

USER INSTRUCTIONS

## JACK PCL BRACE

DYNAMIC KNEE BRACE

TO RELIEVE THE POSTERIOR CRUCIATE LIGAMENT



**albrecht**<sup>®</sup>  
FUNKTIONELLE REHABILITATION

# Jack PCL Brace

## User Instructions

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# Jack PCL Brace

## User Instructions



## 1. Introduction

### 1.1. Foreword

Functional braces relief and stabilize joints and ligaments after trauma and surgery. They support joints and ligaments in the healing process while maintaining the natural range of motion.

Whilst protecting fragile joints and ligaments during rehabilitation, our functional braces are also designed to allow a guided, step by step return to full physiological mobility.

### 1.2. Customer information

For your own safety please read through these User Instructions carefully and accurately before using the brace. The instructions, notes and procedures must be read and understood thoroughly in order to benefit from the correct operation and use of the device. If anything in the User Instructions is not clear, or any instructions, operating procedures or safety information is not fully understandable, please contact the appropriate specialist retailer or albrecht GmbH directly, before you use the brace. This particularly applies to the safety instructions.

### 1.3. Mode of operation

The **Jack PCL Brace** overcomes the gravity of the lower leg to relieve the posterior cruciate ligament. The translation force may be adjusted to the leg and weight of the patient through setting the tension on both sides of the brace. Hereby the detrimental effects of the muscle and gravitation forces can be counteracted. **The slipping of the tibia into the posterior drawer position is prevented.**

### 1.4. Application

The brace has been designed exclusively for the orthotic treatment of the knee joint and for contact with intact skin.

### 1.5. Scope of delivery

Please check the completeness of the brace at delivery.

- Brace with padding and straps
- albrecht GmbH hexagon key
- User Instructions

### 1.6. Declaration of conformity

The albrecht GmbH company as manufacturer with sole responsibility declares the conformity of the **Jack PCL Brace** with European Council Directive 93/42/EEC for medical devices.

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### 1.7. Features

- Constant translation force irrespective of flexion angle
- Optimised hinge geometry
- Small hinge with proven features:
  - Spring force can be adjusted infinitely and individually
  - Spring force can be easily increased or reduced at any time
  - Spring tension can be switched on and off without tools whilst retaining the set pressure force at the calf shell
  - Limitation in 15° increments in extension and flexion
  - Extension limitation 0° / 15° / 30° / 45°
  - Flexion limitation 60° / 75° / 90° / 105° / 120°
  - ROM possible from 0° to 120°
  - Temporary immobilisation possible
- Optimised shell and strap system:
  - High level of wearing comfort due to breathable, lightweight aluminium thigh shells
  - High flexibility due to adjustable, customisable thigh shells
  - Extended size system, incl. paediatric sizes
  - Modular elements that can be combined with one another
  - Anatomically shaped tibia shell to improve pressure distribution

- Strap system can be adjusted to suit individual requirements
- Easy handling and high level of wearing comfort

### 1.8. Indications

The physician will prescribe the fitting based on diagnostic findings.

Generally, the use is indicated for:

- PCL ruptures
- Partial ruptures and elongations of the PCL

For all other indications a physician must be consulted.

### 1.9. Contra-indications

- Massive circulatory disorder
- Massive varicosis

The brace is only intended for use in contact with intact skin.

### 1.10. Safety Instructions

The optimal effect of the brace is only achieved when used correctly.

- The brace must only be used in the intact, complete and mechanically undamaged condition and with complete and intact pads and straps. This must be verified by the user before each usage.
- Opening or removing one or more straps, as well as excessive loosening of the straps when using the brace leads to a reduction of the therapeutic effect of the brace and may lead to injury.
- The brace must not be worn over open wounds.
- The skin should be free of oils, grease, gels or other debris, to prevent reactions with the skin or the structure of the material.
- The orthosis should fit firmly but not too tight, so as not to restrict the blood circulation and adversely affect nerve and lymph vessels. Excessive compression is to be avoided.
- Combination with other products is currently not provided for or is to be agreed with the manufacturer in writing.
- The brace is not intended for single use, but is intended for multiple use by a single person.
- The product as delivered is not sterile.
- Contact your physician immediately in the event of an allergic reaction.
- Please note that cushioned sections can heat up under direct sunlight. Protect the orthosis from direct sunlight if necessary.

