# Alpha DESIGN® App

## User's Guide

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Names and examples used in this document are fictitious unless otherwise noted.

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## INTRODUCTION

Creating a custom liner for a patient with a uniquely-shaped limb requires prosthetists to capture the shape of the limb, communicate details on the desired thickness and placement of gel, and complete an order form. The Alpha DESIGN App combines all of these steps into a seamless process using an iPad and a Structure Sensor.

This convenient solution allows prosthetists to do the following:

- Scan transfemoral and transtibial residual limbs
- Take photos of residual limbs
- Add annotations to scans
- Complete custom liner order forms
- Submit order forms, scans, photos, and annotated images to WillowWood

The Structure Sensor is compatible with the following devices:

- iPad Air
- iPad Air 2
- iPad Pro
- iPad mini 2 with Retina display
- iPad mini 3 with Retina display
- iPad mini 4

The Structure Sensor is not compatible with the iPad 4 or the non-Retina version of the iPad mini.

The Alpha DESIGN App is compatible with iOS 8.2 and above.

## CHARGING THE STRUCTURE SENSOR

Connect the supplied AC charger to the round port on the side of the Structure Sensor, and then plug the other end into any standard 2-pronged wall outlet as found in the United States. Outside of the US or Canada, you will need to use an appropriate adapter.

The LED indicator on the Structure Sensor's glass face will pulse to indicate that the Structure Sensor's battery is charging.

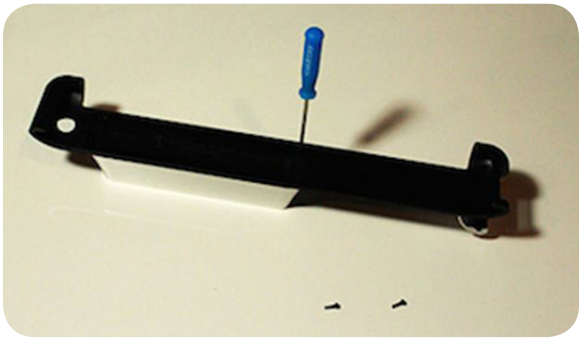
A solid light indicates that the battery is completely charged. The light will stay on until you disconnect the AC charger.

## ATTACHING THE STRUCTURE SENSOR TO THE iPAD

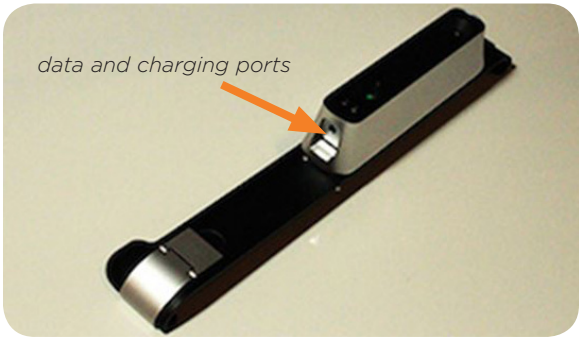
### 1. Attaching the Structure Sensor to the Bracket

The Structure Sensor was shipped with one of three brackets available from Willow-Wood to connect it to different Apple iPad models. The currently available brackets are for the iPad Air, iPad Air 2, iPad mini, and iPad mini 4.

Place the Structure Sensor in front of the bracket, and then use the supplied screwdriver and 4 screws to attach the two together.



The proper orientation for the Structure Sensor is to have the two data ports facing to the long side of the bracket.



## 2. Attaching the Structure Sensor and Bracket to the iPad

Start by sliding the bracket plus Structure Sensor onto the top of your iPad, making sure that the aluminum latch is in its open position.

*Sliding the bracket on the iPad*

*The bracket is firmly seated*

Make sure that the hole in the bracket is centered around the iPad camera.


Close the latch by pressing down on it with your thumb.

### 3. Attaching the Lightning Cable to the Structure Sensor and iPad

Insert the wide end of the data cable firmly into to the Structure Sensor, with the gold-colored pins facing up.

Connect the other end of the cable into the iPad.


The Structure Sensor is now fully charged and connected to the iPad.

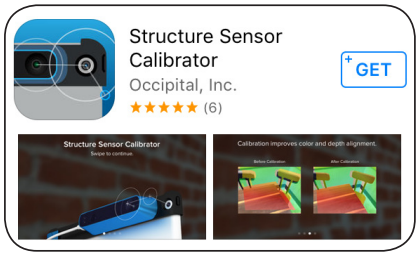
## DOWNLOADING THE APPS

You will need to download the following two apps from the App Store:

- **Calibration App**

  The calibration app allows you to calibrate the alignment between the Structure Sensor's camera and the iPad's camera.

  To download the calibration app, search the App Store for **Structure Sensor Calibrator**, then tap **GET**.




  Before using the Structure Sensor for the first time, launch the calibration app and follow the step-by-step instructions on the screen.

  If you attach the Structure Sensor to a different iPad, or if you delete the calibration app and then reinstall it, you will need to recalibrate the Structure Sensor.

  Whenever calibration is required, you will see a message displayed on the screen.

- **Alpha DESIGN App**

  The Alpha DESIGN app allows you to scan, make notes and drawings on the scan, and place orders for DESIGN Liners.

  To download the scanning app, search the App Store for the **Alpha DESIGN** app, then tap **GET**.

