



Measurement Guidelines for Lymphedema

Measurement Techniques for
Lower and Upper Extremities



Table of Contents

Measurement techniques for the lower extremities	3
Basic guidelines, general information	4
Measurement technique for stockings	5
Measurement point A	6
Measurement point Y and P1/P2	7
Measurement point B, B ¹ , C and D	8
Measurement point E, F and G	9
Measurement point K = (K1), G = (K2) and H	10
Measurement point T and abdomen	11
Measurement techniques for the toe cap	12
Measurement point A, A1, and toes 1-4 (5)	13
Measurement techniques for the upper extremities	14
Basic guidelines, general information	5
Measurement point C, C ¹ , D and E	16
Measurement point F, G and G ¹	17
Measurement techniques for gloves	18
Measurement point A, B, C and C ¹	19
Measurement point D, E, finger 1 and fingers 2-5	20
Measurement Materials	21
Styles & Options for the lower extremities	22
Styles & Options for the upper extremities	23
Functional Zones	24

Measurement Techniques - Lower Extremities



Basic guidelines, general information

This measurement guide was developed according to the guidelines of the Federal Academy of Orthopaedic Technology [Bundesfachschule für Orthopädie-Technik] (Germany).

Basic guidelines for measurement techniques for lymphatic treatment

This measurement guideline is valid for all flat-knitted JOBST® product, such as Elvarex®, Elvarex® Soft and Elvarex® Soft Seamless. This is to ensure that one measuring technique is used consistently.

- Communication with the health care professional is absolutely necessary in preparation for the measurement.
- Measure accurately to the millimeter in the area of the fingers / toes; skips in the needles are possible beyond these areas in 5 mm intervals.
- Photo documentation is helpful in difficult cases.
- Do not measure in skin folds.
- In exceptional cases for purposes of contouring in the case of very soft, excess tissue and to facilitate measurement, the measurements can be taken either with the legs lightly bandaged or over the old stockings, tights, or a tube bandage!

General information: Lower extremities

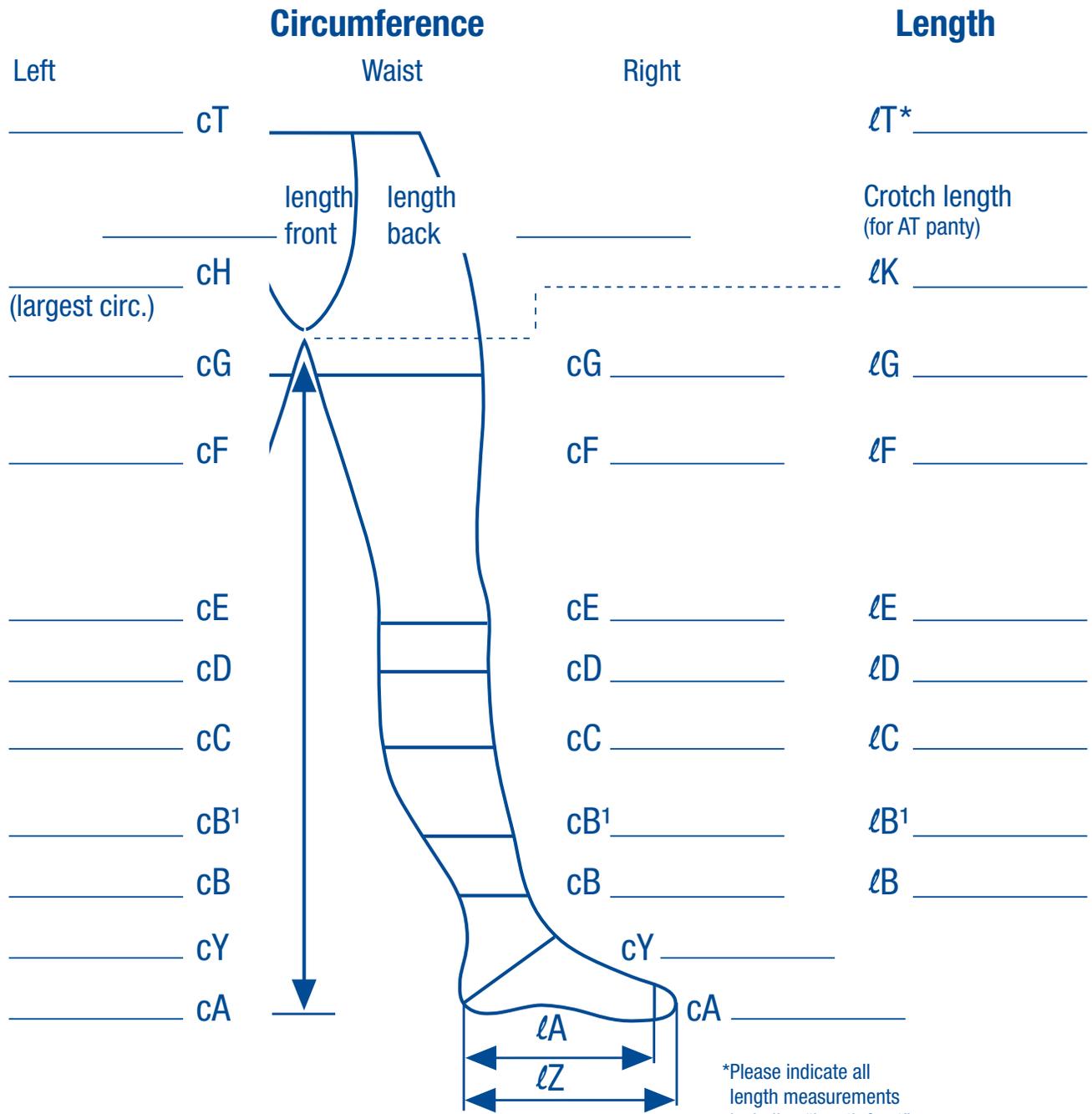
Method for measuring length:

- Measurements A-F (E) are taken in a supine position; measurements G-T are taken in a standing position. The total length of the foot and the inner and outer length should be checked in a standing position.
- In the case of anatomically abnormally shaped extremities, the following can be used as a guideline:
 - Normal height for the B measurement: approx. 8-12 cm.
 - Additional measurement points: B¹, C and D approx. 10 cm higher in each case.
- The leg length measurements are measured vertically on the inner side of the extremities, the abdominal measurement is measured against the body, that is, following the curvatures of the body. In the case of very soft abdominal tissue, the abdominal lengths must be measured while tensioning or lifting the abdomen/buttocks.
- If there is a significant reduction in circumference (measurement under tension), an extra length allowance should be made. This should be noted for documentation purposes on a separate measurement record.

Method for measuring circumference:

- Measuring circumferences under tension should be done gently, but firmly to mimic the resistance of the edema, the limb should never be constricted. The patient's sensitivity to pain should be taken into account.
- For follow-up documentation, it is advisable to take body measurements. This should be noted in a separate measurement record.

Measurement technique for stockings



*Please indicate all length measurements including "length front" and "length back".

Foot length

With open toe (ℓA) _____

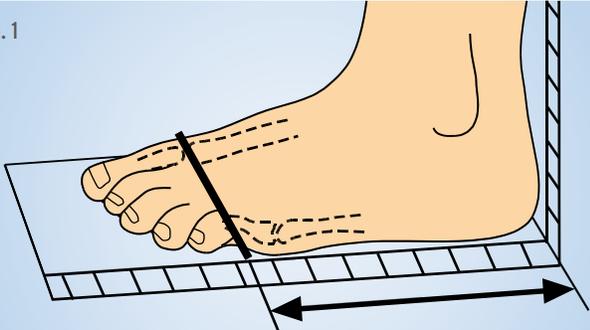
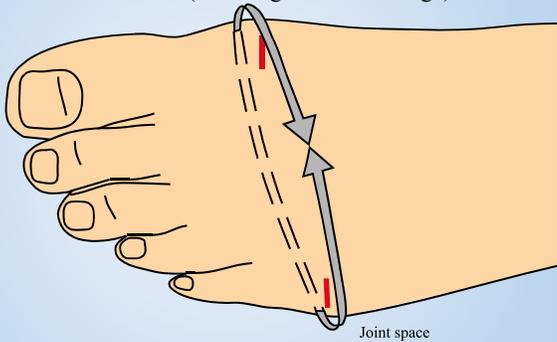
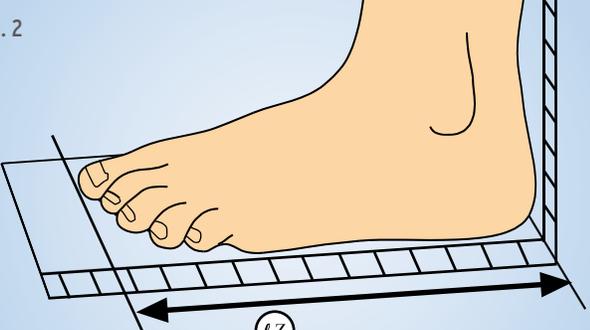
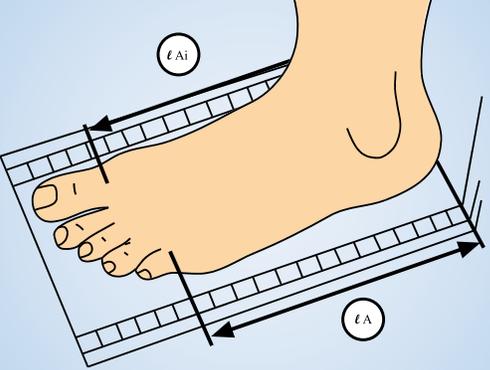
With closed toe (ℓZ) _____

