



Complete Amputations
for Laerdal SimMan 3G
Laerdal Part No.

212-55130

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1. SYSTEM SUMMARY

This document covers the installation, use, and maintenance of the Amputations with Cores (left side) depicted in **Figure 1**.

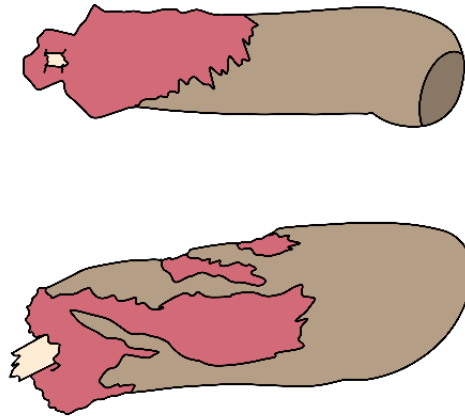


Figure 1. Amputations with Cores

SIMETRI developed hyper-realistic amputated limbs used in the training of traumatic limb injuries, utilizing the Laerdal SimMan 3G manikin. The amputation's reliability and maintainability are critical to the objective of maintaining combat emergency response readiness. Steps on how to assemble, use, and maintain this system are detailed in the sections below.

2. INSTALLATION INSTRUCTIONS

2.1 Supplies

The only tool required to install SIMETRI's Amputations with Cores is the Laerdal Arm Allen Key (8 mm) provided with the Laerdal SimMan 3G manikin (**Figure 2**).

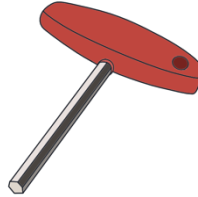


Figure 2. Laerdal Arm Allen Key Provided with Laerdal SimMan 3G Manikin

2.2 Environment

Although installation can be done in any environment, a dry and climate-controlled environment is ideal for installing the Amputation with Cores on the Laerdal SimMan 3G manikin. If not in the ideal environment, be cautious to avoid getting any fluids or heavy moisture within the system.

2.3 Procedure

In order to install the Amputations with Cores, remove the existing limb from the manikin, following the removal instructions for the existing limb. If replacing a leg, first unzip the chest skin and lay the skin open to one side so the ribs are exposed (**Figure 3**).

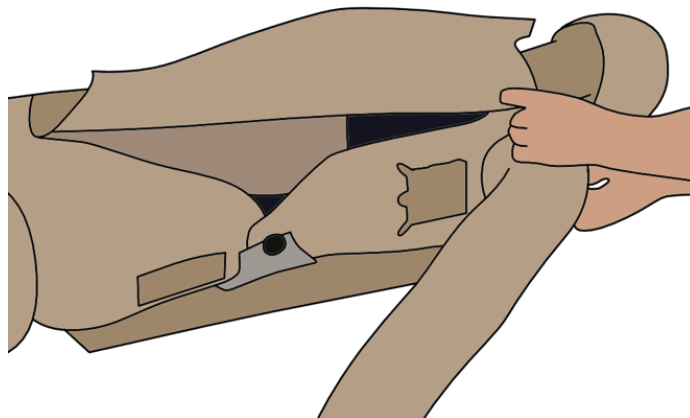


Figure 3. Unzip Chest Skin

Lift the stomach plate out to access the manikin's internal cavity (**Figure 4**).