  Refer to the following pages for instructions on using the **Alpha DESIGN** app.

## USING THE ALPHA DESIGN APP

For the best quality scan, follow these general guidelines:

- Stand about 2 feet away from the surface to be scanned
- Make sure that you have an unimpeded 360-degree path around the surface to be scanned so that you may capture an entire scan easily
- Place the patient at a standard tabletop height to allow for the best combination of scanning quality and ease
- Use the Structure Sensor indoors or outside of direct sunlight
- Take measurements of the limb by hand for comparison to the scanned shape. You will need to enter these measurements on the order form.

### Opening the App

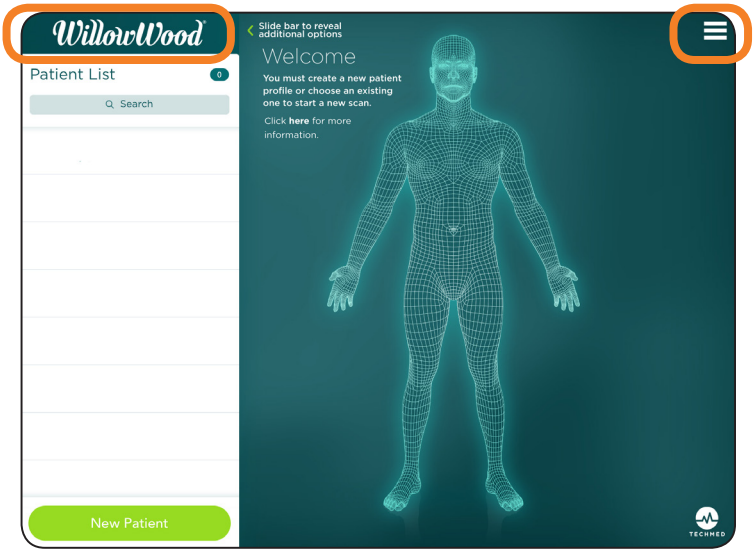
Tap the **Alpha DESIGN** icon on the iPad to launch the app.

The **Welcome** screen appears.

### Entering Practitioner Information

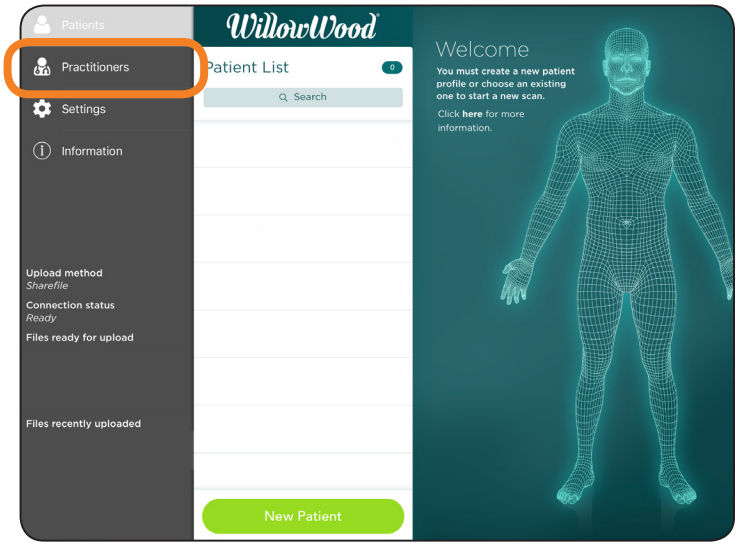
Before scanning your first patient, you will need to enter some details about yourself and your facility.

To access that screen, tap the menu icon in the upper right of the screen, or slide the WillowWood logo to the right.



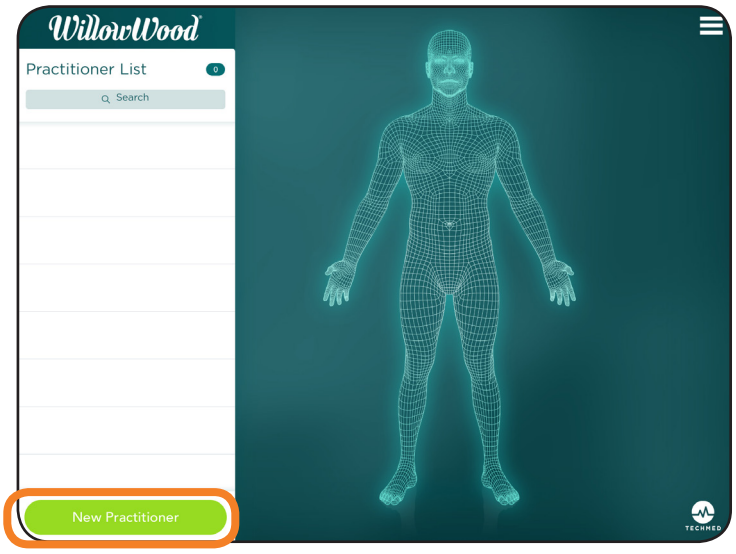

The menu options will be revealed on the left side of the screen.

Tap **Practitioners**.



The **Practitioner List** appears.

Tap **New Practitioner**.