Length slant foot

Length medial _____

Length lateral _____

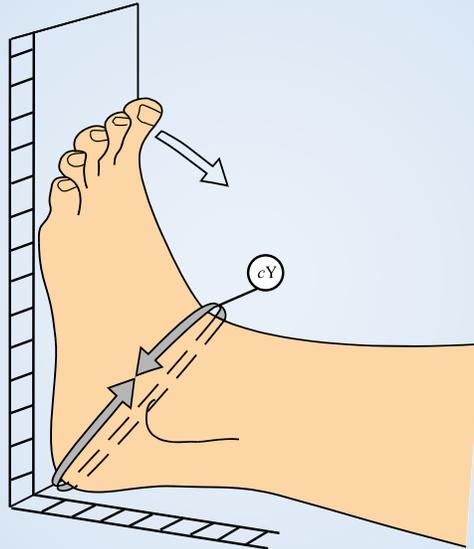
Measurement point A

Measurement point	Length (ℓ)	Circumference (e)
<p>A</p> <p>Foot, full weight-bearing</p>	<p>All lengths should be taken medially.</p> <p>Open toe; straight edge: Distance from heel to webbing of the little toe (Fig. 1)</p>	<p>Lay tape measure along the metatarsophalangeal joints. (Fig. 4)</p>
	<p>Closed toe: Distance from heel to longest toe (Fig. 2)</p>	
	<p>Open toe; slant edge: Distance from heel to webbing of the little toe (= outer length) & distance from heel to webbing of the large toe (= inner length) (Fig. 3)</p>	
<p>Fig. 1</p> 	<p>Fig. 4</p> <p>cA (for straight and slant edge)</p>  <p>Joint space</p>	
<p>Fig. 2</p>  <p>ℓZ</p>		
<p>Fig. 3</p>  <p>ℓ_{Ai}</p> <p>ℓA</p>		

Measurement point Y and P1/P2

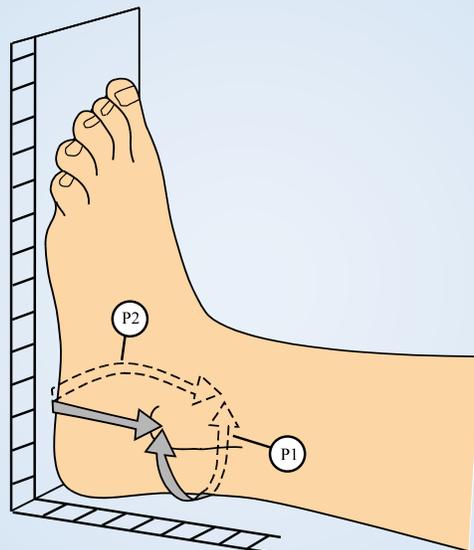
Measurement point	Length (ℓ)	Circumference (e)
Y	Only circumference necessary	Measurement over the heel and instep in dorsiflexion i.e. tendons flexed; body measurements should be taken without tension and take soft tissue projections into account. (Fig. 5)

Fig. 5



Measurement point	Length (ℓ)	Circumference (e)
P1/P2 Additional measurement for Profile stockings	Only circumference necessary	Measurements should be taken from the middle of the lateral malleolus to the middle of the medial malleolus (P1) crossing over the Achilles tendon. Measurements should be taken from the middle of the lateral malleolus to the middle of the medial malleolus (P2) crossing over the sole of the foot. (Fig. 6)

Fig. 6



Measurement point B, B1, C and D

Measurement point	Length (ℓ)	Circumference (e)
B	From the sole of the foot to above (proximal) the ankle (ankle, Fig. 7). Length should be taken medially.	Circumference measurement may be taken under tension, if indicated (ie: edema) (Fig. 7)
B'	From the sole of the foot to the base of the calf (see also General Information) (Fig. 8). Length should be taken medially.	Circumference measurement may be taken under tension, if indicated (ie: edema) (Fig.8)

Fig. 7

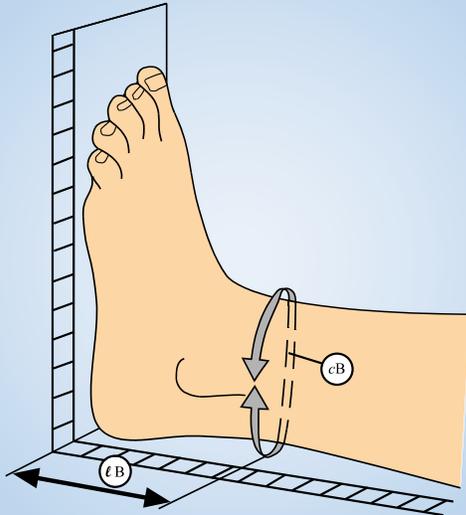
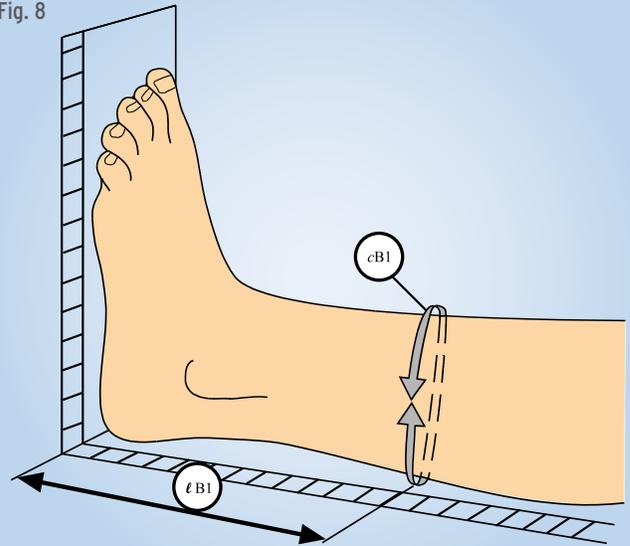


Fig. 8



Measurement point	Length (ℓ)	Circumference (e)
C	From the sole of the foot to the widest part of the calf. Length should be taken medially. (Fig. 9)	Circumference measurement may be taken under tension, if indicated (ie: edema) (Fig. 9)
D	From the sole of the foot to the head of the fibula (approximately two finger-widths below the patella, Fig. 10). Length should be taken medially.	Circumference measurement may be taken under tension, if indicated (ie: edema) <u>Exception:</u> Knee-high stocking = body measurement, if necessary with addition (Fig. 10)

Fig. 9

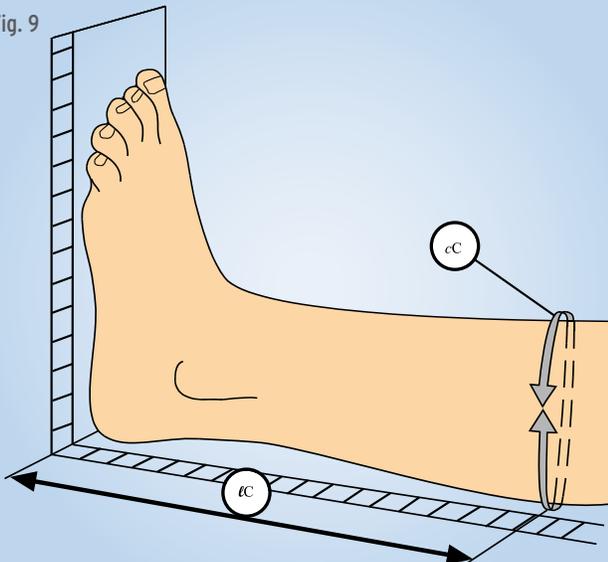
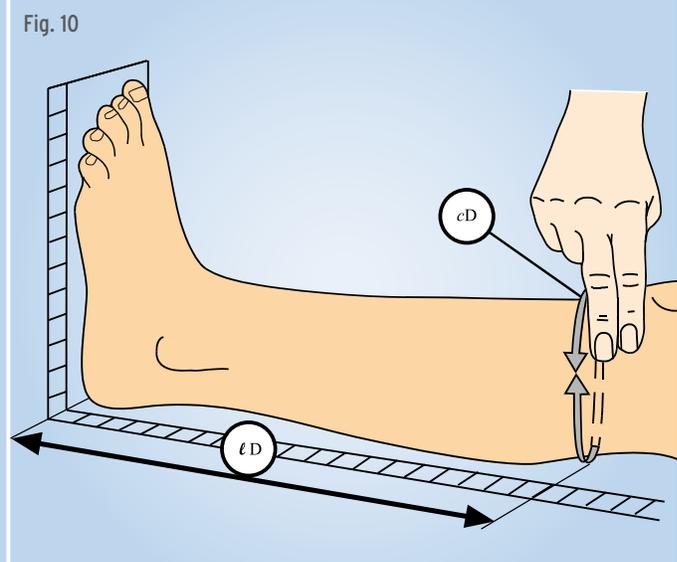
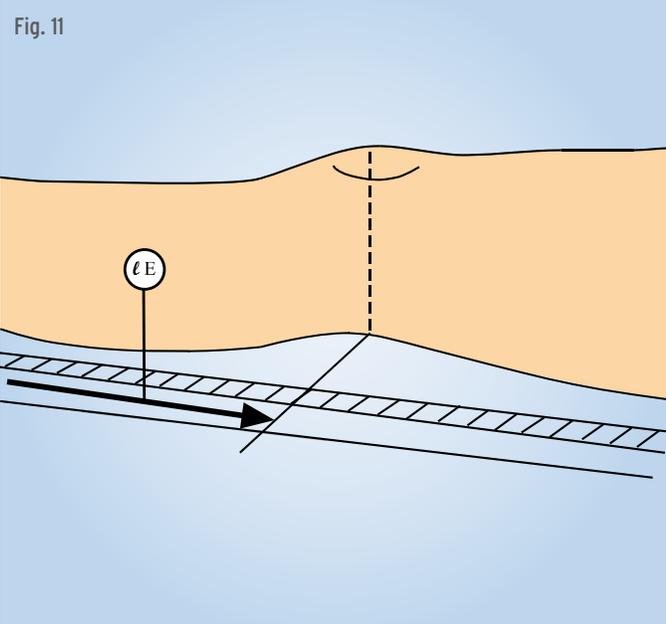
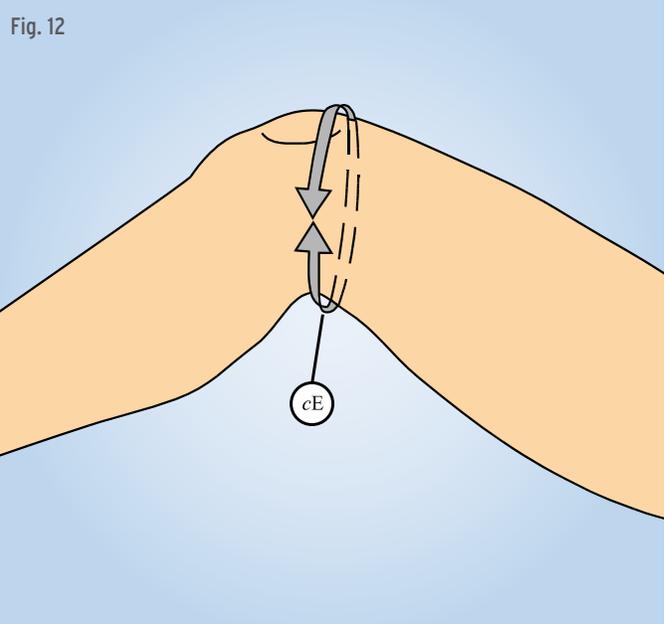


