



## MANUAL GENUX<sup>®</sup> 2 ORTHOSIS

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Twekkeler Es 24, 7547 SM Enschede, The Netherlands tel:  
+31 53 4302836 | [info@ambroise.nl](mailto:info@ambroise.nl) | [www.ambroise.nl](http://www.ambroise.nl)  
[www.youtube.com/AmbroiseHolland](http://www.youtube.com/AmbroiseHolland) | [www.facebook.com/AmbroiseHolland](http://www.facebook.com/AmbroiseHolland)

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 **USER**

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# GENUX 2 KNEE ORTHOSIS

## USER INFORMATION

The GENUX 2 is a knee orthosis for people suffering from instability of the knee, caused by for example arthrosis. The GENUX 2 stabilizes the knee and relieves the affected and often painful side of the knee. With the help of a GENUX 2, the user is encouraged to use all remaining residual function. An unstable knee can make walking difficult. There is insufficient support in the leg and sometimes also considerable pain.

### WHEN A GENUX 2?

An unstable knee can have many causes. These include the effects of osteoarthritis. The knee then gives way into an x-position (valgus: knee pointing inwards, lower leg pointing outwards) or in an o-position (varus: knee pointing outwards, lower leg pointing inwards). The GENUX 2 helps to compensate this. This usually leads to a quick improvement in stability and reduction of complaints.

The GENUX 2 can also be used in other knee disorders, such as hyperextension (overstretching) of the knee in early stages.

### WHEN NOT TO USE A GENUX 2?

- The GENUX 2 is a knee brace. It can offer stability and some correction for an unstable knee. However, in severe cases of knee instability quite often the ankle will show misalignment as well. The GENUX 2 is not designed to stabilize the ankle, so caution is required in cases of severe knee misalignment.
- The GENUX 2 is designed for cases of mild hyperextension. In cases of severe hyperextension ( $> 20^\circ$ ) the external loading can increase to very high levels. We advise not to use the GENUX 2 in those cases, but to choose a [UTX POST](#) orthosis.
- The maximum body weight for use of the GENUX 2 is 100 kg.
- In cases of knee flexion contractures  $> 10^\circ$  the GENUX 2 is not recommended.
- Non-correctable valgus / varus  $> 10^\circ$  can lead to considerable increase of the necessary stabilising forces, since the moments of force in the frontal plane increase with increasing instability angle. If we are able to correct the leg back to a (semi) neutral alignment we can keep the forces within tolerable limits, but if correction is not possible, so is limiting the forces.
- Full instability: valgus and varus. The GENUX 2 works one way only in the frontal plane. It stabilises or corrects either a valgus instability (in which case the brace is used laterally) or a varus instability (in which case the brace is used medially). Therefore it is not possible to use this brace in cases of instability both ways.
- The GENUX has a circular calf strap around the lower leg. That strap might influence the flow of blood from the lower leg upwards. Patients with a high risk of thrombosis are advised to consult their physician about that in their case.



Figure 1: The Genux 2

### TREATMENT IS NECESSARY

A leg which cannot remain sufficiently stable, can lead to insecurity, falling, but also pain. This may hinder your mobility. It is important to start treatment in order to minimize further damage to the internal structures of the knee and to prevent falling incidents. Always consult your physician about the best options in your individual case.

## THE GENUX 2 – UNLOADING

### What does unloading mean?

The GENUX 2 is designed to unload the affected side of the knee. Unloading means the reduction of the loading forces inside the knee at one side of the knee.

In cases of osteoarthritis, usually one side of the knee is more affected than the other. At the most affected side more cartilage is damaged and/or gone. The knee drops that way which makes this part more heavily loaded, leading to an increase of the associated problems. To prevent worsening of instability, that side of the knee must be unloaded. This usually leads to a rapid reduction of complaints.