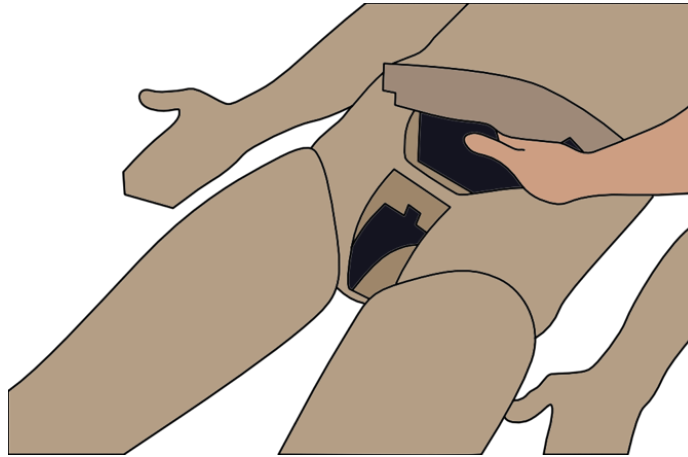


Figure 4. Open Stomach Plate

Locate the top of the leg pipe, which is secured by a small 2" metal pin that is attached to a yellow string. Remove the 2" metal pin from the leg shaft, loosening the limb as depicted in **Figure 5** below. Keep the 2" metal pin nearby; you will need it for the Leg Amputation attachment.

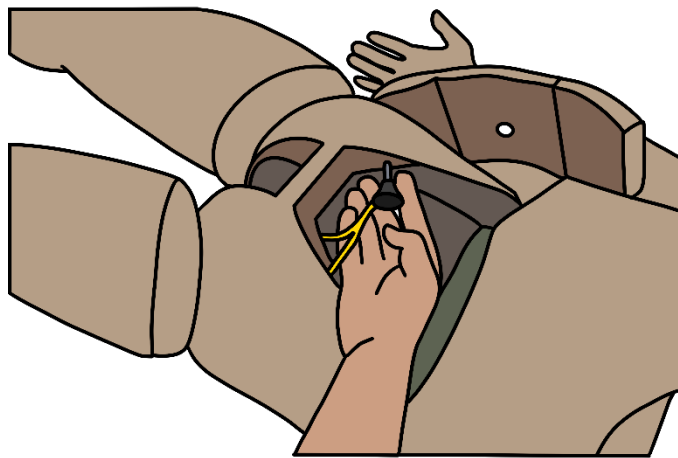


Figure 5. Remove Metal Leg Pin

Insert the SIMETRI Leg Amputation, orienting it so that the metal leg pipe is located closest to the pelvic region of the manikin (**Figure 6**). Make sure the hole on the top of the leg pipe can easily slide into the pelvic opening of the manikin.

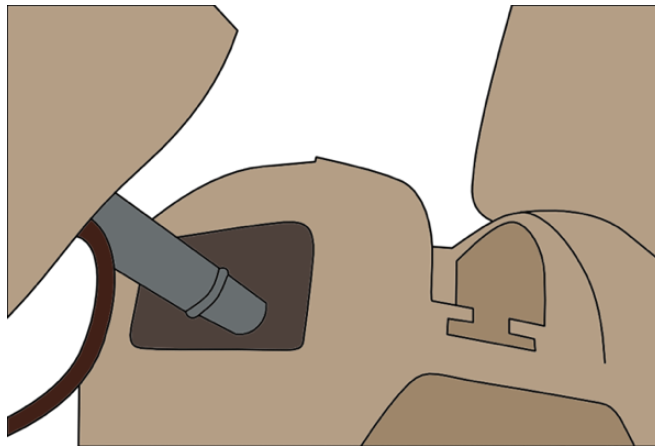


Figure 6. Position and Insert Leg Amputation

Once the Leg Amputation is in place, slide the top of the leg pipe directly into the pelvic slot, aligning both holes into place (**Figure 7**).

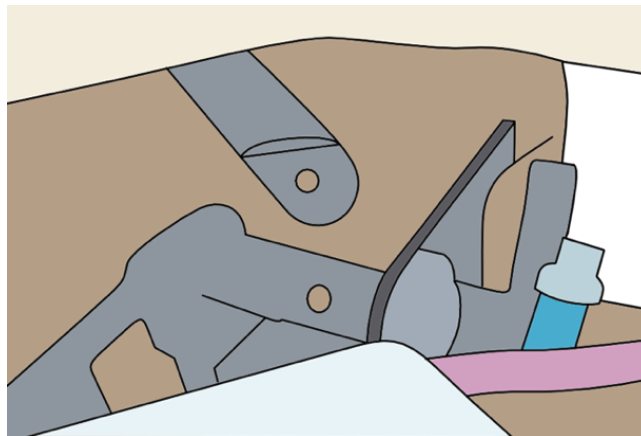


Figure 7. Leg Pipe Orientation into Pelvic Cavity

Insert the 2" metal pin attached by a yellow string into the holes, securing both components into place as illustrated in **Figure 8** below.



