



**medi**



**mediven<sup>®</sup>**  
**flat knit**  
measuring guide



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## Notes on taking measurements for lower extremity

- Flat knit compression garments should not be measured until the best possible decongestion effort has been achieved. Circumference (c) and length (l) measurements are taken in a distal to proximal sequence (starting at the toes and working up the leg towards the waist).
- It is essential to mark measuring points on the leg so that the circumference and length measurements are taken at the same point.
- The amount of tension applied must be determined by a person experienced in bandaging techniques and depends on edema and tissue characteristics, sensitivity to pain, fibrosis, location of the edema, mobility, and strength of the patient.
- Generally flat-knitted garments are measured under tension with the exception of cY. According to the measuring point we distinguish:

**Skin measurements** = no tension;

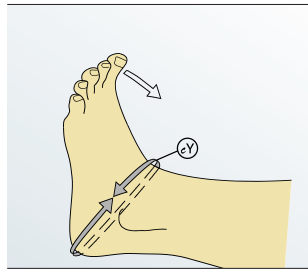
**Measuring to the first resistance** = measuring under tension without force;

**Full Tension** = absolutely compression of the tissue.

## Knee high

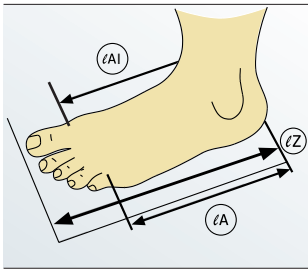
All length measurements are contoured along the medial (inner) side of the leg

### Foot measurement points (Y, A, AI, Z)



#### Circumference (c) Y

Measurements taken over the heel and arch in dorsal flexion with tendons taut. Take physical dimensions without tension (skin measurement). Take soft tissue projections into account.



#### Length (l) A

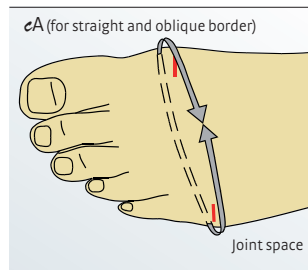
Distance from heel to base of little toe (length of outer side of foot), including the joint.

#### Length (l) AI

Distance from heel to base of big toe (medial length), including the joint.

#### Length (l) Z

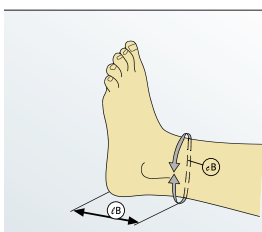
Closed toe: distance from heel to end of longest toe. (Not needed for open toe garments, except open toe seamed toe caps. lZ needed for ALL seamed toe cap garments.)



#### Circumference (c) A

Apply tape measure around the metacarpophalangeal joints (first joints of toe).

### Measuring point B: just above the malleolus (ankle bone)



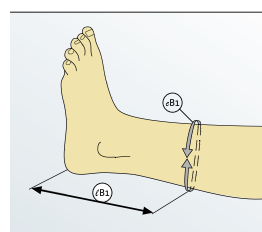
#### Length (l) B

From sole of foot to above (proximal to) the ankle.

#### Circumference (c) B

Measure circumference, depending on indication, tightly if necessary.

### Measuring point B1: at the base of the calf



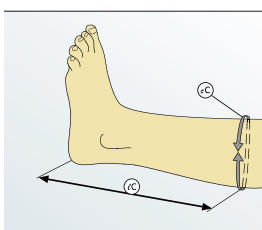
#### Length (l) B1

From sole of foot to base of the calf.

#### Circumference (c) B1

Measure circumference, depending on indication, tightly if necessary.

### Measuring point C: at the largest calf circumference



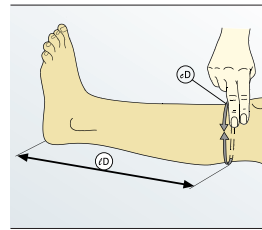
#### Length (l) C

From sole of foot to largest calf circumference.

#### Circumference (c) C

Measure circumference, depending on indication, full tension typically indicated.

### Measuring point D: at the head of the fibula



#### Length (l) D

From the sole of the foot to the head of the fibula (approx. two finger widths below kneecap).

