Then scoop out the same amount of material from the Part B jar into a Mixing Palette. Mix thoroughly until combined as illustrated in **Figure 12**.



**Figure 12. Mixing Prosthetic Adhesive**

Note: This material once mixed cures quickly so you must work efficiently to apply the mixture to your surface area.

Use the Plastic Palette Knife and spread the mixture into and on top of the seam securing all sides of the incision area as shown in **Figure 13**. Let the mixture cure for 5 to 10 minutes. You will know it is cured when the surface is no longer tacky.



**Figure 13. Adding Adhesive to Incision Site**

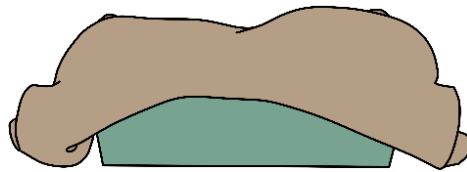
While the mixture is still curing, use a dry paper towel to gently wipe away any excess of the adhesive from the incision site.

Once the adhesive is completely cured, turn the front Female Retrofit Kit Vest panel over and repeat the steps to the back side of the incision.

Once the adhesive is cured, to clean your supplies, simply peel away the prosthetic adhesive from your Plastic Palette Knife and Mixing Palette.

#### 4.5 Storage

When the Female Retrofit Kit is not being used, store the Female Retrofit Kit Vest using a soft foam pillow so that the breasts are inclined and supported from the back side. Make sure the vest is folded under and around the foam pillow included with the purchase, so it lays like a folded shirt as shown in **Figure 14**.



**Figure 14. Store Female Retrofit Kit Vest Folded on Foam Pillow**

When the Female Retrofit Kit is ready to be stored, maintain the Female Retrofit Kit Vest in that folded position and do not put heavy items directly on top of the breasts, to avoid distortion of the breasts. It is recommended to store them in a hard or semi-rigid case laying on a flat surface so that no heavy weight is applied to the breast tissue (**Figure 15. Protect the Female Retrofit Kit Vest in a Hard Case**Figure 15).



**Figure 15. Protect the Female Retrofit Kit Vest in a Hard Case**

## 5 MAKEUP APPLICATION INSTRUCTIONS

### 5.1 Makeup Supplies

The required supplies for this makeup application are as follows:

Makeup Supplies List		
Brushes	Angle Brush	
	Buffer Brush	
	Contour Brush	
	Blending Brush	
Makeup	Alcohol Activated Dusty Rose	
	Creme Foundation Honey	
	Creme Foundation Dark Brown	
	Creme Foundation Ultra Fair	
	Neutral Set Translucent Face Powder	
Accessories	Eye Lashes	

	Eyeshadow Adhesive	
	Woman's Wig	
	Wig Tape	
	99% Isopropyl Alcohol	
	Cotton Facial Pads	
	Hair Comb	
	Tweezers	
	Makeup Case	

## 5.2 Step By Step

### 5.2.1 Cleaning

Tools: 99% Isopropyl Alcohol, Cotton Facial Pads

- Begin by cleaning the surface of the manikin's face using 99% Isopropyl Alcohol and a cotton facial pad.
- Repeat the process until the surface is clean of any residue or debris.





### 5.2.2 Eyebrow Definition

Tools: Angled Brush, Creme Foundation Dark Brown Color

- You lightly spray the makeup with alcohol and press the makeup brush into product.
- Then follow along the brow line pressing the product on the brush onto manikin's face.
- Do not drag as the makeup will smear, keep pressing lines down the eyebrow bone.
- The eyebrow line should be thicker closer towards the nose and thinner as it goes further from the nose.



### 5.2.3 Face Contour

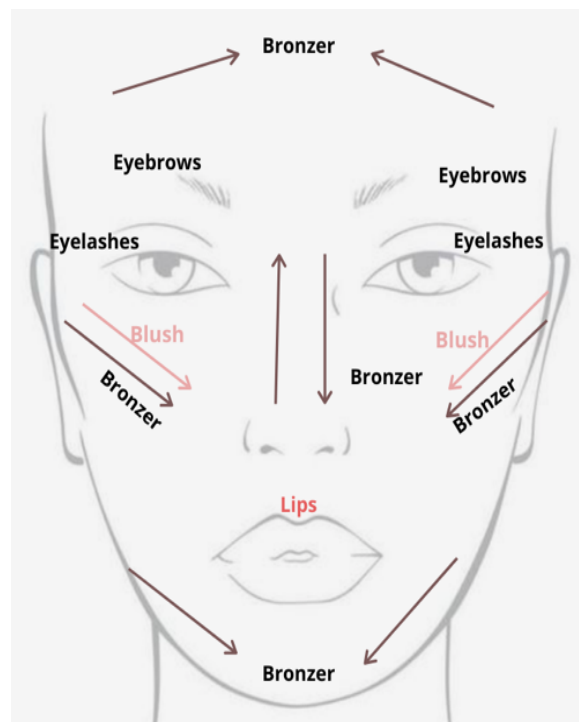
Tools: Buffer Brush, Creme Foundation Honey Color

- Lightly spray the makeup with alcohol and dab the brush onto the product and press lightly onto the face.
- You must move quickly will pressing the bronzer on the face so it not to set and smear.
- Start at the high cheek bone by the ear and press halfway down the cheek repeating on the other side.

- Then press lightly along the forehead close to the hair line and then along either side of the nostrils to the tip of the nose and blend onto the skin moving your brush repeatedly.



