

USER INSTRUCTIONS

COMBINATION BRACE CDS® ELBOW / WRIST

DYNAMIC SPRING-LOADED ELBOW / WRIST ORTHOSIS



albrecht®
FUNKTIONELLE REHABILITATION

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Combination Brace CDS® Elbow / Wrist

User Instructions



1. Introduction

1.1. Foreword

Dynamic spring-loaded orthoses can be used to treat joint contractures caused by both neurological and orthopaedic conditions. The shortening of the tissue surrounding the joint decreases the range of motion affecting the patient's everyday life. Therefore, our CDS®-concept aims to increase the range of motion without pain by applying a constant, appropriate low load prolonged stretch (LLPS).

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 **Combination Brace CDS® Elbow / Wrist** functions according to the CDS®-principle and has been designed to treat an extension deficit of the elbow and the wrist. The brace applies a dynamic low load prolonged stretch to stimulate growth in the contracted tissue. **The adjustable redression range protects the tissue from overstretching and allows for individual extension until -15.**

1.4. Application

The brace has been designed exclusively for the orthotic treatment of the elbow joint / wrist 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
- Strap padding set

1.6. Declaration of conformity

The albrecht GmbH as manufacturer with sole responsibility declares the conformity of the **Combination Brace CDS® Elbow / Wrist** with European Council Directive 93/42/EEC for medical devices.

1.7. Features

- **Fast disconnection and reconnection of the elements by Coniungi**
- **Variable length between pivotal points**
- Therapy in extension
- Individual adjustment of the spring tension
- Spring tension can be switched on and off without tools and without varying the set spring tension
- Optimized shell- and strapsystem
- High wearing comfort thanks to air-permeable, light aluminium shell elements
- Infinitely variable adjustment of the redression range between -15° and $+30^{\circ}$

1.8. Indications

The physician will prescribe the type of treatment to apply based on his or her diagnostic findings.

In general, the device is used to treat combined impairments on the elbow and hand:

- Joint contractures:
 - After surgery
 - After conservative treatment of capsular ligament injuries
 - Before and after joint replacement
 - In arthrosis and chronic polyarthritis
 - After burns
 - After strokes
 - After cranio-cerebral trauma (CCT)
- To prevent new contractures after arthrolysis

For all other indications a physician must be consulted.

1.9. Contraindications

- Bony obstruction, osteoporosis
thrombophlebitis

The brace is intended exclusively for contact with intact skin.

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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 cushioning and walers. This must be verified by the user before each usage.
- Opening or removing one or more belts, as well as excessive loosening of the waler 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 therefore 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.
- The mechanical functions must only be adjusted using the supplied tools in order to avoid injuries and damage of the hinge.
- 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.

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.

Combination Brace CDS® Elbow / Wrist

User Instructions

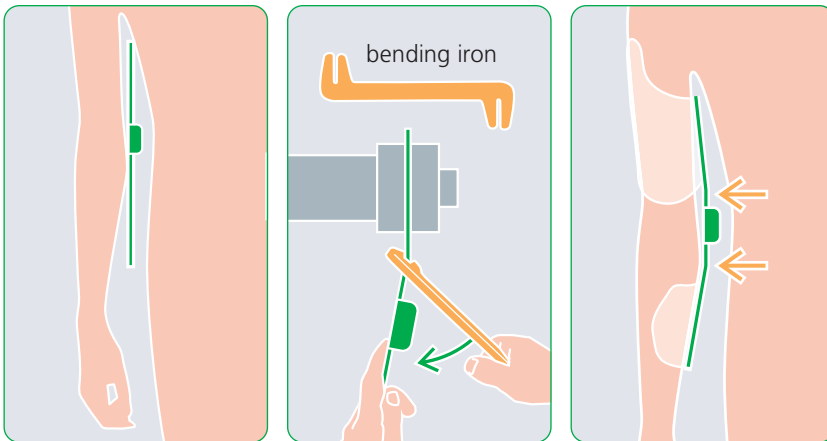
2. Adjustment by the orthopaedic technician

2.1. Fitting to the patient

- Our CDS® braces are constructed to be adjustable.
- The position of the shell components can be changed and they can be shaped.
- The hinge rods can be adapted to the shape of the extremity by using an orthopaedic bending iron.
- The strap lengths can be adjusted to different girths and shortened if necessary.