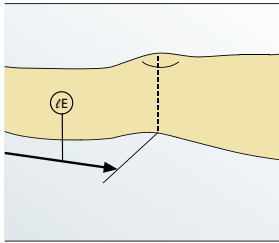
#### Circumference (c) D

Measure circumference, depending on indication, tightly if necessary. Exception: AD stocking = First resistance

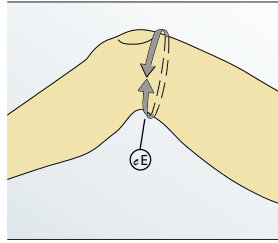
# Thigh high

All length measurements are contoured along the medial (inner) side of the leg except (l)K2 which is contoured on the posterior (back) side of the leg.

## Measuring point E: at the middle of the kneecap

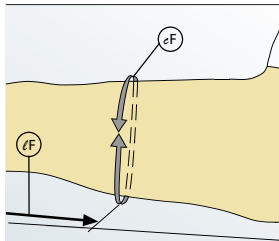


**Length (l) E**  
From sole of foot to middle of kneecap.



**Circumference (c) E**  
In general, measurements are not made tightly when the leg is bent (angle 30° - 45°), take circumference measurement one finger width proximal (above) to the back of the knee, and two finger widths proximal (above) to the knee cap. Do not place tape in the back of the knee or folds of skin.

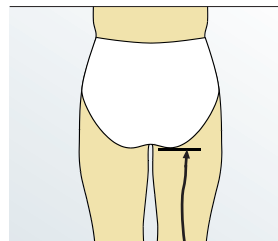
## Measuring point F: at the middle of the thigh



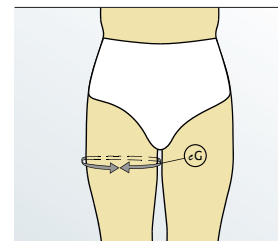
**Length (l) F**  
From sole of foot to middle of thigh.

**Circumference (c) F**  
Full tension for measuring the circumference is typically indicated.

## Measuring point G

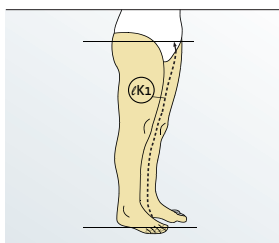


**Length (l) G**  
AG stocking dimension: sole of the foot to largest point (inner aspect) below the transverse buttock fold (including top band).



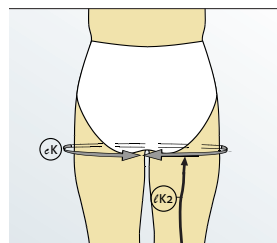
**Circumference (c) G**  
Depending on the indication, the circumference is generally measured fairly tight at the widest part of upper thigh (not always the top of the thigh.)

## Measuring point K1: at the pubic bone



**Length (l) K1**  
From sole of foot to the pubic bone.

## Measuring point K2: at the gluteal fold



**Length (l) K2**  
From sole of foot to gluteal fold.

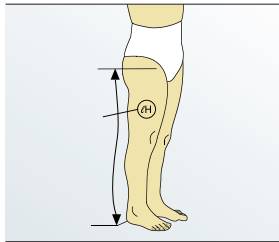
**Circumference (c) K**  
Measure around both legs at the gluteal fold.

Obligatory measurement for medi!

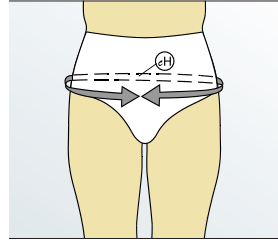
# Waist high

All length measurements are contoured along the body.

## Measuring point H: widest point of the pelvis

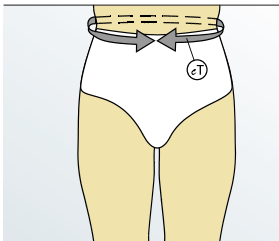


**Length (l) H**  
From sole of foot to widest point of pelvis.



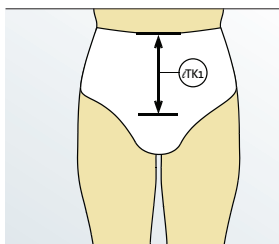
**Circumference (c) H**  
Circumference of pelvis at the widest point, or buttocks, measure tightly depending on indication.