Figure 8. Secure Metal Pin in Leg Shaft

If replacing an arm, repeat the steps to unzip the chest skin and lift up the chest plate. Use the Laerdal Arm Allen Key (8mm) (**Figure 2**) to unbolt the arm connector of the limb and disconnect the arm (**Figure 9**).

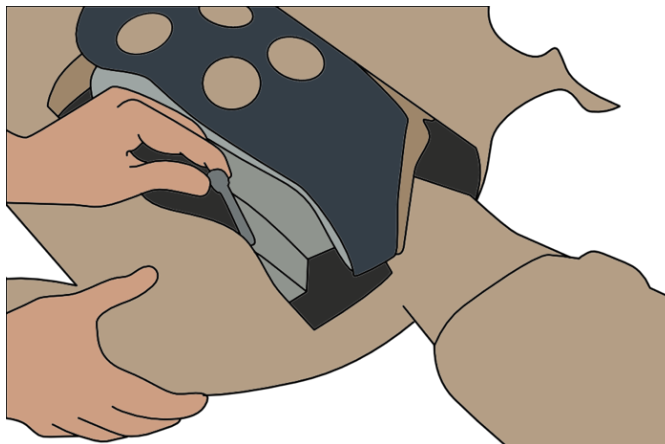


Figure 9. Unbolt Arm Connection

Now orient the Arm Amputation by inserting the black connector inwards into the arm shaft. Once the black connector is resting inside, insert the hair cotter pin to secure the arm amputation. This will tighten the black connector in place (**Figure 10**). Store the round hex (Allen) bolt in a secure location.

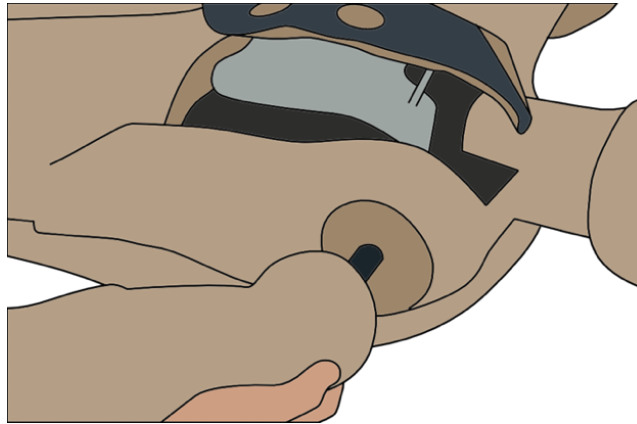


Figure 10. Tighten Bolt to Secure Arm Connector

If you want the Amputation to bleed, locate the connector at the end of the Amputation's red tubing and attach it to the connector of the internal Laerdal Blood Line located inside the Laerdal SimMan 3G manikin (**Figure 11**).

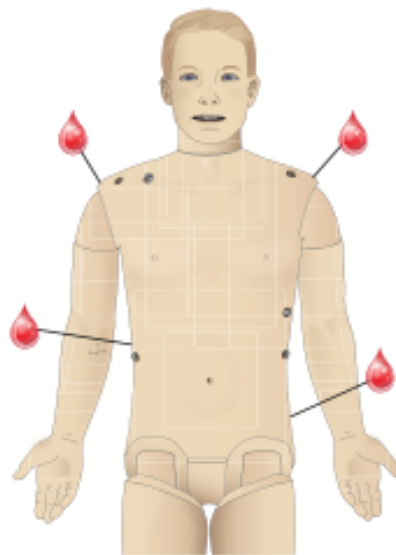


Figure 11. Laerdal SimMan 3G Bleed Ports

Follow Laerdal's instructions on filling up blood reservoirs and Power On manikin to make blood flow through the limbs.

