



MANUAL UTX[®] ORTHOSIS

Part of the IMS series



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USER



PRODUCT INFORMATION



PROFESSIONAL

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UTX ORTHOSIS USER INFORMATION

The UTX is a product line of Knee Ankel Foot Orthoses (KAFO) for people with partial or complete paralysis of one or both legs and/or a severe instability of the knee. The UTX can stimulate the user to activate the remaining residual functions and to walk safely and dynamically again.

WHEN A UTX?

The UTX (Figure 1) is designed to maintain the gait and support for persons with reduced muscle strength.

Additionally, instability of the knee, in x-position, o-position or overstretching can be stabilized as well.

CAUSES MUSCLE WEAKNESS

Decreased strength in the leg can have various causes. These include the effects of (post-) polio, MS, femoral nerve injuries, quadriceps insufficiency, Inclusion Body Myositis (IBM), muscular dystrophy, muscle atrophy or a stroke.

THE UTX

The UTX consists of a single-sided frame, constructed of thin-walled tubular material, which optimally supports the leg by means of a four-point support. The contact with the leg is provided by four tilting pelottes. These are provided with a soft lining and are perforated, thereby generating an optimal skin contact with adequate ventilation.

There are different versions of the UTX, you can read all about it from page 7 onwards.

TREATMENT IS NECESSARY

A leg, which can not remain sufficiently stable, can lead to insecurity, falling, but also pain. This also hinders your mobility and treatment is necessary. In addition, it is important to start treatment in order to minimize further damage to the internal structures of the knee and to prevent falling incidents.

PHOTO MEASUREMENT

Ambroise not only pays attention to the innovation of its products, but also to the way they are individually measured. Every UTX is custom made based on two digital photos using the Ambroise Photo Measurement

Advantages of the UTX

- ✓ Active and dynamic correction of the leg.
- ✓ No limitation of the normal gait.
- ✓ Light weight (750 - 1100 gr)
- ✓ High comfort of wearing.
- ✓ Can be worn fully underneath clothing.
- ✓ Custom made and therefore great fitting.



Figure 1: UTX-SWING

Technique. (See Figure 2, next page).

The Ambroise software converts the photos to a production drawing with the exact contour and sizes. Casting the leg is history at Ambroise! Step one is an investigation of residual muscle strength and mobility of the hip, knee and ankle. Then an analysis is made of the gait. The measurement process including analysis, is done by appointment only and takes about an hour.

DELIVERY

When the orthosis is ready, a delivery appointment is made. At that moment, the final check takes place before the orthosis is delivered. The process of getting you a custom made orthosis can be quite time consuming: measuring, applying to the insurer, fitting, maybe an extra correction and finishing. The delivery time of a UTX orthosis is very short despite all these steps, even though it is a fully custom made brace. The orthosis can be delivered within 2 (working) weeks (if approved by the insurance). *Note: this is the standard procedure for orthoses made in the Netherlands. If you live outside of the Netherlands, the procedure can be different. Please contact your local orthotist about the procedure in your country.)*

When going to the first fitting appointment, the user of the orthosis is recommended to wear shoes which:

- have a sturdy closure (preferably laces)
- are comfortable
- are not too high (no boots)
- have an average heel raise

- can open up far enough

DONNING AND DOFFING THE UTX

The UTX-SWING orthosis is put on while sitting. To achieve this, the orthosis must first be unlocked by hand. Straighten the knee hinge of the orthosis, make a dorsal flexion at the ankle hinge (bring the foot up) and bend the orthosis.

The orthosis is put on the leg while it's in a 90 degree angle. In some cases, the foot is first placed on the foot support, so the foot and foot support can be inserted together in the shoe. In other cases, the foot support is first placed in the shoe. The strap below the knee is fastened first. The order to fasten the remaining three straps is up to your liking.

The UTX-ESF / STABIL orthosis is also put on while seated. To do so, the orthosis must first be unlocked by hand. Straighten the knee hinge of the orthosis, push the button at the top of the orthosis and bend the orthosis.

On our YouTube channel you can find a tutorial how the UTX can be donned and doffed.

www.youtube.com/AmbroiseHolland

It will require practice to become skillful in donning and doffing the orthosis. See the following instructional photo series:



Figure 2: Photo measurement, casting the leg is no longer needed.



1. Hold the clip between thumb and index finger and bring it towards the connector. Beware of any skin entrapment.



2. Connect the clip with the connector with a twisting motion. Make sure the clip is well connected.



3. Close the clip with your thumb. Beware of skin entrapment.



4. When you hear the 'click' it means the clip is closed correctly.

OPENING THE CLIPS - when brace is on the leg.



