

# Canine Leg Vascular Access Simulator



## Instruction Manual

## Introduction

Congratulations on your purchase of the SurgiReal Canine Leg Vascular Access Simulator! This product has been designed by veterinary surgeon educators to provide you with a powerful educational support tool. The simulator has been engineered to be simple to use and long lasting. However, routine maintenance and replacement of consumable components are required to keep your simulator operating effectively

### **Refer to this manual while using the Canine Leg Vascular Access Simulator (CLVAS) to prolong the model's life**

The Canine Leg Vascular Access Simulator is not indestructible and its parts will not last forever. Our products are made to withstand the stress of 'normal' usage. However, we cannot predict the forces that might occur if you use, or allow the product to be used, outside of its intended use or if it is used in other ways that apply high stress or fatigue loads. With damage, the life of the product or other parts can be drastically reduced and may fail without warning.

The life of a part is determined by its construction, materials, use, maintenance, and environment (humidity, salinity, temperature, etc.), so it is not possible to give an accurate timetable for replacement. Any form of crack, scratch, or change of color in a high-stress area may indicate that the life of the part has been reached and the part should be replaced.

### **Warranty**

SurgiReal Products warrants this product and its parts against defects in materials or workmanship for **one year** from the original ship date. During this period, SurgiReal Products will repair or replace defective parts with new or reconditioned parts at SurgiReal Products' option, without charge to you. This limited warranty extends only to the original purchaser.

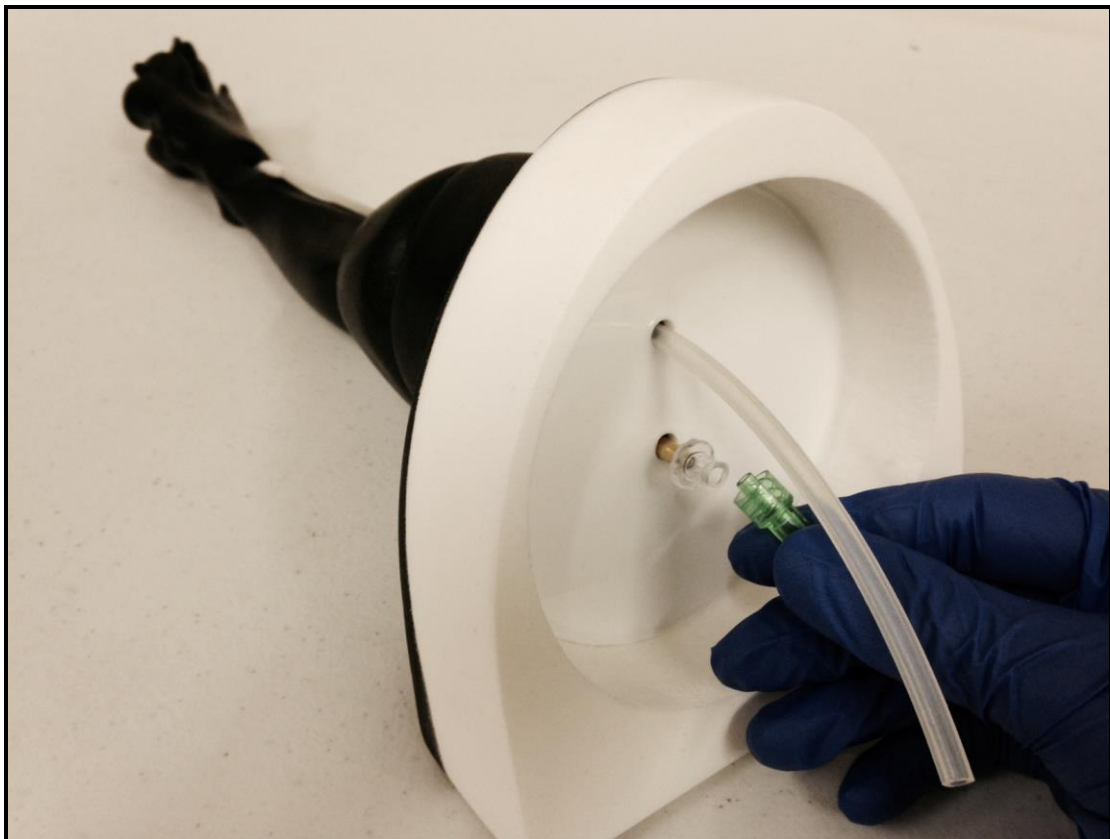
## Contents

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<b>Getting Started</b>	<b>4</b>
<hr/>	
<b>Preparing the Artificial Blood</b>	<b>5-6</b>
<hr/>	
<b>Placing/Removing the Artificial Skin</b>	<b>7-8</b>
<hr/>	
<b>Exchanging the Vein</b>	<b>9-10</b>
<hr/>	
<b>Maintenance and Care</b>	<b>12</b>
<hr/>	
<b>Troubleshooting</b>	<b>13</b>
<hr/>	

## Getting Started

Your simulator is pre-assembled and only requires a few steps to get it ready to use. You will need to prepare the artificial blood (Fig. 2 & 3), place the artificial skin sleeve (Fig. 9,10,11), and connect the green male adaptor (Fig. 1). This connection can be used to prime or to re-inject drawn artificial blood into the system.