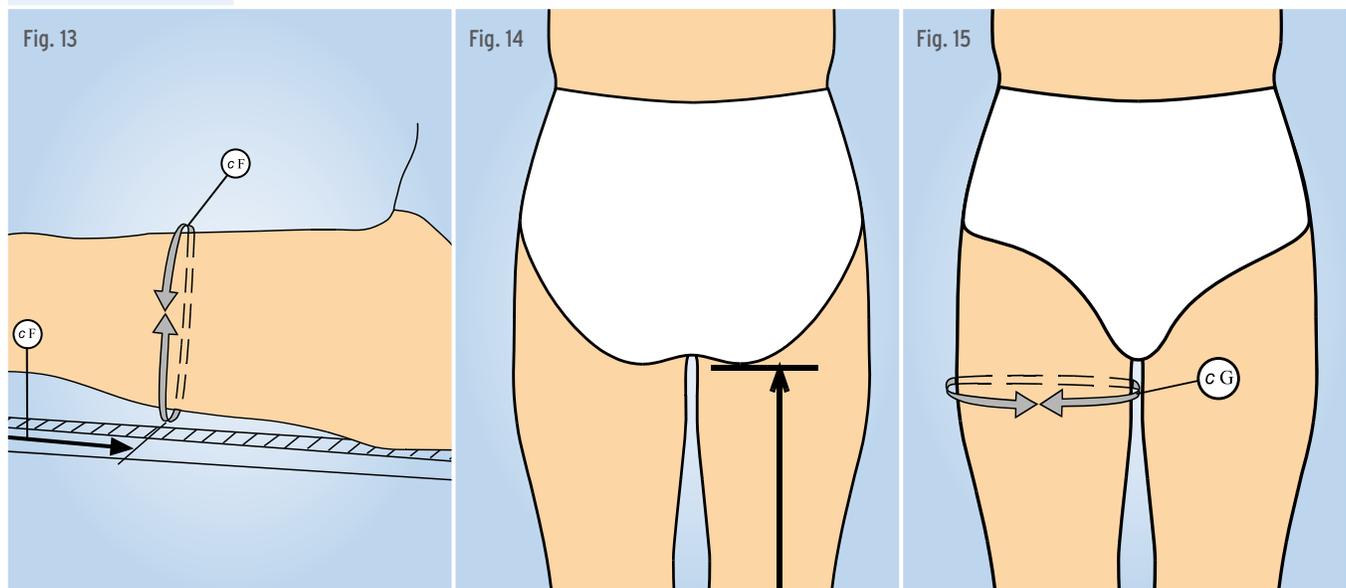
Fig. 10



Measurement point E, F and G

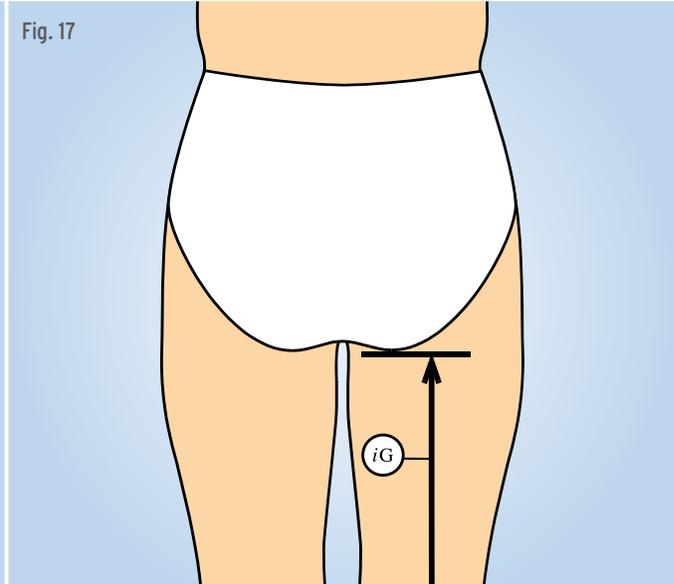
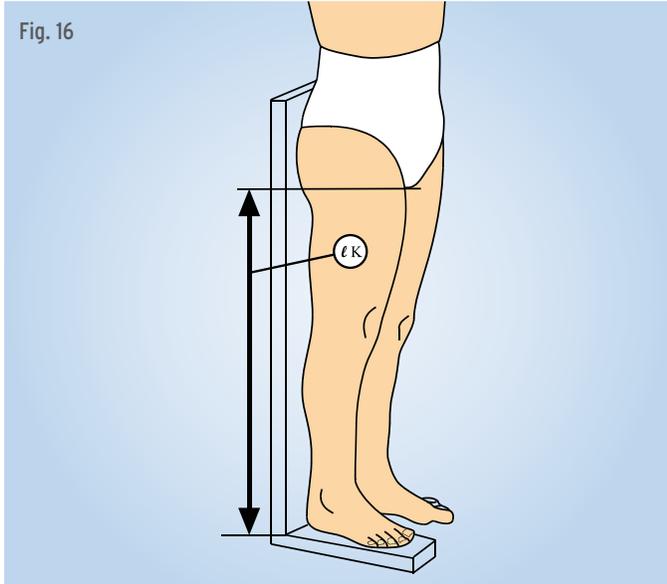
Measurement point	Length (ℓ)	Circumference (c)
E	From the sole of the foot to the middle of the patella (Fig. 11). Length should be taken medially.	Circumference measurement should be taken with the leg bent (30°-45°). Do not measure under tension. In cases of larger circumferences, these can be taken either one finger-width proximal to the back of the knee, or two finger-widths proximal to the patella. Do not lay the measuring tape into the back of the knee or skin fold. (Fig. 12)
Fig. 11		Fig. 12 

Measurement point	Length (ℓ)	Circumference (c)
F	From the sole of the foot to the middle of the thigh (Fig. 13). Length should be taken medially.	Circumference measurement may be taken under firm tension if indicated (ie: edema) (Fig. 13)
G	Thigh-high stocking measurement: Sole of the foot to below the transverse gluteal fold (including silicone band) (Fig. 14)	Circumference measurement may be taken under appropriate tension if indicated (ie: edema). Avoid constriction. This is the widest circumference, below the transverse gluteal fold. (Fig. 15)

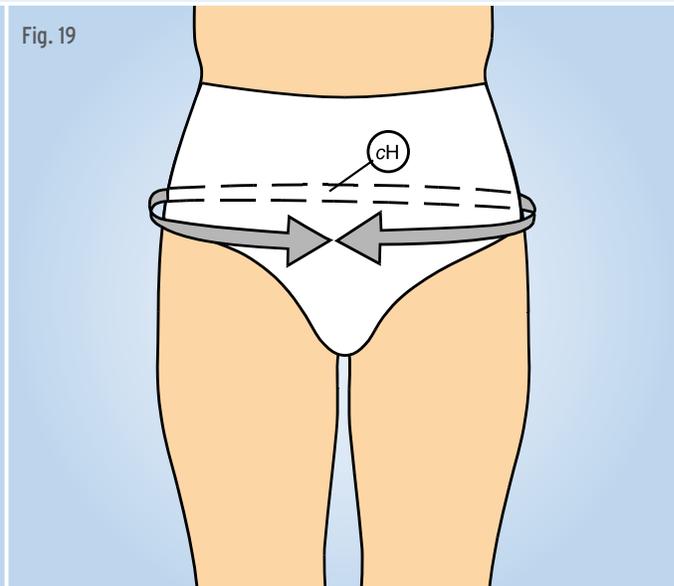
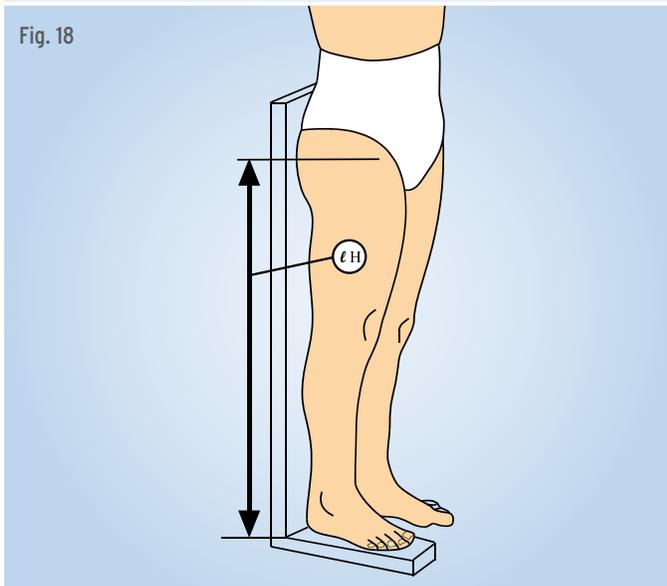