1. Place the top of you finger behind the flap of the clip.



2. Open the clip entirely until it is in line with the rest.



3. Grab the clip between thumb and index finger and twist the clip to disconnect.



STANDING UP WITH THE ORTHOSIS

During standing up while wearing the UTX-SWING orthosis, most support must be gained from the unaffected side. Put the foot just below the seat of the chair, so that most of the weight rests on that leg. Press yourself diagonally up. Once in position, properly extend the knee of the leg with the orthosis until the hinge is locked (you will hear a click). Now you get support from the orthosis and a safe situation is created. It is important that you are sure that the orthosis hinge is locked. If this is not the case, you can use your hand to push the knee even further back, so that the hinge will get locked. In rare cases it is advisable though to stretch the leg and lock the hinge before you get up.

SITTING DOWN WITH THE ORTHOSIS

To be able to sit down with the UTX SWING orthosis, the knee hinge must be unlocked. Unlocking is done in the same way as when walking: make a (small) step with the other leg whereby the ankle is sufficiently brought in dorsiflexion (lower leg tilted to the front relative to the foot) and extend the knee. The orthosis is now unlocked and the knee can be bent.

To sit down with the UTX-STABIL orthosis the knee hinge must be unlocked manually. Extend the knee, push the button at the top of the orthosis and bend the knee. If the knee is not extended, the orthosis will not unlock. This means that the orthosis can only be unlocked consciously. It will never happen by accident.

The UTX-FREE does not need to be unlocked first. This variant has no locking against bending.

GETTING USED TO IT

During advising, measuring, fitting and delivering your orthopedic device much attention has been paid to a proper fitting. Still, the leg will have to get used to a new position or support. Give yourself and your leg time to go through this. It is advisable to use a schedule and slowly build up the time you wear the orthosis.

CHECK-UP

It is always wise to make an inspection appointment after a few weeks. Once pressure sores occur which threaten to damage the skin, you should always contact your orthotist immediately for inspection. Particularly in this case of diabetics, additional check-ups are very important. If everything goes as planned, we recommend having an annual check-up for fitting, functionality and comfort.

THE ROLE OF THE PHYSIOTHERAPIST, MORE THAN JUST PRACTICE

A lot of practice is needed when using the UTX. The user needs to be in control of the orthosis. The physical therapist can play an important role so that the user becomes familiar with the orthosis and can use it safely. General and daily activities need to be practised and walking needs to become an automatic rather than a conscious activity. Think of distractions as traffic or uneven surfaces. It is also important to pay attention to the mental process. An orthosis is intended as a medical device, that you'd rather do without. Moreover, it takes perseverance to learn to handle it.

In the beginning the benefits of the brace may not immediately outweigh the disadvantages. This could mean that the user becomes demotivated. This will be prevented by proper instruction and guidance. That is why the role of a physiotherapist is so important. The orthosis is custom made and is being individually measured. Residual muscle strength and mobility is taken into account. Important for the use of the orthosis is that the existing muscle strength and mobility is maintained and used correctly. Besides gait training also think about muscle strength training for remaining strength around hip, knee and ankle, as far as possible and preventing contractures (shortening of muscles).

COULD THE UTX ORTHOSIS BENEFIT YOU?

If you're interested in additional information on the UTX or if you want to find out if the UTX could benefit you, please feel free to contact us. You can phone us at +31 53 430 28 36 or email us: info@ambroise.nl. One of our clinical experts is more than happy to discuss the best solution for your problems with you. And we're more than happy to see how we can realise a well fitted UTX for you, provided that this will be a suitable option in your case. Your local orthotist or specialist should also be able to provide additional information on the applicability of the UTX in your case.

UTX ORTHOSIS

PRODUCT INFORMATION

VERSIONS OF THE UTX

The UTX is available in different versions with a plurality of mutually interchangeable options. As a result, a large portion of the people in need of a knee ankle foot orthosis can be helped. Each UTX is adapted to the leg of the user.

Stabilizing the knee in the sagittal plane (flexion / extension):

SWING

The knee is locked against undesired flexion in the stance phase, but unlocks automatically at the end of the stance phase, so that a free swing phase is possible.

STABIL

The knee is locked during the entire gait. To sit down, the hinge can be unlocked manually.

FREE

The knee is free in flexion and can bend at will. An extension stop in the knee joint prevents overstretching the knee.

POST

For extra control in cases of severe overstretching by posterior placed interfaces on the lower leg. (Figure 3). Can be combined with SWING, STABIL and FREE.

Stabilizing of the knee in the frontal plane:

UNILAT

This is the standard version of the UTX, using only a laterally placed orthosis. Used if no additional stability is needed in the frontal plane. Because this is the standard version, the term "unilat" is usually omitted.