2.1.1. Adjusting the brace to the arm 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 arm 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.



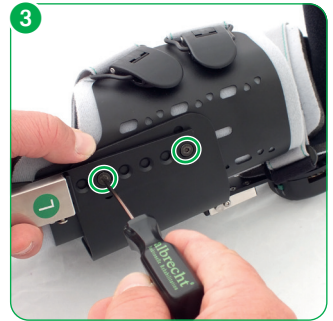
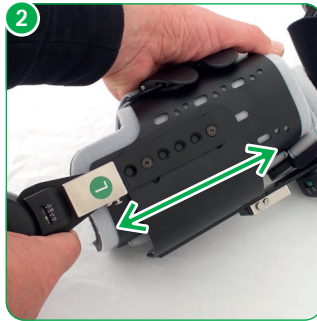
When adjusting the hinge rods to the shape of the extremity by using an orthopaedic bending iron, you must not bend the rods in the area of the hinge housing or the hinge cover as this could lead to damage or break of the hinge.

User Instructions

2.1.2. Setting the shell components

The shell components are moveable.

- 1 Loosen the screws on the shell components with the supplied tool 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 shape of the extremity.

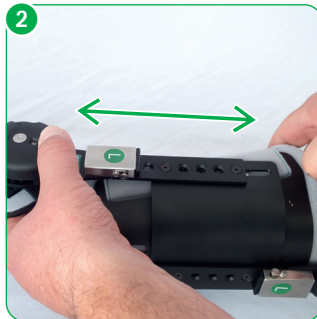
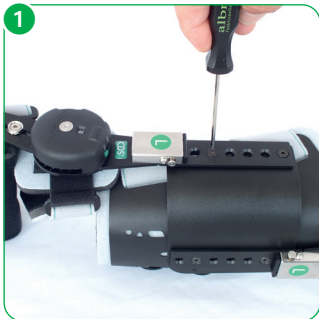
Combination Brace CDS® Elbow / Wrist

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2.1.3. Length adjustment between elbow and wrist

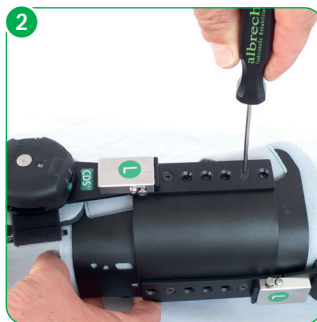
The **Combination Brace CDS® Elbow / Wrist** can be adjusted in length to ensure the pivotal points of the brace are optimally aligned with the joints.

- 1 Loosen the screws of the forearm support without fully removing them.
- 2 Move the support to the distance you need.
- 3 Tighten the two clamping screws again.



If necessary, you can change the mounting position of the support.

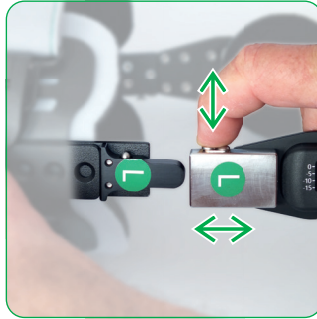
- 1 Remove both lower arm support screws.
- 2 Position the screws in a different position in the hole grid and tighten them again.



User Instructions

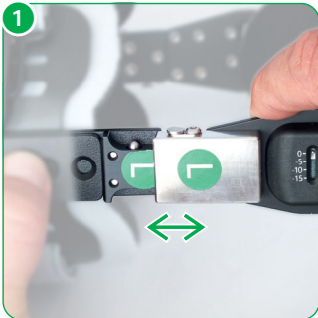
2.1.4. Disconnect Coniungi

Push the twistlock and pull the elements apart.



2.1.5. Reconnect Coniungi

- 1 Ensure that the green marking points are correctly aligned.
- 2 The rods can be adjusted to ensure the correct distance between the pivotal points.



Please deactivate the spring force if you want to take individual parts away from the orthosis or add parts to it (see 2.3.1.).

Combination Brace CDS® Elbow / Wrist

User Instructions

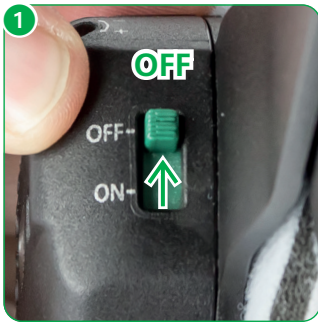
2.2. Setting of the hinge

2.2.1. Setting the limitation for the elbow hinge

The limitation restricts the range of motion.