- Currently there is no test for flammability. Exercise caution when using the orthosis in the direct vicinity of open flames such as lighters and cigarettes.

### 1.11. Warranty

In addition to the legal warranty, we provide a 6-month durability guarantee for the orthosis. If properly used, this guarantees that the orthosis will function without fault. This excludes the padding and straps, which are usually liable to a certain amount of wear and tear. This kind of wear and tear does not represent a product defect. This manufacturer's warranty is subject to the condition that the orthosis is used as a medical rehabilitation device and for no other purpose than that described in the instructions for use. Changes to the orthosis or the removal / damage to the quality management seal will invalidate the warranty.

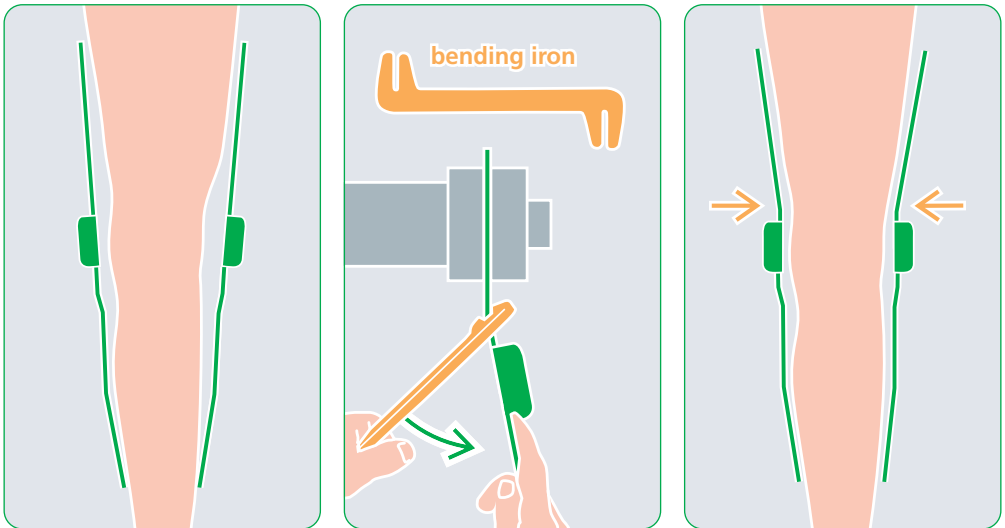
## User Instructions

### 2. Adjustment by the orthopaedic technician

#### 2.1. Fitting to the patient

##### 2.1.1. Adjusting the brace to the leg shape by using an orthopaedic “bending iron”

The brace is anatomically contoured. However, if a different shape is required, the hinge rods can be adjusted to the shape of the patient’s leg with the aid of an orthopaedic bending iron. Loosen the screws on the shell components and either move or remove them. Then adjust the hinge rods to the shape of the extremity.



**When adjusting the hinge rods to the shape of the extremity by using an orthopaedic bending iron, you must not bend the rods in the area of the hinge housing or the hinge cover as this could lead to damage or break of the hinge.**

The **Jack PCL Brace** can only be adjusted at the thigh rods, due to constructive reasons.

# Jack PCL Brace

## User Instructions

### 2.1.2. Setting the shell components

The shell components are moveable to adjust the length of the brace.

- 1 Loosen the screws on the shell components with the supplied hexagon key without unscrewing them completely.
- 2 Move the shell components into the desired position.
- 3 Tighten the screws again.



The shell components can be adjusted to the contour of the extremity by gently pressing them on the leg.