The pain is often aggravated by the occurrence of inflammatory reactions on the affected compartment. The loading levels on the inflamed cartilage of the compartment need to drop below a certain level in order to be able to reduce the inflammatory reaction. Unloading of the affected side of the knee (by the GENUX 2 knee orthosis) can therefore create a favourable condition to start the reduction of inflammatory responses. This can also have a positive effect on reducing pain. This effect is noticeable only after a few days.

### How does the GENUX 2 unload

The GENUX 2 unloads the knee by (partly) pushing the leg back into its neutral alignment. The frame of the brace is shaped to your leg in a manner that it doesn't allow for the knee to move outwards (in case of varus instability) or inwards (in case of valgus instability). When you extend your leg with the GENUX 2 on, the frame of the brace straightens your leg (in a frontal view). It is strong and rigid enough to create the necessary moments of force to do that.

With your leg straightened the drop of your knee to the affected side is counteracted. As a result the crevice in your knee on that side will open up leading to a reduction of the forces on that side. This is called unloading.

Quite often it is sufficient to just partly realign the leg back to neutral. A full correction of the leg would require considerable forces of the brace to the leg, making it uncomfortable to wear, whereas the loading on the affected side will drop to zero as soon as a crevice is created. A larger crevice (more correction) does not reduce the loading on the affected side, but does increase the loading of the brace to the leg. Therefore we try and correct as much as possible, but not too much.

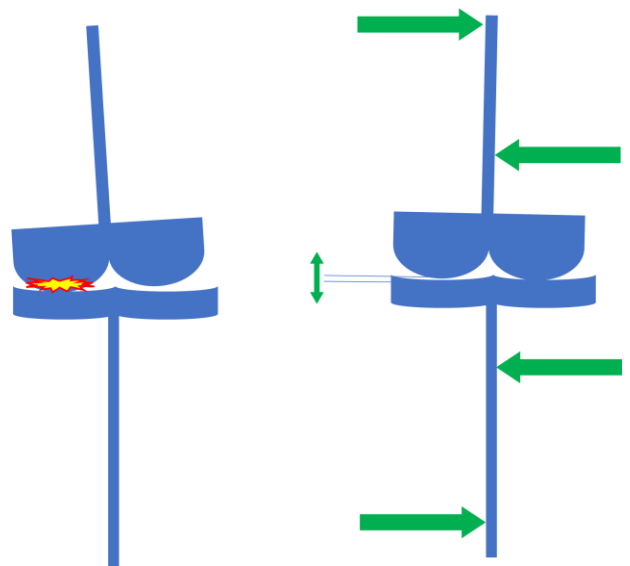


Figure 2: Schematic principle of unloading. In the left image the left side of the joint shows degeneration, leading to pain and misalignment. By adding a 4 point force system in the right image, the joint is pushed back into neutral alignment, leading to an opening up of the joint on the affected side.

## THE GENUX 2 – LONG LEVER ARMS & LIGHT WEIGHT

The GENUX 2 is a relatively long brace, compared to a lot of other knee braces on the market. We do that to keep the brace light weight and comfortable. It does sound a little contradictory, but actually it's just plain mechanics. A long brace has long lever-arms. With a long lever arm you can create higher moments of force with lower forces. That means that by exerting lower forces from the brace on the leg we create higher moments of force around the knee. These moments of force are what the brace actually needs to deliver to make it work.

The lower forces of the brace on the leg make it more comfortable, but also allow us to optimize the weight of the brace without compromising the rigidity of the structure of the brace. So, in short: it works better and is more comfortable because it's longer.

