LegStyle Style that Fits

3D Scanning Guidance

This guide sits behind the scanning checklist on page 3 of the order form. The checklist says what we need. This explains why each item matters, shows where on the prosthesis it is, and covers the cases the checklist cannot: above-knee, over-sleeve covers, sound side and bilateral.

If you only read one thing, read the checklist. If a scan comes back short, this is the page we will point you to.

The checklist

This is the same list as page 3 of the order form. Tick it before the client leaves.

☐ Before scanning
- Cosmesis, shoe, sock and knee sleeve off
- Spectra sock, if fitted: tape it close to the blade
- Over-sleeve cover? Give the sleeve thickness in Section 8 and we design for it

☐ Must be complete: no gaps over 15 mm
- Socket, up to the trimline (AK: the knee too)
- Foot shell rim, where the cover meets it
- Pin lock, valve, blade

☐ Only needs to be located: gaps up to 30 mm are fine
- Rest of the foot shell and any other hardware
- Pylon (a spiral of masking tape along it helps the scanner track)

☐ Saved as an STL over 4 MB, with hole-filling and smoothing off

Nice to have: toes, heel and some floor (we use them for orientation), and a sound-side scan, even a rough one.

Can't tick everything? Get in touch before ordering and we'll work out whether we can make the cover.

1 · Preparation: why everything comes off

Cosmesis. A scan over an old cover hides the socket and the hardware completely. We cannot design to a shape we cannot see.

Shoe and sock. The cover blends into the foot shell, so we need the shell itself, toes included. The toes also tell us the alignment and which side the limb is.

Knee sleeve. The socket trimline sets the top of the cover and how much room is left for the sleeve. A sleeve in the scan hides it. This applies to over-knee-sleeve covers as well: scan with the sleeve off and give us its unstretched thickness (about 5 mm on most sleeves) in Section 8 of the order form. We add that thickness back in the design. It is simpler and more reliable than scanning over the sleeve. One check for over-knee-sleeve covers: the cover attaches to the socket below the sleeve, so there needs to be about 2 cm of socket clear beneath it before the socket curves in. If there is not, tell us and we will talk it through.

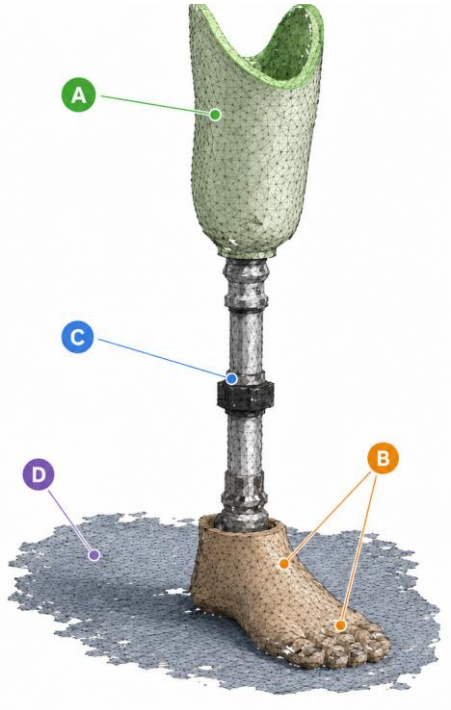
Spectra sock. The protective sock over a carbon foot often runs up over the exposed blade and sits loose. Loose fabric scans as solid volume, and we cannot see the blade through it. Tape it flat, lift it clear, or tuck it into the foot shell: any of these gives us a good estimate of the blade underneath.

2 · Scan areas that must be complete

These are the surfaces the cover is built against. No gaps or rough patches larger than 15 mm, and the trimline itself as clean as your scanner allows. This is the one place where scan quality becomes fit quality.

The trimline also sets the top of the cover: how far up the sides go, and how much room is left for a knee sleeve. Hardware near the cover line (pin lock, valve, carbon blade) is designed around, so a missed valve is a cover that will not close.

Below-knee



A · Socket exterior to the trimline ***Must be complete.*** The cover seats flush here. Include the posterior cutout. No gaps or rough patches larger than 15 mm.

B · Foot shell and toes ***Rim must be complete.*** The cover meets the foot shell at its rim, so that edge is in the strict tier. The rest of the shell only needs to show where it is. Toes confirm alignment and which side the limb is.

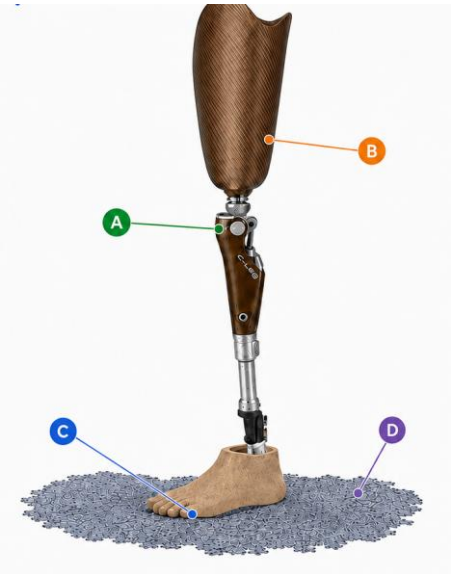
C · Hardware near the cover ***Must be complete where it sets the size.*** Pin lock, valve, carbon blade. The pylon itself only needs to be located: gaps up to 30 mm are fine.