Extension and the redression range are limited by the stop screw. In a second step, the set value can be reduced up to a maximum of 15°, enabling infinitely variable adjustment of the redression range.

- 1 Before setting the limitation, you must deactivate the spring tension. Turn the switch to "off".
- 2 Bring the brace into flexion.
- 3 On the side of the CDS® housing are three holes that are marked with the degrees 0, 15 and 30. In the hole marked with 0 is the stop screw. Then turn the stop screw with the supplied tool from the CDS® housing.



Before screwing it into one of the three holes, bring the brace into flexion, so that the holes are freely accessible. Position the stop screw in the desired position and tighten the screw.

The limitation can be adjusted to the treatment progress with increasing mobility of the patient.

Please be aware that the brace must only be used with the stop screw positioned and tightened in one of the holes, otherwise the hinge will be damaged.

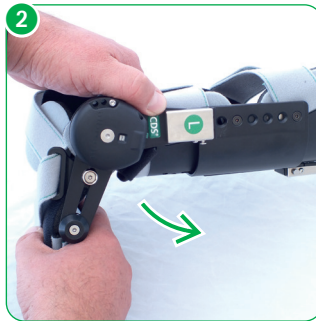
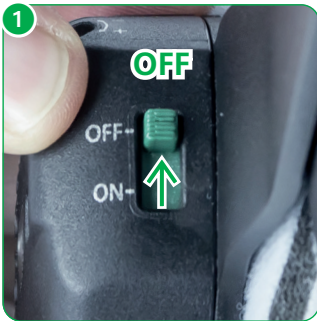
User Instructions

2.2.2. Setting the limitation for the wrist hinge

The limitation restricts the range of motion. Extension and the redression range are limited by the stop screw. Before setting the extension limitation, you must deactivate the spring tension.

- 1 Turn the green switch to „off“.
- 2 Bring the brace into flexion.
- 3 There are three holes on the side of the CDS[®] housing. The number of degrees depends on the position of the straightening and limitation range and can be determined with a goniometer. The stop screw is located in one of the holes.

Then turn the stop screw with the supplied tool from the CDS[®] housing.



Before screwing it into one of the three holes, bring the brace into flexion, so that the holes are freely accessible. Position the stop screw in the desired position and tighten the screw. The limitation can be adjusted to the treatment progress with increasing mobility of the patient.

Please be aware that the brace must only be used with the stop screw positioned and tightened in one of the holes, otherwise the hinge will be damaged.

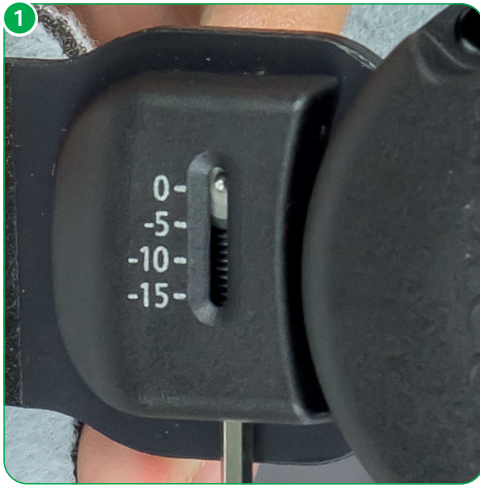
Combination Brace CDS® Elbow / Wrist

User Instructions

2.2.3. Fine adjustment for the elbow hinge

Fine adjustment gives you the option of infinitely variable extension limitation.

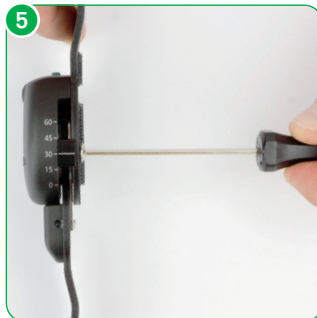
- 1 Set the fine adjustment to a value between 0 and -15. The setting reduces the limitation already set by the stop screw.