FS

The FS version delivers additional stability in case of a valgus or varus knee instability via an intelligent cable design. In case of a valgus, the UTX is placed laterally and the cable is placed medially. In case of a varus, the UTX is placed medially and the cable laterally.

Stabilizing the ankle:

EZ

This is the standard version of the UTX, with a lateral ankle hinge, and an insole.

DZ

In this version there is both a medial and lateral ankle hinge. The double hinge can be attached to the shoe or to an insole.

ESF

This version consists of a polypropylene AFO attached to a UTX frame, without an ankle hinge. The AFO provides stability around the ankle. Because the UTX frame has no hinge, this combination is only suitable for a STABIL or FREE.

ESC

This version consists of a polypropylene AFO attached to a UTX frame, with an ankle hinge. The AFO provides stability around the ankle. The frame is constructed as a UTX SWING.



Figure 3: UTX-POST

ITEM NUMBERS

UTX Lateal Left:	400420
UTX Lateral Right:	400421
UTX Medial Left:	400422
UTX Medial Left:	400423

KNEE FUNCTION

SWING / STABIL / FREE
SWING / STABIL / FREE
SWING / STABIL / FREE
SWING / STABIL / FREE

ADDITION

FS / POST / DZ / ESC (SWING only)
FS / POST / DZ / ESC (SWING only)
always FS / POST / DZ / ESC (SWING only)
always FS / POST / DZ / ESC (SWING only)

UTX-ESFLateral Left:	400500
UTX-ESFLateral Right:	400401
UTX-ESF Medial Left:	400402
UTX-ESF Medial Right:	400503

STABIL / FREE
STABIL / FREE
STABIL / FREE
STABIL / FREE

FS
FS
always FS
always FS

OPERATION OF THE SWING

The UTX-SWING is locked against flexion and extension during the stance phase of walking. At the end of the stance phase the knee hinge automatically unlocks. During the swing phase a natural knee flexion is possible. If the leg extends again at the end of the swing phase, the knee falls automatically into its lock again.

Locking

The UTX SWING falls into its lock when the knee hinge is sufficiently stretched. A ratchet jumps into the lock position prohibiting further bending of the knee. An extension stop in the hinge prevents overstretching of the knee.

Unlocking

The knee hinge of the UTX-SWING orthosis is kept locked by a ratchet. The hinge will remain locked until the end of the stance phase of walking. Then, the hinge is unlocked automatically. In order to unlock the knee hinge at the end of the stance phase, you need to simultaneously reach two conditions: First, a small dorsiflexion with the ankle (minimum of 5 degrees) should be made. This is a normally occurring ankle motion during the stance phase when the foot remains on the floor and the leg moves forward. This is what happens in the UTX: the ankle hinge is attached to the ratchet in the knee hinge via a cable. This ratchet can only be pulled from the lock when it is released. This requires a (very small) knee extension. This is the second condition that must be met. If either is missing, the knee hinge will not be unlocked.

Stretching the knee

Research has shown that stretching the knee at the end of the stance phase is part of normal human gait. So the movement is natural. It requires certain residual functions. Persons who are in possession of these residual functions, usually learn to master the technique as described above. Persons who do not have sufficient rest function(s), can generally make optimal use of a UTX-STABIL orthosis (optionally in combination with UTX-ESF)

There are three ways to stretch the knee at the end of the stance phase:

1. Stretching the hip with still present (partially) active hip extensors (3 MRC muscle strength is required), in particular, M. gluteus maximus, (Hamstrings: M. Semimembranosus and Semitendinosus, and M. Biceps femoris).
2. Stretching the knee with still present (partially) active knee extensors (3 MRC muscle strength is required) M. quadriceps femoris.
3. By using knee hyperextension. (See also UTX selection protocol.)

In addition to this automatic release, it is also possible to manually unlock the UTX-SWING



Figure 4: UTX-FS



Figure 5: UTX-ESC

by using a knob on the top side of the orthosis (identical to the unlocking in the STABIL)

Swing phase

During the swing phase, the knee hinge is not locked, so a natural knee flexion is possible. At the end of the swing phase the leg reaches the extended position again and the knee automatically falls into lock.

OPERATION OF THE STABIL

The knee hinge of the UTX-STABIL orthosis is kept locked by a ratchet. This ratchet locks the knee joint during stance and walking, but can be unlocked manually before sitting down. For this unlocking, a push-button is mounted at the top of the UTX-STABIL orthosis.

By pushing in the button, the hinge is unlocked, but only when the knee is stretched. When the knee is not extended, unlocking is potentially unsafe. In that situation pushing the button therefore has no effect. So the user has complete control over sitting down safely. The ankle hinge of the UTX-STABIL and SWING orthosis compensate for any flaccid foot drop by means of a built-in spring. The foot is thereby returned to the neutral position in the swing phase.

