

# Carbon System Joints

## Ultralight, Durable and Waterproof





## Carbon System Joints

Our product range contains four different carbon system joints:

- NEURO SWING Carbon system ankle joint
- NEURO CLASSIC Carbon system ankle joint
- NEURO CLASSIC Carbon system knee joint
- NEURO LOCK Carbon system knee joint

The carbon system joints allow patients to enjoy their outdoor activities without restrictions. The ultralight and durable carbon joint case and the seawater-resistant stainless steel screwing defy both wind and rain. An orthosis equipped with these system joints can also be worn on the beach and in the sea and used for many other activities.

With the help of the matching system side bars and system anchors, it is possible to construct an ultralight yet fully functional orthosis that accompanies your patients safely in any weather.



NEURO SWING Carbon system ankle joint



NEURO CLASSIC Carbon system ankle joint



NEURO CLASSIC Carbon system knee joint



NEURO LOCK Carbon system knee joint



\* The orthosis pictured in the centre with a 16mm NEURO LOCK Carbon system knee joint with pulling cable and a 16mm NEURO SWING Carbon system ankle joint has a total weight of only 960g.

# NEURO SWING Carbon System Ankle Joint

ultralight thanks to carbon fibre-reinforced joint case

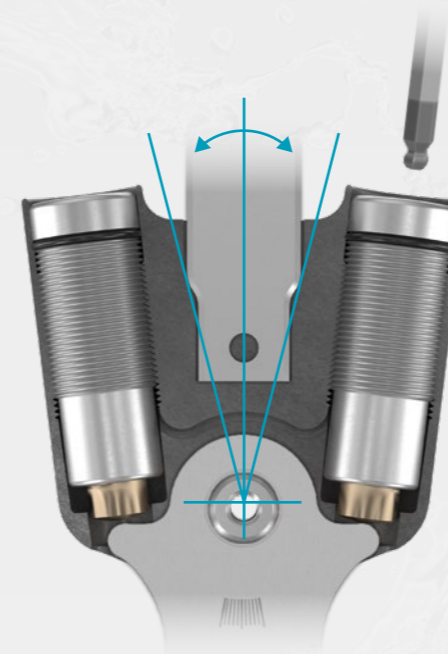
dirt- and water-resistant



waterproof spring unit sleeve

spring unit with disc springs

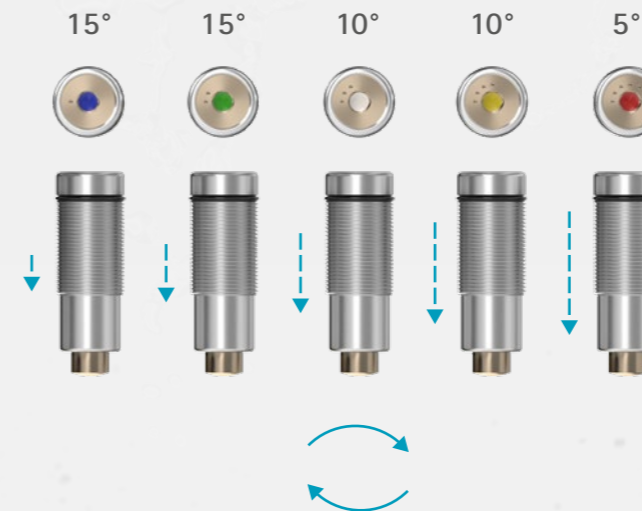
seawater-resistant stainless steel screwing



## Adjustable Alignment

Thanks to the adjustment options of the NEURO SWING Carbon system ankle joint, the alignment of the orthosis can be optimally adjusted according to the individual pathological gait. The aim is to achieve a gait that is as physiological as possible. And should the gait change, a quick response by an adjustment modification and tuning is easily possible.

All adjustments can be made separately. They do not influence each other.



## Variable Spring Force

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



## NEURO SWING Carbon

The NEURO SWING Carbon is the ultralight version of the NEURO SWING. With its adjustable alignment and interchangeable spring units, it offers similar advantages as the NEURO SWING, i.e. it dynamically brings the patient into an upright position and stabilises them when walking and standing. Additionally, thanks to the waterproof spring unit sleeves and the water-resistant carbon fibre-reinforced joint case, it can also be used in wet and outdoor areas.

The NEURO CLASSIC Carbon can be used as a supporting joint for the NEURO SWING Carbon.



## Spring Unit Case

A practical spring unit case is available as an accessory for the NEURO SWING Carbon. It contains two spring units per spring force for each system width as well as the necessary tools for exchanging the spring units. Your advantage: with this case, the effects of the different spring forces on the gait can be compared and a flexible reaction to the therapy progress is possible. The case can also be ordered empty for customised equipping.