## THE GENUX 2 – DYNAMIC 4 POINT BALANCING

The GENUX 2 is the first brace in the world with Dynamic 4 Point Balancing. This is a truly unique systems that we've developed with various positive effects. Dynamic 4 Point Balancing is a system in which the straps of the brace just above and just below the knee are connected to each other by means of a smart cable. This cable runs posteriorly of (behind) the centre of rotation of the knee joint. As a result the cable allows the straps to become loose in flexion, but to tighten in extension. The positive effects of this system are subsequently described below:

### Extension Preloading

When the knee extends, the straps of the interface just above the knee and just below the knee tighten themselves because the cable, that connects these two straps and that runs behind the centre of rotation of the knee joint gets tightened. With this tightening of these two straps the soft tissues of the leg at all 4 interface locations of the brace are compressed/tensioned, gradually 'gripping' the brace tightly to the leg. When the leg reaches full extension brace and leg form a rigid combination with a direct transfer of the stabilising forces from the brace to the leg.

This is (and feels!) much more stable because you prevent that the brace, once you start loading the leg by standing on it is first pressed into the soft tissues, before it actually does anything, allowing the leg to give way a little.

### Extension Triggering

Patients that need to control a hyperextension feel the built up of the correction forces of the straps just below and just above the knee increasing before their foot is on the floor and the leg gets loaded by body weight. That triggering reduces the active component of pushing the knee in hyperextension that patients often have. They do actively push their knee into (hyper)extension, because the body needs to feel that the knee is stable enough to start loading the leg. There are no sensors in the leg that accurately tell the brain the alignment of the leg, so feeling the 'end' of extension (even if that's in hyperextension) is the only trigger left. With the extension triggering the brace gives that signal a lot earlier, combined with a more rigid grip of the brace to the leg leading to a reduction of the excessive extension forces.

### Force Balancing

Because of the cable that connects the straps around the knee, the force in these straps need to be equal. If not, the cable is pulling the strap with the lower force until the forces are equal again. This balancing of these two forces ensures that not one is taking most of the load, whereas the other does little to nothing. Furthermore, since the lever arms of the lower leg are made equal to that of the upper leg, the forces on the pelottes (interfaces) at the top and bottom of the brace are equal as well and equal to the balanced strap force. This is a very nice feature, because we now never have the situation in which one interface doing a lot more than another. This prevents excessive interface forces that can be uncomfortable. But it also means that we know a lot more precise what the maximum loading on the system will be and that allows for a huge step in optimization of the weight of the orthosis.

### Sitting Comfort

A very tight, snug fitting of the brace is nice in having a direct action of the brace to what the leg is doing. However it's not so nice in sitting, particularly if we realise that the shape of the leg (due to a different alignment of muscles and tendons in a 90° flexed position, compared to a straight leg) is somewhat different. For instance, the upper leg just above the knee is narrower but somewhat higher (in front side to back side of the leg) in sitting than in stance. The coupling of the straps just around the knee loosens these straps in bending the knee. This allows for a great increase in comfort during sitting.

### Anti slipping

In the earlier model (the GENUX 1) we've proven the need for skin migration underneath the brace just above the knee at the front side of the leg in flexing the knee to prevent the skin from pulling the brace downwards (see <https://www.ambroise.nl/en/leg->

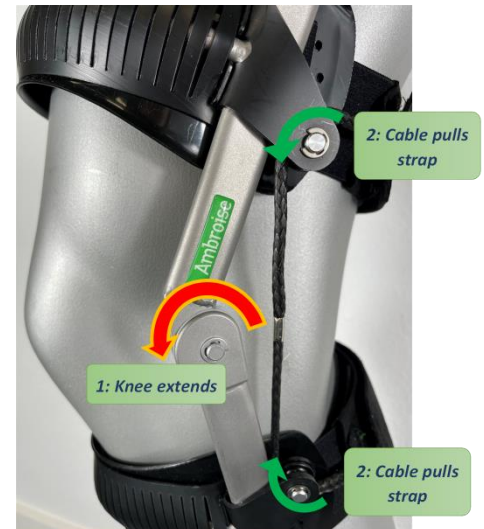


Figure 3: When the knee extends the cable of the Dynamic 4 Point Balancing System pulls the straps just above and just below the knee tighter to the leg. When the knee flexes, the opposite happens: the straps are loosened.

orthoses/GENUX-knee-orthosis/). In the GENUX 2 we've realised the freedom to migrate the skin underneath the brace by loosening the strap of the interface just above the knee (as well as the one just below the knee). As a result of that the contact force of the interface at that location drops to (almost) zero in flexion. This logically results in a drop in the contact-friction forces and thus in the skin trying to pull the brace downwards in flexion. Combined with a very smooth non-stick surface of the interfaces this ensures that the GENUX 2 stays in place on the leg.