On request, alternative release latches are also possible, such as a lever on the knee hinge, or a lever situated on the leg at the upper pelotte carrier.

OPERATION OF THE FREE

No lock against flexion, but still blocking hyperextension. (The UTX-FREE can optionally be extended with an FS and DZ as well as POST and in ESF).

OPERATION OF THE POST

Pelotte carrier just below the knee positioned at the back (posteriorly) provides additional control in case of hyperextension. A thus placed pelotte carrier immediately captures the force of the backwards bending knee.

OPERATION OF THE FS

Cable provides stability to frame, thereby generating control over valgus (UTX lateral, cable medial) or varus (UTX medial, cable lateral).

OPERATION OF THE EZ

Only lateral ankle hinge. In the ankle hinge of the UTX is a spring that helps to lift a flaccid foot drop during swing phase.

OPERATION OF THE DZ

Two hinges. Medially and laterally. Thus, greater control in the frontal plane for valgus and varus ankles.

OPERATION OF THE ESF

The UTX ESF has two versions for stability around the knee in the sagittal plane: FREE (no flexion stop, but lock against hyperextension) or STABIL (fully locked but, manual release). In case there is a passive or spastic foot drop, the integrated AFO of the orthosis will generate the required control. The AFO will give stability, for a foot drop or prevent equinus foot position.

OPERATION OF THE ESC

As ESF, but now with UTX frame in SWING embodiment.

FOCUS POINTS FOR HANDLING THE UTX-SWING.

Locking

During stand and during stance phase of walking the knee hinge of the UTX-SWING is locked.

The knee hinge is released at the end of the stance phase. The knee can move freely during the swing phase. At the end of the swing phase, the hinge falls back into its lock for the next stand phase. This happens automatically when the knee is sufficiently stretched. The extended position does not necessarily have to correspond with a knee angle of 0°. The locking position depends on the personal alignment of the UTX-SWING.

The user must learn to properly complete the swing of the orthosis leg. If he / she doesn't do this, then the next stance phase can begin without a locked knee.

In that case the user can only provide a safe situation by pressing the knee in extension from the hip. If even this does not happen, an unsafe situation might occur. The user will transfer his body weight on the supporting leg with an unlocked knee. Practice luckily shows that users, after some training, generally have no difficulty in extending the knee for the next stance phase.

Unlocking

The ankle hinge is connected to the knee hinge with control wire. For unlocking the knee hinge of the UTX-SWING, two conditions must be simultaneously satisfied:

1. First, the ankle should be in sufficient dorsiflexion. Only a small amount of degrees is required. About 5° is enough to trigger the hinge. Also, without active muscles, dorsal flexion still occurs naturally at the end of the stance phase when the supporting leg rotate forward over the foot.
2. In addition to dorsiflexion there must also, simultaneously, occur extension of the knee. The knee hinge of the UTX-SWING has a lock in both flexion and extension. The knee hinge can only be unlocked when it is pressed against the extension lock, that is to say, if around the knee an extension moment is present. Releasing the flexion lock is safe in this situation. If on the other hand the knee would be unlocked when it momentarily tends to flex (is loaded with flexing moment of force) an unsafe situation would occur, leading to possible falling. With the UTX-SWING this is not possible, because an extension is needed for release.

This compelling double condition: **dorsiflexion of the ankle** and **knee extension** asks for extra attention mainly during training of users. Especially the extension of the knee at the end of the stance phase is tricky for some because it requires residual control over the hip movements. Hip muscles are not necessarily required for this. Residual function of still partially active knee extensors, but also an existing hyperextension of the knee may be sufficient to stretch the knee.

There are a number of gait elements that need special attention during the training of UTX SWING-users.

Step size

First, the step size matters.

When taking **too small a step**, it is possible that the upper body is insufficiently placed in front of the supporting leg at the end of the stance phase. As a consequence, no or insufficient dorsiflexion of the ankle will occur (Figure 6). The release of the knee hinge will not occur.

When taking **too big a step**, the other condition (knee extension) at the end of the stance phase can be a problem. In very large strides it is difficult to make the floor reaction force vector to run in front of the knee, in other words: to get the knee in extension. (Figure 7).

Timing

The requirement of getting the knee in extension at the end of the stance phase makes, the users timing important. For some users, the required unlocking procedure seems

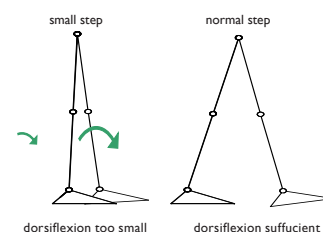


Figure 6

Influence of the step size on the occurring dorsiflexion at the end of the stance phase. At small steps, there is insufficient dorsiflexion in order to allow unlocking the hinge.

