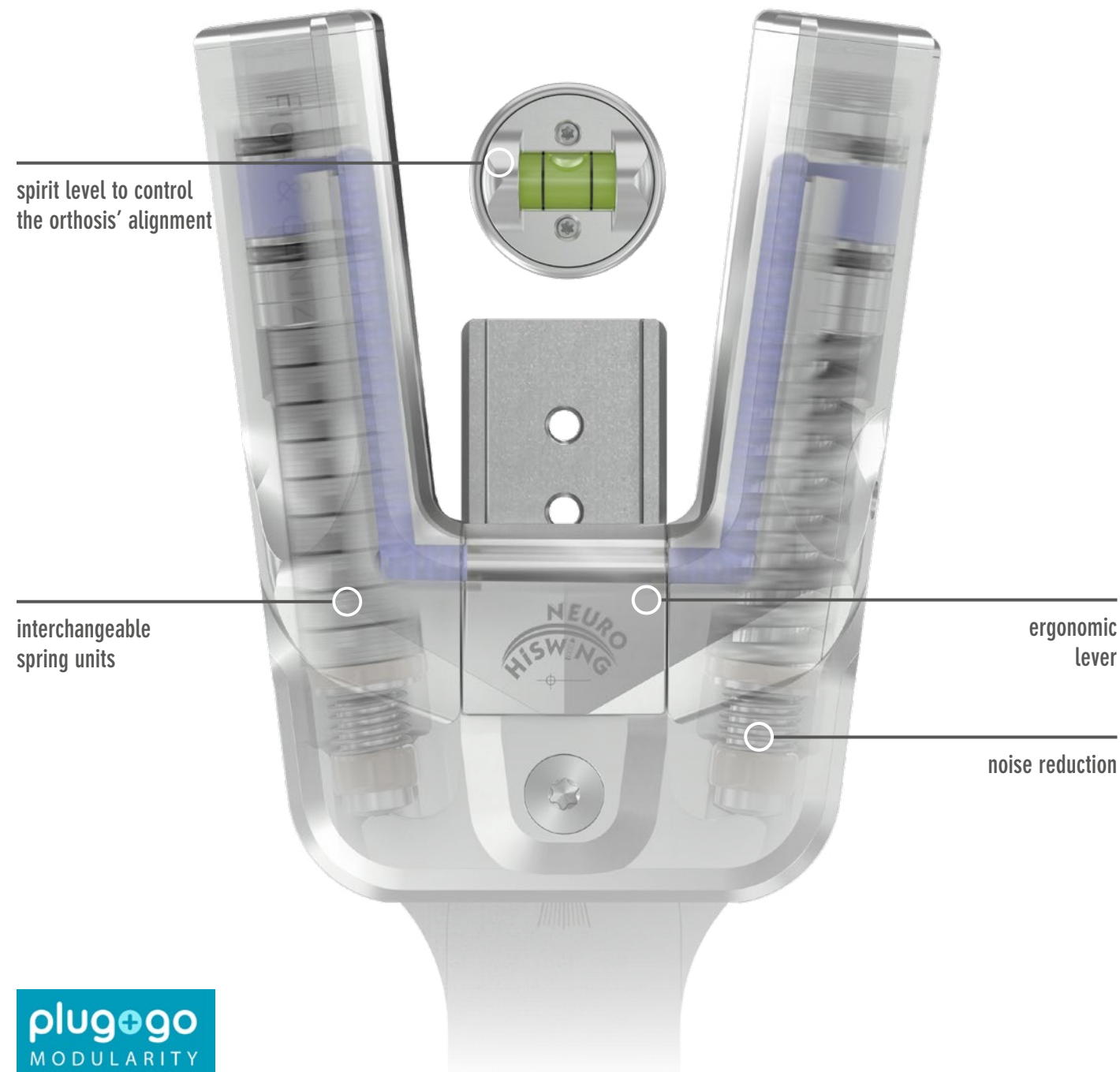


NEURO HiSWING – the **First Hydraulic** Ankle Joint in Orthotics



The First Hydraulic Ankle Joint

an Innovation in Orthotics



plug+go
MODULARITY

With the **NEURO HiSWING**, the first hydraulic ankle joint has been developed.

In its basic alignment, it is adjusted to level ground. However, even stairs and hilly terrain can be easily mastered with the **NEURO HiSWING**.

The **NEURO HiSWING** offers the following advantages to the patient:

- hiking in hilly terrain
- more comfort when sitting
- climbing stairs with less effort
- wearing shoes with different heel heights
- standing and walking without shoes

The **NEURO HiSWING** guarantees security and flexibility in every situation.



Unique in orthotics: thanks to the hydraulic component, the patient is able to independently change the ankle joint angle, if necessary, and then reliably restore the basic alignment set by the orthotist.