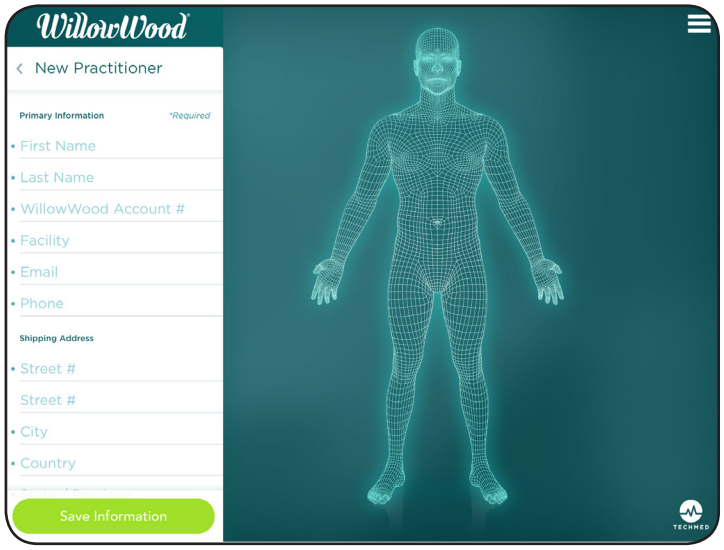

The **New Practitioner** screen appears.

Tap the **First Name** field. A keyboard will appear. Enter your first name, then continue filling in the rest of the fields.
(If you do not have a WillowWood account, please call 800.848.4930 to set one up.)

Tap **Save Information** when you are done.

The details you just entered will be displayed.

Repeat this process for any additional practitioners who will be using this app.

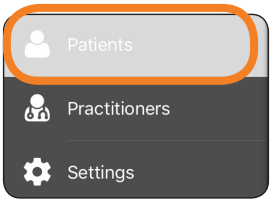



Note: To delete a practitioner from the Practitioner List, slide the practitioner's name to the left, then tap **Delete**.

Tap the menu icon to return to the menu.

## Entering Patient Information

Select **Patients** from the menu.




The **Patient List** screen appears.

- *If you <u>have not</u> previously used this app to scan this patient:*

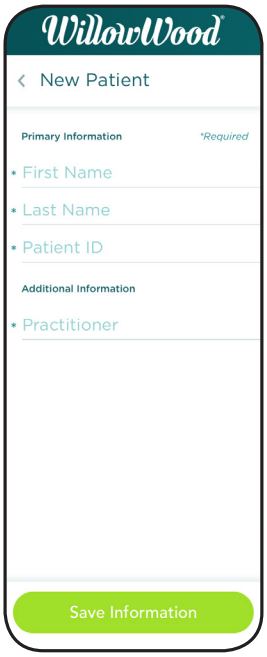
  Select **New Patient**.


  When the **New Patient** screen appears, tap the **First Name** field.

  A keyboard will appear. Enter the patient's first name, last name, and Patient ID.

  Tap the **Practitioner** field, then scroll through the list of practitioners and select your name.

  Tap **Save Information** when you are done.




- *If you <u>have</u> previously used this app to scan this patient:*

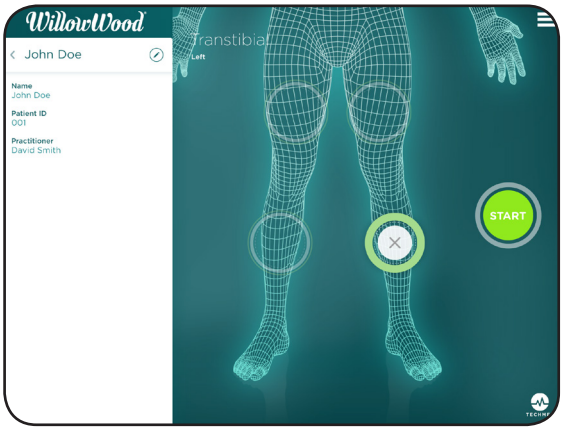
  Select the patient's name from the **Patient List**. For assistance in locating the patient's name in the list, enter the patient's name in the **Search** field.


Note: To delete a patient from the Patient List, slide the patient's name to the left, then tap **Delete**.

After selecting an existing patient or creating a new patient file, four circles will appear to indicate the areas that can be scanned (right transtibial, left transtibial, right transfemoral, or left transfemoral). Tap the circle associated with the area you will be scanning.

In this example, a left transtibial scan has been selected.

Tap **Start** when you are ready to scan.



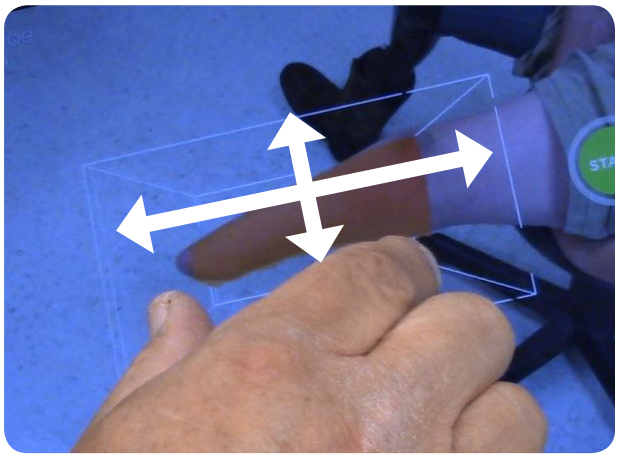
**Positioning the Scan Area Cube**

After **Start** is selected, the outline of a large cube appears on the screen. The transparent cube shows what will be captured in the scan.

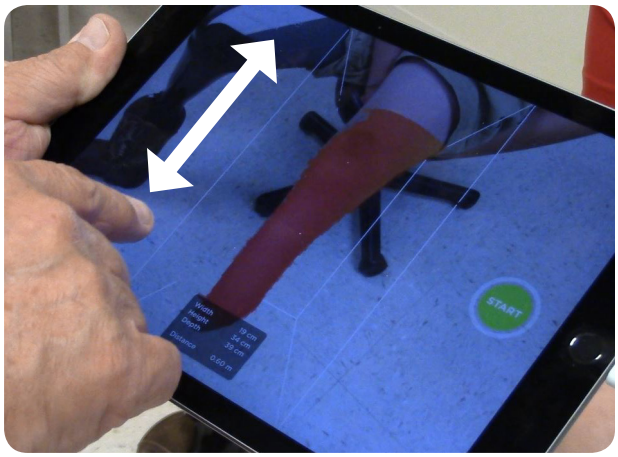
Hold the iPad parallel to the limb, about 2 feet away from the medial or lateral side of the limb. Center the limb within the transparent cube.

The goal is to have the limb covered in red, with the cube just slightly larger than the limb. To achieve this, you may need to reposition the Structure Sensor, or adjust the box on the iPad screen:

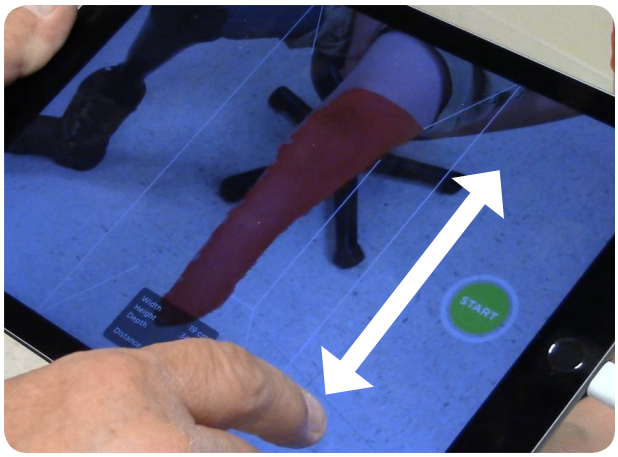
To change the **height** or **width** of the cube, use the "pinch" gesture: Place your thumb and index finger on the screen, and move them closer together or farther apart to decrease or increase the height or width.



To change the **depth** of the cube, slide your finger up or down on the screen on the **left side** of the cube.




To change the **distance** of the cube, slide your finger up or down on the screen on the **right side** of the cube.



If the cube is **too small** to contain the limb, as shown in this example, your scan will not capture the entire limb.

Use the pinch gesture to make the cube larger.

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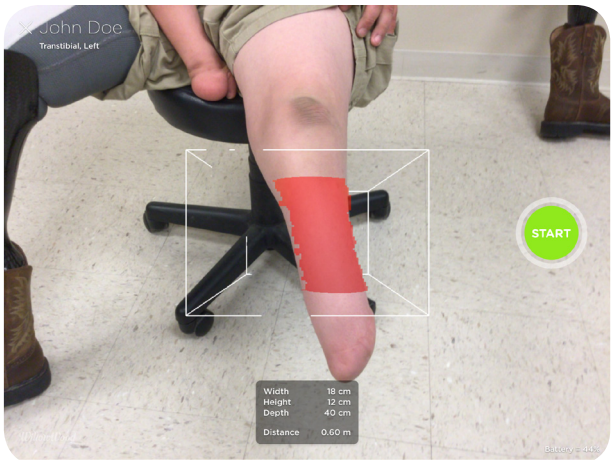
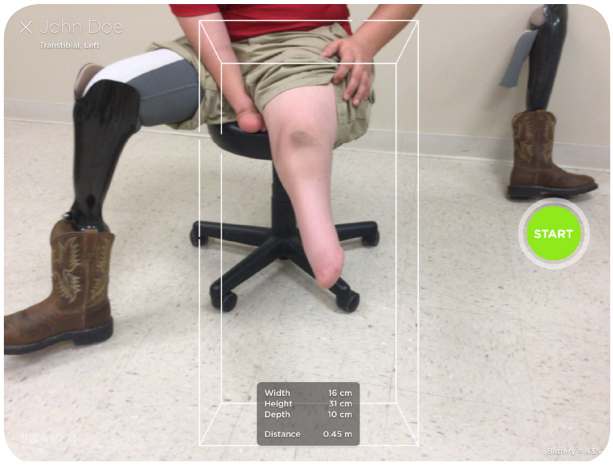


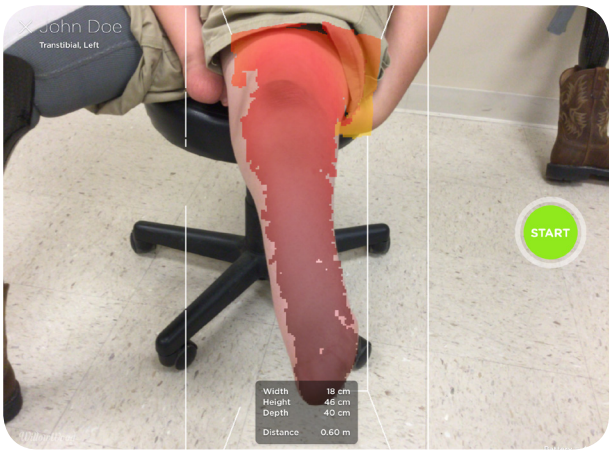

If the cube is **too large** for the limb, as shown in this example, then the scan will be of poor quality and you may potentially capture objects in your scan that you do not want.

Use the pinch gesture to make the cube smaller.




Make sure the limb is centered in the cube with respect to both length and depth.

This example shows a cube that is the correct size for the limb.

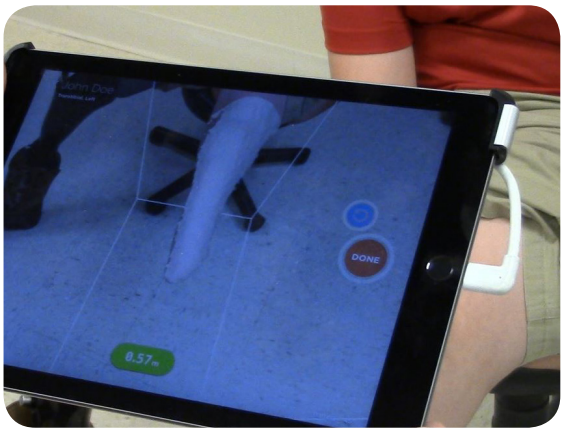



Refer to the **Settings** section of this document for information on scan cube alignment options.

## Scanning

To begin your scan, tap the **START** button.


As soon as you start scanning, you will see the white 3D model appearing on top of your subject in real time.




Move around the limb to capture the entire surface.

Once the scan has started, you do not have to hold the iPad parallel to the limb.

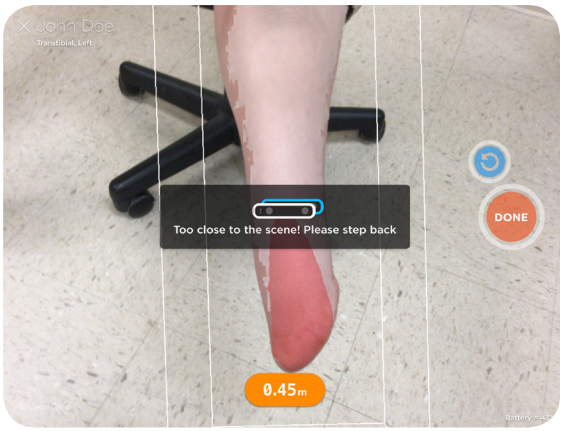
The limb must remain still during scanning. If some form of support is necessary to hold the limb in place:

- do not allow the support to cover any distinctive features of the limb
- make note of the support when submitting the scan to WillowWood

If you make a mistake during your scan, or if you notice that there is a hole in the scan, you can press the reset button with the circular arrow on it to restart your scan.

## Maintaining Tracking

If the app loses tracking of the limb, error messages such as those shown at right will be displayed.




Reposition the Structure Sensor until the message disappears. If that does not work, press the reset button and start over.

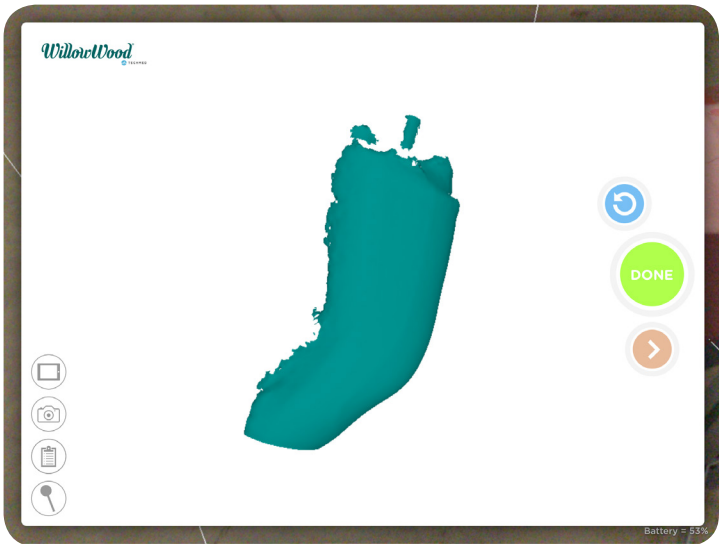
Repeated displays of error messages during the scan may indicate a need to reposition the patient or to change the scan settings. Refer to **Settings** (page 19) for details.

**Viewing/Annotating the Completed Scan**

To view the scan, tap the **DONE** button.


The model screen appears.

Drag your finger across the screen to view the scan from various angles.




If you <u>are not satisfied</u> with the scan, tap the re-scan icon to delete the scan and start over.

If you <u>are satisfied</u> with the scan, you may then use the icons in the lower left corner to communicate details that will help WillowWood to create the DESIGN Liner.

Tap the **Screenshot** icon to draw on a screenshot of the scanned shape.

Tap the **Camera** icon to take a photo of the limb or of anything else that is relevant to the creation of the liner.

Tap the **Scan Notes** icon to type your specifications for the liner.