3. USER INSTRUCTIONS

3.1 Set Up

The only tool required to install the Amputations with Cores is the Laerdal Arm Allen Key.

If you intend to use the amputation bleeding capabilities, you must perform the following step before turning the manikin's power on. Connect the amputation's red tubing to the end of the internal Laerdal Blood Line located inside the Laerdal SimMan 3G manikin. This will allow simulated blood to course through the amputations once the system is turned on.

If you don't intend to use the amputation's bleed functions, you may power the manikin's system on without attaching the tubes.

3.2 Start Up

Plug the power supply into a wall outlet and connect the power cable to the power inlet of the manikin's power panel. Activate the "On" button on the Power Panel located on the right side of the manikin by the waistline (**Figure 12**).

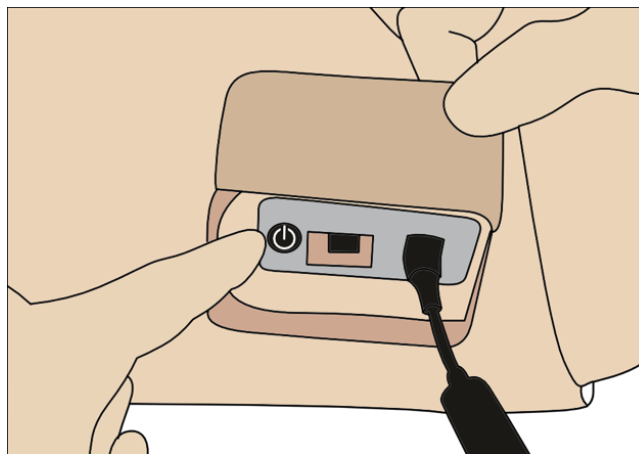


Figure 12. Laerdal SimMan 3G Power Panel

The fluid bottle, filled with blood fluid per Laerdal's instructions, needs to be attached to the Bleed Inlet of the Fluid Fill Panel located on the right side of the manikin (**Figure 13**). This allows for the internal reservoirs filled with simulated blood to be pumped through the tubing system so that blood can actively bleed through the wounds that are attached. Follow Laerdal's instructions on how to run the manikin with external blood.

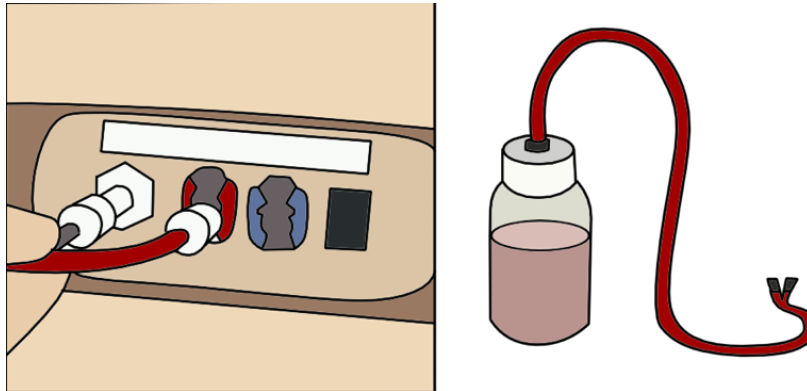


Figure 13. Laerdal SimMan 3G Fluid Fill Panel

3.3 Shut Down

When the Laerdal manikin's system is shut down, the microprocessor is also powered off automatically.

3.4 Removal

Making sure the Laerdal manikin's system is turned off, please use the following steps to remove the Leg Amputation from the manikin.