## THE GENUX 2 – ADJUSTABLE KNEE JOINT

The GENUX 2 knee joint has an adjustable extension stop. With that adjustment you can change the alignment in flexion with 15 ° This is important because for many patients a slightly more flexed alignment can be less painful. However, too much flexion is more tiring, because you require more muscle activity to stabilise the knee. And this increased muscle activity also leads to an undesired increase in forces in the knee. Also for patients with a knee hyperextension it can be very meaningful to be able to adjust the extension stop in the brace.

## THE GENUX 2 – CUSTOM MADE BASED ON PHOTO MEASUREMENT

The GENUX 2 is a custom made brace, based on our unique photo measurement system. With this quick, clean and easy system we are able to make a brace that is specially shaped to your leg. A proper fitting for a knee brace is important, because in general such a device needs to be worn for many hours a day. Both OA as hyperextension (the two main indications for the GENUX 2) are incurable conditions. This means that if you need an orthosis because of this condition, it is very likely that you will need that orthosis permanently (or at least until your condition has deteriorated even further). A brace that gives you support needs to be comfortable, because you'll need to wear it most of the day, every day.

We advise that you consult your local orthotist to ensure that with the proper fine-tuning done by him your brace is optimally adjusted to your needs.

### Advantages of the GENUX 2

- ✔ Active and dynamic correction of the leg.
- ✔ Dynamic 4 Point Balancing
- ✔ Adjustable knee joint
- ✔ No limitation of the normal gait.
- ✔ Light weight & High comfort of wearing.
- ✔ Custom made and therefore great fitting.



Figure 4: The Genux 2

## WHAT DOES THE DELIVERY PROCESS OF THE GENUX 2 LOOK LIKE?

The GENUX 2 is an individually custom made orthopaedic device. Your doctor (physiatriest or orthopaedic surgeon) will decide together with you and the orthotist if a GENUX 2 will benefit you. They can also assess which type of GENUX 2 is best for you. After choosing a GENUX 2, your orthotist can start preparing for your individual GENUX 2. Depending on your insurance situation, he will ask for an authorization from your insurance company as a first step. If your insurer agrees, your orthotist will call you for the intake. At this appointment, the orthotist will take pictures of your leg against a special background. These photos are used to collect the correct shape and size information about your leg. The orthotist also collects all the information needed for a correct order, for example, the required type and your personal information. With this information, the orthotist can order a GENUX 2 at Ambroise. At Ambroise in Enschede, your GENUX 2 is then manufactured for you, based on the data provided by the orthotist. First of all, using the specially developed software, a technical drawing is made of your

GENUX. This drawing is used during the production process to choose the right sizes and shapes. When the GENUX 2 is complete, Ambroise sends the orthosis to the orthotist. Your orthotist will then invite you to an appointment where you can fit the knee orthosis. During this appointment, the orthotist will also need to adjust some elements of your GENUX 2. For example, setting the lengths of the straps, but the orthotist also looks at the level of correction achieved with the GENUX 2. If all settings are right, you can take the GENUX 2 home so you can practice using it.

## DONNING THE GENUX

The GENUX 2 can be worn either underneath clothing or on top of clothing. When worn underneath clothing we advise to wear a sleeve under the brace. There needs to be migration underneath the GENUX at the front side of the upper leg (see Anti-Slipping above). The human skin can have a relatively high coefficient of friction, making slipping of the interfaces with respect to the skin more difficult. The sleeve can ensure a low coefficient of friction between sleeve and pelottes. Furthermore the sleeve is an extra protective cover for sensitive skin. If you order a GENUX 2 a sleeve will be supplied. You can order spare sleeves in various designs on our web shop.