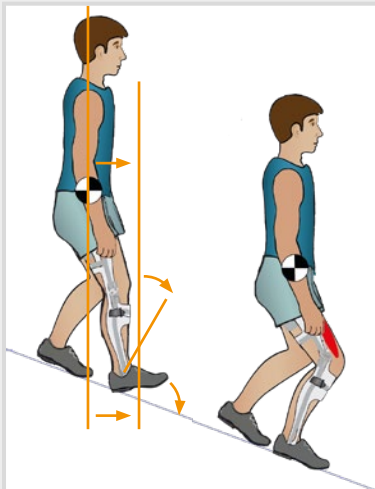


By opening the hydraulic valve via the lever, the desired inclination angle of the foot can be adjusted (e. g. on a slope). The spirit level on the system ankle joint indicates the correct alignment for the slope when the air bubble is centred.



Walking Downhill Safely with the NEURO HiSWING

The individual adjustment of the ankle joint angle via the hydraulic system enables the patient to walk downhill safely and upright.

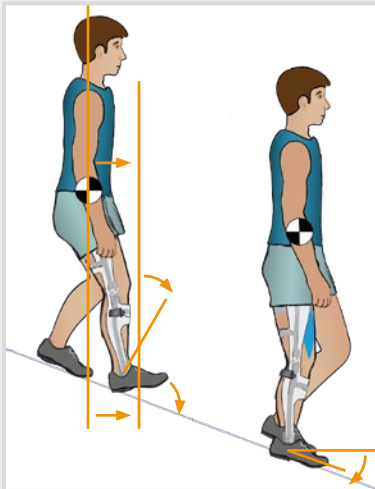


without NEURO HiSWING

If the ankle joint angle is not adjusted to the incline, the body's centre of gravity shifts forward when the forefoot is lowered until it is above the support surface of the foot. At the same time, the knee is flexed, as the dorsiflexion stop is only reached with an excessive tibial inclination. The thigh muscles that secure the knee are heavily strained.



Adjustment on the NEURO HiSWING:
The patient places the foot on the incline and closes the lever as soon as the air bubble of the spirit level is centred.



with NEURO HiSWING

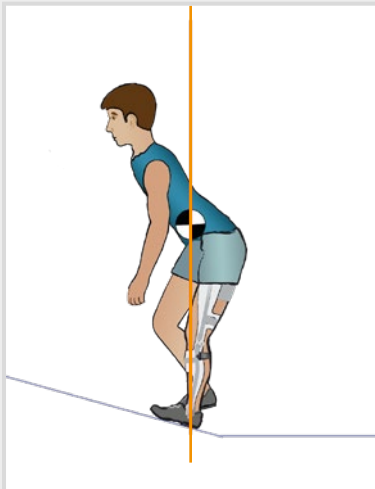
The ankle joint angle is now adjusted to the incline. The body's centre of gravity shifts forward until it is above the support surface of the foot. The forefoot does not have to be lowered until it touches the ground. The knee does not flex excessively since the knee is secured by the forefoot lever with an effective. Less strain is put on the thigh muscles.

A firm footing at any incline is guaranteed.



Walking Uphill Safely with the **NEURO HiSWING**

The individual adjustment of the ankle joint angle via the hydraulic system enables the patient to walk uphill safely and with less effort.

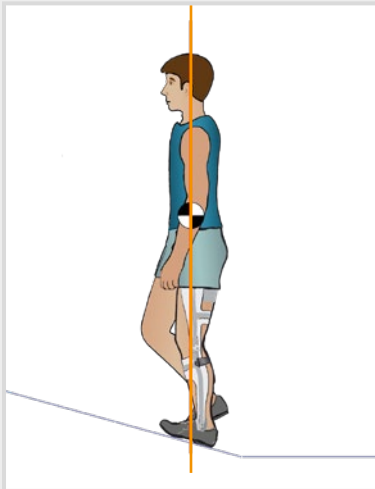


without NEURO HiSWING

If the ankle joint angle is not tilt to the slope, the patient must incline the upper body forward until the body's centre of gravity is above the support surface of the foot and in front of the ankle joint pivot point.



Adjustment on the **NEURO HiSWING**:
The patient places the foot on the slope and closes the lever as soon as the air bubble of the spirit level is centred.



with NEURO HiSWING

The orthosis is now adjusted to the angle between the line of gravity and the tibial inclination. Thus, the body's centre of gravity in an upright, physiological posture is in front of the ankle joint pivot point.

Walking safely uphill is possible.