1. Unzip and remove skin from chest
2. Reposition abdomen to provide access to internal components.
3. Disconnect the red line from the manikin and the amputated leg by twisting the white connector.
4. Locate the metal pin and pull it out of the pelvic slot, thus loosening the leg pipe from

the manikin.

For the Arm Amputation, make sure the Laerdal manikin's system is turned off and perform the following steps.

1. Unzip the chest skin (**Figure 3**) and lift up the chest plate. Disconnect the red line from the manikin and the Arm Amputation by twisting the white connector.
2. Remove hair cotter pin from arm connector and pull amputation away from manikin (**Figure 14**). Remove arm amputation from manikin.

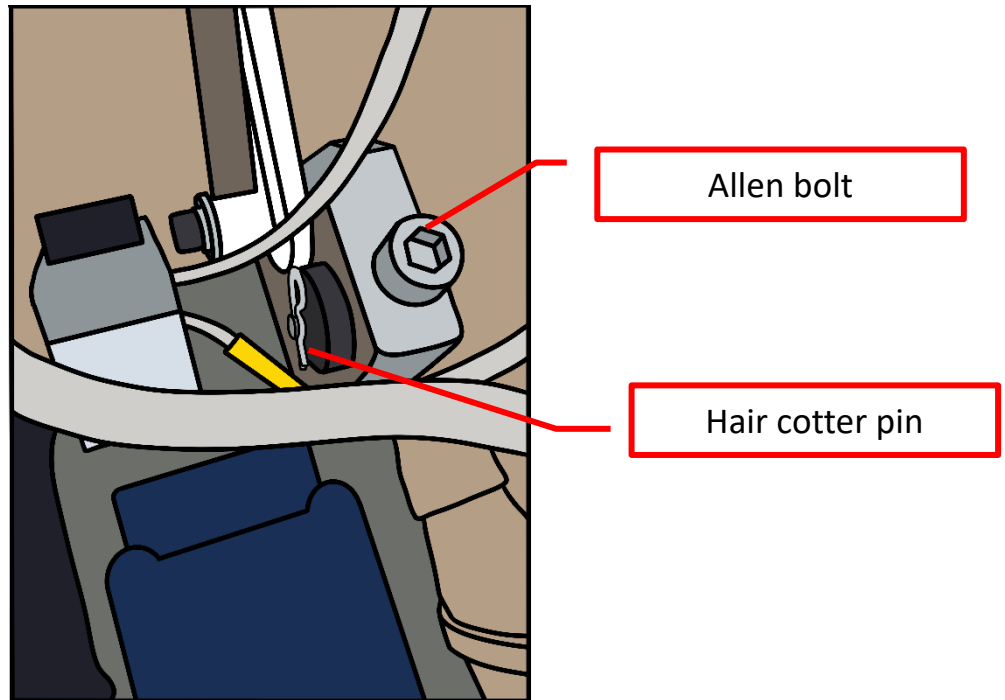


Figure 14. Arm Disconnection

3. Reinsert the arm connector of the limb to reconnect the arm. Secure with the bolt you secured when installing the arm amputation, using the Laerdal Allen Key (**Figure 2**).

4. MAINTENANCE

4.1 Supplies

The only supplies required to maintain the Amputations with Cores Module are a cleaning cloth or paper tissue, and soap and water.

4.2 Environment

A dry and climate-controlled environment is ideal for installing the Amputations on the Laerdal SimMan 3G manikin. It is also desirable to have access to a utility sink with running water and a drain, although a bucket will suffice.

4.3 Procedure

To maintain proper operation of the Amputations, the red tubing should be flushed out, preferably with distilled water, and then let dry before storing. You may also use 70% isopropyl alcohol to flush through the tubing to clean out any excess blood, and then allow drying before storing.

The silicone amputations are extremely durable and require little maintenance. Once removed from the manikin, use soap and water to remove any blood left on the wound if you would like to reuse for another application. To remove any leftover adhesive on the wound, place a small amount of alcohol on a paper towel and wipe the area clean of any debris.