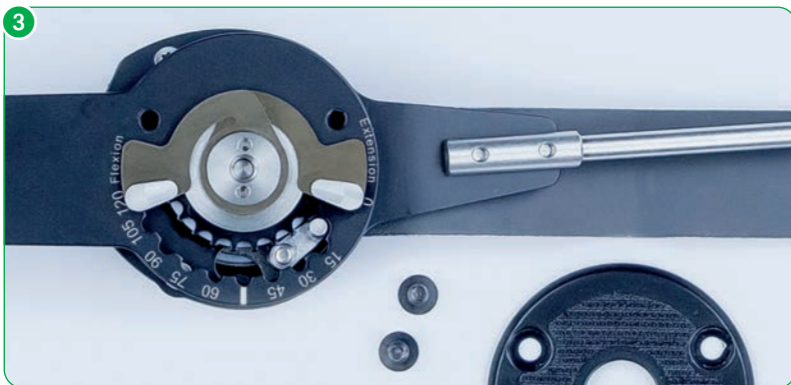
## User Instructions

### 2.1.3. Adjustment of limitation stops

To restrict extension and flexion the limitation can be adjusted in 15° increments.

At both hinges, all the steps in the procedure must be performed in an identical manner.

- 1 To be able to make hinge adjustments you must remove the condylar pad on the inside of the hinge.
- 2 Now undo the screws on the cover and then remove them.
- 3 Under the cover there are stops for extension and flexion. They each consist of a stop bridge connected to a spring plate. The factory settings for extension and flexion are 0° and 120°, respectively.



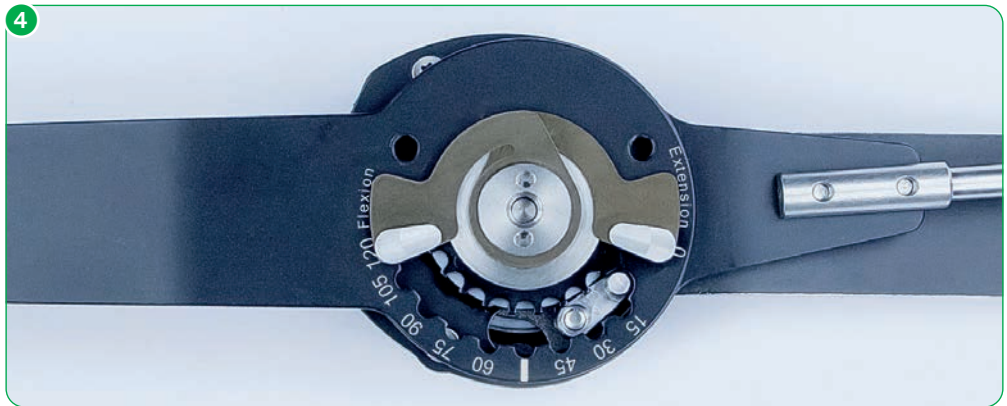
# Jack PCL Brace

## User Instructions

### 2.1.4. Setting the flexion limitation

- 4 To adjust the flexion stop, move the brace to maximum extension.
- 5 Raise the flexion stop with your fingernail until the stop is disengaged from the set position and can be moved round the centre of the hinge with the spring plate.
- 6 Insert the flexion stop in the recess at the position required.

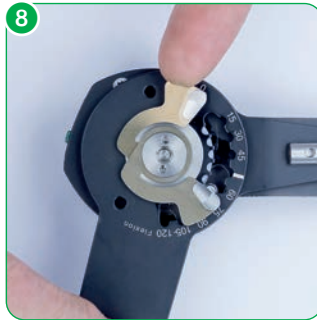
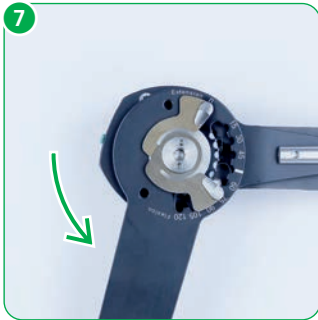
**Please bear in mind that excessive bending of the spring plate can result in damage.**



## User Instructions

### 2.1.5. Setting the extension limitation

- 7 To adjust the extension stop, move the brace to flexion against the flexion stop you have already adjusted.
- 8 Raise the extension stop with your fingernail until the stop is disengaged from the set position and can be moved round the centre of the hinge with the spring plate.
- 9 Insert the extension stop in the recess at the position required. **Please bear in mind that excessive bending of the spring plate can result in damage.**



- 10 To secure the stops, fit the cover back on again and fasten it down with the screws you previously removed.
- 11 Reattach the condylar pads to the hinge.