Measurement point K = (K1), G = (K2) and H

Measurement point	Length (ℓ)	Circumference (e)
K = (K1)	From the sole of the foot to the crotch (Fig. 16) (according to the manufacturer)	Only length measurement necessary
G = (K2)	From the sole of the foot to the crotch (Fig. 16) (according to the manufacturer)	Only length measurement necessary



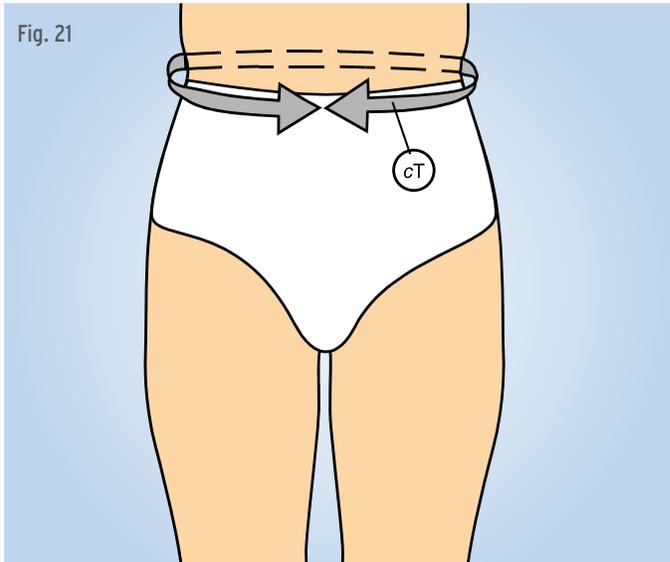
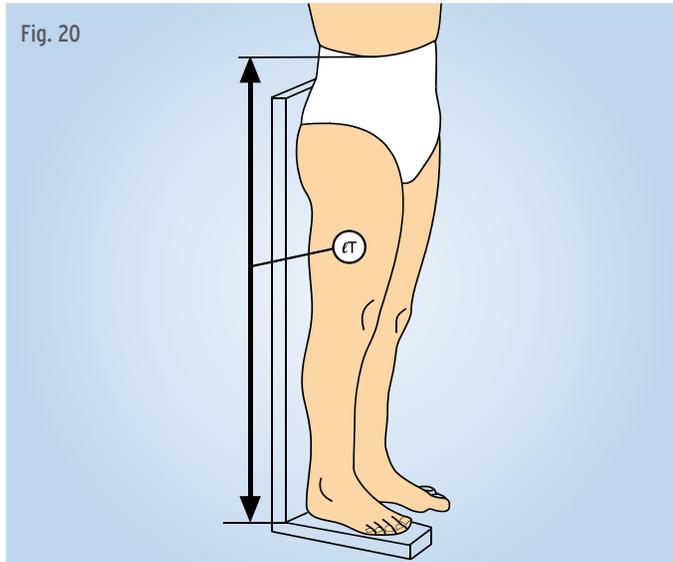
Measurement point	Length (ℓ)	Circumference (e)
H	From the sole of the foot to the widest point of the pelvis (not needed by BSN-JOBST) (Fig. 18)	Measure circumference of the pelvis at its widest point, depending on the indication, generally under greater tension (Fig. 19)



Measurement point T and abdomen

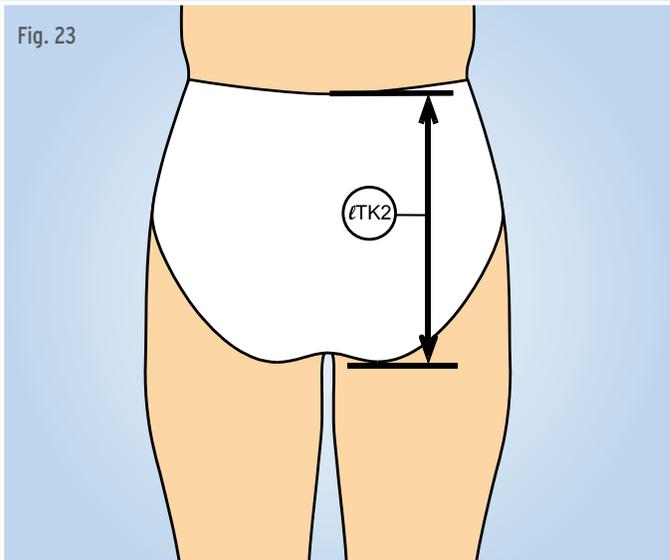
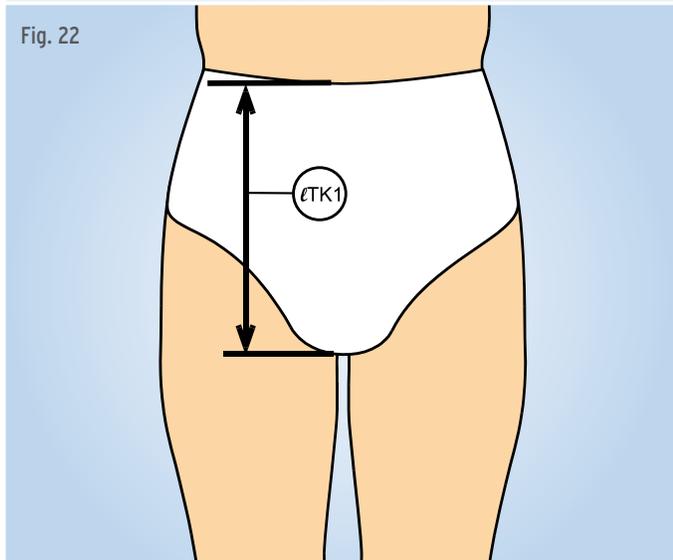
Measurement point	Length (ℓ)	Circumference (c)
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T	From the sole of the foot to the upper edge of the tights (patient-specific) (Fig. 20)	Circumference of the torso (waist) is generally measured without tension (Fig. 21)
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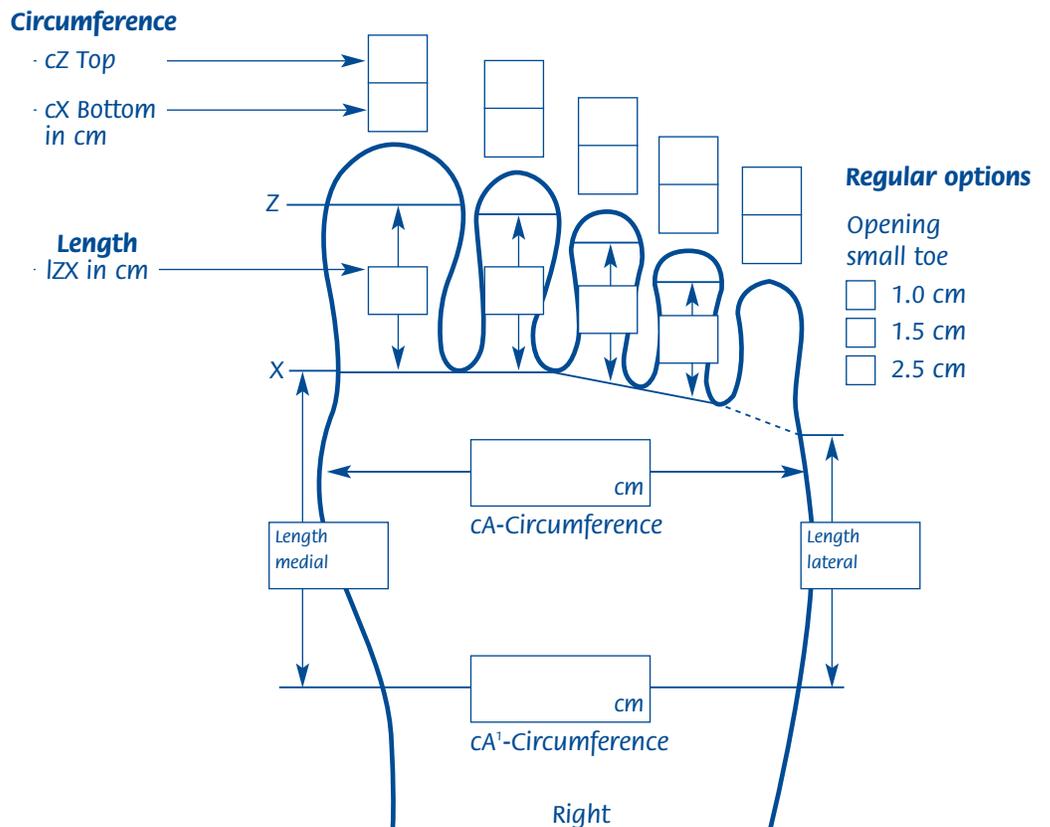
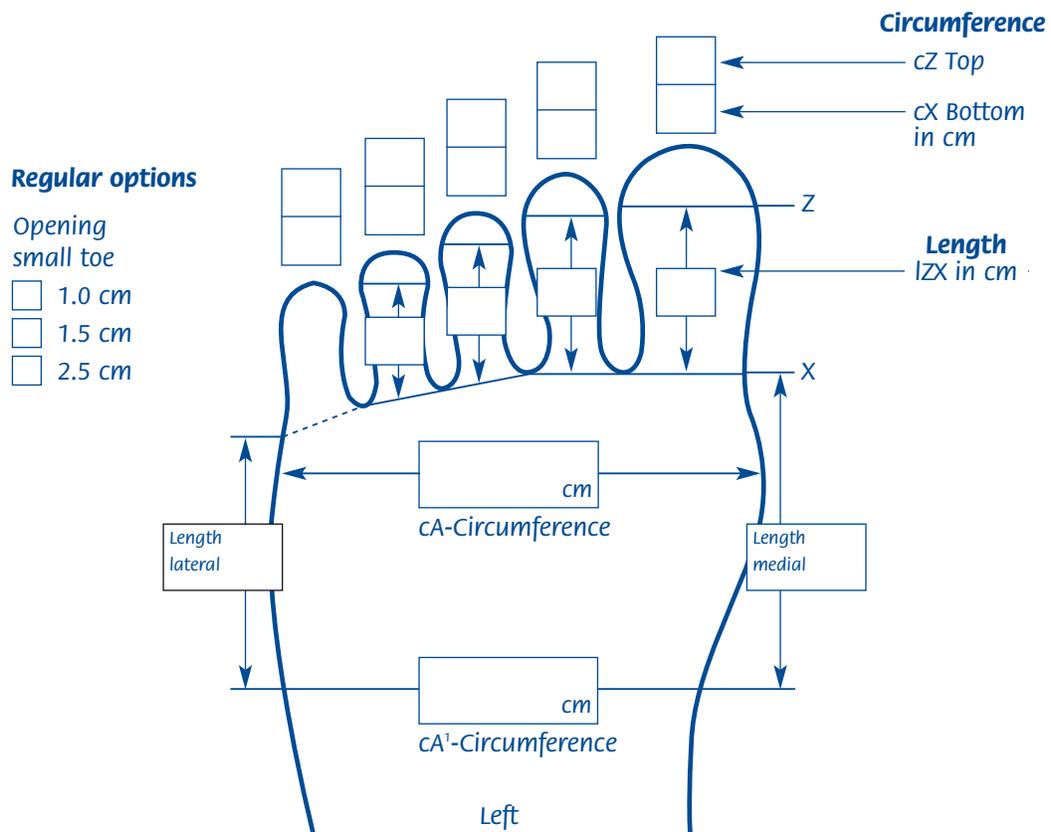