# NEURO CLASSIC Carbon System Ankle Joint

ultralight thanks to carbon fibre-reinforced joint case

dirt- and water-resistant



free moving

seawater-resistant stainless steel screwing



## NEURO CLASSIC Carbon

The NEURO CLASSIC Carbon is a free moving system ankle joint without a dorsiflexion and plantar flexion stop. It is mainly used as a supporting joint for the NEURO SWING Carbon. This enables a bilateral construction with a higher load with only one NEURO SWING Carbon as the main joint and one NEURO CLASSIC Carbon as the supporting joint.



# NEURO CLASSIC Carbon System Knee Joint

ultralight thanks to carbon fibre-reinforced joint's upper and lower part

dirt- and water-resistant



free moving with integrated posterior offset

seawater-resistant stainless steel screwing



## NEURO CLASSIC Carbon

The NEURO CLASSIC Carbon is a free moving system knee joint with integrated posterior offset. It can be mounted unilaterally, but can also be used as a supporting joint for the NEURO LOCK Carbon. This enables a bilateral construction with a higher load with only one NEURO LOCK Carbon as the main joint and one NEURO CLASSIC Carbon as the supporting joint.



# NEURO LOCK Carbon System Knee Joint

extremely durable,  
ultralight  
carbon fibre-reinforced  
joint's upper and lower part

dirt- and  
water-resistant

locking pawl  
with fixing pawl

seawater-resistant  
stainless steel screwing



## Locking/Unlocking

The system knee joint is permanently locked via the locking pawl. It can be unlocked for flexing the leg.

The unlocking is done via a lever extension (lock lever) or a pulling cable. The orthotist can either mount the lever extension included in the scope of delivery or use a pulling cable which is available as an accessory part.

Special feature: the NEURO LOCK Carbon system knee joint can also be used as a main joint with complete load capacity in a unilateral construction orthosis.



## Permanent Unlocking

The system knee joint can be permanently unlocked via a fixing pawl. This function is recommended, for example, when cycling or doing exercises during physiotherapy.



## Precisely Adjustable Extension Stop

If play occurs due to wear, the position of the locking pawl can be infinitely adjusted by means of a precisely adjustable extension stop.



## NEURO LOCK Carbon

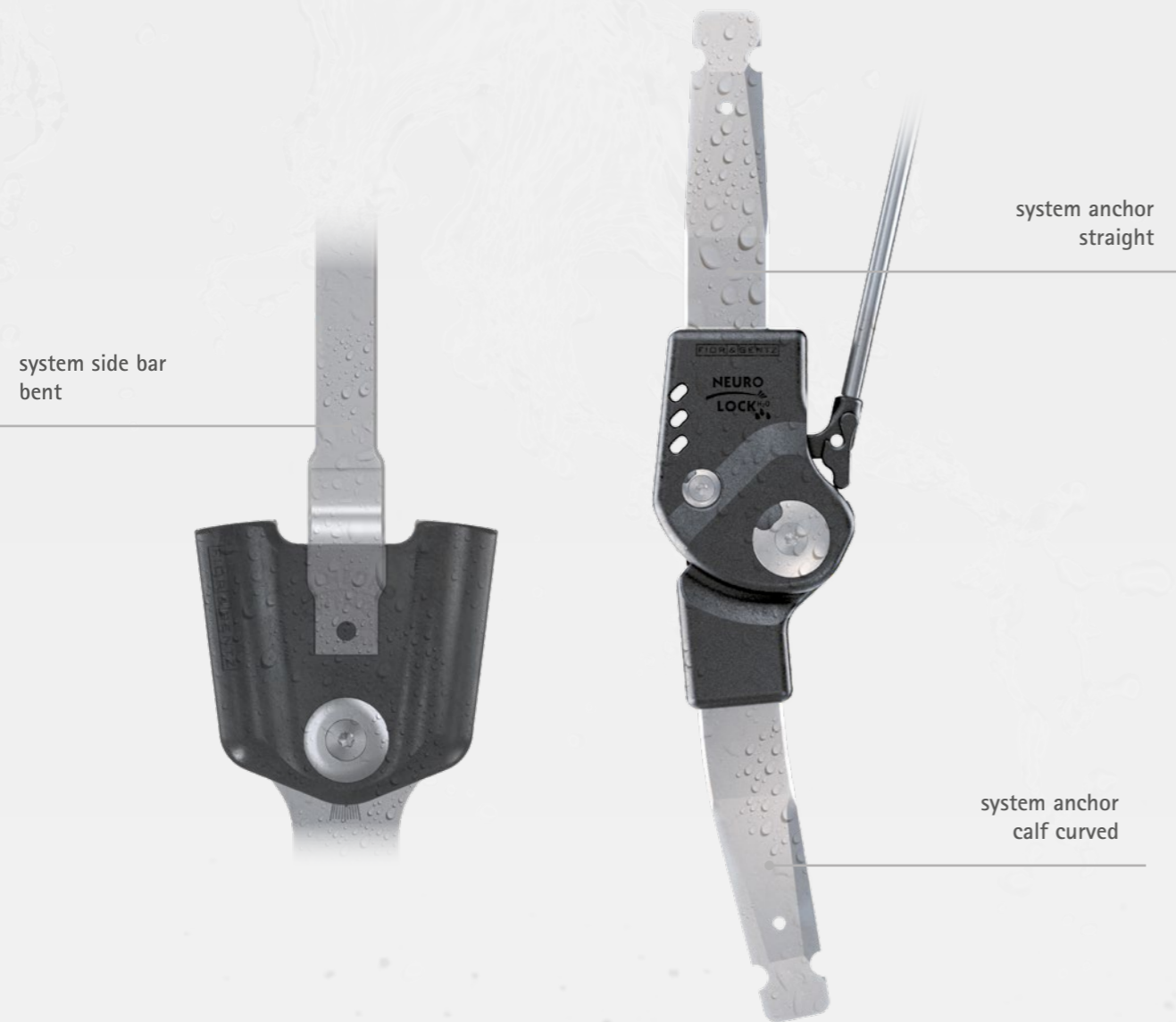
The NEURO LOCK Carbon is a locked system knee joint. It has a locking pawl that can be used to lock it permanently. Thanks to the fixing pawl, the system joint can also be permanently unlocked whereby it becomes a free moving system joint with integrated posterior offset.