When donning a GENUX 2 please follow the steps as described below

### Step 1 Put on the calf strap

- A) First, the GENUX 2 calf strap must be donned. Step with the foot through this circular strap.
- B) Make sure that the clip is on the front of the calf strap and facing down.
- C) Secure the calf strap just above the widest part of the calf and just below the knee
- D) Evenly tighten the two ends of the strap. (see Figure 5)

### Step 2 Put the GENUX 2 on the leg

- A) Donning the GENUX 2 is best done in sitting position, with the knee bent in 90°.
- B) Now also bend the GENUX 2 with your hands till 90°.
- C) Now push the GENUX 2 frame on your leg.

### Step 3 Attach the GENUX 2 to the calf strap

- A) The calf strap and GENUX 2 are connected by means of a plastic clip. Click the two ends of the clip together (see Figure 6).
- B) The elastic of the calf strap will now pull the GENUX 2 upwards.

### Step 4 Push the GENUX 2 down

- A) Push the GENUX 2 against the tension of the elastic down until the interface just above the knee touches the upper leg.

### Step 5 Attach the strap just below the knee

- A) The first strap that is attached is the strap that is just under the knee.
- B) Hook the clip into the connector.
- C) Close the clip. (See photo series 'closing the clips' on the next page)

### Step 6 Attach the lower strap

- A) Attach the lower strap in the same way as the strap just below the knee

### Step 7 Attach the upper leg straps

- A) Attach the upper leg straps in the same way as the strap just below the knee.

### Step 8 Adjust strap tension (B1 and B4, top and bottom strap)



Figure 6: Attach GENUX 2 to calf strap

- A) The straps can be adjusted by means of the Velcro closure.
- B) The double backing hook-to-hook piece can be shifted to a new location at your liking, to ensure that the end of the strap is fully gripping.

### **Step 9 Adjust strap tension (B2 and B3, strap just above and just below the knee)**

- A) The straps B2 (the one just above the knee) and B3 (The one just below the knee) should be adjusted with the knee fully extended, for instance while standing
- B) Because these straps are connected to each other they need to be adjusted the same amount for each strap.
- C) Make sure the marker on the connecting cable is always at the level of the knee centre.
- D) The strap are loosened when flexing the knee. Adjusting them in full extending / standing ensures you feel what the maximum tension of the straps will be
- E) When fully tensioned in flexed position, the straps can increase in tension on the leg considerably when the brace is stretched. This might cause discomfort or worse. Please therefore do **not** tension the straps in sitting position.
- F) If all steps are at the appropriate tension, you can walk with the GENUX 2.

On our YouTube channel you can find a tutorial how the GENUX 2 can be donned and doffed.

[www.youtube.com/AmbroiseHolland](http://www.youtube.com/AmbroiseHolland)

It will require practice to become skilful in donning and doffing the orthosis.

### **DOFFING THE GENUX 2**

When doffing a GENUX 2, the sequence is less important. For most people, it's easy to start with the upper strap. The GENUX 2 straps can be loosened by turning them out of the connector (see photo series 'opening the clips' on the following page).

The clip that attaches the GENUX 2 to the calf strap is easy to loosen by pressing the two pins from both ends inwards



## CLOSING THE CLIPS - when brace is on the leg.



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 your 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.

### FIRST USE OF THE GENUX 2

If you get home with your GENUX 2, you can use the orthosis during your daily activities. Take into account that you have to get used to wearing a GENUX 2 at first use. To function properly, the orthosis should push against your leg on various spots. At these pressure points your skin must get used to the load of the brace.