User Instructions

2.2.4. Inserting the stop wedge

- 1 Flexion can be limited with the stop wedge.
- 2 Before adjusting the flexion limitation you must activate the spring tension. Turn the switch to "on".
- 3 Bring the brace into flexion until you feel a slight resistance that you have to overcome in order to activate the spring tension.
- 4 On the side opposite of the three holes are five positions marked with the degrees 0, 15, 30, 45 and 60. Insert the stop wedge in the desired position.
- 5 Fix it with the supplied screw.



Please note: The CDS[®] joint on the hand is built on the basis of the 360° joint. With the 360° joint, the spring housing and the hinge rod can be pivoted against one another and, thus, no marking of the degree figures is possible.

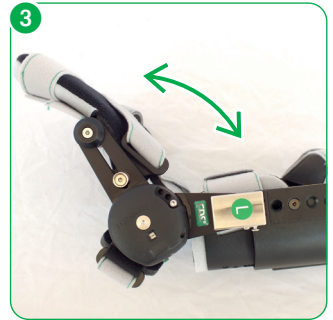
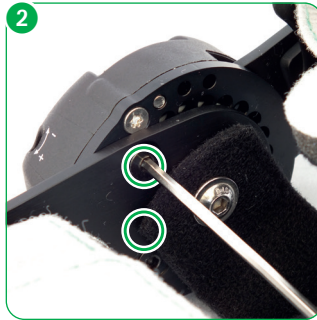
Combination Brace CDS® Elbow / Wrist

User Instructions

2.2.5. Change the position of the support on the wrist

The CDS® joint on the hand is built on the basis of the 360° joint. With the 360° joint, the spring housing and the hinge rod can be pivoted against one another.

- 1 Remove the pad.
- 2 Remove the two screws.
- 3 You can adjust the position of the redression range in 15° steps. Use a goniometer to determine the desired position and adjust the hinge accordingly.
- 4 Insert the screws again and tighten them.
- 5 Insert the pad again.

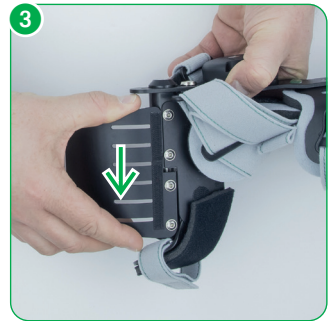
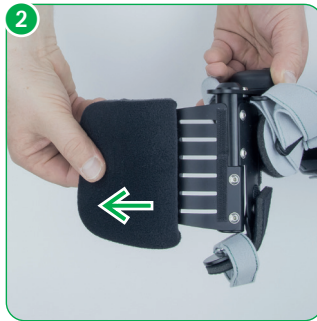


User Instructions

2.2.6. Adjusting the finger plate

The finger plate can be adjusted in 15° steps.

- 1 Loosen the pad beneath the palm.
- 2 Remove the pad.
- 3 Pull apart the two elements of the palm plate.
- 4 While pressing on the finger plate, set the desired position.
- 5 Attach the pad again beneath the palm.



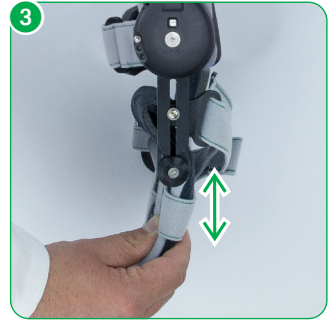
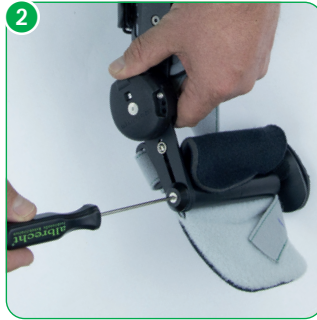
Beneath the pad are slits that can be used for finger fixation.

Combination Brace CDS® Elbow / Wrist

User Instructions

2.2.7. Optional additional length adjustment of the hand piece

- 1 Loosen the lock screw.
- 2 Loosen the screw in the fixing disc with the supplied tool.
- 3 Move the hand piece forward to the stop. Ensure that the retaining pin of the fixing disk clicks into the hole pattern of the retaining rod.
- 4 Tighten the lock screw again.
- 5 Tighten the screw in the fixing disk.



User Instructions

2.2.8. Optional disassembly of the thumb plate

The thumb plate can be removed if not needed.

Loosen the two screws with the supplied tool and remove the thumb plate.