## Preparing the Artificial Blood

Your simulator is provided with an IV Bag and an initial supply of artificial blood powder. We recommend that you prepare the artificial blood as follows:

1. Fill a 1-liter mixing container with water, add the complete contents of artificial blood powder pack, and mix thoroughly (Fig. 2 & 3).



2



3

2. Pour the mixed artificial blood solution into the IV Bag and connect to Simulator (Fig. 4).



4

**PLEASE USE ONLY SURGIREAL ARTIFICIAL BLOOD MIXED WITH WATER** (Any other liquid used in the silicone vein can damage it and create leaks. Warranty is void if any other mixture is used)



## Placing/Removing the Artificial Skin

Your simulator comes with the skin in a separate bag to prolong the life of both the skin and the leg. We recommend placing the skin as follows:

1. Roll the skin into a “donut” shape (Fig. 9). Stretch the hole out and slide it over the paw end of the leg.



2. Un-roll the skin sleeve until it covers the entire leg (Fig. 10 & 11).



10



11

3. The same method should be used to remove the skin sleeve after every use and if replacement is necessary.

**It is important to remove the skin after each use and store it separately. If this step is not taken, the leg will lose strength and the skin will lose elasticity.**



## Exchanging the Vein

Your simulator comes equipped with one cephalic vein already assembled. When this vein begins to leak it needs to be replaced with another cephalic vein. These can be purchased on our website [www.surgireal.com](http://www.surgireal.com) or by calling 800-873-1445. Once purchased the vein can be replaced using the following steps:

1. Disconnect the old vein by pulling it gently away from the clear elbow connector leaving the clear elbow connector attached to the harder tubing held within the leg (Fig. 5).



2. Grip the old vein and pull it down and out through the top of the simulator. This should bring the cephalic vein, the larger tubing that connects to the IV bag, and the white barbed connector free of the simulator.

3. Pull the old cephalic vein off the white barbed connector and push the new cephalic vein onto the white barbed connector. Thread the new cephalic vein through the hole in the plastic top of the simulator until you can push it onto the clear elbow connector in the paw (Fig. 6). Make sure that the new cephalic vein is pushed all the way over the elbow of the clear elbow connector.



6

4. Pull up on the hard tubing protruding from the top (plastic side) of the leg until the slack is gone from the new vein segment. (Fig. 7)



If it is ever needed, the brass tube can be replaced simply by pulling it from the top (plastic end) of the leg. The replacement brass tube can then be slid in the same way. The silicone tube held within the brass tube will extend an inch past the end of the brass and will be pushed all the way out of hole near the paw of the simulator. Once the tubing is out the bottom of the hole the clear elbow connector can be attached.

## Maintenance and Care

The following actions will help to keep the simulator in working condition and ensure that its useful life is maximized.

1. When not in use, clean the artificial vein and remove any viscous fluid (SurgiReal artificial blood) to avoid occluding the lumen. You can do this by using a syringe to inject clean water into the vessel system. Follow this with compressed air or air dry in a hanging position.
2. After use gently remove the skin and the artificial vein. Re-assemble the system prior to use.
3. Store the Canine Leg Vascular Access Simulator in its horizontal resting position, maintaining the leg straight. If storing in vertical position, make sure the leg is protected by the 4-inch diameter cardboard tube provided, and with the wide base always down. **Always remove the simulated skin before storing.**

## Troubleshooting

1. When setting up the artificial blood, ensure that the IV bag is hung less than a foot above the simulator. Any higher than that will cause pressure that may lead to the leg leaking before 100 draws.
2. Use only a 22-gauge needle or smaller when practicing on the simulator. Using a larger needle will drastically reduce the life span of each cephalic vein.
3. Cephalic vein should be pushed up and over the elbow portion of the elbow connector in the paw end of the simulator. If this vein is not pushed all the way on it can lead to leakage.
4. The cephalic vein should be loose in the channel up the leg when the skin is placed. If it is pulled too tight all of the previous needle holes will open up and cause major leaks to occur.



Maintenance and replacement parts for your Canine Leg Vascular Access Simulator can be ordered online at: [www.surgireal.com](http://www.surgireal.com) or by calling 800-873-1445.

Video Instructions can be found online by entering the address below  
<https://www.youtube.com/channel/UCHJX1Z7H3-1UJSVsFsio1ng>

Thank you for purchasing SurgiReal products. If you have any questions or concerns, please contact us can through e-mail at [info@surgireal.com](mailto:info@surgireal.com) or give us a call at 800-873-1445.