Measurement point	Length (ℓ)	Circumference (c)
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Abdomen	Length in front T - K = (K1) (Fig. 22): Measure vertically, close to the body, from the waist to the crotch.	Only length measurement necessary
	Length in back T - G = (K2) (Fig. 23): Measure vertically, close to the body, from the desired waist level of the panty to the transverse gluteal fold	
	Note: In the case of very soft abdominal tissue, the abdominal lengths must be measured while tensioning or lifting the abdomen/buttocks. In the case of larger circumferences, the abdomen should never be measured too short.	



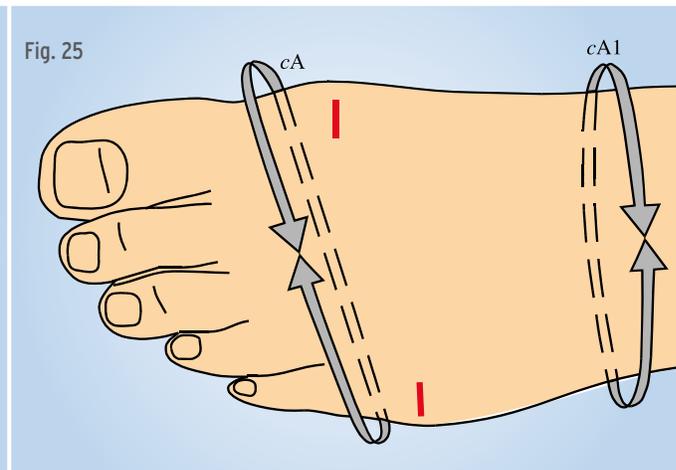
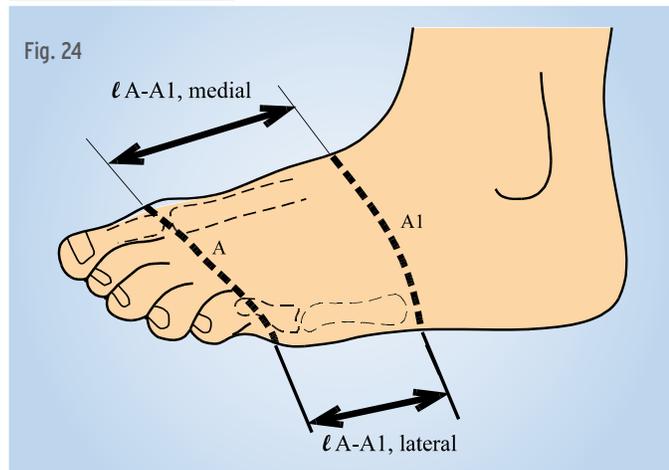
Measurement techniques for the toe cap



Measurement point A, A1 and toes 1-4 (5)

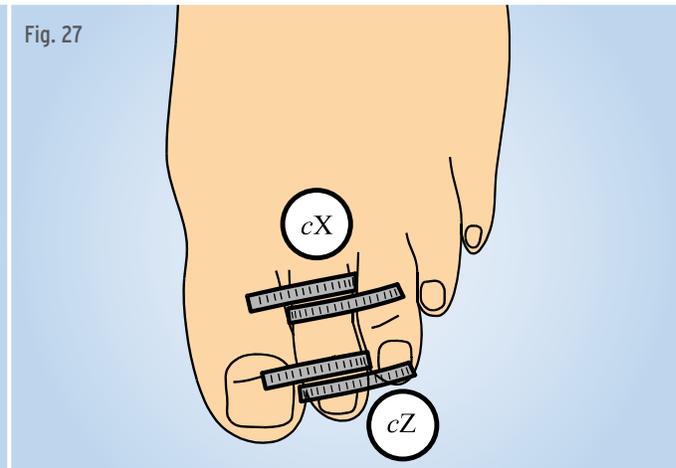
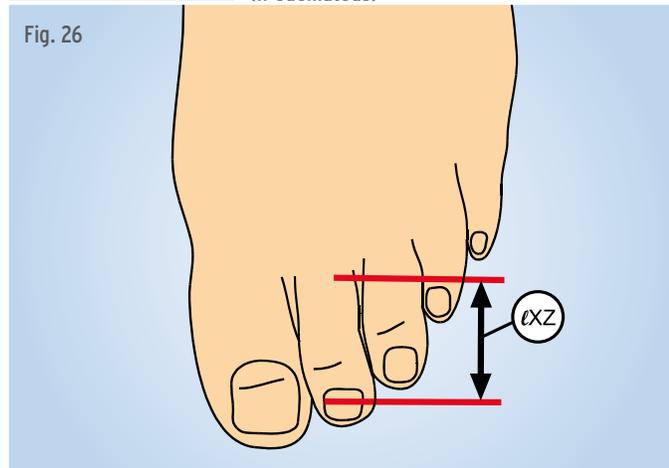
Measurement point	Length (ℓ)	Circumference (e)
A (metatarsophalangeal joint of the little toe over the metatarsophalangeal joint of the large toe)	(Fig. 24)	Lay tape measure distal to the metatarsophalangeal joints (Fig. 25)

A1	Lateral length: From the webbing of the little toe to the base of the instep (roughness of the 5th metatarsal) Medial length: From the webbing of the large toe to the base of the instep. (Fig. 24)	Lay tape measure distal to the metatarsophalangeal joints (Fig. 25)
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Measurement point	Length (ℓ)	Circumference (e)
Toes 1-4 X = proximal measurement Z = distal measurement	Shortest length from the webbing (X, to end of toenail (Z), (Fig. 26) Exception: In the case of closed toes, measure to the end of the toes	In general, measure X and Z to the nearest millimeter and without tension. The X measurement should not be less than the Z measurement; if necessary, it should be made equal to the Z measurement (Fig. 27)

Toe 5 (if edematous)	Stockings should only be worn over this toe in exceptional cases	see toes 1-4
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Measurement Techniques - Upper Extremities



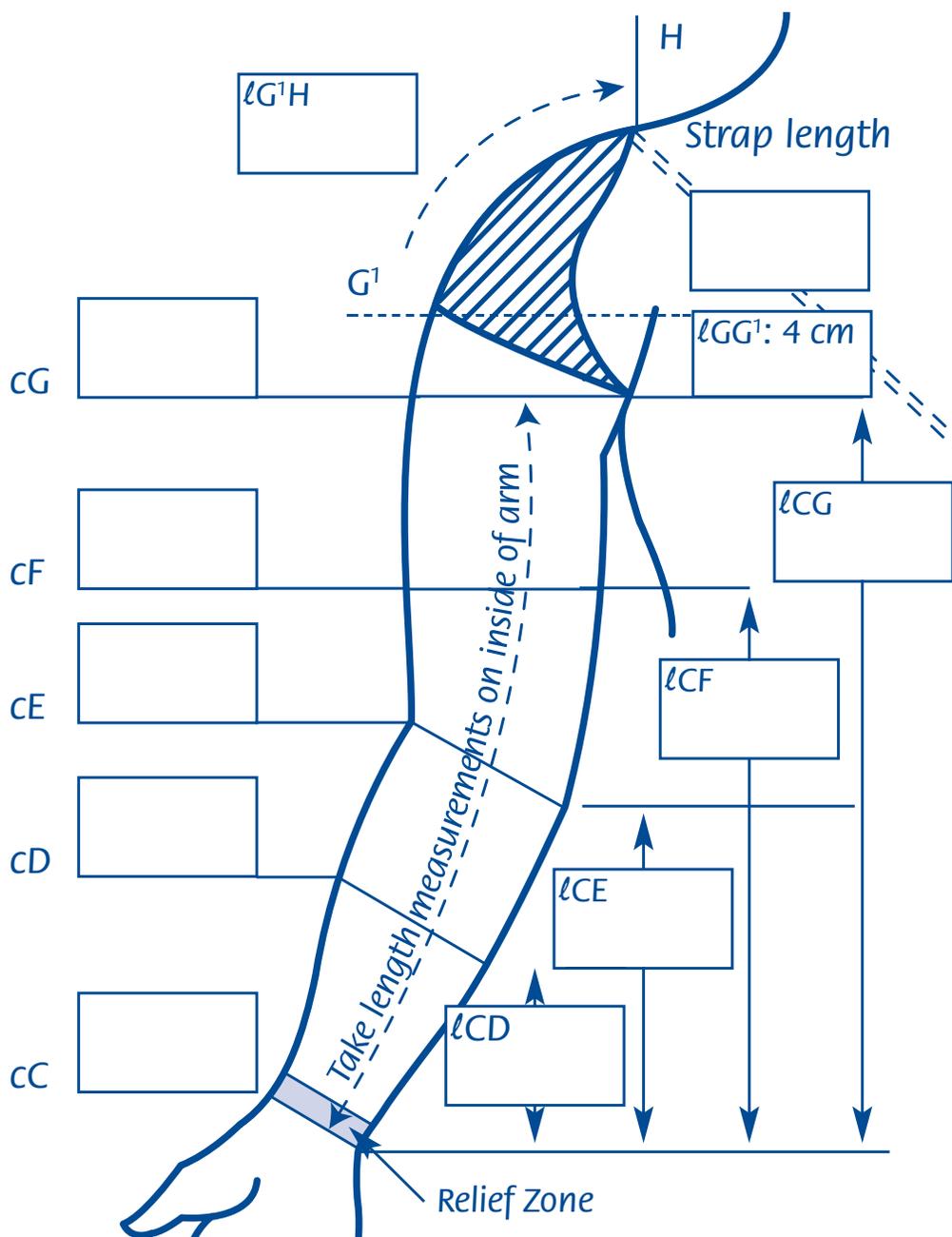
Basic guidelines, general information

Basic guidelines for measurement techniques for lymphatic treatment

This measurement guideline is valid for all flat-knitted JOBST® product, such as Elvarex®, Elvarex® Soft and Elvarex® Soft Seamless. This is to ensure that one measuring technique is used consistently.