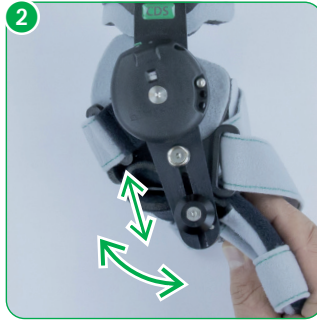
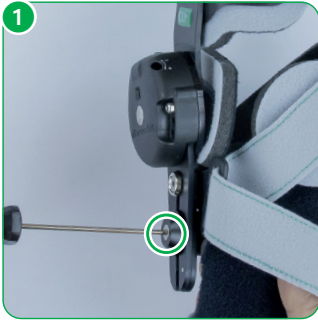
Please be aware the thumb plate consists of PE material and is suitable for thermoforming.

Combination Brace CDS® Elbow / Wrist

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2.2.9. Adjusting the palm plate

- 1 Loosen the screw in the fixing disk with the supplied tool.
- 2 Turn the palm plate into the desired position and position the retaining pin. Ensure that the retaining pin of the fixing disk clicks into the hole pattern of the retaining rod.
- 3 Then tighten the screws again.



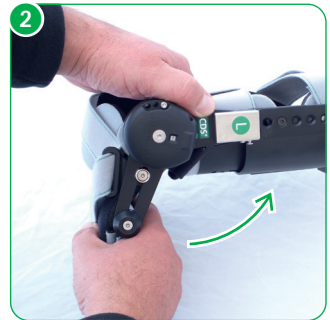
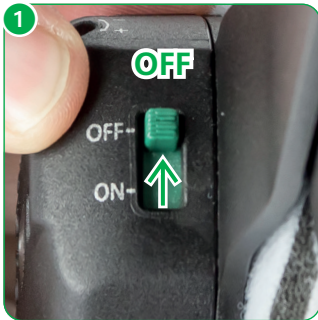
2.3. Application of the brace by the orthopaedic technician

2.3.1. Deactivate the spring tension

Before attaching the brace you must deactivate the spring tension.

- 1 Turn the green switch to „off“.
- 2 Bring the brace as far into flexion as the patient is allowed to move. Now, the activation mechanism of the hinge is set to this position and the patient can reactivate the spring tension in this position.

To facilitate attaching of the brace on the patients, adjust the length of all brace straps to their maximum length without unthreading them. First loosen the finger strap. Then loosen the forearm straps by opening the clips.