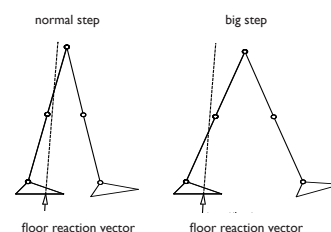
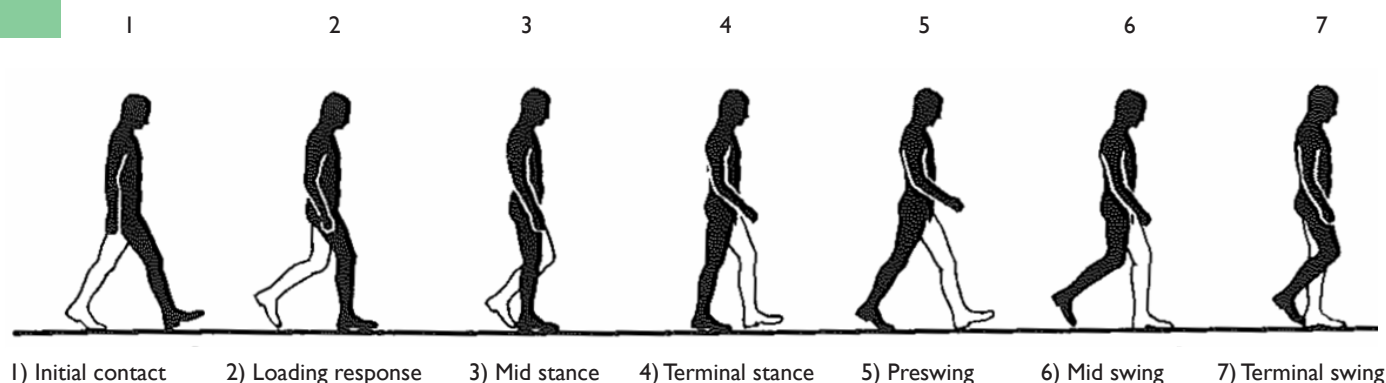


Figure 7

Influence of the step size on the knee load. With increasing step size, the knee load is more strongly flexing.



contradictory. To bend the knee (in the swing phase) you should stretch it (at the end of the stance phase). As a result, some users are prematurely busy trying to flex the knee. Without bringing it into the required extension. As a result the hinge will not unlock. Moreover, the extension of the knee in the second half of the stance phase is a normal physiological movement. Even at normal walking at this stage extension of the knee occurs.

Gait cycle

Finally attention must be paid to not lifting the heel of the floor too early. It may happen that both the required conditions (ankle-dorsiflexion and knee extension) are properly met. The knee hinge will therefore be in the unlocked position. Then, when the heel is lifted from the floor without the knee first being flexed, the lock will automatically come into operation again. Because the leg is lifted from the floor the dorsiflexion of the ankle will disappear. If the knee hinge is still in the position at which it can be locked (meaning still no knee flexion has occurred), then the ratchet of the knee hinge will automatically fall back into its lock. The knee should be bent before the heel lifts off the floor.

The ankle hinge has a spring mechanism that allows plantar flexion only after a certain threshold. This results in a uniform and controlled plantar flexion that will bring the foot in full contact with the ground at initial contact. People with a foot drop can thus reduce the peak load on the leg and show a more natural gait. In addition, the spring is strong enough to prevent a foot drop during the swing phase. Despite the inhibition of the ankle hinge, it is sufficiently flexible so that people with mild spasticity also can use this provision without increasing the spasm.

Pay attention when taking steep slopes or ramps. Unlocking is usually a little more difficult in that situation. At slopes that are too steep it is advised to keep the leg locked.

Taking curbs or stairways is done in the same order as when walking with crutches. Going up, put the unaffected leg first on the next step; then follow with the orthosis leg. Going down, step with the orthosis leg down on the next step and place the unaffected leg next to it.

Cycling (also at the home trainer) is certainly possible, if taken into account that the orthosis is not allowed to lock. The knee should not reach full extension because otherwise it locks. To prevent this, don't put the saddle too high.

FOCUS POINTS FOR HANDLING THE UTX STABIL

Locking

Extend sufficiently. The knee joint should lock automatically in full extension.

Unlock

Start with unloading the knee by bringing it into extension, then press button, and while pressing, bend the knee.