- Use this below reference diagram of the face to apply the bronzer in the correct placements. This shading technique provided the appearance of contouring along the face and jawline.

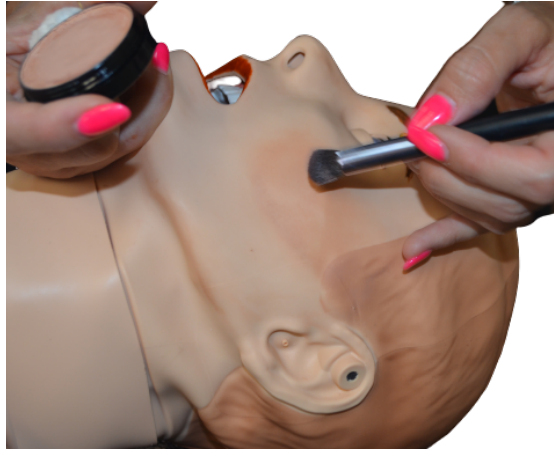


#### 5.2.4 Applying Blush

Tools: Blending Brush, Creme foundation Ultra Fair Color

- Lightly spray the makeup with alcohol and then lightly press brush into makeup.

- Once makeup is applied to the brush, lightly dab the brush onto the cheeks starting just outside of the mouth and head back towards the ears, above where you placed the bronzer.
- Try not to press too hard or go over bronzer for it will smear and you will have to start over. The key is to blend the color into the skin so there isn't any smearing or streaks.



### 5.2.5 Applying Lip Color

Tools: Angle Brush, Alcohol Activated Dusty Rose Color

- Lightly spray makeup with alcohol and rub brush into the product to get a good amount of it on the brush.
- Once you have product on the brush outline the upper lip starting from outer corner to middle of the lip.
- Then go back and fill that section and repeat other side then do the lower lip same as above.



### 5.2.6 Setting The Face

Tools: Contour Brush, Neutral Set Translucent Powder

- Once the makeup application is complete, you will need to set or powder the face.

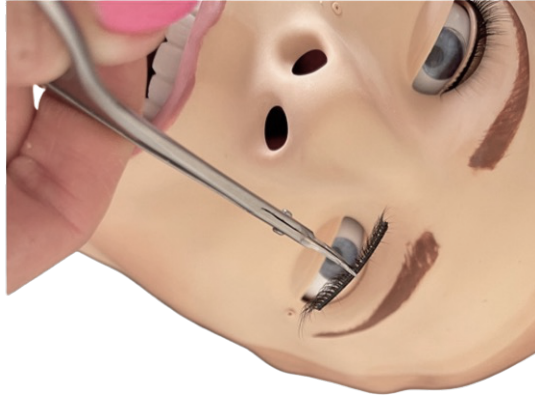
- Lightly press the brush into the powder and then hit the side of the canister as to remove any excess powder and apply directly to the face.
- Start from the center of the forehead and move to the right side of face and downward to chin. Making sure you get the entire right side of face and lips.
- Then go back to forehead and repeat on the left side starting at the forehead and moving down to the chin again making sure you get the entire left side of face and lips.
- You may need to add more product several times as you apply to the face, especially around the mouth so the lips do not smear.
- If any of the powder falls into mouth use brush to remove it or blow on the manikin to remove any excess.



### 5.2.7 Applying Eyelashes

Tools: Pair of Eyelashes, Eyelash Adhesive, Metal Tweezer

- Cut down the eyelashes so they fit the width of the manikin's eyelid.
- Use tweezers to hold the lashes while you apply the glue to the eyelashes.
- Once you have applied the glue to the eyelashes wait about 30 seconds for the glue to dry a little and become tacky, then you will close the eyelid and press the eyelashes onto the eye.
- The lashes should stick right away if they move just move the eyelashes to their location and hold for a few seconds and they should stick.
- Make sure to place the eyelash so that the hair is curling up towards the eyelid.



### 5.2.8 Wig Placement

Tools: Wig Tape, Synthetic Women's Wig

- You will need 4 of the pieces of Wig Tape and place them on top of head closest to forehead, right and left side of head just above ears, and the base of the head.
- Once you have all 4 Wig Tape pieces on you will start at the base of the head and place the wig on from there and then pull towards the sides and then to the crown to make sure the tape does not stick to the hair of the wig and just sticks to the inside of the wig.

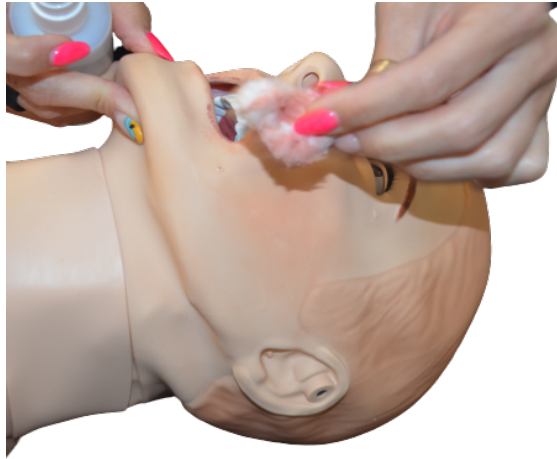


### 5.3 Maintenance

#### 5.4 Cleaning and Drying

Tools: 99% Isopropyl Alcohol, Cotton Facial Pad

- Simply use 99% Isopropyl Alcohol and cotton facial pad or clean cloth to wipe away makeup from the face.
- Let the surface dry for 1-2 minutes before using again.



The final result should look like this when applying makeup to a Laerdal SimMan manikin:

