



# Shape Capture and RideWorks™ Scanning Instructions

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Shape Capture Bases



Shape Capture Bags, hoses, clear outer bags  
(shown folded), T-valve, and vacuum pump

## I. Components

1. Shape Capture Base, three sizes: Small (blue), Medium (white), Large (Red)  
NOTE: Do not modify shape capture bases.
2. Ride Cushion Shape Capture Bag (Small) with appropriate sized clear outer bag, reusable zip tie and hose.
3. Ride Back Shape Capture Bag (Large) with appropriate sized clear outer bag, reusable zip tie and hose.
  - a. The hose attached to each bag has a slide valve that allows one-hand operation from “bag soft” to “bag hard.”
4. T-Valve with two check valves. Allows two-bag operation with one vacuum pump.
  - a. Check Valves allow vacuum to remain full in one bag and soft in the other.
5. Vacuum Pump

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## II. Slide Valve Operation

1. It is recommended to listen carefully to the vacuum pump while operating the slide valve.
2. Start with the slide valve in the “bag soft” position.
3. Slide the valve toward “bag hard” listening for the pump noise to change as the valve minimally opens the vacuum. The goal is to find the spot where the pump just begins to engage. This is where the vacuum is introduced to the Shape Capture Bag at its minimal amount.
4. Allow the Shape Capture Bag to respond.
5. Check for pliable but stable bead mass. This will take some practice to master. Call us if you need help with this step: toll-free 866.781.1633.



Suggested Shape Capture Bag technique.

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## III. Preparing the Ride Shape Capture Bags

1. Cover the blue shape capture bags with clear, plastic outer bags. The smaller, clear, plastic bag goes over the Ride Cushion Shape Capture Bag and the larger, clear, plastic bag goes over the Ride Back Shape Capture Bag. The outer bags are to be changed after each shape capture is complete, to provide a sanitary environment, helping to reduce the spread of germs.
  - a. Open the new, clear, plastic outer bag.
  - b. Holding the bag open, drop in the appropriate sized Ride Shape Capture Bag.
  - c. Align the seam of the Ride Shape Capture Bag with the seams of the clear, plastic, outer bag.

Note: It is recommended to drape the yellow hose over your shoulder suspending the Shape Capture Bag so that the bottom edge just touches the floor.

  - d. Pull the plastic bag up to remove the slack in the clear bag, but do not lift the Ride Shape Capture bag off of the floor.
2. Verify the Ride Shape Capture Bag is not twisted inside the clear, plastic, outer bag.
3. Remove excess air from the clear, plastic outer bag.
4. Secure/seal the clear, plastic, outer bag to the foam tubing on the hose using one removable zip tie (provided). The zip tie should be snug, slightly deforming the foam

tubing. Do not over-tighten as this will make it difficult to remove the zip tie after the shape capture is complete. Do this for both the Ride Cushion Shape Capture Bag and the Ride Back Shape Capture Bag.

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## IV. Check for Leaks

1. Place the vacuum pump near the back and to the side of the wheelchair. Start the vacuum pump by plugging the cord into a 120 volt outlet.
2. With the vacuum pump running, install the T-valve onto the vacuum pump, then attach both shape capture bag hose assemblies onto the T-valve using the quick disconnects.
3. With the slide valves in the "bag hard" position, allow both bags to become rigid. A bag that does not become rigid indicates an outer bag leak. Small bag leaks can be patched with masking tape. In the event of a large leak, replace the outer bag per section III above.

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## V. Preshaping Cushion and Back Shape Capture Bags for Dual Shape Capture

1. Disconnect the Ride Shape Capture Bag hoses from the vacuum adapter T.

### How to pre-shape a cushion bag to minimize cushion height.

2. With vacuum turned off, begin to move beads from front of bag towards the rear to thin out about the first 6" which will be under the thighs on the shape capture base.



3. Hold the front edge of the bag down with one hand and continue to slide beads from the front of the bag to the rear.



4. Connect the Ride Cushion shape capture bag hose to the vacuum adapter T-valve.

5. Turn the vacuum on and evacuate all air from bag. Notice how the front 6" or so of the bag is close to only 1" thick.



6. Remove the side guards from the wheelchair allowing the Ride Cushion Shape Capture Bag to flow off the sides of the Shape Capture Base to the sides during the shape capture.

7. Select the appropriate size Shape Capture Base.

8. Using hook and loop fastener, secure the base into the client's wheelchair with the back corners of the shape capture base touching the rear canes of the wheelchair. This back portion of the shape capture base represents the back of the finished, new, Ride Custom Cushion 2 when delivered. Always maintain the Shape Capture Base parallel with the wheelchair seat rails.

9. Let a slight amount of air into the bag to make it pliable. Place bag on the shape capture base. Route the hose end of the shape capture bag over the seat capture base, then out the back of the wheelchair. Take care to hold the front edge of the bag down and allow it to extend ~1" over the front edge of the shape capture base. Continue to hold the front edge down to keep the bag from moving. Push down with other hand into the well of the shape capture base.



Shape Capture Base and bag on chair with hose valve positioned in front.

10. Continue feeding the hose under the wheelchair, inside the wheels so the vacuum slide valve is in front of the wheelchair. This will allow the practitioner to keep track of valve locations and operate the seat vacuum from the front of the wheelchair.

## 11. Reduce wrinkles as much as possible.

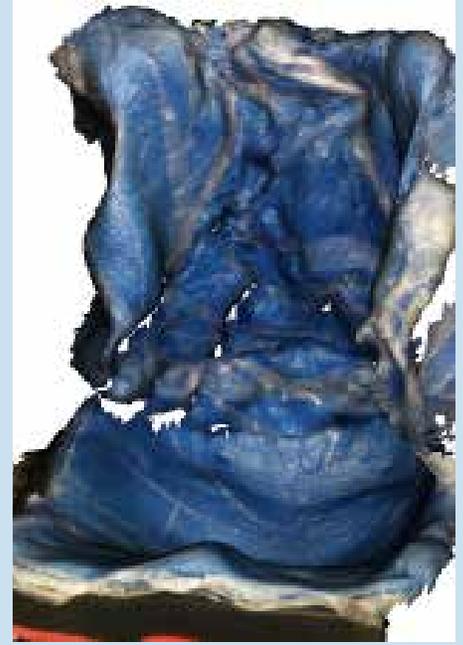
GOOD

Smooth shape: do your best — does not have to be completely wrinkle-free.



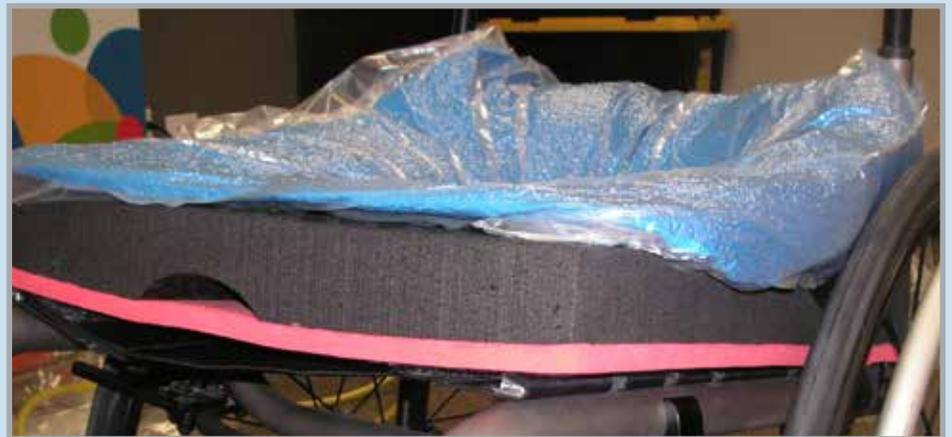
BAD

Excessive wrinkles will not scan properly.



12. Once the pre-shape is satisfactory, move the slide valve to “bag hard,” removing air from the shape capture bag, locking in the pre-shape.

Image below shows a good pre-shape. Note the thin front edge and clear visibility of red foam layer.



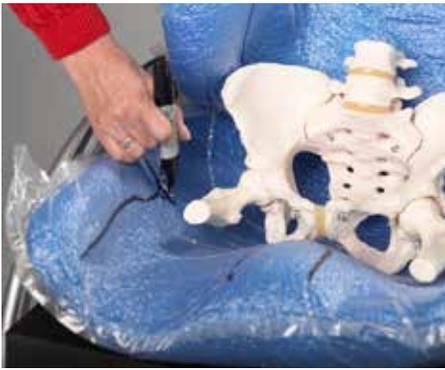
A good pre-shape should have a very deep well, 6 - 7" deep.



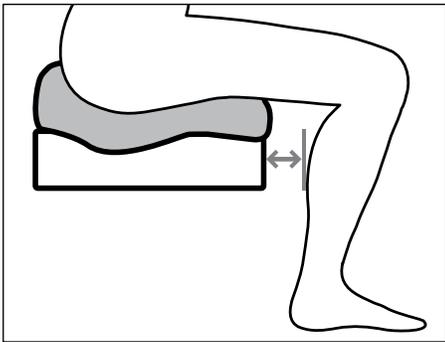
Pre-shaped back bag.

### **Preshaping the Back Shape Capture Bag**

13. Connect the Ride Back Shape Capture Bag hose to the T-valve.
14. Slightly move the Ride Back Shape Capture Bag slide valve towards the "bag hard" position to create minimal vacuum to allow beads to be easily moved, but stay in place once hands are removed.
15. Flatten the bag evenly on a clean surface
16. Cover any sharp edges on the wheelchair back canes or hardware with masking tape to prevent outer bag puncture.
17. Place the Ride Back Shape Capture bag in front of the wheelchair canes, making sure the bottom of the bag meets the top of the Ride Cushion Shape Capture Bag.
  - a. For a tall client, keep the hose end up.
  - b. For a wide client, place the bag sideways, keep the hose end to the non-leaning tendency side.
18. Drape the Ride Back Shape Capture Bag over the wheelchair back or canes with the hose end of the bag on the back side of the wheelchair.
19. Pre-shape the Ride Back Shape Capture Bag.
20. Remove wrinkles in the bag. Refer to #11 on page 5.
21. Once the pre-shape is satisfactory, move the slide valve to "bag hard" to lock down the preshape.



Mark apex of trochanters on bag.



Cushion length measurement.

## VI. Cushion and Back Dual Shape Capture Process

1. The client can now transfer into the wheelchair. If necessary, an open bottom Patient Lift can be used, with the sling left in place.
2. The client's hips should be fully back in the Ride Shape Capture Base.
3. With the client on the Ride Cushion Shape Capture Bag, slide the valve fully to the "bag soft" position.
4. Gripping the client's clothing at the hips, sweep the pelvis side to side from right obliquity to left obliquity to immerse the pelvic and thighs into the beads, stopping once the desired pelvic and lower extremity position in the cushion shape capture bag has been achieved.
5. Move the slide valve slowly toward the "bag hard" position to slightly tighten the bag while leaving it pliable enough to refine the positioning contours of the simulated cushion, such as cantles, medial and lateral thigh supports.
6. Verify the front corners of the colored layer of foam on the Shape Capture Base are visible as this information is needed during the scanning of the shape to determine orientation and heights.
7. Once an accurate cushion shape has been captured, move the slide valve to "bag hard" to lock the shape down.
8. Move the Ride Back Shape Capture Bag slide valve to "bag soft."
9. The beads should be pliable enough to shape the bag around the client holding the desired, corrected resting posture.
10. Apply seating strategy to properly position the client.
11. Once an accurate back shape has been captured, move the slide valve to "bag hard" to lock the shape down.
12. Adding more vacuum as the shape is finalized is recommended. Once at "bag hard", step back, remove hands and test the client's simulated postural response. Repeat the shape capture if necessary.
13. Mark the apex of the trochanters on the Ride Cushion Shape Capture Bag using a black, permanent marker.
14. Determine the desired cushion length of the finished RCC2. Measure starting at the front of the Ride Shape Capture Base and out toward the back of the client's knees. Typically, allow a couple of finger widths clearance behind the knees. (Remember, you can order an undercut to accommodate tight hamstrings.) Record this measurement on the shape capture bag (plus or minus \_\_\_ inches) as well as on the order form.
  - a. NOTE: Cushion dimensions cannot exceed wheelchair seat dimensions more than 1" in any direction.
15. Mark additional trim lines on the Ride Cushion Shape Capture Bag, and on the Ride Back Shape Capture Bag with a black, permanent marker.
16. Access the RideWorks app.
  - a. Enter the client information, and complete the additional fields.
  - b. Take photos of the client in the wheelchair with shapes captured, from the front, and from each side. We recommend you take the photos from the iPad's camera app rather than from within the RideWorks app, as pictures taken from within the RideWorks app cannot be used outside of it.
17. The client can now be transferred out of the shape capture bags.
18. Darken trochanter marks with a black, permanent marker and extend the lines medially so marks can be easily seen on the scanned image.
19. Complete drawing trim lines and marks to draw the back outer contour as it should be



Trim lines marked.

manufactured, including an arrow pointing upward, and soft relief areas to protect bony prominences, on the inside of the Ride Back Shape Capture Bag. Mark the depth and height of the lateral trunk supports on the back bag. Mark and define medial and lateral thigh support heights on the cushion bag.

20. Using the RideWorks app, scan the captured shapes. (Reference Section IX.)

21. Make sure the front corners of the colored foam layer on the Ride Cushion Shape Capture Base is visible in the scanned image.

22. Save the scanned image, or rescan if necessary.

23. Complete the order form, and follow directions to save the flattened copy to Rideworks. (See Section XII.)

a. Note: If the submit button is clicked, the file will be submitted to Ride Designs when the iPad is connected to WiFi.

24. Unplug the vacuum pump and disconnect the shape capture bag hoses from the T-valve.

25. Discard the clear, outer shape capture bags and store the reusable zip ties on the yellow hoses.



Make sure colored foam layer is visible on scanned image.

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## VII. Cushion Only Shape Capture Process

1. Prepare the Ride Cushion Shape Capture Bag and perform leak checks per Sections III and IV.

2. Disconnect the Ride Shape Capture bag hoses from the vacuum adapter T-valve.

3. Preshape the cushion bag. Refer to section V, # 2-12. Note: When connecting the shape capture bag hose to the vacuum, it can be connected directly. The vacuum pump T-valve adapter is not needed for single shape capture.

4. The client can now transfer into the wheelchair. If necessary, an open bottom Patient Lift can be used, with the sling left in place.

5. The client's hips should be fully back in the Ride Shape Capture Base.

6. With the client on the Ride Cushion Shape Capture Bag, slide the valve fully to the "bag soft" position.

7. Gripping the client's clothing at the hips, sweep the pelvis side to side from right obliquity to left obliquity to immerse the pelvic and thighs into the beads, stopping once the desired position in the cushion shape capture bag has been achieved.

8. Move the slide valve slowly towards the "bag hard" position, allowing the beads to be easily moved but stay in place. Finish shaping the remainder of the cushion shape capture bag as needed.

9. Verify the front corners of the colored layer of foam on the Shape Capture Base are visible as this information is needed during the scanning of the shape to determine orientation and heights.

10. Once an accurate cushion shape has been captured, move the slide valve to "bag hard" to lock the shape down.

11. Mark the apex of the trochanters on the Ride Cushion Shape Capture Bag using a black, permanent marker.

12. Indicate on the shape capture bag how much longer than the shape capture base the finished cushion should be.

a. NOTE: Cushion dimensions cannot exceed wheelchair seat dimensions more than 1" in any direction.

13. Mark additional trim lines on the Ride Cushion Shape Capture Bag with a black, permanent marker.
14. Access the RideWorks app.
  - a. Enter the client information, and complete the additional fields.
  - b. Take photos of the client in the wheelchair with shapes captured.
15. The client can now transfer out of the wheelchair.
16. Darken trochanter marks with a black, permanent marker and extend the lines medially so marks can be easily seen on the scanned image.
17. Complete drawing and darken trim lines on the clear, plastic, outer bag.
18. Skip to Section IX, XII and XIII for scanning process instructions, order form process instructions, and order submission instructions.
19. Unplug the vacuum pump and disconnect the shape capture bag hoses from the T-valve.
20. Discard the clear, outer shape capture bags and store the reusable zip ties on the yellow hoses.

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## VIII. Back Only Shape Capture Process

1. Prepare the Ride Back Shape Capture Bag and perform leak checks per Sections III and IV. Connect the Ride Back Shape Capture Bag hose directly to the vacuum pump (the T-valve adapter is not needed for single shape capture).
2. Preshape the back bag. Refer to Section V, #13-21.
3. The client can now transfer into the wheelchair. If necessary, an open bottom Patient Lift can be used, with the sling left in place.
4. With the client in the wheelchair, slightly move the slide valve towards the “bag soft” position, allowing the beads to be easily moved, but stay in place.
5. The beads should be pliable enough to shape the bag around the client holding the desired, corrected resting posture.
6. Apply seating strategy to properly position the client.
7. Once an accurate back shape has been captured, move the slide valve to “bag hard” to lock the shape down.
- 8 Adding more vacuum as the shape is finalized is recommended. Once at “bag hard,” step back, remove hands and test the client’s simulated postural response. Repeat the shape capture if necessary.
9. Mark all trim lines, including the bottom line, on the Ride Back Shape Capture Bag with a black, permanent marker.
10. Access the RideWorks app.
  - a. Enter the client information, and complete the additional fields.
  - b. Take photos of the client in the wheelchair with shapes captured.
11. The client can now transfer out of the wheelchair.
12. Complete drawing trim lines, including an arrow pointing upward, soft relief areas, and lateral trunk support height and depth on the inside of the Ride Back Shape Capture Bag.
13. Using the RideWorks app, scan the captured shapes. (Reference Section IX.)
14. Save the scanned image, or rescan if necessary.