Tap the **Landmarks** icon to add landmarks to the scanned shape.

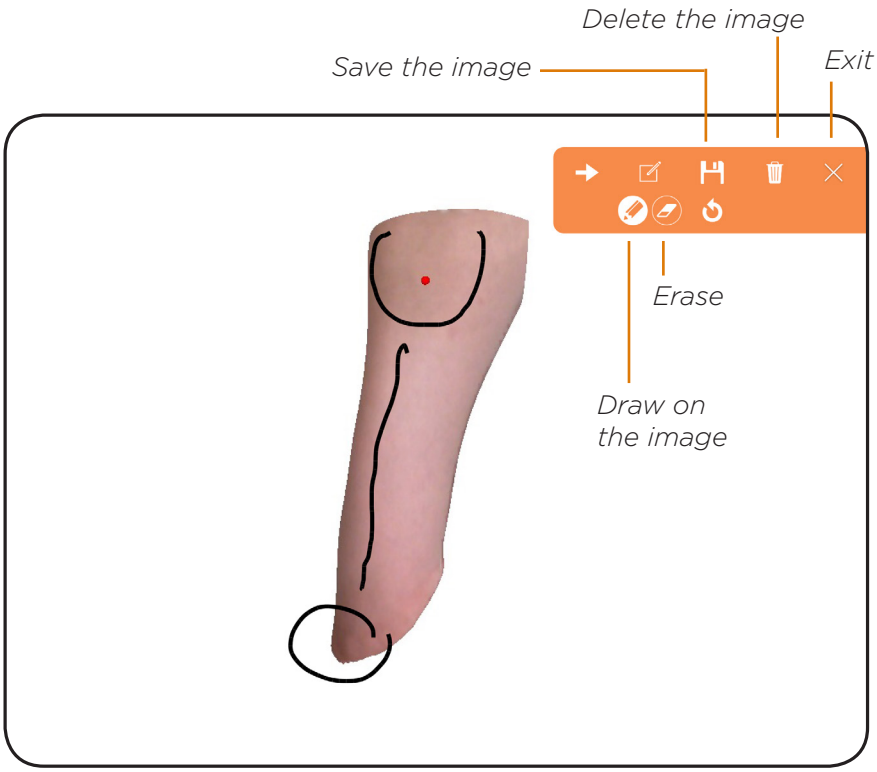
Refer to the following two pages for details on each of these functions.

While it is certainly possible to create a DESIGN Liner using only the scan file and a few basic details, we strongly encourage you to take advantage of these options to provide as much information as possible about the limb as well as the desired gel thickness and placement.

Screenshot

To draw on a screenshot of the scanned shape, drag your finger across the model screen to rotate the model to the desired view, then tap the **Screenshot** icon.

The model screen is replaced with a screenshot of the scan. Use the icons to make the desired annotations on the image.




Camera

To take a photo of the limb, tap the **Camera** icon.

Position the iPad to capture the desired shot, then tap the white circle on the right side of the screen.

If you are satisfied with the photo, tap **Use Photo** in the bottom right corner of the screen.

The same icons that are used in the **Screenshot** tool will appear on screen so that you may draw on the photo if desired.

Scan Notes

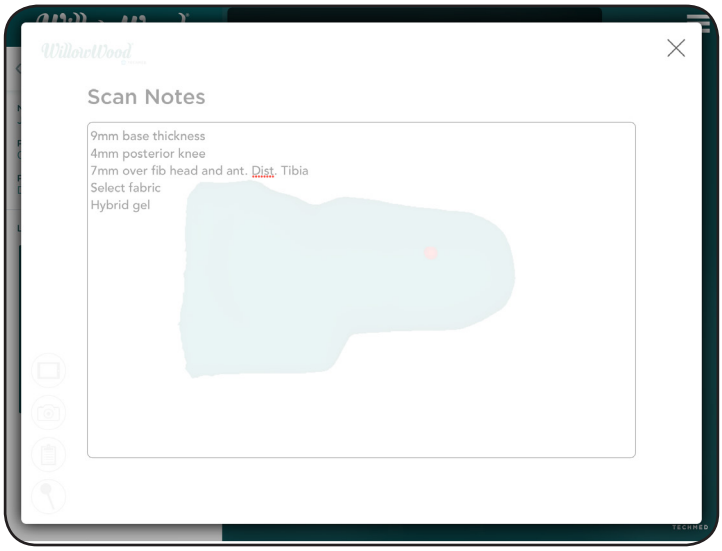
To enter a list of specifications for the liner, tap the **Scan Notes** icon.

When the **Scan Notes** screen appears, tap anywhere inside the rectangle to open the keyboard.

Enter the following information:

- base gel thickness
- gel thickness at specific anatomical locations

Tap the **X** in the upper right corner when you are done.