Sitting Comfortably with the NEURO HiSWING

Modern system ankle joints are functionally adapted to the biomechanics of standing and walking. However, this results in disadvantages when sitting. With the NEURO HiSWING, the patient can increase the range of motion of the system ankle joint to lower the forefoot and enlarge the sitting comfort.



In the basic alignment, the heel touches the ground while the forefoot points diagonally upwards. The range of motion is limited due to the spring units. Such a sitting posture is uncomfortable after a while.



Adjustment on the NEURO HiSWING:
The patient gets more range of motion by opening the lever.



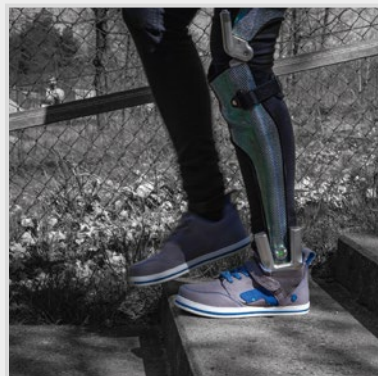
The system ankle joint can now be moved without resistance in plantar flexion and dorsiflexion direction. The sole can be placed completely on the ground.

A total relaxation of the orthosis leg is achieved when sitting.



Walking Down Stairs in Alternation with the **NEURO HiSWING**

Thanks to the adjustability of the ankle joint angle with the **NEURO HiSWING**, the patient has a stable and secure balance when walking down stairs.



The aim of the adjustment by the patient is again to bring the body's centre of gravity above the support surface of the foot and in front of the ankle joint pivot point.



To do so, the patient increases the tibial inclination by adjusting the ankle joint angle. This allows the body's centre of gravity to be lowered when the orthosis foot is completely touching the ground.



Thanks to the larger tibial inclination, the patient can optimally shift the body's centre of gravity to the support surface of the foot when walking down stairs.

The patient can walk down stairs safely and in alternation.



Walking Up Stairs Effortlessly with the **NEURO HiSWING**

Even strenuous hurdles, such as long and steep staircases, can be mastered safely with the **NEURO HiSWING**.



Adjustment on the **NEURO HiSWING:**
The patient places the orthosis leg on the first stair. The leg without the orthosis is on the floor close to the step.



By means of the lever, the patient increases the tibial inclination, just as when walking down stairs.



Thanks to the larger tibial inclination, the patient can optimally shift the body's centre of gravity to the support surface of the foot when walking up stairs. The effort required is therefore low.

Walking up stairs is safe and effortless.



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Wearing Different Heel Heights with the **NEURO HiSWING**

With the **NEURO HiSWING**, the orthosis can even be used with different heel heights. The ankle joint angle can be flexibly adjusted to the respective heel height in just a few steps.



The heel height can be adjusted with the orthosis on as well as before putting it on – with the orthosis in the shoe.



Adjustment on the **NEURO HiSWING**:
The lever is opened. As soon as the air bubble of the spirit level is centred, the lever is closed.



Following this procedure, the patient can quickly and easily adjust the **NEURO HiSWING** to any shoe.

Different heel heights offer stylish looks and a fashionable appearance.



* The orthotist should be informed in advance which shoes with which heel height the patient will wear so that they can take this into account when planning the orthosis.

Walking Without Shoes with the **NEURO HiSWING**

The **NEURO HiSWING** offers patients the unique opportunity to wear slippers or socks at home.



The **NEURO HiSWING** orthosis is fixed to the foot by means of a slip-resistant sole and an easy-to-produce device that attaches the foot piece to the foot. The ankle joint angle is then adjusted as usual via the lever to compensate for the missing shoe heel.



The patient can now move comfortably without shoes at home.



By releasing the lever, the patient can increase the range of motion in the ankle joint and slip into their shoes quickly and comfortably.

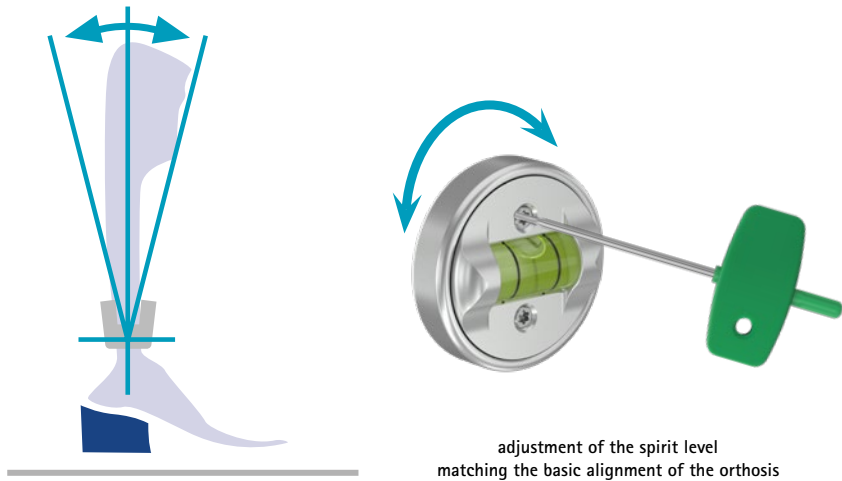
The patient enjoys more freedom at home and when putting on and taking off shoes.