TROUBLESHOOTING

If the UTX-SWING orthosis does not work properly, it is important to identify the origin of the problems. The problem may lie with the orthosis, or with the user or in the combination of the user and the orthosis. If it appears that the orthosis does not work properly, contact your orthotist. Furthermore consult your orthotist for changes to the fitting or adjustment of the hinges can be done in consultation. If the orthosis does not work properly, the list below can be used to analyze the problem. If this does not lead to a solution, please contact your orthotist or Ambroise.

SITUATION 1: The knee hinge does not unlock

Reason 1:

There is no or insufficient dorsal flexion of the ankle joint at the end of the stance phase.

- Lifting the foot too early at the end of the stance phase. Train to keep the heel on the floor longer and to (mildly) bend the knee before lifting the foot of the ground will offer a solution.
- An incorrect alignment angle of the ankle stirrup. Contact Ambroise or your orthotist to adjust the ankle angle.
- Play on the ankle hinge (The ankle stirrup is not tightened properly). Contact Ambroise or the orthotist to lock the ankle bolt.
- Excessive knee extension with small steps. Stretching the knee when the foot is on the floor always results in a smaller dorsal flexion angle. In a small step, this may lead to insufficient remaining dorsal flexion causing the knee hinge to not unlock (see Figure 6). The user must practice taking bigger steps.

Reason 2:

There is no or insufficient knee extension at the end of the stance phase.

- Stretching the knee at the wrong moment.
- Despite a present hyperextension, there is no extension at the end of the stance phase, possibly because the orthosis is aligned too much in flexion.
- The user makes too big a step which increases the bending load on the knee hinge (see Figure 7). This makes it harder for the hip and knee muscles to stretch the knee. Smaller steps need to be taken.
- The leg is locked to the maximum anatomical limit. To unlock the knee hinge, the knee must be pushed slightly more in extension. If the leg is already at its anatomical limit, further stretching is difficult. The orthosis must then be aligned more in flexion. Contact your orthotist for this.

SITUATION 2: The knee hinge unlocks too early

If early in the stance phase there is a partial or complete dorsal flexion of the ankle joint, this is caused by an incorrect alignment of the ankle stirrup to the ankle hinge. This can be checked by looking in the knee hinge from the back and see when the ratchet is pulled downwards. Contact your orthotist so that the alignment can be changed.

SITUATION 3: The knee hinge does not lock

Reason 1: Incorrect ankle-alignment

A misalignment of the ankle stirrup that leads to full dorsal flexion even at the start of stance prevents locking of the knee. Contact your orthotist so that the alignment can be changed.

Oorzaak 2: The knee is required to extend beyond its anatomical limits

To lock the knee joint, the leg needs to sufficiently extend. If sufficient extension means stretching beyond the anatomical limit. This will not occur during swing. The orthosis needs to be aligned in more flexion. Contact your orthotist.

Reason 3: The leg extended too vigorously

When the leg is vigorously extended at the end of the swing phase, reaching full extension might lead to the foot move onwards into dorsal flexion due to inertia. Prior to putting the foot on the floor. If enough dorsal flexion is reached the knee joint is unlocked. A less vigorously swing is advised. The user must be further advised on this. Your PT can help.

POINTS OF ATTENTION:

- The orthosis is adjusted to the footwear at hand at that time. Changing shoes and hence the heel raise will change the timing of unlocking.
- Are the pelottes pinching your leg or are you experiencing sensitive skin underneath your brace? Possibly some fitting alterations might help to prevent this. Contact Ambroise, or your orthotist.
- If the hinge becomes hot then usually this means the joint has too much friction. Please stop using the orthosis, do not use lubricant, but contact your orthotist. Usually this is due to incorrect alignment of the orthosis.

MAINTENANCE

Necessary maintenance extends the life of the product. The timely replacement of simple and relatively inexpensive parts helps to reduce wear and tear on expensive and more difficult to replace parts.

Desired maintenance is also important for lasting high wearing comfort by replacing in a timely manner the parts that are in direct contact with the skin, such as straps and pelottes.

When you notice the orthosis to not work smoothly, it is strongly advised not to lubricate hinges with oil or other lubricants. This seems to help initially, but greasy substances will attract dust and dirt, which will cause even more problems. In addition, lubricants can cause dirty spots in clothing. It is advised to clean the hinges with a degreasing product such as alcohol, acetone or similar products or contact the orthotist. The straps can be washed. Please remove the straps from the orthosis. Make sure to close the Velcro in order to prevent cloth from sticking to it. You can use a laundry bag at temperatures of max 30°C. Additional parts of the orthosis can be cleaned using a damp cloth.

REPLACEMENT OF SPARE PARTS

It may occur that parts of the orthosis need to be replaced. Of course you can order these from us. Please contact us and we will send a replacement part.