**At both hinges, all the steps in the procedure must be performed in an identical manner.**

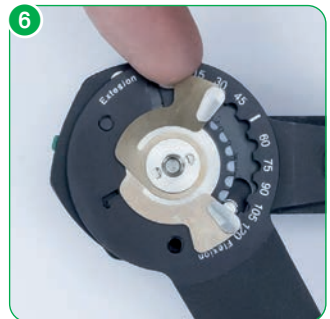
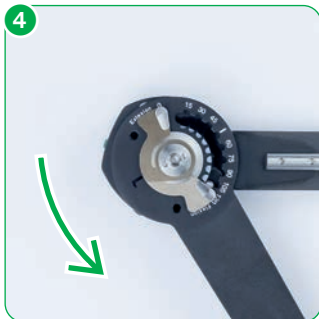
# Jack PCL Brace

## User Instructions

### 2.1.6. Adjusting immobilisation

For immobilisation the hinge can be adjusted in 15° increments.

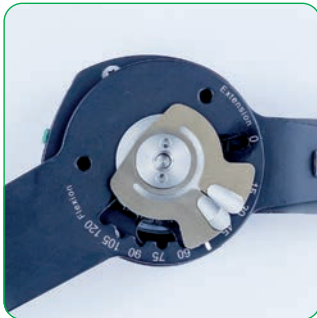
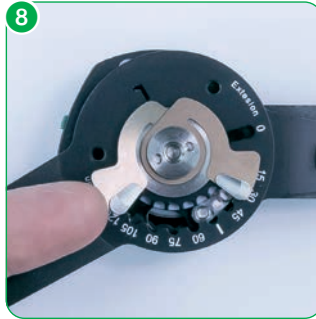
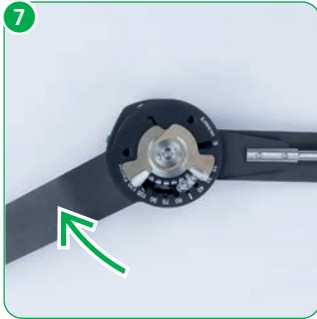
- 1 To be able to perform immobilisation you must remove the condylar pad on the inside of the hinge.
- 2 Now undo the screws on the cover and then remove them.
- 3 Under the cover there are stops for extension and flexion. They each consist of a stop bridge connected to a spring plate. The factory settings for extension and flexion are 0° and 120°, respectively.
- 4 To set immobilisation, move the brace to maximum flexion.
- 5 Raise the extension stop with your fingernail until the stop is disengaged from the set position and can be moved round the centre of the hinge with the spring plate.
- 6 Insert the extension stop in the milled recess at the position required.



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- 7** For immobilisation, then move the brace to extension against the extension stop you have already adjusted.
- 8** Raise the flexion stop with your fingernail until the stop is disengaged from the set position and can be moved round the centre of the hinge with the spring plate.
- 9** Place the flexion stop directly next to the extension stop.
- 10** To secure the stops, fit the cover back on again and fasten it down with the screws you previously removed.
- 11** Re-attach the condylar pads to the hinge.

**At both hinges, all the steps in the procedure must be performed in an identical manner.**



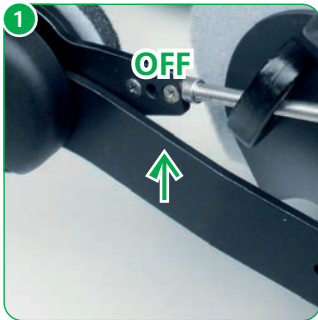
# Jack PCL Brace

## User Instructions

### 2.2. Attaching of the brace by the orthopaedic technician

#### 2.2.1. Deactivating the tension spring

- 1 Before fitting the brace, you must deactivate spring tension. First, set the levers of both hinges to the „off“ position.
- 2 To deactivate spring tension you must push the lower leg shell to posterior. To do so, grasp under the hinge bar with your hands and position your thumbs on the pressure blocks attached to the lower leg shell.
- 3 Using your thumbs on the pressure blocks, push the shell to posterior against the spring tension. The anterior directed spring force is now deactivated.