- Rest the arm on a pad.
- Measure lengths on the flexor side of the arm when it is slightly bent and with the hand outstretched.
- During length measurements depress the thumb slightly into the patient's soft tissue at each measuring point.
- Arm lengths can be checked, if necessary, with the arm hanging.
- In general, use slant edges (A/C-G').
- Only use a silicone band if necessary in the case of a slant edge.

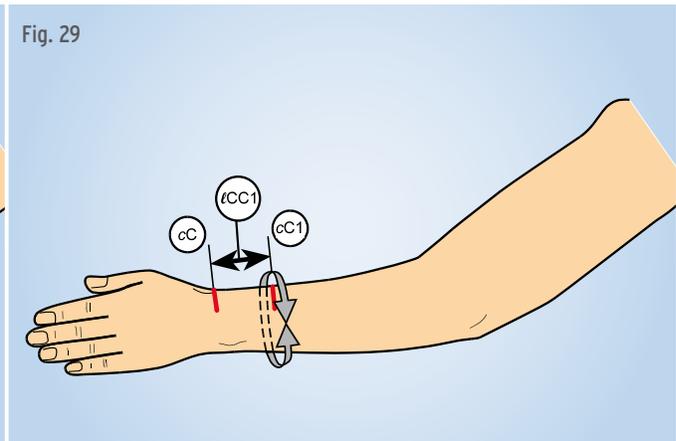
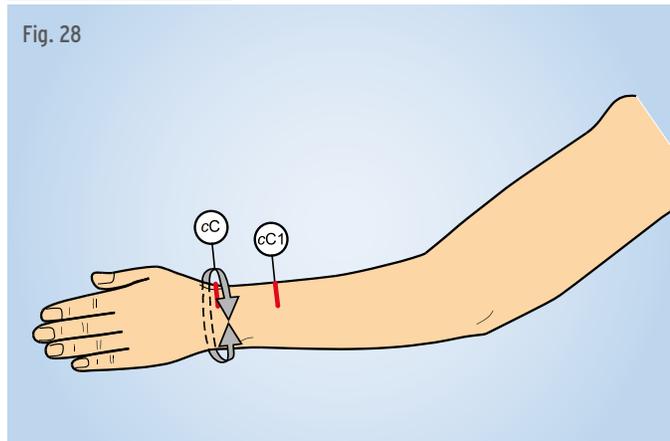
- Do not measure finger lengths too short; initiate brief finger treatment only in exceptional cases, but allow for treatment up to at least the middle phalanx.
- For a fingerless glove with a thumb base (work glove), the glove must extend up to the metacarpophalangeal joints. That is, the length measurement (A-B) should be taken from the first flexor fold of the middle finger.
- If the back of the hand is severely edematous, a one-piece product is recommended (A-G¹) ; in any case, compression pads should be used here in the area of the back of the hand.
- If the forearm is edematous, an elongated glove (A-E) should be used.
- Compression pads for the back of the hand should extend over the joints (do not take into account when measuring circumference) unless the patient is pain sensitive.



Measurement point C, C¹, D and E

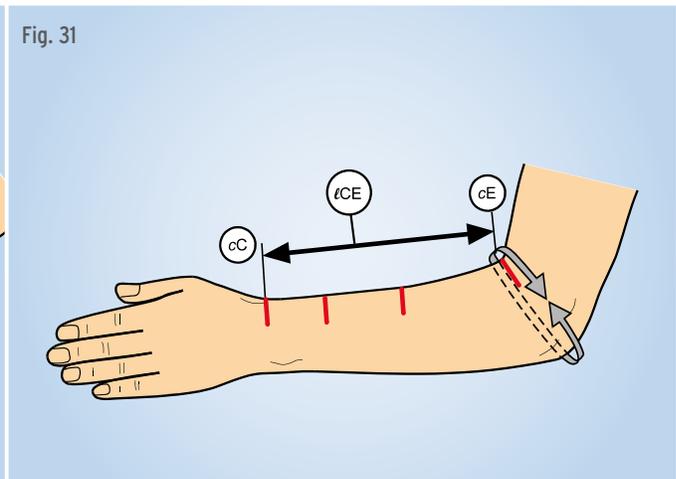
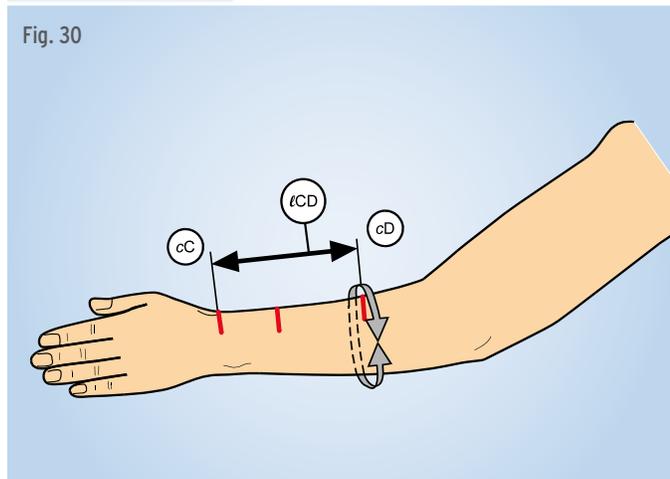
Measurement point	Length (ℓ)	Circumference (e)
C In general, distal (second) wrist crease (distal styloid process) depends on the degree of edema formation	Circumference only (Fig. 28)	Measure without tension; size allowance if necessary in the case of smaller circumferences (approx. < 18 cm). Important: If C measurement is too tight, edema formation at the back of the hand is possible (Fig. 28)

C¹ C ¹ is in the first third between C and E, approximately 5-7 cm.	(not needed by BSN-JOBST)	Measure without tension (Fig. 29)
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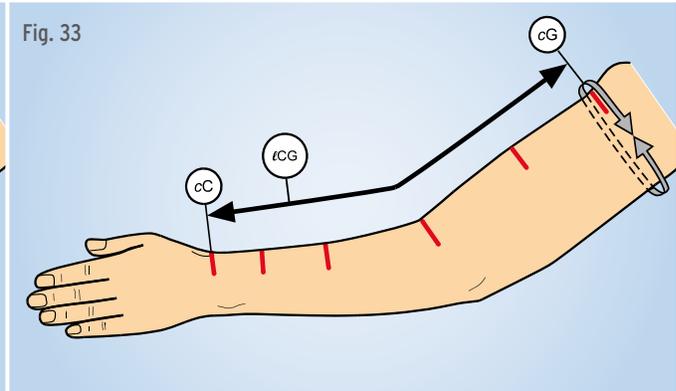
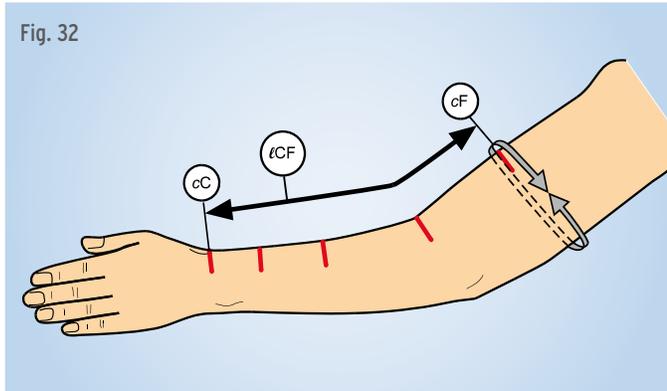
Measurement point	Length (ℓ)	Circumference (e)
D is in the middle third between C and E, greatest circumference in this area	Measure on the flexor side (inner side) of the slightly bent arm Indicate length measurement of C-D	In general, measure under slight tension, depending on the indication and degree of edema (Fig. 30)

E Over the elbow and flexor fold	Mark measurement point in the bent elbow Determine length of C-E on the slightly flexed arm	With elbow bent (approx. 45°), measure without tension and not in the flexor fold; measure somewhat more proximally, if necessary (Fig. 31)
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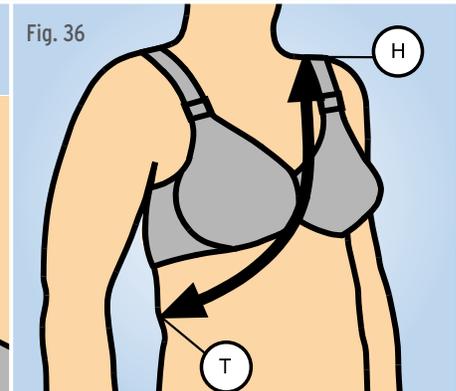
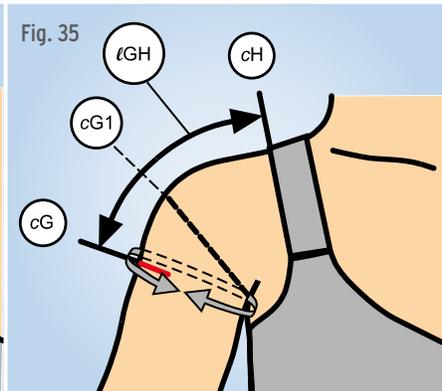
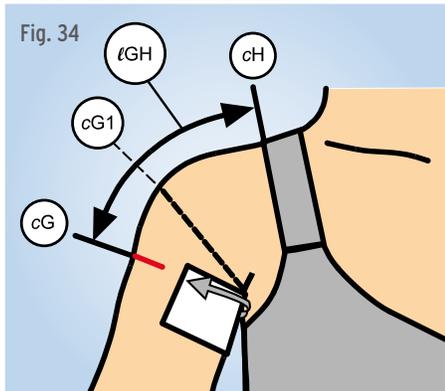