D · Floor ***Nice to have.*** A little floor around the foot sets the foot's position on the ground.

Rough edges, floating fragments, partial rescans ***Fine.*** We clean and merge everything. If one area comes out poorly, rescan just that part and send both.

Figure 1 · Below-knee.

Above-knee



A · Knee ***Must be complete.*** The cover attaches at the knee, so this is the one region that has to be clean and whole.

B · Socket ***Include as much as practical.*** We use it to shape the leg and to set the posterior cutout. It does not need to be perfect.

C · Foot shell and toes ***Rim must be complete.*** As for below-knee.

D · Floor ***Nice to have.*** Sets the foot's position on the ground.

Two scans ***Recommended.*** Full extension, then maximum natural flexion. We size the posterior cutout to the flexed position. One straight scan is still fine; we use a slightly larger cutout.

Figure 2 · Above-knee.

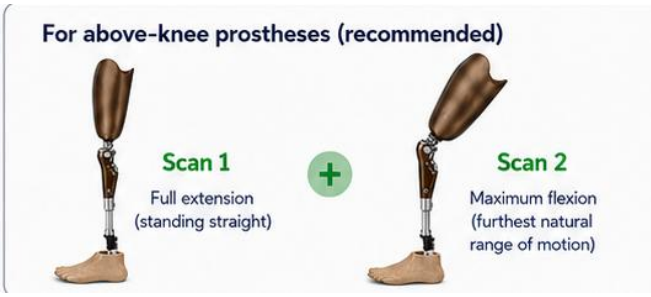


Figure 3 · Above-knee, the two-scan capture: full extension and maximum flexion.

3 · Scan areas that only need to show where things are

The rest of the foot shell, the pylon, and any other hardware only need to be located: gaps up to 30 mm are fine, and so are rough edges, floating fragments and excess floor. We clean and merge everything.

The pylon is the part that usually comes out worst, and it matters least. Polished metal is hard for a scanner to track, and the usual fixes all work: a spiral of masking tape along it, a stocking held with elastic bands, a scatter of blue-tack dots, or a light chalk spray. Use whatever your clinic already does. If it still has holes, leave them. If one area comes out poorly, rescan just that part and send both files. We merge partial rescans as a matter of course.

4 · Final checks and export

Spin it before the client leaves. Rotate the scan on screen and look for a missing patch on the socket or foot shell rim. It takes ten seconds and saves a repeat appointment.

Save as STL. OBJ is also fine. Send it raw: hole-filling, gap-filling and smoothing off. Holes are fine; a filled or smoothed model loses the detail we need.

Resolution. A good prosthesis scan is bigger than 4 MB. Well under that almost always means the export was too coarse: zoom in on the trimline, and if it looks faceted rather than smooth, re-export at a finer setting. Bigger files are fine. Newer scanners produce 100 MB and more, and that is no problem.

Sending. Email the form and scans to orders@legstyle.com. Too big to email? Ask us for the upload link. It is upload-only, so nobody using it can see anyone else's files. The job number in the filename helps: JOB1170XXX_prosthesis.stl, JOB1170XXX_sound.stl.

5 · Sound side and bilateral

Sound side (nice to have). A sound-side scan is the best reference we can get: we mirror it, so the cover matches the client's own leg rather than our best guess. Scan standing naturally, include the knee if you can, and do not worry about quality: even a rough, low-resolution scan

tells us the proportions. If a scan is not practical, give the max calf circumference and mid-patella to floor on the order form instead.

Bilateral. Scan both prostheses. We design the pair together so the shape stays consistent from side to side while allowing for each socket and its hardware. With no sound side to mirror, we start from a mannequin with average male or female proportions and scale it to the client. Mid-patella to floor, measured while the client is wearing the prosthesis, is the measurement that sets those proportions: we can sometimes estimate it from the scan, but not always, so please give it on the form and leave the sound-side calf blank. Add a target calf circumference if the client has a preference, or send a scan of a reference leg with a shape they like (it can be anyone's). Otherwise the aim is a natural leg that is not oversized, since the sockets already carry some width.

Say on the form if the two sides are to have different styles or colours. Height and weight let us check proportions against an anthropometric database, and a front-on photo of the client standing square lets us overlay the cover render so you and the client can see the outcome. Before anything is made you get an interactive 3D model of the pair to review together. If the client wears knee sleeves, an over-knee-sleeve cover gives a more symmetrical pair.

Questions at any stage: orders@legstyle.com. We would rather talk a scan through before the job starts than after.