It is therefore wise to slowly build up the use of the GENUX 2. Although most users in the end wear the GENUX 2 all day, it's advisable to build up the usage time slowly in the first few days.

Your orthotist has set up the GENUX 2 during the fitting phase. The chosen settings were at that moment carefully selected by your orthotist to best fit your situation. However, some of these settings may need to be modified later on.

In the end, only you can really judge whether the GENUX 2 is comfortable, by wearing it for hours. Therefore, it's a good idea to register your first-day experiences for yourself, for example, by writing them down. If, after a few days, you find that there is still some improvement needed in the setting of your GENUX 2, your orthotist will get a good idea of your experiences and know how to customize the GENUX 2 to meet your needs. Setting up the GENUX 2 requires a good insight into the clinical situation of your knee and the possibilities and impossibilities of the GENUX 2. Your orthotist is trained for that. Therefore, contact him if something needs to be changed and do not change settings yourself.

### ACTIVE USE OF THE GENUX 2

The GENUX 2 does its job when the leg is stretched and loaded, especially during standing and walking. If the GENUX 2 is bent and/or the leg is not loaded, the corrective action of the GENUX 2 is low. Some people choose not to wear the GENUX 2 on days or dayparts that they are mostly sitting. For other people, even the few steps they make during such a day(parts) are too unstable and/or painful to do without the GENUX 2. You can ultimately judge best for which activities you most benefit from wearing your orthosis.

Keep in mind that sometimes the reaction to overloading your knee (by not wearing your GENUX 2) will come later, for example, at night. Most people therefore choose to wear the GENUX 2 throughout the day.

The GENUX 2 can be used for sporting activities. Exercising is healthy. If you are able to exercise again, using the GENUX 2, we advise you do that. However, the GENUX 2 is not a sports brace. The GENUX will especially benefit from sports activities where you can make steps, such as walking. For sports where the knees remain mainly bent, such as cycling, skating or skiing, the GENUX 2 relieving effect is significantly less. Keep in mind that if you're going to walk more and faster, the GENUX 2 pushes more to your leg. This may overload the skin on the contact points with the GENUX 2. Slowly building up activities is therefore advisable.

### PHOTO MEASUREMENT

Ambroise not only pays attention to the innovation of its products, but also to the way they are individually measured. Every GENUX 2 is custom made based on two digital photos using the Ambroise Photo Measurement Technique. (See Figure 7).

The Ambroise software converts the photos to a production drawing with the exact leg 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 your gait. The measurement process is done by appointment only and takes about half an hour.

## DELIVERY

When the orthosis is ready, a delivery appointment is made. At that time, 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 GENUX 2 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.*

## GETTING USED TO THE GENUX 2

When advising, measuring, adjusting and delivering your orthopaedic device a lot of attention has been paid to the right fit. Still, the leg will have to get used to a new position or support. Therefore use a build-up schedule.

## CHECK-UP

It is always wise to make an inspection appointment after a few weeks. Once pressure sores occur which threatens 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 GENUX 2. 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 again. 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 individually tuned. 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 GENUX 2 BENEFIT YOU?

If you're interested in additional information on the GENUX 2 or if you want to find out if the GENUX 2 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](mailto: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 GENUX 2 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 GENUX 2 in your case.



Figure 7: Photo measurement, casting the leg is no longer needed.

# GENUX 2 KNEE ORTHOSIS

## PRODUCT INFORMATION

### ITEM NUMBERS

450000 | Genux 2 lateral | left  
450001 | Genux 2 lateral | right  
450002 | Genux 2 medial | left  
450003 | Genux 2 medial | right

### 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.

The GENUX 2 is made of sustainable stainless materials. You can clean the parts of the orthosis using a damp cloth, optionally moistened with non-aggressive degreasing products. 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.

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,

It is recommended to let your GENUX 2 be checked by your orthotist once a year (with very active use twice a year). He can then judge the proper functioning of your orthosis, but can also check whether the GENUX 2 is still the best solution for your clinical situation.