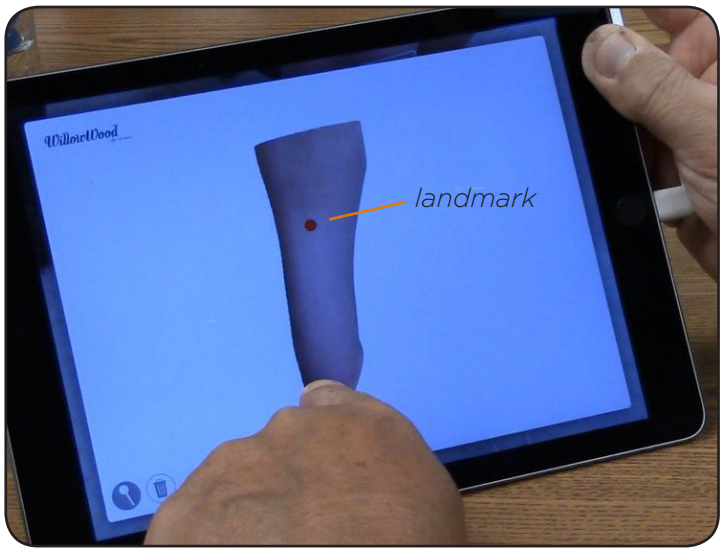

Landmarks

To add landmarks to the scanned shape, tap the **Landmarks** icon.

Drag your finger across the model screen to rotate the model to the desired view. Tap and hold in the desired location until a red dot appears.

To delete landmarks, tap the trash can icon in the lower left corner.

Tap the **Landmarks** icon in the lower left corner to return to the model screen.



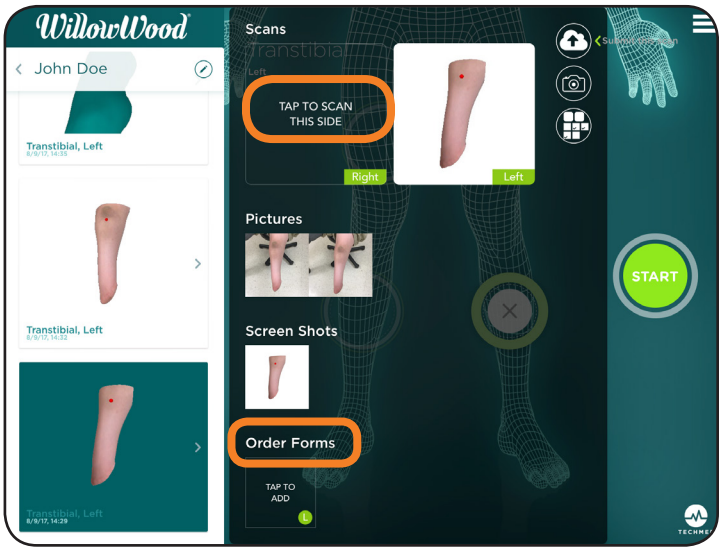

For a patient with bilateral transtibial or bilateral transfemoral amputations or limb differences, tap the **Scan Next** icon to initiate a scan of the opposite limb without having to start at the beginning of the process. If one limb is transtibial and the other is transfemoral, you will need to start a new scan file for the opposite limb.

Tap the **DONE** button to exit the model screen and prepare your order for submission.

## Submitting the Order

Tapping the **DONE** button will display a screen that shows all the scans, pictures, and screen shots for this liner.

For a patient with bilateral transtibial or bilateral transfemoral amputations or limb differences, select **TAP TO SCAN THIS SIDE** to initiate a scan of the opposite limb without having to start at the beginning of the process.




If desired, tap the camera icon to take additional photos.

If there are any images on this screen that you do not wish to submit with the order, tap the icon shown at right. Then select the unwanted images and tap the trash can icon that appears.

Tap **Order Forms** to proceed with your order.

The order form will be partially populated. Fill in the highlighted fields.

Fields with an * are required.

Tap  to save the form.

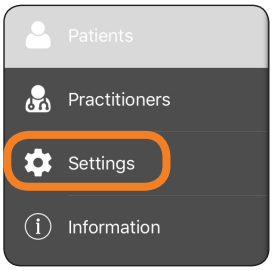
Tap  to delete the form.

Tap  to return to the previous screen when you are done.


Tap the cloud icon to submit the scan file, order form, and any images to WillowWood. A message will appear on screen to notify you that the submission was successful. Please call WillowWood at 800.848.4930 if you have any questions or concerns about your order.

## Settings

To access options for various functions in the app, tap **Settings** on the menu.




a. Tap **User ID** to include the User ID at the beginning of the scan file name.

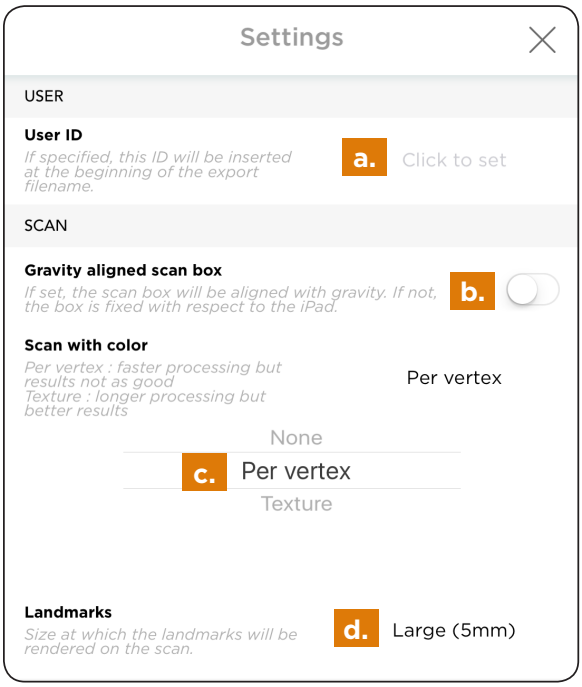
b. If you would like the scan cube to align itself with the floor, slide the **Gravity aligned scan box** switch to the right.
Otherwise the scan box will align itself with the iPad.

c. Scroll through the **Scan with color** options and select **None**, **Per vertex**, or **Texture**.

