

Crafting a Custom Prosthesis

Crafting a prosthetic device is a timely process. The practitioner specializes in the creation of the socket; whereas the feet and/or knee units are produced by other manufacturers. Our practitioner staff meets



with the Physician to determine the feet and/or knee units which best fit the needs and goals of the patient. But the process always begins with the task of crafting the prosthetic socket.

O&P Design is unique in that we feature an on-site custom lab for timely fabrication of devices. The process starts with a casting. This is when the prosthetist makes a mold of your residual limb using plaster bandages; marking the ridges of bone and depressions as notes to ensure proper fit. After the cast has been made it is filled with plaster and the prosthetist modifies the model to create weight bearing and non-weight bearing areas. This replica is referred to as the positive mold. Once the mold is modified the prosthetist will then fabricate the first "check socket". A check socket is a clear plastic socket the prosthetist uses to identify the fit of the prosthesis to the residual limb. Often patients will wear more than one check socket, tweaking and making slight changes as they go to ensure a proper fit. The clear plastic not only allows the practitioner to literally see where the problems are but also the plastic is easily moldable and correctable. A final socket is much harder to adjust.

Once the patient has been fit with the correct check socket and the patient is no longer experiencing any fitting issues, it is time to begin work on the definitive socket. The practitioner begins by filling the check socket with plaster and creating a new positive mold of the residual limb. Then it is time to create the definitive socket through the process of lamination. The practitioner adds the appropriate devices for the suspension system which best fits the needs of the patient. Then, using a combination of resins, carbon, nyglass, nylon and/or plastics the prosthetist carefully molds a socket around the positive mold. Once this process is complete the socket is attached to the foot and/or knee assembly.

After the lamination is completed the practitioner will use shaping tools to create the trim lines of the socket. Proper trim lines are needed to assure stability while donning the prosthetic device. The check socket likewise went through this shaping process and the practitioner uses this as their guide to shaping the trim lines of the definitive prosthesis. The final product is then fit to the patient. Some patients also have an exterior cover created by hand for a more realistic appearance.

The creation of a prosthetic device is a timely labor. Each device is made by hand to exact specifications. For more information and photos of the prosthetic fabrication process please visit our blog at www.oandpdesign.wordpress.com.4



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Terry Burgess: Lead Technician

You may not know Terry, he is a behind the scenes kind of guy but our staff surely appreciates him. Terry is our resident Mr. Fix-it. As Lead Technician, Terry, has had a hand in nearly every brace that has left our shop. If you wear an orthotic most likely Terry built it, inspected it or over-saw its production. For nearly 40 years Terry has worked in the O&P industry and he brings years of experience to his craft in the field of O&P.

In 1972 Terry answered an ad in the paper for “light bench work” making \$2.50 an hour. In answering that ad he found a career path that he has spent his life perfecting. Over the years he has worked in many capacities, including a ten year period fitting custom bracing and servicing patients directly. During this time he primarily worked with back and hip bracing. Though this was an enjoyable and challenging aspect of his career he now enjoys his position in our fabrication facility.



The art of orthotic fabrication dates back to pre-civil war when black smiths and metal workers began creating bracing and prosthetics. As individuals began to specialize in the creation of these devices the field became a cross between science and art. The technical skills required to design and build an orthotic are akin to a craft. Technicians like Terry have spent years apprenticing and gathering skills to produce quality products. As our Lead Technician Terry acts as mentor as well as supervisor.

These days he mostly keeps busy in our lab creating some of our most complicated braces. When asked Terry said that he particularly enjoys building KAFO's (Knee Ankle Foot orthotics). It is not surprising that he enjoys building this device as its alignment and components are some of the most difficult to assemble. When asked what he likes the least he said that he misses patient contact. We asked him what advice he would most like to share with our patients and he suggested that proper fitting shoes are the key to a proper fitting brace. Terry has become an indispensable part of our team at O&P Design. His smile and ability to fix just about anything has made him a helpful and appreciated staff member. But his experience with creating custom braces has made him an admired craftsman.

What can you do?

If you read our blog regularly, as I do, you would have seen our recent post asking patients to share their stories of success. For our practitioner staff this is the most rewarding part of the job, to see their patients succeed and return to activities they never thought they would. From extreme sports to walking down the aisle at their wedding every outcome of success is thrilling and inspiring.

Throughout the careers of our various staff members we have seen some amazing things. Practitioners have recalled patients standing for the first time in decades, amputees competing in various sports, patients returning to hobbies and passions. Every story is inspiring, something we admire in our patients and look forward to hearing about.

We have featured many of these success stories in our newsletters but we want to hear more. If you have a story you would like to share please visit our blog at www.oandpdesign.wordpress.com or you can email your story to our Executive Director at dwilson@oandpdesign.com.

Traveling with your Orthotic or Prosthetic Device

It's that time of year, the holiday season. Many of our patients travel to see family and friends during this time and some experience unexpected problems. If you think airport security is a pain, try heading through security with a brace or an artificial limb. If you have ever forgotten to take your toothbrush along you are lucky compared to those who forget their multi ply socks. Your best course of action is to be well prepared.



First we want to remind patients to prepare their device for travel. If you are going to be out of town for an extended time or even a few days it's a good idea to make sure your device is working well. Check your prosthetic or orthotic for any signs of distress or possible wear and tear. If you suspect a problem schedule an appointment prior to your trip, so that one of our practitioners can correct the issue. It is also a good idea to stock up on supplies. If you are heading out on vacation make sure you pack extra socks, protective wear or liners. You never know what might happen and it is better to be safe than sorry. If you are not sure what you might need to bring along, call our office and a staff member would be happy to assist you.

Before you arrive at the airport we suggest you browse the TSA website, you can find a detailed description of the screening process on their website, which is www.tsa.gov. This site provides you not only with the

process of screening but also your rights as a traveler. Remember that due to the nature of your device they will have to specially screen you, unfortunately there is no way around this. These special screenings may be done in public but depending on your device you may want to opt for a private screening. It is never a bad idea to bring along a signed letter from your physician stating that you wear a prosthetic or orthotic device. Though this doesn't always exempt you from a search, it can move the process along a bit faster. If you really want to shorten time with security try to be mindful of how you are dressed. For lower limb amputees shorts can save you an enormous amount of time during a search. For those wearing a lower limb brace you may want to wear the device on the outside of your clothing.

But what if the unexpected happens? Over the years we have received emergency calls during most unforeseen circumstances. If you are out of town and experience any problems with your device make sure you have our number and we will direct you with the best course of action.

Travel Check List

- Prepare your device for travel
- Pack extra supplies
- Check the TSA website at www.TSA.gov
- Bring along O&P Design's phone number
314-535-5359

Remember that travel is easiest when you are well prepared!

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