## Measuring point T: at the waist

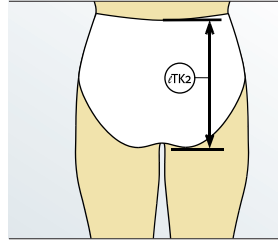


**Circumference (c) T**  
Circumference of torso, measured under moderate tension.

## Measuring points for front (l) TK1 and back (l) TK2 top border of the garment



**Length (l) TK1**  
Front length TK1: measure vertically next to body, at the level of the pubic bone to the top border of the garment.



**Length (l) TK2**  
Back length TK2 measure vertically near the body, at the level of the transverse gluteal fold to the border of the garment. Must add 4 cm to patient measurement on order form.

## Measuring a suspensory

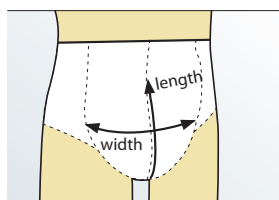


Fig. A

**Length & width**  
Measure the width and length of the suspensory, as marked in Figures A and B - this measurement can be taken over the underwear.

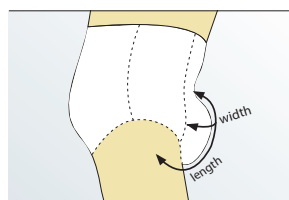
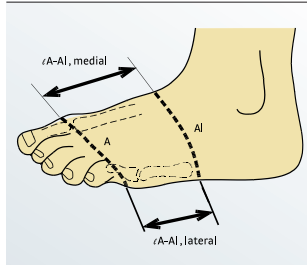


Fig. B

# Toe Caps

Take the following measurements while patient is weight bearing.

## Measuring point A-AI



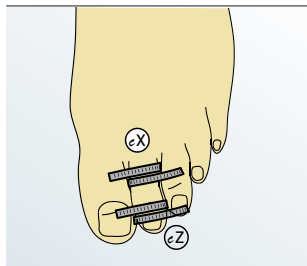
### Length ( $\ell$ ) A-AI Medial

From base joint of big toe to start of arch.

### Length ( $\ell$ ) A-AI Lateral

From base joint of little toe to start of arch.

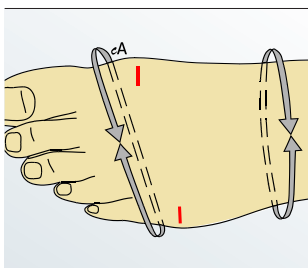
## Measuring point toes 1-5



### Circumference ( $c$ ) X and Z

Generally measure dimensions X and Z to the millimeter and without tension (skin measurement). The X measurement should not be smaller than the Z measurement, and, where necessary, is adjusted to the Z measurement. Ok to add up to 5mm to cX measurement.

## Measuring point A & AI



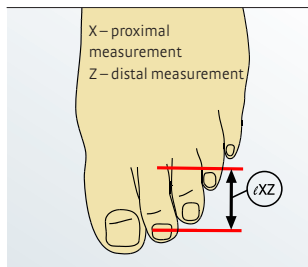
### Circumference ( $c$ ) A

Measure straight across base joint of little toe and base joint of big toe .

### Circumference ( $c$ ) AI

Measure straight across middle of foot (final length).

## Measuring point Toes 1-5



### Length ( $\ell$ XZ)

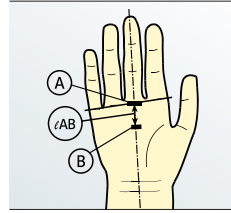
Shortest length from web X to desired length Z.

# Notes on taking measurements for upper extremity

- Flat knit compression garments should not be measured until the best possible decongestion effort has been achieved. Circumference (c) and length (l) measurements are taken in a distal to proximal sequence. (starting at the fingers or wrist and working up the arm towards the shoulder).
- It is essential to mark measuring points on the arm so that the circumference and length measurements are taken at the same point.
- The amount of tension applied must be determined by a person experienced in bandaging techniques and depends on edema and tissue characteristics, sensitivity to pain, fibrosis, location of the edema, mobility, and strength of the patient.