   Refer to the following page for examples.

   All three options will capture the required shape detail. Selecting **Per vertex** or **Texture** may be useful if there are issues with the limb that are best communicated through the use of color.

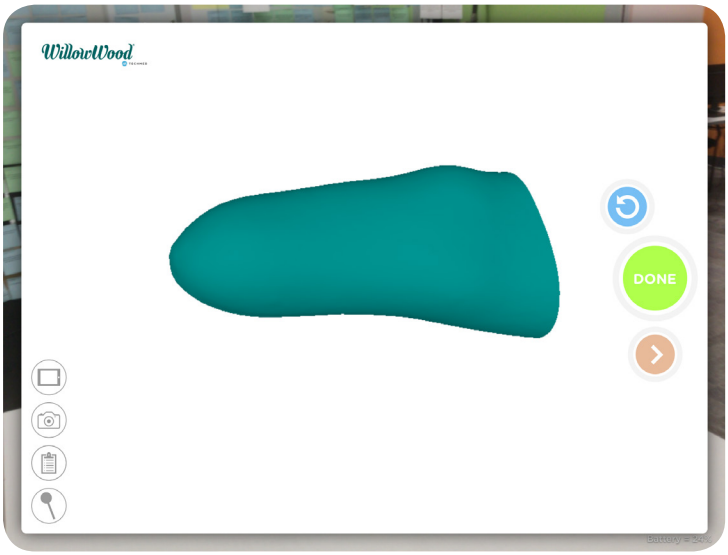
d. Scroll through the **Landmarks** options and select your preferred landmark size.



Example of the three **Scan with color** options are shown below.

**None**

- Blue color
- Faster scanning




**Per vertex**

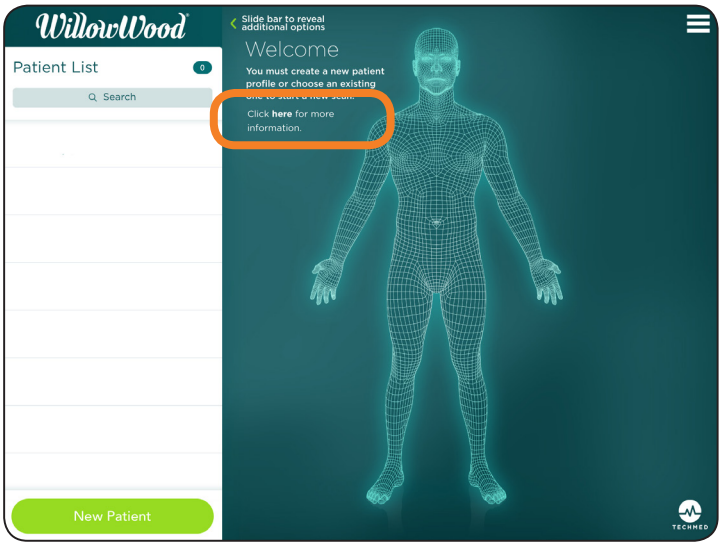
- Low-resolution color
- Slower scanning


**Texture**

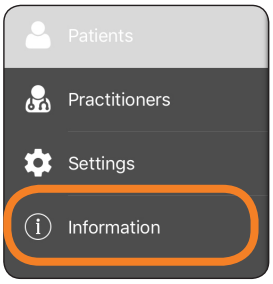
- High-resolution color
- Slower scanning
- Useful for taking pictures of the limb for documentation purposes

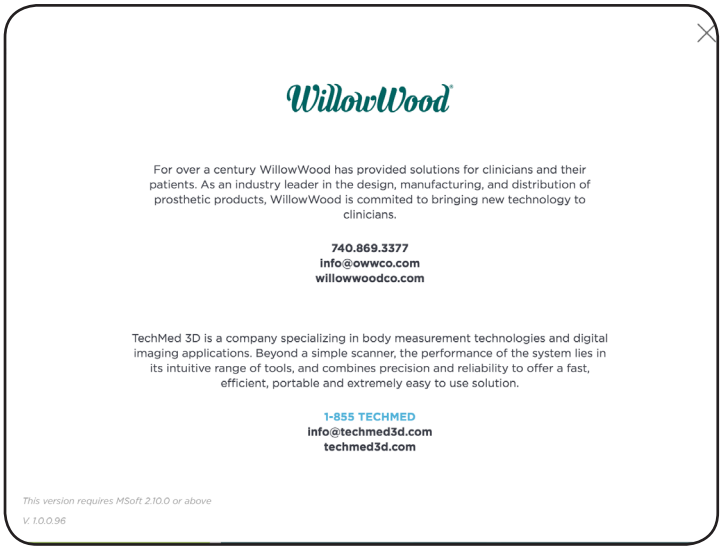
## Getting Help

This instruction manual can be accessed at any time within the app by tapping the link on the Welcome screen.




If you require further assistance, tap **Information** on the menu to display WillowWood's phone number and e-mail address.



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