Measurement point F, G and G¹

Measurement point	Length (ℓ)	Circumference (e)
F Middle of the upper arm length (middle between E and G)	Determine length of C-F on the slightly flexed arm	In general, measure under slight tension, depending on the degree of edema (Fig. 32)
G Underarm; use measurement aids (Fig. 34)	Determine length of C-G on the inner side of the slightly flexed arm	In general, measure to the brachial axis perpendicularly without any tension, depending on the degree of edema (Fig. 33/35)



Measurement point	Length (ℓ)	Circumference (e)
G ¹ Lateral elevation/slant, depending on the circumference approx. 3-7 cm above the G measurement	Slant edge: The following applies to BSN-JOBST: Distance from G-G ¹ ; in the case of BSN-JOBST, this is calculated with a default value of approx. 4 cm	Do not specify circumference (Fig. 35)

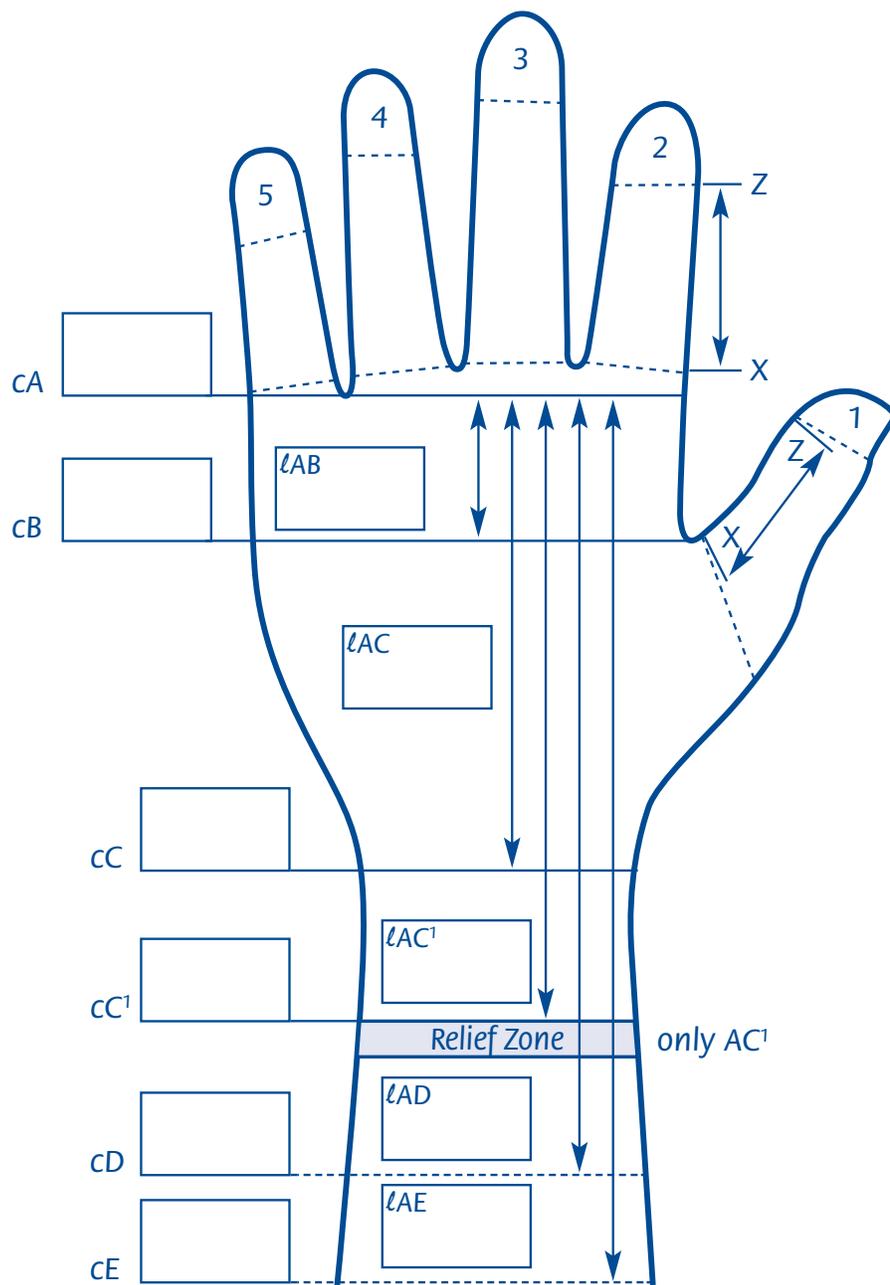


Fastening Options

1. If there is a grip edge: Slant edge (only in the case of lateral elevation)
2. Skin adhesive (be aware of skin compatibility)
3. Shoulder strap
4. Bra fastening

H (3. shoulder strap)	Measure from G on the outer side to the top of the shoulder (acromion)	Measure strap length from the top of the shoulder (acromion) over the torso and back to the start of the shoulder blade. (Fig. 36)
H (4. Bra fastening)	Measure from G to the outer side of the bra strap. Indicate width of bra strap (> 3 cm) The following applies to BSN-JOBST: Measure from G ¹ -H (outer side of bra strap). Indicate width of bra strap (> 3 cm). Or: Measure from G to H (outer side of bra strap) minus the increase of approximately 4 cm.	(Fig. 35)

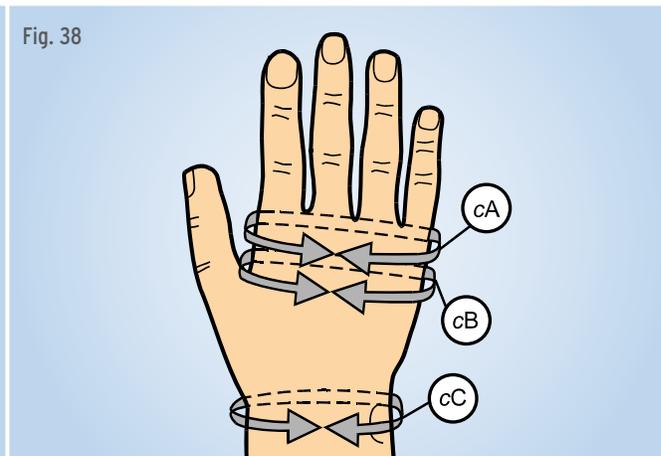
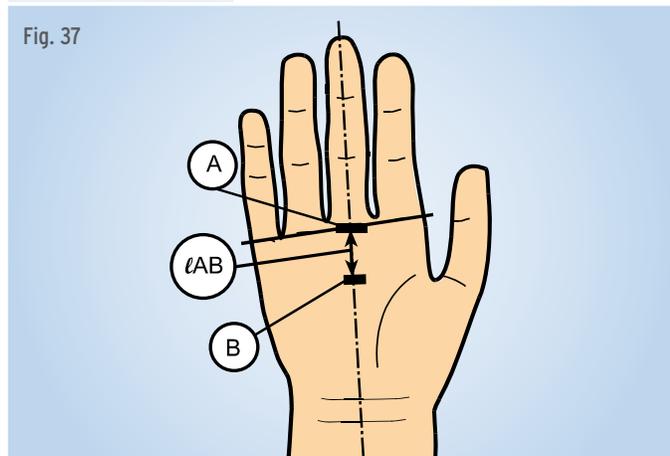
Measurement techniques for gloves



Measurement point A, B, C and C¹

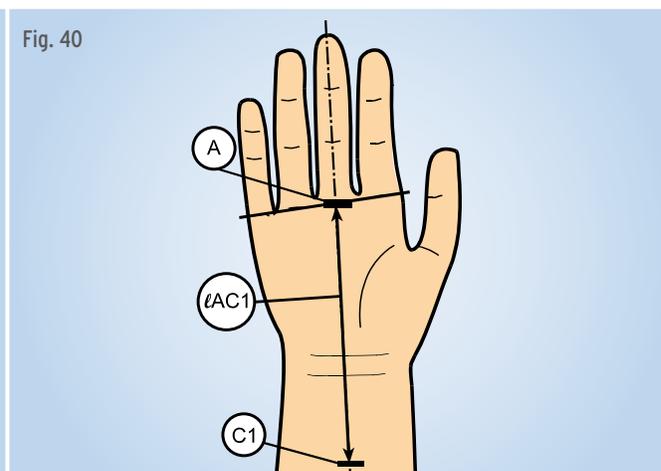
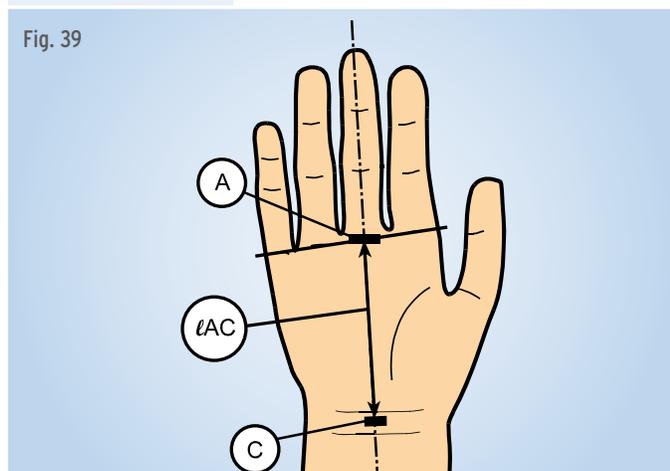
Measurement point	Length (ℓ)	Circumference (e)
A Connecting line between the movement crease of the metacarpophalangeal joints of the little finger and the index finger.	The starting point for additional length measurements is the halfway point of the connecting lines (Fig. 37)	Place tape measure along the metacarpophalangeal joints with the hand rigidly supported (Fig. 38)