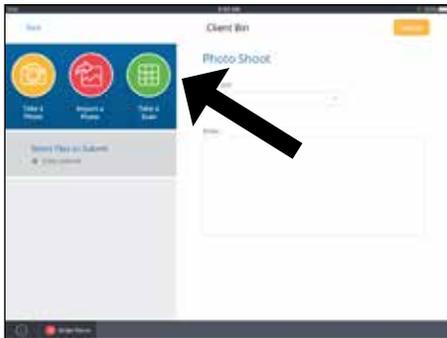
Trim lines marked.

15. Complete the order form, and follow directions to save the flattened copy to Rideworks. (See Section XII)

a. Note: If the submit button is clicked, the file will be submitted to Ride Designs when the iPad is connected to WiFi.

16. Unplug the vacuum pump and disconnect the shape capture bag hoses from the T-valve adapter.

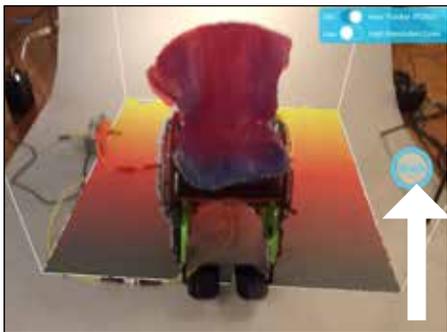
17. Discard the clear, outer shape capture bags and store the reusable zip ties on the yellow hoses.



Press the scan icon to open the scanner.



Stand about three feet away from the shape.



Size the cube so shape fits within boundary, then press blue scan button to begin.

## IX. Scanning Process

1. BEFORE SCANNING, make sure the following items have been drawn on the bag(s) with a black permanent marker:

- a. Well-defined trim lines.
- b. Arrow indicating the top of the backrest.
- c. Extra modifications you'd like made to the backrest (e.g. enhanced reliefs, axillary pads, etc.)
- d. Apex of trochanters, and medial lateral thigh support heights.

2. Open and log in to the RideWorks app on your iPad.

3. Enter client's first and last name in the corresponding fields or choose your client from the list under existing clients. You will be directed to the client bin screen. From here you can Take a Photo (not recommended from within the app, take photos with the iPad camera app), Import a Photo, or Take a Scan.

a. Note: Photos taken from within the RideWorks app cannot be used outside of it. It is recommended to take photos from the iPad Camera app, and use the Import Photo option in RideWorks to add photos to your RideWorks client file.

4. Press the "Take a Scan" icon to open the scanner.

5. Stand approximately three feet away from the shape, pointing the scanner at the captured shapes.

6. Size the cube on the screen, using a two-finger pinch motion so the entire, captured shape fits within the cube boundary.

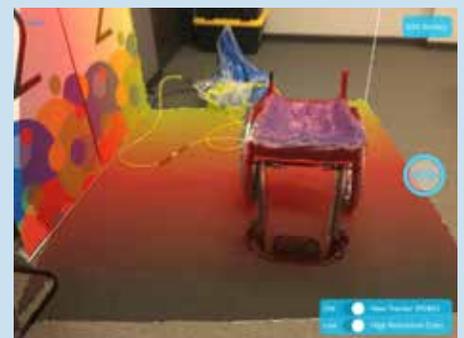
### Size the scan cube as small as possible.



Appropriately sized cube: just fits cushion and slight portions of wheelchair.



Cube too large: getting other items in room.



## 7. Use Low Resolution color setting to avoid memory overload.

GOOD

Color is set to "Low" Resolution.



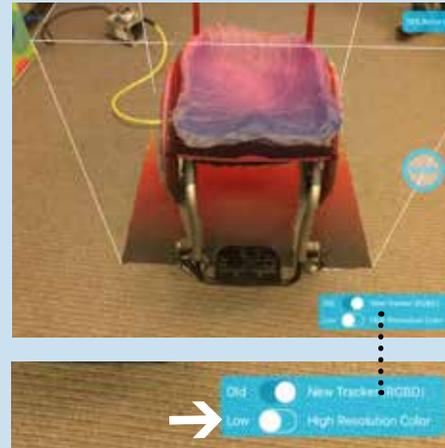
White begins to fill shape during scanning.



Move slowly around the shape, pausing when prompted on the screen.



All areas scanned will turn white.



If you are routinely getting "Low Memory Error" during a scan or processing try the following:

- Close all apps except RideWorks.
- Reset ipad RAM Memory:
  - Ensure ipad is unlocked.
  - Go to home screen.
  - Hold down power button until shut down slider appears, then release button.
  - Hold down Home button until you are sent back to home screen.
  - The RAM memory is now clear and a new scan should process.

