



## Socket Interface Technology – **Silcare Breathe Locking Liner** Casting and Rectification Guide

## Examination and History

Carry out a full examination of the residual limb, noting any scarring, sensitive or neuropathic areas and anatomical landmarks.

Test the knee joint range of motion.



## Patient Selection

Patient selection criteria:

- Amputation level: Trans-tibial
- Activity level: Medium - High
- Good soft tissue coverage
- Good hand function
- Good cognitive ability
- Good hygiene

Contraindications:

Short residuums - UD fabric must end no more proximal than Tibial Tubercle/distal patella tendon/Fib Head.

Deep/invaginated scarring distally - acts as track for air running longitudinally down residuum, (wearer will feel this).

Distal hypersensitivity to "traction"- Unable to tolerate pull of pin during swing phase, may be improved by slight supra condylar containment within socket.

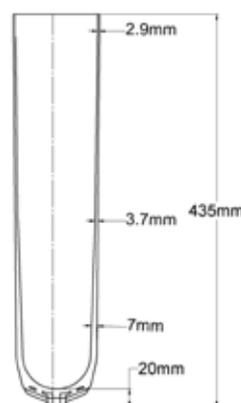
## Liner Selection

Determine correct liner size by measuring 4cm from distal end. Do not allow soft tissue to deform by pulling tape too tightly. Select liner size as measured or one size down if measuring between liner sizes. Consider taking this measure with the residual limb in a vertical position if necessary to include any redundant tissue.

<b>SB</b>	<b>TT</b>	<b>LP</b>	<b>XX</b>	<b>L</b>
Silcare Breathe	Trans-tibial	Locking Parallel	Size 22cm to 40cm*	Light Tone
*Note: 23.5 = 23, 26.5 = 26				

Sizes available: 22, 23.5, 25, 26.5, 28, 30, 32, 34, 36, 40

Example part number: **SBTTLPXXL**



## Liner Donning

Fully invert and grip the liner as shown.

Roll liner along length of residual limb ensuring all the air is fully expelled ensuring locking pin is orientated along the long axis of the residuum (when viewed from both front and the side).

Confirm location of "end of UD fabric". This should be no more proximal than Tibial Tubercle/distal patella tendon/Fib Head. Otherwise knee flexion will be affected and stretch will be concentrated on perforations leading to potential premature failure of the liner. A shorter matrix would be more suitable for these candidates, contact your sales representative.

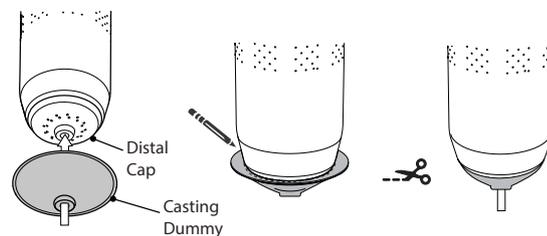
It is recommended to keep the liner on the residual limb for 10 minutes to confirm fit and that the wearer does not experience any tingling or other adverse sensations.

If numbness/tingling is experienced. Remove the liner until normal sensation returns. Don the liner again ensuring it is donned correctly without creases etc that could contribute to undue localised pressure. If numbness etc re-occurs remove liner, liner is not suitable for this wearer.



## Casting Preparation

Fit casting dummy & secure with lock-pin/lanyard.  
Mark periphery of end cap.  
Trim dummy to size of end cap, ensuring it is not smaller than end cap.  
Re-fit dummy with lock pin/lanyard.



Wrap around residual limb and liner with cling wrap, ensuring all areas of the liner are covered and free from trapped air.



Apply wet casting sock and hold firmly in place with suspender (or similar). Patients with adequate hand strength may be able to assist with this. Identify and mark appropriate landmarks relating to your initial examination and your current clinical practice.

This would likely include:

- Patella
- Patella Tendon
- Fibula Head
- Crest of Tibial tubercle
- Other sensitive or problematic areas



Mark, measure and record stump circumferences at 2cm intervals using the patella tendon or a bony landmark as a reference point for consistency of future measurements.



## Casting

Apply plaster slab to capture distal end shape.

Smooth to capture definition.

N.B. Slab ensures that there is sufficient coverage/strength distally in cast.



Wrap with elasticated or standard bandage.

On cylindrical residuums add tension, as preferred, beneath medial condylar flare or indent with finger tips as plaster sets to provide a guide to soft tissue reductions other than posteriorly.

On particularly fleshy cylindrical residuums it may be advantageous to also create a more defined triangular shape to aid rotational control.



Whilst the cast is setting, apply gentle/comfortable tension on lanyard until cast has set.

The amount of tension should be determined prior to plaster application.

This places the tissues of the residuum under slight (comfortable) tension, reducing relative movement and improving control. The resulting cast will be elongated slightly.

Once the cast has dried, draw appropriate alignment lines before removing from wearer.

Once removed, confirm you are happy with cast and distal end shape has been captured.

N.B. If shape isn't captured satisfactorily either distally or within cast take another cast!



## Rectification

Fill the plaster cast in the desired alignment and once set, remove the plaster bandage. It is recommended to cut down the posterior wall so as not to damage the cast over the anterior bony structures.



Remove shell cast.  
Confirm end shape captured.  
Re-establish landmarks.



Clean positive model to remove bandage debris. Record measurements of the positive cast to ensure they do not deviate significantly from those taken prior to casting. Calculate reductions from the pre cast measurements.

- 3-5% proximal reduction, dependent on soft tissue coverage and bony anatomy.
- 0-1% distal reduction dependent on soft tissue coverage and bony anatomy.
- Ensure your measurements are accurate to ensure effective total contact.
- Take advantage of our Rectification Assistant to help with calculations.



Make reductions to soft tissue areas, mainly posteriorly\*

Para-tibial areas can also be reduced to accentuate bony anatomy.

Maintain global shape.

If residuum is very fleshy/cylindrical introduce flare beneath medial condyle to level of indent in soft tissue if indented during casting.

\*Use posterior reduction to introduce posterior brim flare typically at level of MPT.

The reason for introducing a flare beneath medial condyle is: if stump volume reduces on a cylindrical residuum, the residuum will slip further into the socket and weight-bear/contact distally. With a gentle flare if volume reduces then the weight will be more readily taken by the medial condylar flare.

Gentle (very gentle) reduction to PT tendon-relieves pressure to proximal tibia, it also acts as a reference for position within the socket

Build up/reliefs to cut end tibia, fib head etc.

Build ups should be limited and gentle i.e 5mm to anterior cut end of tibia.

Do NOT reduce or alter the end shape of the cast (in the area of the valve).

N.B. There should be no abrupt changes in contour otherwise life of the liner will be adversely affected.



It is important to limit the amount of plaster additions to any total contact socket in order to accurately volume match the socket to the residual limb. However, it may be necessary to apply minimal relief to areas identified during your initial examination of the stump and also the posterior wall. We recommend the use of a diagnostic test socket fitting to accurately determine the fit of the socket and clearance for valve operation before proceeding to the definitive socket.