ADJUSTING THE ORTHOSIS

If you have the feeling the orthosis is too tight (pinches) or too loose (slips) it is important that the orthosis will be properly fitted by your orthotist.

SPECIFICATION

Max. User weight: 120kg. See also UTX selection protocol for indication and contraindication parameters.

UTX ORTHOSIS INFORMATION FOR THE PROFESSIONAL

CONTRAINDICATIONS (SEE ALSO UTX SELECTION PROTOCOL):

- *Moderate to severe spasticity*

May cause high loading on leg and orthosis. It may also disturb the dorsal flexion of the ankle at the end of the stance phase, or prevent proper knee extension.

- *Knee flexion contracture > 10°*

A flexion contracture in the knee > 10° results in excessive loading on the leg and orthosis. Knee extension is also required for unlocking the swing at the end of the stance phase, which is more difficult with a flexion contracture.

- *Varus / valgus deformity > 10° which can not be redressed.*

In case of knee instability > 10° which can not be rectified, there may be excessive loading on leg and orthosis.

- *Weight > 120 kg*
- *Ischial weight bearing required*

This is not possible with a UTX. Ischial tuberosity weight bearing is occasionally required in severe pelvic/torso instability or with required unloading of skeletal elements in the leg.

- *Insufficient cognitive abilities*

Limited cognition can make it difficult to (learn to) handle the orthosis.

ADJUSTING THE ANKLE HINGE

1. Remove the tape from the ankle hinge.

The UTX is standard delivered with a untightened ankle hinge, which **must** be adjusted on location to the footwear of the client and secured in that alignment.

2. Loosen the locking screw from the ankle hinge.
3. Determine the right angle of the ankle stirrup. More dorsal flexion means unlocking later / more plantar flexion means unlocking sooner.
4. Tighten the socket head screw
Use a good (non-rounded) Allen key. When the Allen key is slipping use the included spare screw and find a better Allen key
5. Check the timing of unlocking, if necessary adjust the hinge (back to step 2).

The following steps are required when the ankle stirrup must be disassembled.

1. Unscrew the screw from the ankle hinge.
2. Remove the screw.
3. Insert a center punch into one of the clamp block pins of the ankle stirrup and slightly hit it with a hammer, vary with other pen until the ankle stirrup is loose.

ADJUSTMENT OF THE PELOTTE CARRIER

1. Open the clip with your thumb and index finger until the cap is in line with the rest of the clip.
2. Grab the clip between thumb and index finger and twist the clip to disconnect.
3. Remove the IMS pelotte of the pelotte carrier (instruction page. 16)
4. Unscrew the two screws, using the appropriate Allen key.
5. Push a flat screwdriver into the opening of the pelotte carrier clamp.
6. Increase the gap in the pelotte carrier clamp by the screwdriver with half a turn.
7. Hit the pelotte carrier with a plastic hammer (right next to the flat oval) to move it up or down.
8. Place the clamp plates in the in the vice and position the pelotte carrier clamp between it
9. Make sure that the pelotte carrier clamp is properly sealed on the flat oval by lightly turning the vice.
10. Retighten the screws.
11. Put the pelotte back on the pelotte carrier (instruction page. 16)



Figure 6: Ankle hinge

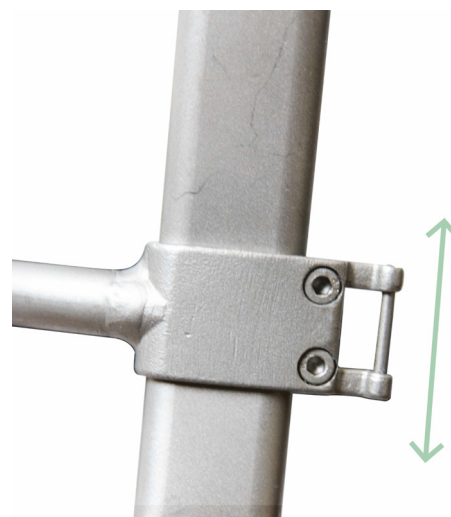


Figure 7: Pelotte carrier



PHOTO MEASUREMENT UTX

Focus points by the preparation of the photo measurement

- Fold the poster on the black line and attach it to the wall.
- Measure 2m distance from the wall.
- Mark the floor at 2m distance from the wall.
- Determine the anatomical knee axis.
- Mark knee center at the lateral side of the leg, positioned at the anatomical axis.
- Mark the lateral malleolus of the ankle.
- Mark the medial malleolus of the ankle.