### WHAT TO DO WITH PROBLEMS

Despite the care that Ambroise and your orthotist spend to ensure the maximum quality of your GENUX 2, something can go wrong. Your orthotist is the first point of contact in case of problems. He can best judge what needs to be done to solve the problems. It may be that changing one of the GENUX 2 settings in your case is the best. Perhaps, despite all the guarantees, something went wrong. Your orthotist can judge whether he can perform the repair or that your GENUX 2 has to be sent to Ambroise. Also, your orthotist can investigate if your situation may have changed, so that GENUX 2 is no longer the best solution for you.

Also talk to your doctor about possible problems with your orthosis. An orthosis should help to reduce your complaints. If that is not the case then a solution needs to be found.

The warranty on a GENUX 2 is with normal use, one year. The product life-time for the GENUX 2 is set to three years (daily use). After that a safe use of the product can no longer be guaranteed by Ambroise.

### 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.

# GENUX 2 KNEE ORTHOSIS

## INFORMATION FOR THE PROFESSIONAL

### CONTRAINDICATIONS:

- Overweight (> 100 kg)
- Knee flexion contracture > 10°
- Full instability: valgus and varus
- Non-correctable valgus / varus > 10°
- Quadriceps < 4 (MRC scale. A UTX can be considered as an alternative)
- Hyperextension > 20° (in that case choose a UTX POST)
  
- Lower leg vascular problems / High risk of thrombosis. The circular calf strap may be problematic in those cases. Consult the physician about that.

### ADJUSTMENT OF THE PELOTTE CARRIER

1. Remove the pelotte (see page 13)
2. Unscrew the locking screws of the FS cable in the connector
3. Use the Ambroise bending pliers to bend the pelotte carrier
4. Reattach the FS cable
5. Place the pelotte back

On our YouTube channel [www.youtube.com/AmbroiseHolland](http://www.youtube.com/AmbroiseHolland) you can find a tutorial how to adjust the pelotte carrier.



## PHOTO MEASUREMENT GENUX - 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 centre at the lateral side of the leg, positioned at the anatomical axis.
- Mark the lateral malleolus of the ankle (UTX only).
- Mark the medial malleolus of the ankle (UTX only).

### 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. Prevent unwanted concealing clothes.
- Measure distance lateral malleolus till floor (UTX only)
- Measure distance medial malleolus till floor (UTX only)
- Measure distance lateral malleolus till knee centre (UTX only).
- Write the measurements on the measurement form.

Send the completed form to: [GENUXorder@ambroise.nl](mailto:GENUXorder@ambroise.nl)

You can order the photo measurement poster by sending an email to [info@ambroise.nl](mailto:info@ambroise.nl)  
Order code 300187 for the UTX/GENUX background kit, including markers.

## PLACING PELOTTES

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



1 A: outer shell | B: inner shell



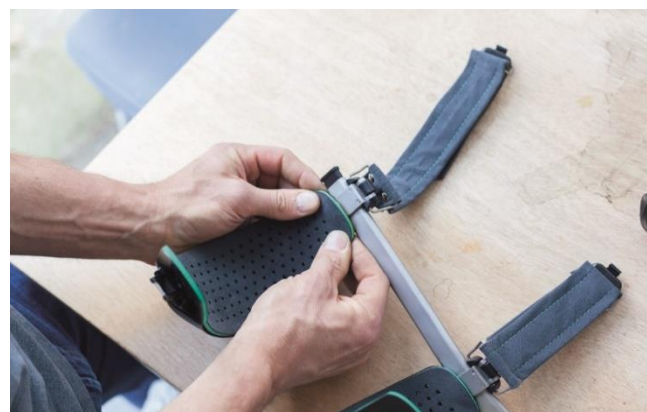
2. Slide the outer shell on the tube (matte side out).



3 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 yellow cover to stick the foam to the surface and press tightly.



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