App Note:  
Future versions of the RideWorks app will have Low Color resolution set as the default to eliminate this issue.

8. Press the blue SCAN button to begin scanning.

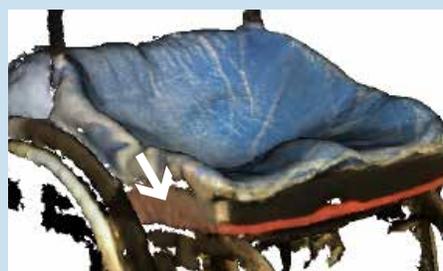
9. As soon as scanning begins, the 3D model will appear in white on top of your shape in real time, as it is scanned.

10. Once scanning has begun, move slowly in a circular path around the shape. Hold the scanner up above to include the insides of lateral trunk supports. If there are areas on the image that have not turned white, point the scanner at those areas and they will be filled in. It is not necessary to scan the back side of the shape, the front and sides are sufficient.

## 11. Move slowly to reduce blurry scans.

BAD

Blurry portions of scan are the result of not moving slowly and not stopping when prompted by app.





Make sure the colored foam layer of shape capture base is scanned.

12. It is imperative to scan the colored, foam layer on the bottom of the Ride Shape Capture Base in order to relay orientation.

### 13. Ensure that front edge, sides and corners of shape capture base foam are visible.

GOOD

Visible: front edge, both sides, and corners of base, including colored foam band.



BAD

Not visible: front edge, sides and corners.



14. When the shapes have been scanned successfully, press the STOP icon to finish scanning.

15. Wait while the app processes the scan and adds color to the model.

## 16. Ensure scan finishes processing prior to clicking "Save."

BAD

Do not click "Save" until processing has been 100% completed. If scan is incomplete, the color file will not generate and will not be sent to Ride Designs. Preview all scans to ensure color is visible prior to submitting to Ride Designs.





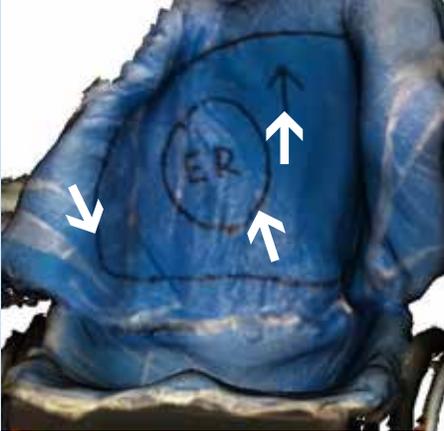
Finished processing, spin image on touch screen to view all sides of scan and ensure trim lines are visible.

17. When the app finishes processing, spin your model around and make sure that the trim lines are dark and visible.

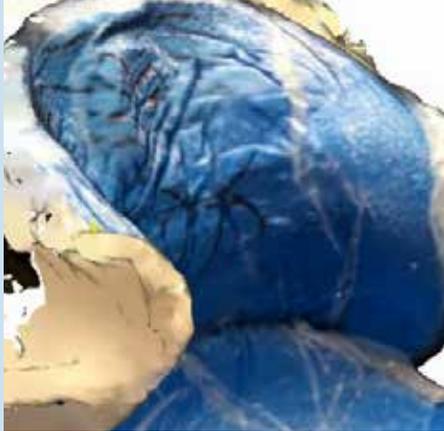
**Ensure trimlines and other markings are dark and visible in scan preview.**

GOOD	BAD
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**Dark and visible:** trimlines, up arrow, and enhanced relief (ER) markings.



**Not clear and dark:** trimlines and markings.

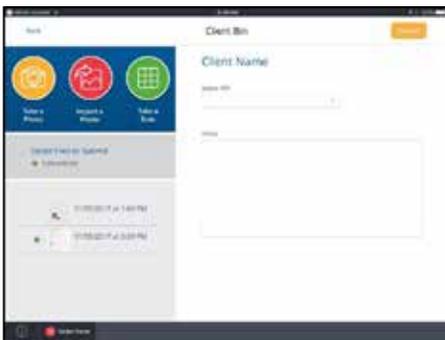


18. To start over, press “Rescan.” To accept and save your scan, press “Save.”

19. Disconnect hoses from vacuum pump.

20. Discard clear, plastic, outer shape capture bags and replace with clean bags.

21. Your scan will appear in the client bin in the list of files ready for submission.



Scan will appear in client bin.