## Hand All length measurements are contoured along the limb.

**Measuring point A:** At the line joining the joints at the base of the little finger and index finger



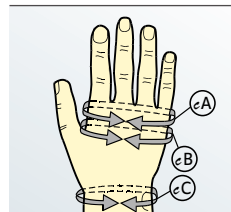
### Length (l) A

Starting point for further length dimensions is halfway along this line.

### Circumference (c) A

Place the tape measure around the joints at the base of the fingers with the hand placed firmly on the table. Hand must be splayed.

**Measuring point B:** At the base of the thumb webbing



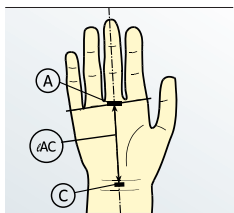
### Length (l) B

Measure A – B on the extended palm. Experience shows that in 80% of cases this is approx. 3cm in adults.

### Circumference (c) B

Measure in a straight line over middle of hand with palm placed firmly on the table. Hand must be splayed.

**Measuring point C:** Usually at the distal (closer to fingers) wrist fold, depending on the extent of the edema



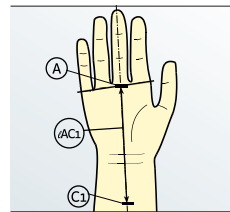
### Length (l) C

Measure A – C on the inside of the extended hand.

### Circumference (c) C

Measure without tension. If necessary make a dimensional allowance.

**Measuring point C1:** At the first third between C and E (elbow crease)



### Length (l) C1

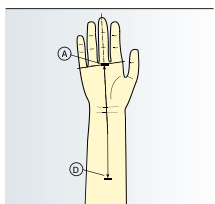
Measure A – C1 on the palm side of the extended hand.

### Circumference (c) C1

Measure as border dimension without tension.

## Long Glove Measuring Points All length measurements are contoured along the limb

**Measuring point D:** At the second third between C and E, generally the largest forearm circumference



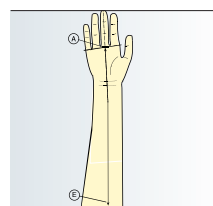
### Length (l) D

Measure A – D on inner/palm side of the extended wrist.

### Circumference (c) D

Measure at desired tension level.

**Measuring point E:** At the elbow crease



### Length (l) E

Measure A – E on inner/palm side of the extended wrist.

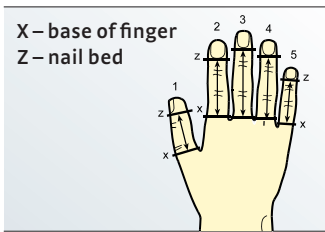
### Circumference (c) E

Ensure that the border dimension is not measured too tightly.

## Fingers

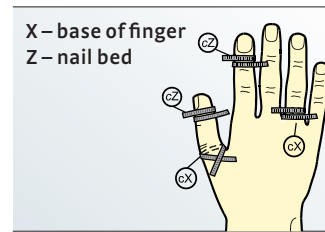
All length measurements are contoured along the limb.

### Finger lengths



**Length (ℓ)**  
Shortest length from web (X) to the nail bed (Z).  
Exception: If the fingers are closed, measure to the end of the finger

### Finger circumferences

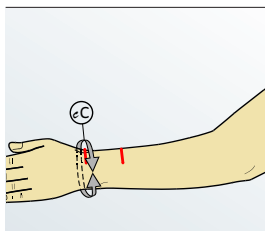


**Circumference (c)**  
Generally measure dimensions X and Z to the millimeter and without tension.  
The X dimension may not be smaller than the Z dimension; if necessary, adjust to the Z dimension

## Lower Arm

All length measurements are contoured along the limb.

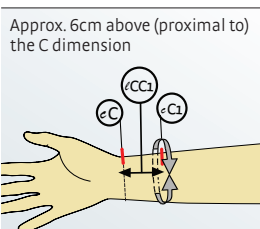
**Measuring point C:** Usually at the distal (closer to fingers) wrist fold, depending on the extent of the edema



**Circumference (c) C**  
Measure without tension for small circumferences (approx. < 18). If necessary, make a dimensional allowance.

Caution: If C dimension is too small, edema may develop in the back of the hand .