To make it easier to fit the brace to the patient, adjust the length of all the brace straps to maximum length without unthreading them. Now release the anterior straps from the thigh shell and lower leg shell by opening the buckles.

Then remove the two anterior additional shells from the upper and lower legs.





## User Instructions

### 2.2.2. Fitting the brace to the leg

- 4 Fit the brace to the patient's leg from behind. Ensure that the pivots of the brace hinges match the physiological pivots of the knee.



It is possible to adjust the thigh rods to the shape of the patient's leg by using an orthopaedic bending iron.

Make sure the hinges are as parallel as possible to one another in order to ensure wear-free operation of the brace. The lower leg shell was intentionally designed to be solid without ventilation windows to prevent oedemas.

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- 5 Now position the additional shell on the thigh. Please bear in mind that the additional shell must be located within the lateral thigh shells.
- 6 Then place the anterior distal thigh strap over the additional shell and close it with the buckle. Adjust the length of the strap so that the thigh shells are parallel to the thigh.
- 7 Now adjust the length of the posterior distal strap so that the thigh shells are parallel to the thigh.
- 8 Then adjust the length of the posterior proximal strap and continue to make sure that the shells are parallel to the thigh.
- 9 Now close the anterior proximal thigh strap over the additional shell. Readjust the strap if necessary.





## User Instructions

Now fit the lower leg shell to the patient's calf.

- 10 Then place the tibia shell on the shin.
- 11 Close the tibia strap over the the tibia shell.
- 12 Readjust the strap if necessary.

**Ensure that the pivots of the brace hinges match the physiological pivots of the knee.**



# Jack PCL Brace

## User Instructions

### 2.2.3. Final readjustment

Having closed the individual straps, check the set strap lengths and appropriate positioning of the brace, correcting them if necessary. Make sure the straps are not too tight, so as not to impair blood circulation.

To enable the spring force of the brace to act properly, the straps marked in red must be tightened sufficiently.

- 1 Tibia strap
- 2 Distal anterior thigh strap
- 3 Posterior proximal thigh strap

**If any of these straps should become loose or if they have been set too loosely, the brace will not function properly.**



## User Instructions

### 2.2.4. Activate spring tension

- ❶ To activate the spring tension of the brace, and hence enable it to function, set the levers of both hinges to the „on“ position.
- ❷ To activate spring tension you must push the lower leg shell to posterior. To do so, grasp under the hinge bar with your hands and position your thumbs on the pressure blocks attached to the lower leg shell.
- ❸ Using your thumbs on the pressure blocks, push the shell to posterior. The anterior directed spring force is now activated.



# Jack PCL Brace

## User Instructions

### 2.2.5. Adjusting spring tension to the intensity required by the patient

- 1 Through the window in the PCL casing the set spring force is indicated on a scale from 0 to 15. The ranges above 15 and below 0 are marked in red.  
**To prevent damage to the PCL hinge, it must not be rotated into the red zone of the window on the PCL hinge.**
- 2 Insert the tool into the lateral hole in the hinge as far as it will go. Turning clockwise or in the + direction increases spring tension whilst turning anticlockwise or in the - direction reduces spring tension.



### 2.2.6. Altering spring tension

Spring tension can be adjusted according to the progress of treatment.

Insert the tool into the lateral hole in the hinge as far as it will go. Turning clockwise or in the + direction increases spring tension whilst turning anticlockwise or in the - direction reduces spring tension.

The intensity of spring tension must be identical on both hinges.