Combination Brace CDS® Elbow / Wrist

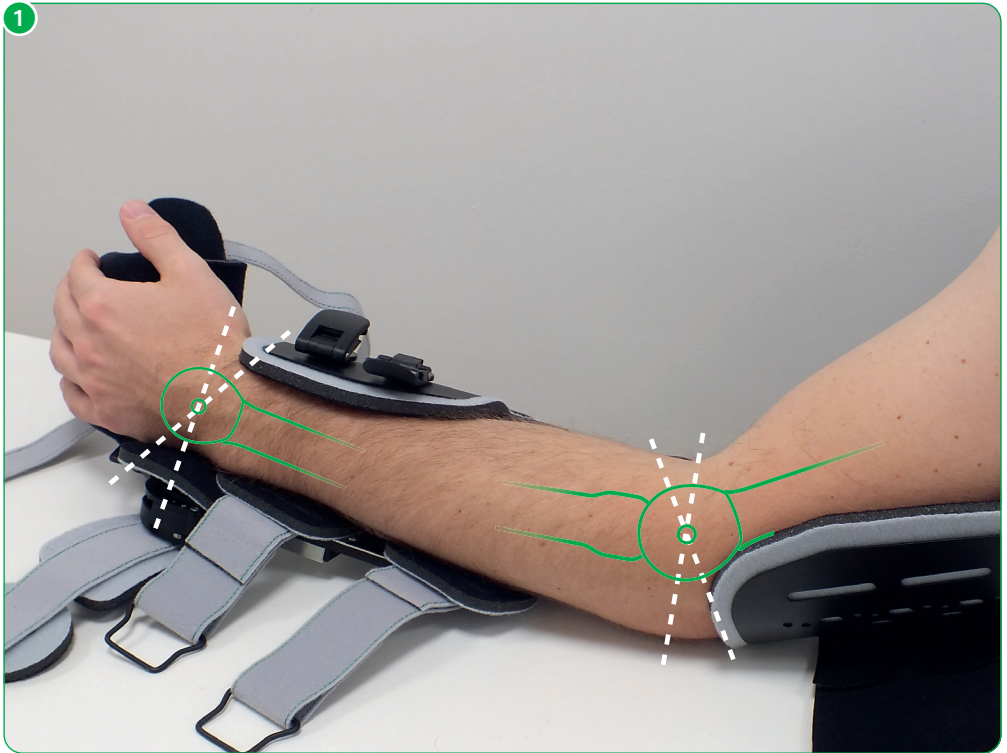
User Instructions

2.3.2. Attaching the brace to the arm

Place the brace on the patient's arm.

- 1 Ensure that the pivot of the brace hinge matches the physiological pivot of the joints.

It is possible for you to adjust the arm rods to the shape of the patient's arm by using an orthopaedic bending iron.

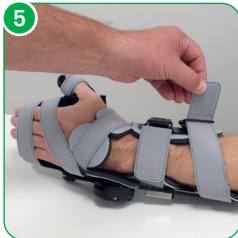
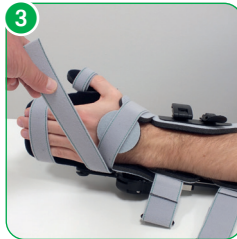
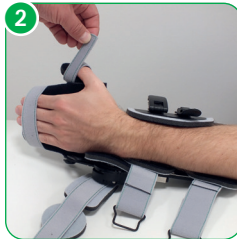


User Instructions

2.3.3. Adjust strap lengths as necessary

Adjust the straps to the desired length and shorten them if necessary on the strap end containing the double-sided hook end.

- 1 Pass the strap under the finger plate and fasten it firmly.
- 2 Position the strap pad under the loop.
- 3 Take the strap with the fleece stitched to it and thread it through the strap loop, then fasten it with the Velcro.
- 4 First fasten the forearm strap next to the joint.
- 5 Fasten the forearm strap further from the joint.
- 6 Fasten the narrow upper arm strap.
- 7 Fasten the wide, elastic upper arm strap.



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2.3.4. Final adjustment

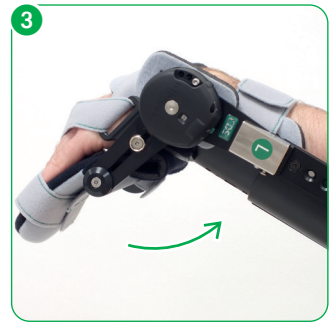
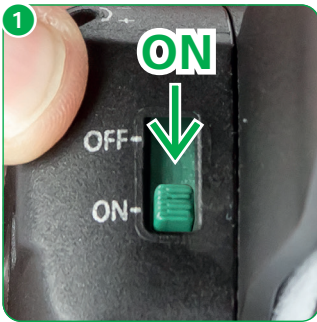
After fastening the individual straps, check that the straps are the correct length and that the brace is in the correct position, and correct if necessary. Ensure that the straps are not too tight so as not to interfere with the circulation.

The shell elements are anatomically contoured. You can also shape the shell elements with the hand to the arm contour directly on the patient.

2.3.5. Activate the spring tension

- 1 To activate the spring tension, turn the switch to "on".
- 2 Bring the brace into flexion until you feel a slight resistance that you have to overcome in order to activate the spring tension.

The intensity of the spring tension is not altered by activation or deactivation of the spring tension.



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2.3.6. Setting the spring tension to the intensity needed by the patient

Infinitely variable adjustment of the spring tension

- 1 The spring tension setting is displayed on the CDS[®] housing by a scale from 0 to 15. The ranges above 15 and below 0 are marked in red.

To prevent damage to the CDS[®] hinge, the red range in the CDS[®] hinge window must be avoided.

- 2 Insert the tool as far as it will go into the side hole on the hinge. By turning clockwise or towards + the spring tension is increased and it is decreased by turning anticlockwise or towards -.