Focus points when taking the photos

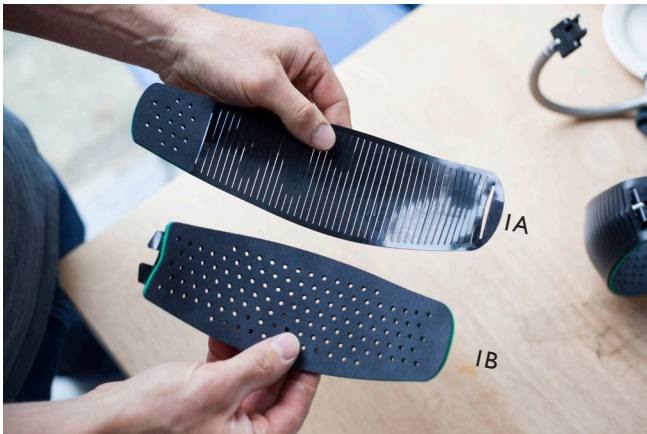
- Frontal photo: the heel against the line indicated. Make sure the feet point straight forward so all the markers are visible while taking the frontal photo, and the leg is not internally or externally rotated.
- Make sure the medial side of the foot hits the line while taking the sagittal photo.
- Take the frontal photo at knee height, 2 meters from the wall. Hold the camera vertically. (Portrait).
- Make sure at least 3 of the 4 corner markers on each side of the grid are visible on the photo.
- Take the sagittal photo at knee height, 2 meters from the wall. Hold the camera vertically. (Portrait).
- Make sure that the legs are fully in frame, from the feet up to the groin. Remove unwanted concealing clothes.
- Measure distance lateral malleolus till floor.
- Measure distance medial malleolus till floor.
- Measure distance lateral malleolus till knee center.
- Write the measurements on the measurement form.

Send the completed form to: utxorder@ambroise.nl

You can order the photo measurement poster by sending an email to info@ambroise.nl
Order code 300187 for the UTX background kit, including markers.

PLACING PELOTTES

Placing pelottes. Identical for all IMS pelottes. In this series you see the application to the UTX.



IA: outer shell IB: inner shell



2. Slide the outer shell on the tube (matte side out).



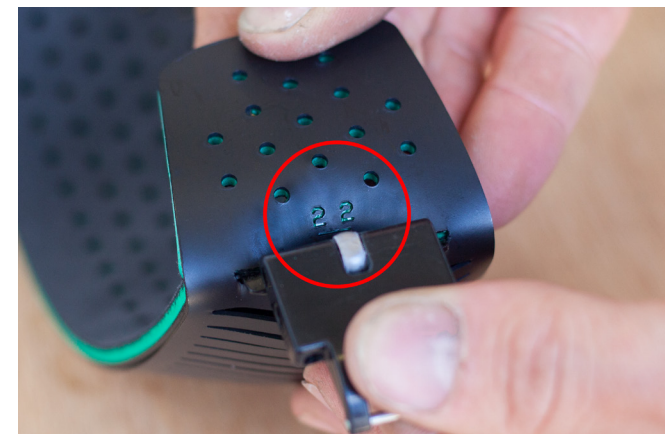
3. Remove the yellow strip, and press the flaps of the inner shell through the first groove of the outer shell.



4. Shape to an S-bend. Press the flaps of the inner shell through the outer groove of the outer shell.



5. Remove the other yellow strip so that the adhesive strip is exposed. Press the adhesive strip well.



6. You can find the size of the shell on the inside of the outer shell.

Order form UTX orthosis

Patient records

Name and/or reference: ☐ M ☐ F

Date of birth:

Leg side: ☐ Left leg ☐ Right leg ☐ Both sides

Height: CM

Weight: KG

Pathology:

UTX information

Hip extensor strength: MRC

Knee extensor strength: MRC

UTX model: ☐ SWING ☐ STABIL ☐ FREE

Genu Recturvatum: ☐ No ☐ Yes→P3/P4 POST: ☐ No ☐ Yes

Function in frontal plane: ☐ Unilat ☐ FS Lat ☐ FS Med

Function in ankle: ☐ EZ ☐ DZ ☐ ESF¹ ☐ ESC¹ ☐ + AFO

Foot support: ☐ Starflex ☐ Novasoft ☐ Flat stainless

Shoe size:

Foot support mounted by: ☐ Ambroise ☐ Orthotist

Thicknes inlay on top of stirrup: CM

Correction valgus/ varus: Degrees

LM – Floor: CM

MM – Floor: CM

LM – KA: CM

Comments:

Customer Information

Company name:

Orthotist:

Order number:

Desired delivery date: YYYY.MM.DD

PAY ATTENTION! Upload the frontal and sagittal photos as an attachment in the email.
For details read the photo measurement manual at www.ambroise.nl

Email

Print



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