**Adjustment of spring force may only be performed in agreement with the attending physician.**

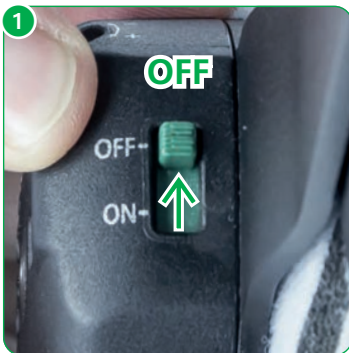
## User Instructions

### 3. Handling by the patient

#### 3.1. Removing the brace

##### 3.1.1. Deactivating spring tension

- 1 Before removing the brace, you must deactivate spring tension. First, set the levers of both hinges to the „off“ position.
- 2 To deactivate spring tension you must push the lower leg shell to posterior. To do so, grasp under the hinge bar with your hands and position your thumbs on the pressure blocks attached to the lower leg shell. Using your thumbs on the pressure blocks, press the shell to posterior. The anterior directed spring force is now deactivated.



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## User Instructions

### 3.1.2. Open the buckles of the straps (on upper and lower shells)

Due to the user-friendly buckle system it is not necessary to open the hook and loop fasteners when fitting and removing the brace. To fit the brace, simply undo the buckles and open the anterior straps of the brace.

- 3 Undo the tibia strap by opening the buckle. Do not allow the strap to slip out.
- 4 Undo the distal anterior thigh strap by opening the buckle without unthreading them.
- 5 Undo the proximal anterior thigh strap by opening the buckle. Do not allow the strap to slip out.
- 6 Remove the additional thigh shell.
- 7 **Remove the brace downwards.**  
Detach the brace.

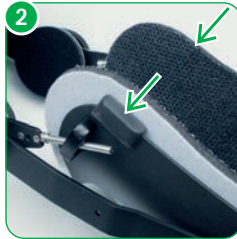
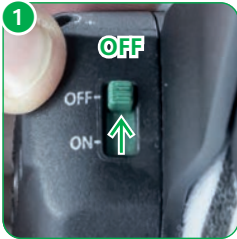


## User Instructions

### 3.2. Fitting the brace

#### 3.2.1. Deactivating spring tension

- ❶ Before fitting the brace, you must deactivate spring tension. First, set the levers of both hinges to the „off“ position.
- ❷ To deactivate spring tension you must push the lower leg shell to posterior. To do so, grasp under the hinge bar with your hands and position your thumbs on the pressure blocks attached to the lower leg shell.
- ❸ Using your thumbs on the pressure blocks, push the shell to posterior. The spring force is now deactivated.
- ❹ **Open the buckles of the straps (on upper and lower shells)**  
 Due to the user-friendly buckle system it is not necessary to open the hook and loop fasteners when fitting and removing the brace. To fit the brace, simply undo the buckles and open the anterior straps of the brace.





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## User Instructions

### 3.2.2. Fitting the brace to the leg

- 5 Fit the brace to your leg from below. Make sure you position the brace on your leg as it was customised for you by the orthopaedic technician.
- 6 Now position the additional shell on the thigh. Please bear in mind that the additional shell must be located within the lateral thigh shells.
- 7 Close the distal anterior thigh strap with the buckle.
- 8 Close the posterior anterior thigh strap with the buckle.
- 9 Close the tibia strap with the buckle.





## User Instructions

### 3.2.3. Activate spring tension

- ❶ To activate the spring tension of the brace set the levers of both hinges to the „on“ position.
- ❷ To activate spring tension you must push the lower leg shell to posterior. To do so, grasp under the hinge bar with your hands and position your thumbs on the pressure blocks attached to the lower leg shell. Using your thumbs on the pressure blocks, push the shell to posterior. The spring force is now activated.



**Please bear in mind that the set spring tension may only be altered by the orthopaedic technician following consultation with the attending physician.**



Hand wash at 30°C



Do not bleach



Do not iron



Do not dry-clean



Do not tumble dry



## 4. Cleaning, maintenance and disinfection

The orthosis is designed to be maintenance-free. To ensure proper operation over the period of treatment the orthosis should be cleaned regularly (at least every 3 months) or as required, according to the following instructions.