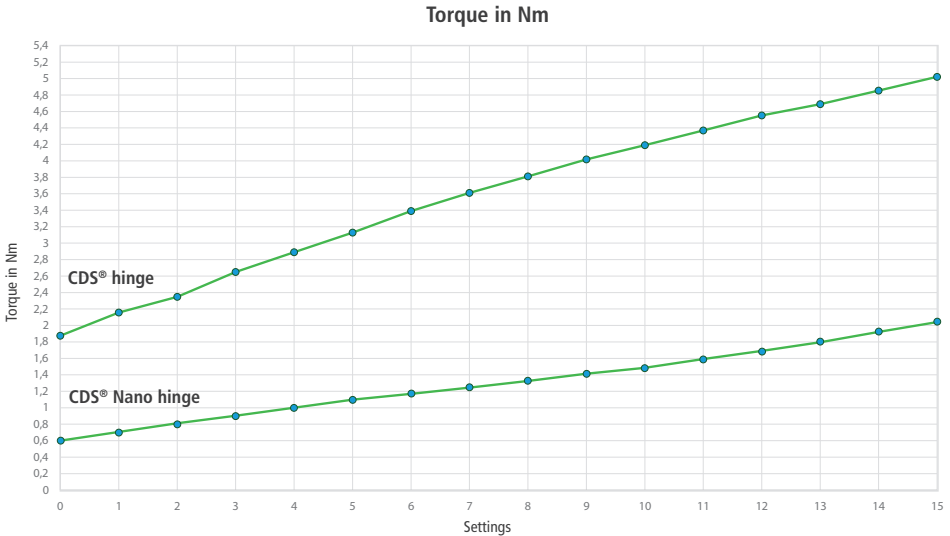
The intensity of the spring tension is not altered by activation or deactivation of the spring tension.

The spring tension may be adjusted only in consultation with the treating physician.

The spring tension can be adjusted to treatment progress.

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2.3.7. Changing the spring tension

The spring tension can be adjusted according to the to treatment progress.

Insert the tool as far as it will go into the side hole on the hinge. By turning clockwise or towards + the spring tension is increased and it is decreased by turning anticlockwise or towards -.

The spring tension may be adjusted only in consultation with the treating physician.

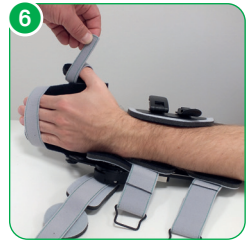
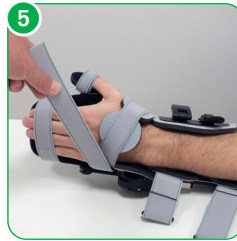
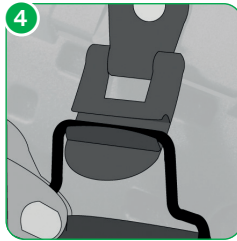
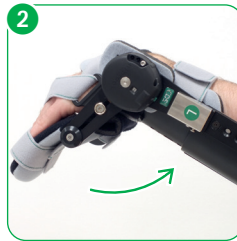
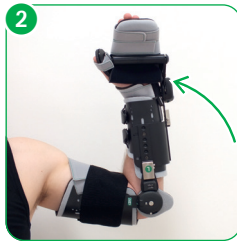
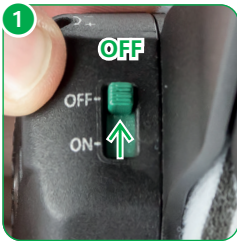
User Instructions

3. Handling by the patient

3.1. Removing the brace

Before removing the brace you must deactivate the spring tension.

- 1 To do so, turn the switch to "off".
- 2 Bring the brace into flexion.
- 3 To remove the brace, first open the wide, elastic upper arm strap.
- 4 Then open the remaining straps by opening the clips and do not unthread the straps.
- 5 Loosen the hand dorsom strap.
- 6 Loosen the thumb strap.
- 7 Loosen the finger strap.



User Instructions



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. Pads and straps

- All fabrics can be washed by hand at 30°C using water and a mild detergent and/or disinfectant.
- Not machine washable.
- In the case of more severe soiling, a replacement set of textile parts is available.

4.2. Rods (hinges)

- Clean all parts of the brace with a wet cloth soaked with water and a mild detergent and/or disinfectant
- 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.

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5. Technical data / material

Name	Material
Weight	1177g
Padding material	PU foam with PA hook and loop velour
Strap material	PA strap with PA hook and loop velour
Brace material	aluminium

6. Size chart and article numbers

Name	Art.-No. left	Art.-No. right
Combination Brace CDS [®] Elbow / Wrist	981C-L	981C-R

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.

Combination Brace CDS® Elbow / Wrist

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