The NEURO CLASSIC Carbon can be used as a supporting joint for the NEURO LOCK Carbon.

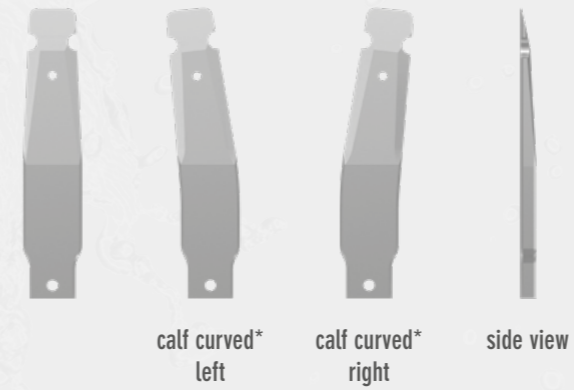


# System Anchors and System Side Bars

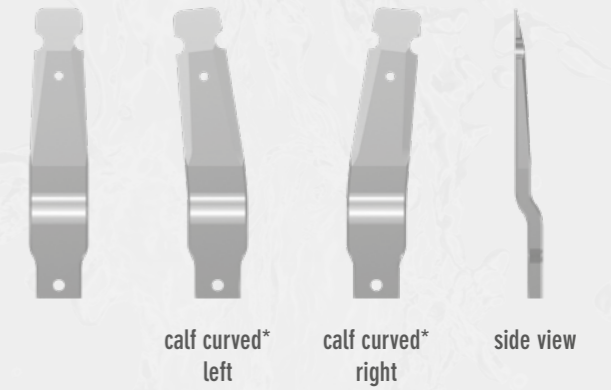
for Carbon System Ankle and Knee Joints



## System Anchors – Straight



## System Anchors – Bent



\* A system anchor with the shape calf curved follows the anatomical shape of the patient's leg. The calf curve simplifies reinforcing the profiles of a KAFO and thus allows the best possible connection between the system ankle and system knee joint.

All straight and bent system anchors are available in the system widths 12mm, 14mm, 16mm and 20mm.

## System Side Bars – Straight



## System Side Bars – Bent



|                                  |       |       |       |       |
|----------------------------------|-------|-------|-------|-------|
| System Width of the System Joint | 12mm  | 14mm  | 16mm  | 20mm  |
| Length of the System Side Bar    | 265mm | 300mm | 450mm | 530mm |

All straight and bent system side bars are available in the system widths 12mm, 14mm, 16mm and 20mm.

### System Anchors and System Side Bars

System anchors and system side bars are connecting elements.