### 4.1. Care Instructions

- The product as delivered is not sterile and is not suitable for sterilization.
- Do not use harsh or abrasive cleaners.
- All fabrics can be washed by hand at 30°C using water and a mild detergent and/or disinfectant.
- Not machine washable.
- The Jack PCL Brace can be dried in the open air.
- In the case of more severe soiling, a replacement set of textile parts is available.
- Wipe down surfaces with a cloth soaked with disinfectant.
- Wet completely, and do not wipe off.
- Spray inaccessible surfaces.
- When spraying ensure complete wetting.
- A mild alcohol-based disinfectant is recommended.

Ask your physician or pharmacist when selecting a disinfectant, and follow the instructions given by the disinfectant manufacturer. The Robert Koch list of approved disinfectants can be found at [www.rki.de](http://www.rki.de).

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### 5. Technical data

Description	Material
Padding material	PU foam with PA hook and loop velour
Strap material	PA strap with PA hook and loop velour
Brace material	aluminium
Weight	1256g (Medium)

### 6. Size chart and article numbers

Size	Length of thigh shell medial	Length of lower leg shell	Circumference of thigh	Circumference of calf	Art.-No. left	Art.-No. right
L/L	23 - 25,5 cm	34 cm	36 - 66 cm	40 - 48 cm	885LL-L	885LL-R
L/M	23 - 25,5 cm	32 cm	36 - 66 cm	33 - 40 cm	885LM-L	885LM-R
L/S	23 - 25,5 cm	31 cm	36 - 66 cm	27 - 33 cm	885LS-L	885LS-R
M/L	18,5 - 21 cm	29 cm	36 - 66 cm	40 - 48 cm	885ML-L	885ML-R
M/M	18,5 - 21 cm	27 cm	36 - 66 cm	33 - 40 cm	885MM-L	885MM-R
M/S	18,5 - 21 cm	26 cm	36 - 66 cm	27 - 33 cm	885MS-L	885MS-R
L/SM	23 - 25,5 cm	31 cm	33 - 43 cm	27 - 33 cm	885LSM-L	885LSM-R
S/XS	17,5 - 20 cm	24 cm	30 - 40 cm	22 - 27 cm	885SXS-L	885SXS-R

Size	Length of thigh shell medial	Length of lower leg shell	Circumference of thigh	Circumference of calf	Art.-No. left	Art.-No. right
Junior blue	17,5 - 20 cm	24 cm	30 - 40 cm	22 - 27 cm	885SXS-BL	885SXS-BR
Junior orange	17,5 - 20 cm	24 cm	30 - 40 cm	22 - 27 cm	885SXS-OL	885SXS-OR
Junior pink	17,5 - 20 cm	24 cm	30 - 40 cm	22 - 27 cm	885SXS-PL	885SXS-PR
Junior green	17,5 - 20 cm	24 cm	30 - 40 cm	22 - 27 cm	885SXS-GL	885SXS-GR



### 7. Transfer of the brace

The brace is not intended for single use, but rather is intended for multiple use by a single person. We do not recommend transfer to other users. Should this be desired however, please ensure to pass on the care and cleaning instructions and have the brace checked by an authorized specialist dealer for safe and proper operation.



### 8. Disposal

The brace contains recyclable materials without toxic or other harmful substances or other environmentally hazardous substances. Provided it is not contaminated with infectious germs, the brace can be deposited in the normal waste disposal. To be sure, consult your specialist orthopaedics dealer.

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**PATENTS:** EP 1 575 464 / EP 1 114 619 / EP 0 841 044 / US 7,309,322

US 5,954,677

FURTHER PATENTS PENDING

**VERSION:** EN 09.2020



**albrecht GmbH**

CHIEMSEESTRASSE 81

D-83233 BERNAU AM CHIEMSEE / GERMANY

PHONE +49 (0)8051 96129-0

FAX +49 (0)8051 96129-30

INFO@ALBRECHTGMBH.COM

WWW.ALBRECHTGMBH.COM



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Hergestellt in Deutschland



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System  
EN ISO  
13485:2016

www.tuv.com  
ID 000046096