**Measuring point C1:** At the first third between C and E (elbow crease)

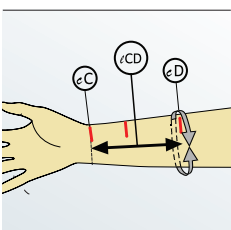


**Length (ℓ) C1**  
Measure C-C1 on the inner side of the arm.

Required by medi!

**Circumference (c) C1**  
Measure without tension.

**Measuring point D:** At the second third between C and E, generally the largest forearm circumference



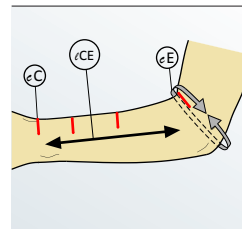
**Length (ℓ) D**  
Measure on the flexor side (inside) of the extended arm, specify the length from C – D.

**Circumference (c) D**  
Usually measured tightly.

## Upper Arm

All length measurements are contoured along the limb.

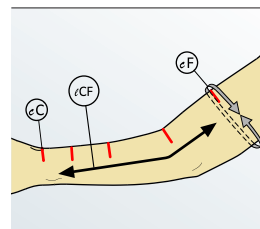
**Measuring point E:** At elbow and flexion crease



**Length (ℓ) E**  
Select the measuring point at the bent elbow as illustrated and determine the length from C – E on extended arm.

**Circumference (c) E**  
With elbow slightly bent (approx. 45°), measure without tension and not into the flexion crease. measure slightly above the elbow .

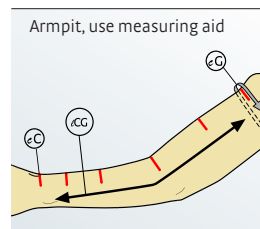
**Measuring point F:** At the middle of the upper arm, at the midpoint of E and G



**Length (ℓ) F**  
Measure length from C – F on the extended arm.

**Circumference (c) F**  
Usually measure tightly, depending on edema.

**Measuring point G:** At the axilla/armpit



**Length (ℓ) G**  
Measure length from C – G on the inside of the extended arm.

**Circumference (c) G**  
Depending on the edema, this is usually measured without tension at right angles to the axis of the arm.

For optimal length outcome, it is recommended to take the average of three length measurements:

1. With the arm resting on a table or platform, patient sitting

2. With the arm straight at the patient's side, patient standing

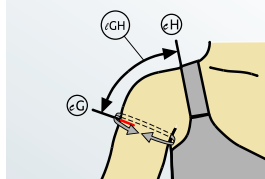
3. With the arm at 90 degrees, resting on the fitter's shoulder, patient and fitter standing

# Shoulder Cap

All length measurements are contoured along the limb.

## Measuring point G (at the axilla/armpit) & H (at the acromion)

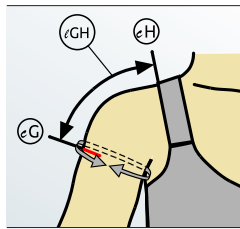
Lateral extension approx.  
3 – 6cm above G dimension



### Length (L) G-H

Oblique border:  
state distance from G – H.

No circumference  
dimension required.

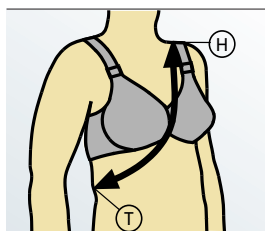


### Point H for Shoulder Strap:

Measure from G on  
the outer aspect as  
far as the shoulder  
(H-acromion).

### Point H for Bra Attachment:

Measure from G to  
lateral side (closer  
to the arm, not the  
neck) of bra strap  
and state bra strap  
width (> 3cm).



Measure strap length from shoulder level  
(H-acromion) over torso back to height of  
shoulder.  
(all the way around the body)

### Attachment options

1. Top band (only with lateral extension). See options offered on order form.
2. Shoulder strap.
3. Bra attachment.

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Circumference left in cm

Circumference right in cm

Length in cm  
Left Right

cG  cT  
cF  cH  
cE  cK  
cD  cG  
cC  cF  
cB1  cE  
cB  cD  
cY  cC  
cA  cB1  
cA  cB  
cA  cY  
cA  cA

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