## X. Scanning Existing Ride Custom Back or Ride Custom Cushion for re-make or duplicate

### How to scan existing Ride Custom Back for re-make or duplicate.

1. Take a photo of the rear of back, showing the location of the hardware and headrest mounts.



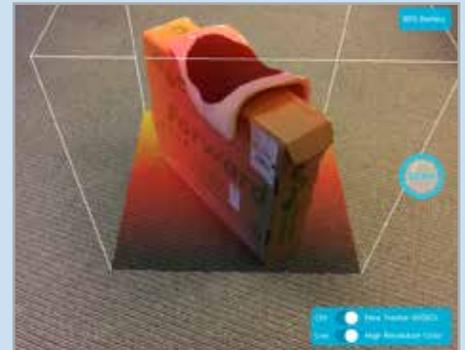
2. Remove the cover and take a photo of the inside of back, showing the location of all pads and enhanced reliefs.



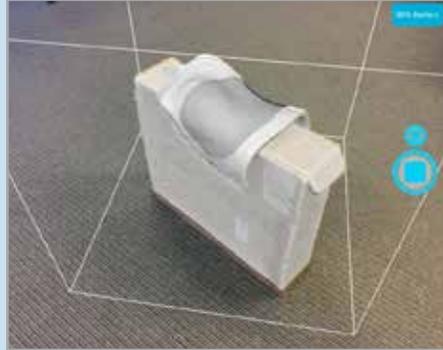
3. Remove the inner liner from the black outer shell. Place the liner, white side up, on an object to elevate it off of the floor or surface.



4. In the RideWorks client bin, select SCAN. Size the scanning cube so that the boundary extends just past the edges of the shape.



5. Press SCAN to begin scanning. Scan only the white plastic side of the backrest. Press the stop icon when finished.



6. After scanning, wait for RideWorks to process the color. Review your 3D scan and make sure the entire back surface is visible and there are no holes. Select SAVE when finished to save your model to the client bin.



## How to scan existing Ride Custom Cushion for re-make or duplicate.

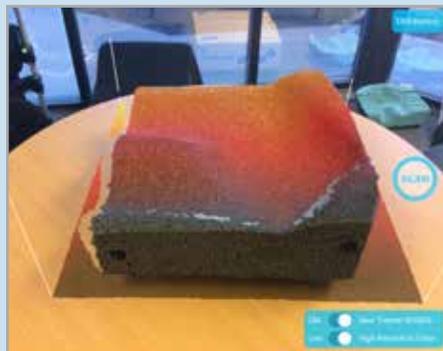
1. Remove the external cover and place the cushion on a flat surface.



2. Use a small box or object to elevate the cushion at least 1" above the flat surface.



3. In the RideWorks client bin, select SCAN. Size the scanning cube boundary so that it extends just past the edges of the cushion.



4. Press SCAN to begin scanning. Slowly walk around the cushion and make sure the entire surface is covered in white. Press the stop icon to finish scanning.



5. After scanning, wait for RideWorks to process the color. Review your 3D scan and make sure there are no holes. Select SAVE when finished to save your model to the client bin.