NEURO HiSWING – Adjustable by Orthotists and Patients

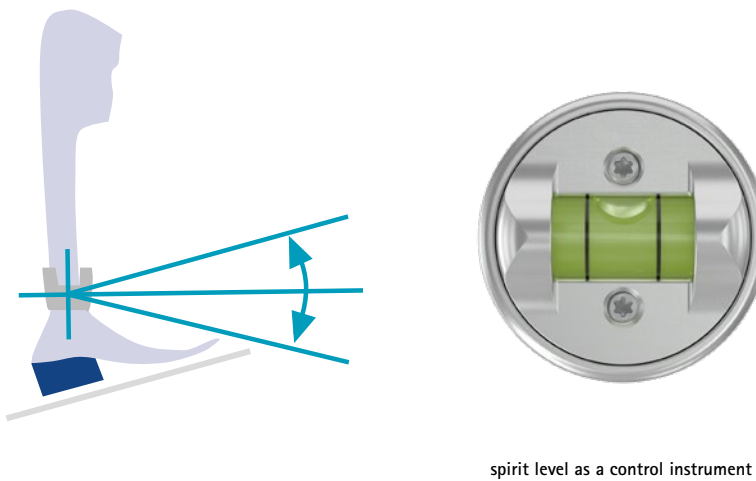
1 Adjustment of the Orthosis Alignment by the Orthotist

Thanks to the adjustable alignment of the **NEURO HiSWING** system ankle joint, the orthosis can be individually adjusted to the patient's pathological gait. The spirit level is adjusted to this basic alignment. If the gait changes, the orthotist can easily correct the alignment and readjust the spirit level.



2 Adjustment of the Ankle Joint Angle by the Patient

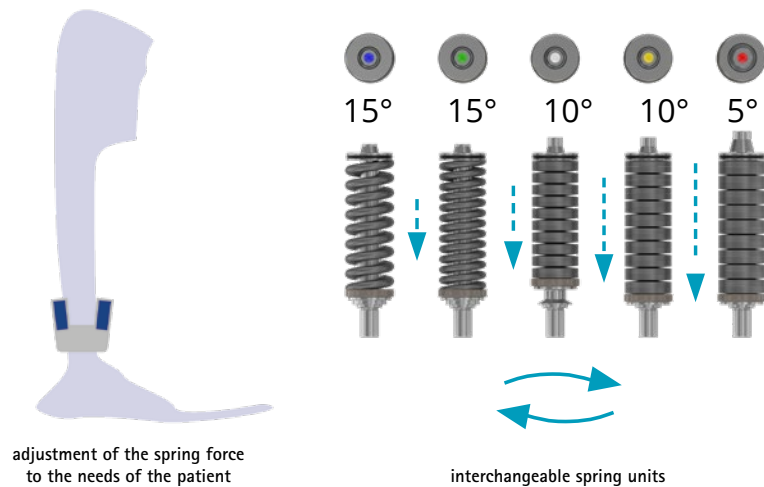
If necessary (e. g. when walking uphill) the ankle joint angle can be adjusted. To do so, one has to open the lever on the system ankle joint, assume the desired position and bring the lower leg into an angle in which the air bubble of the spirit level is centred. The angle between the tibial shell and the line of gravity is therefore adjusted to the basic alignment determined by the orthotist.



3 Variable Spring Force

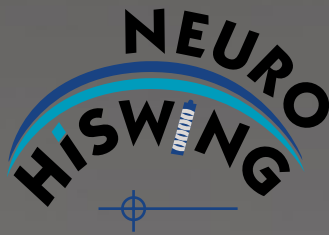
The spring force in plantar flexion and dorsiflexion can be individually adjusted to the patient's needs thanks to the interchangeable spring units. The product range comprises a total of five different spring units, with forces ranging from normal to extra strong and a range of motion from 15° to 5°.

The spring units are the well-proven, silent NEURO SWING 2 models.



Adjustments 1 & 3 can be made separately. They do not influence each other.





Would you like to produce an orthosis with a
NEURO HiSWING system ankle joint for your patient?

Use the Orthosis Configurator to independently select the necessary system components for an orthosis with a **NEURO HiSWING**. The Orthosis Configurator determines the appropriate system components using patient data and taking the load capacity into account.



www.orthosis-configurator.com