B Line from the webbing of the thumb perpendicular to the axis of the hand	Measure A-B on the outstretched inner hand (Fig. 37)	With the hand rigidly supported, measure straight over the metacarpus through the webbing of the thumb (Fig. 38)
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Measurement point	Length (ℓ)	Circumference (e)
C In general, distal (second) wrist crease (distal styloid process) depends on the degree of edema formation	Measure A-C on the outstretched inner hand (Fig. 39)	Measure without tension Revise measurement in cases of small circumferences (approx <18cm). Important: If C measurement is too tight, edema formation in the back of the hand is possible; avoid increased pressure in the area of overlap with arm sleeve

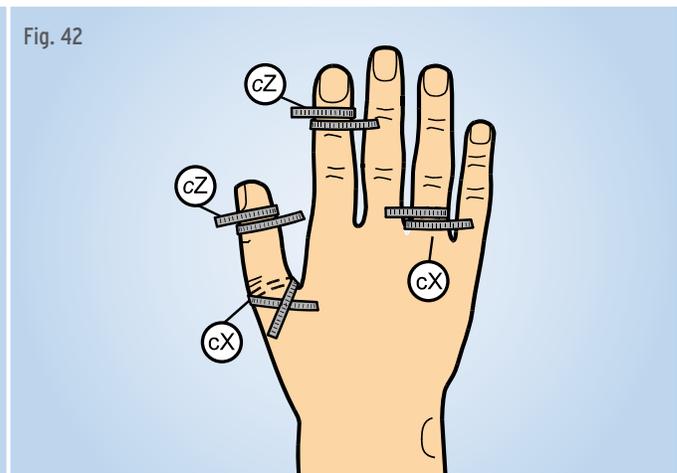
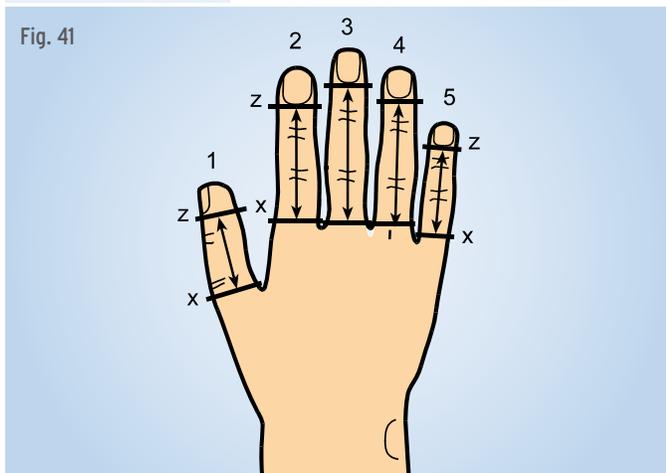
C ¹ is in at least the first third between C and E	Measure A-C ¹ on the outstretched inner hand (Fig. 40)	To measure edge, measure without tension, otherwise measure as for arm sleeve
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Measurement point D, E, finger 1 and fingers 2-5

Measurement point	Length (ℓ)	Circumference (c)
D (elongated glove) Generally up to E	Measure A-D inside (palmar) on the out-stretched wrist	Measure as for arm sleeve with tension based on degree of edema
E (elongated glove) to just below E	Measure A-E inside (palmar) on the out-stretched wrist	Measure edge without tension

Measurement point	Length (ℓ)	Circumference (c)
Finger 1 (thumb) X = proximal measurement Z = distal measurement	Shortest length from the webbing (X) to the nail bed (Z) Exception: In the case of closed fingers, measure to the end of the fingers (Fig. 41)	In general, measure to the nearest millimeter and without tension. Measure X around the first metacarpophalangeal joint of the thumb Z measurement without tension (Fig. 42)
Fingers 2-5 X = proximal measurement Z = distal measurement	Shortest length from the webbing (X) to the nail bed (Z) Exception: In the case of closed fingers, measure to the end of the fingers (Fig. 41)	In general, measure X and Z to the nearest millimeter and without tension. The X measurement should not be less than the Z measurement; if necessary, it should be made equal to the Z measurement (Fig. 42)



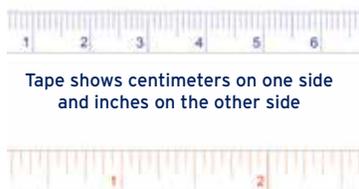
Measurement Materials

Have the following materials ready before taking measurements:

Tape Measures:

Two tape measures of different widths are recommended for taking measurements, depending on which areas of the extremities are being measured:

A 0.5 cm wide tape measure or appropriate finger / toe tape measure is used to ensure measurements to the nearest millimeter in the hand and foot areas.

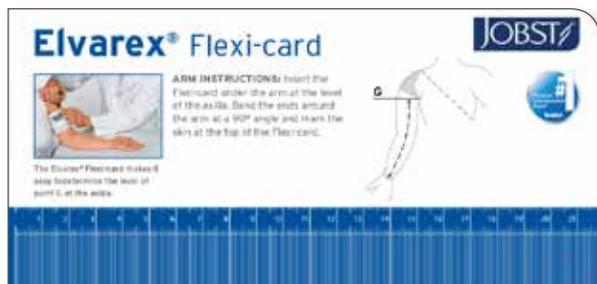


Tape shows centimeters on one side and inches on the other side

A coiled tape can measure the remaining circumference and length measurements (feet, legs, possibly abdomen, hand and arm).

JOBST® Skin Pencil

A skin pencil is recommended for marking the measurement points. Our JOBST® skin pencils are particularly skin-compatible and are easy to remove from the skin due to their fat solubility.



Measurement Chart

The measurement chart is a measurement aid developed exclusively for arm sleeves and gloves. The chart allows finger lengths to be determined very easily and precisely. Moreover, the measurement aid is used for positioning measurement point G.

Measurement Board

A measurement board is recommended for accurately measuring the lower extremities. It is particularly convenient to take combined length and circumference measurements without marking the patient's skin.



Elvarex® in Lymphedema Therapy

Styles and options lower extremities

Most frequent styles:



AD
Knee High



AG
Thigh High



AG-T
Thigh High with waist attachment (chap style)



AG-HT
Elvarex® one leg panty (Single leg with body bandage and leg extension)



AT
Elvarex® Panty (Thigh High with body bandage)

Most frequent options:



Straight ending



Slip form (French cut / outside higher)



Silicone dotted band; on top



Silicone dotted band; inside



3/4 silicone dotted band; inside

Width of the silicone dotted band: 2.5 cm or 5.0 cm

Further options:



Straight foot with open toe*



Slant foot with open toe*



Foot cap with toes

* Open and closed toe are available

Compression Classes (CCL)/Colors:

Style	CCL	Beige	Black	Navy	Cocoa	Grey	Cranberry	Henna	Graphite	Denim
Leg	1-4 super	●	●	●	●	●	●	●	●	●
Foot cap	1-3	●	●	●	●	●	●	N/A	N/A	N/A

Addition to add colored seam at no additional cost, e.g. cranberry garment with a black seam, denim garment with a blue seam. Excludes Henna, Graphite and Denim as seam color.

The options displayed represent just an extract of the JOBST® Elvarex® assortment. Each style can be combined individually. For further information on the JOBST® Elvarex® assortment please refer to the current JOBST® product information.

Styles and options upper extremities

Most frequent styles:



AC¹
Glove



AE
Glove to elbow



CG¹
Armsleeve with bias top end



CH
Armsleeve with shoulder cap (e. g. with bra attachment with Velcro®)



AG¹
One-piece armsleeve and glove

Most frequent options for armsleeves:



Silicone dotted band, on top



Silicone dotted band, inside



3/4 silicone dotted band; inside



With shoulder cap and bra attachment with Velcro®



With shoulder cap and strap

Glove/Gauntlet options:



Without fingers, with thumb*



With fingers, with thumb*



With zipper



With pocket

* Individual length of the fingers and the thumb is variable

Compression Classes (CCL)/Colors:

Style	CCL	Beige	Caramel	Black	Honey	Cranberry
Arm and Glove	1-2	●	●	●	●	●
Arm and Glove	2-Forte	●	N/A	●	●	●

The options displayed represent just an extract of the JOBST® Elvarex® assortment. Each style can be combined individually. For further information on the JOBST® Elvarex® assortment please refer to the current JOBST® product information.

JOBST® Elvarex®: Functional Zones for perfect wearing comfort and targeted compression



Functional Zone "Bias top end"



Available as:
· All compression classes (CCL1 - 2 Forte)

Functional Zone "Elbow Comfort Zone"



Available as:
· CCL 2
· Exception: not available for "single piece hand/arm"



For details of additional garment versions, please consult our special styles and options catalogue.

Functional Zone "Pressure Panty Elvarex® (body-banndage)"



Available as:
· Body bandage: CCL 1-3 Forte
· Corresponding leg stockings available in all CCL (1-4 Super)

Functional Zone "Top Comfort Zone"



Available as:
· B'G, BG, CG, AG, AT
Pressure panty Elvarex® (body bandage), Bermuda, Capri pants, stump stockings (ST)

Functional Zone "Knee Comfort Zone"



Available as:
· CCL 2-3

Functional Zone "T-Heel"



Available as:
· CCL 2-3 Forte

Functional Zone "Slant Foot"



For more information, please contact Customer Service at 1-800-537-1063

VELCRO® is a Registered Trademark of Velcro BVBA.

Please refer to the product label and / or package insert for full instructions on the safe use of these products.



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