## XI. How to scan an impression foam shape for a Ride Custom Cushion 2

1. Place the Simulation Pan on a flat surface in a well-lit room.



2. In the RideWorks app, size the scanning cube so that it extends just past the boundaries of the Simulation Pan.



3. While scanning, make sure to capture all the way to the bottom of the Simulation Pan.



4. Before finishing the scan, check that there are no holes in the 3D scan of the impression foam surface.



5. Preview your 3D scan and rescan if there are any large holes or major imperfections.

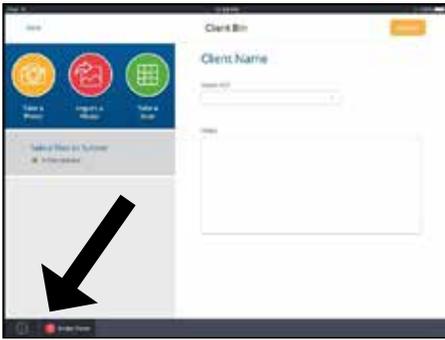


6. Save your 3D scan to the RideWorks app.



## XII. Order Form Process

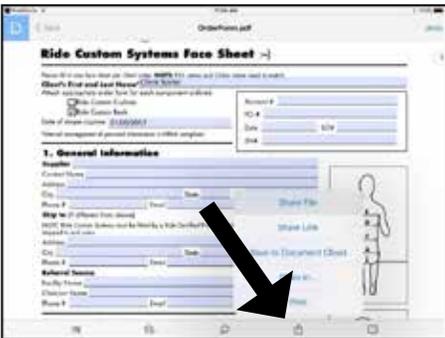
1. To attach a .pdf order form, press the "Order Form" icon in the bottom, left corner of the client bin.
2. In the pop-up menu, press the red application icon that says "Copy to Adobe Acrobat."
3. Select the applicable order form to be completed. Complete the fillable fields. Once the order form has been completed, press the upload icon followed by "Share File" in the pop-up menu.
4. Next, select "Share Flattened Copy."
5. Press the "Import with RideWorks" icon.
6. When prompted, select the client to which the order form should be assigned.
7. The order form will now be displayed in the client's file list.
8. If the order form is completed by hand, a free scanner app can be downloaded to the iPad, and can be used to scan your completed order form. Once scanned, the order form can be shared with the RideWorks app. Please avoid taking a picture of a manually completed order form with the camera app as this method often results in an illegible order form.



Press order form icon in bottom left corner.



Press red icon "Copy to Adobe Acrobat."



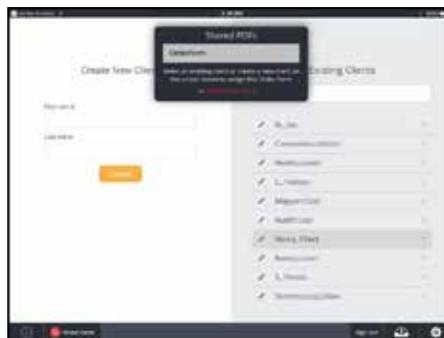
Complete fillable fields on order form and share file via file transfer icon at bottom.



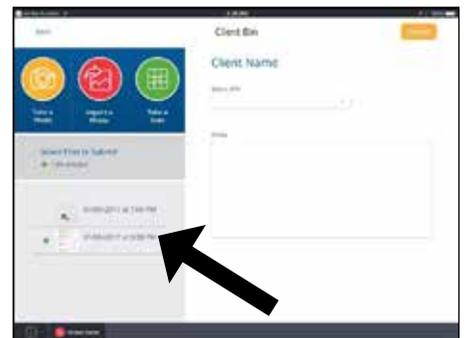
Select "Share Flattened Copy."



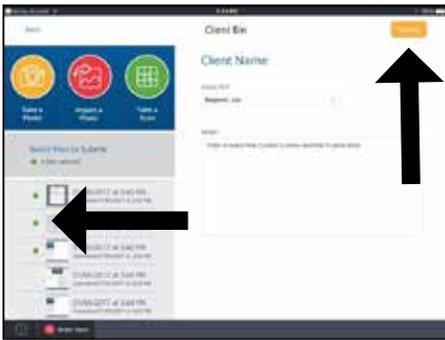
Press "Import with RideWorks" icon.



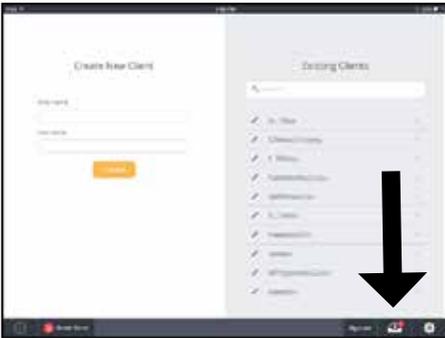
Select appropriate client.



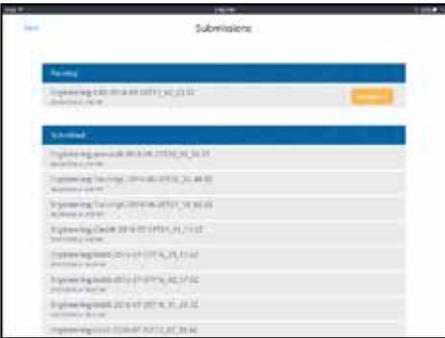
Order form will be displayed in client's file list.



Tap on green circles to select files to send; then press yellow "Submit" button at upper right.



Check out box to verify order submission.



Verify submissions.

### XIII. Order Submission Process

In this step, photos, scanned images, and order forms are submitted to Ride Designs in an encrypted, HIPAA compliant file.

1. Select the files to be included with the order by tapping on the small circle on the left of each file. Files that are selected to be submitted will have a green circle. Press the yellow "Submit" icon to submit your order.
2. To verify an order was successfully submitted, press the outbox icon in the bottom right corner of the app's main menu.
3. A successfully submitted order will appear in the "Submitted" list.
4. Orders that have not been submitted successfully will appear in the "Pending" list. Check your internet connection and then press the yellow "Resubmit" icon if necessary.