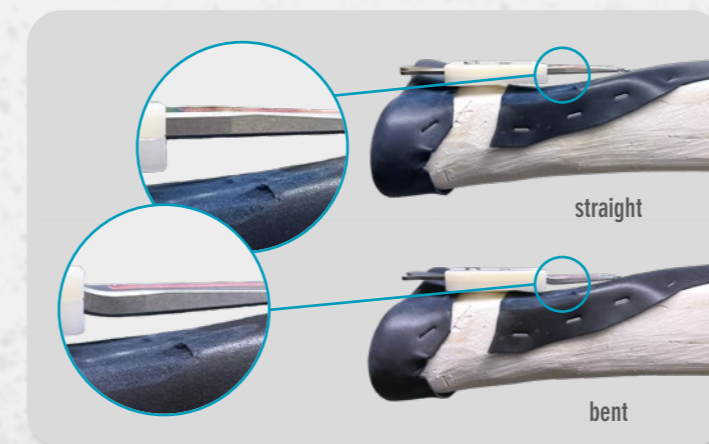
A system anchor for carbon system joints connects the system joint to the shell of a laminated orthosis. The system anchors are laminated into the shell.

A system side bar connects the system joint to a shell, which can be produced in different ways. The system side bars are connected to the finished shell, for example by adhering/riveting/screwing.

System anchors and system side bars can be connected to both a system ankle joint and a system knee joint.

Material: aluminium  
Strength: high  
Breaking Elongation: medium  
Weight: low

You will find detailed information about our production techniques in the section "Online Tutorials" and "Producing the Orthosis" on our website [www.fior-gentz.com](http://www.fior-gentz.com).



The system anchors and system side bars in the bent shape can be used for larger gaps between the system anchor/system side bar and leg, as they are industrially prefabricated.

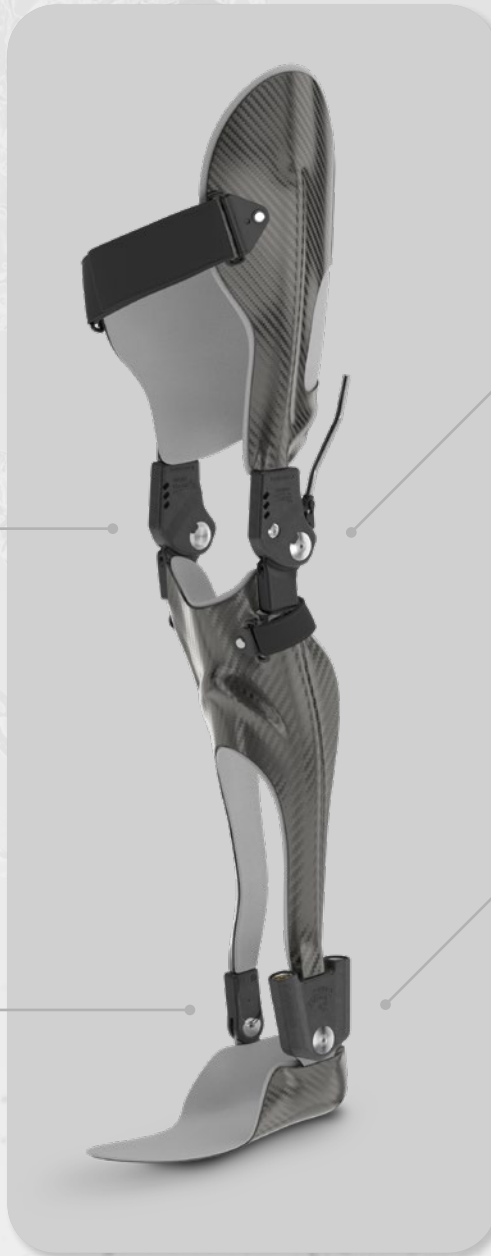
# Example for an Ultralight KAFO with Carbon System Joints



NEURO CLASSIC Carbon  
system knee joint



NEURO LOCK Carbon  
system knee joint



NEURO SWING Carbon  
system ankle joint

NEURO CLASSIC Carbon  
system ankle joint



You would like to produce an ultralight, dirt- and water-resistant orthosis made entirely of carbon for your patient?

Use the Orthosis Configurator to independently select the components for a carbon orthosis. The Orthosis Configurator determines the appropriate system components using patient data and taking the load capacity into account.



Orthosis  
Configurator

[www.orthosis-configurator.com](http://www.orthosis-configurator.com)

FIOR & GENTZ

Gesellschaft für Entwicklung und Vertrieb  
von orthopädietechnischen Systemen mbH

Dorette-von-Stern-Straße 5  
21337 Lüneburg (Germany)

☎ +49 4131 24445-0  
☎ +49 4131 24445-57

✉ info@fior-gentz.de  
🏠 www.fior-gentz.com

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ORTHOPÄDIETECHNIK MIT SYSTEM