

# Multifunctional Correction System Joints

for Children and Adults



Quality for life





# Correction System Joints

## Indications

The 17BK1 Static Correction System Joint and 17BK2 Dynamic Unit are suitable for users with neurological or orthopaedic diseases in conjunction with contractures of the joints.

### **Neurological indications, e.g.**

- Stroke
- Cerebral palsy
- Condition following paraplegia
- Multiple sclerosis
- Spina bifida
- Craniocerebral injuries
- Dystrophy

### **Orthopaedic indications, e.g.**

- After knee TEP
- Burns
- Amputation
- After ligament rupture
- Fractures

### **Contraindications**

- Structural contracture
  - Deformation: muscles, bones
  - Ankylosis, ossification, fibrosis
- Poor blood circulation

## Therapy goal

The objective of contracture treatment is to restore or maintain joint functionality and to avoid deformities.

The 17BK1 Static Correction System Joint for the upper and lower extremities (wrist, elbow, knee, or ankle joints) is suitable for the treatment of children and adults and is used in positioning orthoses. Use of the 17BK2 Dynamic Unit allows for dynamic extension or flexion, depending on the joint and indications. Spring force is used to slowly correct the joint back into the desired position (dynamic contracture treatment).



# Static Correction System Joint

17BK1

The individually required angles are continuously adjustable by means of a worm gear. For orientation, control and targeted adjustment of the correction, an angle scale is printed on the joints. An easy-on-easy-off system has been developed for quick application and removal of the orthosis, allowing correction to be unlocked completely. After donning of the orthosis, correction is activated again at the original correction setting. Another setting option is to unlock the joint, with any extension stop angle setting. This allows for physiotherapeutic training.

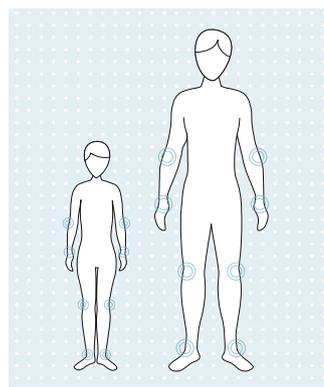
## Effects

- Improved rest position
- Protection, safety, and the possibility of step-by-step joint mobilisation during the rehabilitation phase
- Promoting the growth of truncated tissue and / or alteration of modified tissue, resulting in an increase in joint activity
- Prevention of deformities and restoration of joint functions



**Table 1:**

**Size recommendation matrix 17BK1 Static Correction System Joint**



Body height	Joint			
	Wrist	Elbow	Knee	Ankle
<b>Child up to 1 m</b>	=L/R4	=L/R4	=L/R4	=L/R4
<b>Child 1 – 1.40 m</b>	=L/R4	=L/R3	=L/R3	=L/R3
<b>Adults up to 1.60 m</b>	=L/R4	=L/R3	=L/R2	=L/R2
<b>Adults 1.60 – 1.90 m</b>	=L/R3	=L/R2	=L/R1	=L/R1

The left/right side indications refer to application of the joints on the wrist, knee joint or ankle joint. Due to anatomical characteristics, the sides must be reversed for elbow applications (right to left and left to right).

## Characteristics

### 1 Innovative easy-on-easy-off system

The joint can be unlocked temporarily for easy application and removal of the orthosis. Among other things, this also simplifies hygiene.

### 2 Therapy range with defined stop position

Unrestricted mobility with continuously adjustable extension stop from  $-20^{\circ}$  to  $+120^{\circ}$ .

### 3 Correction function

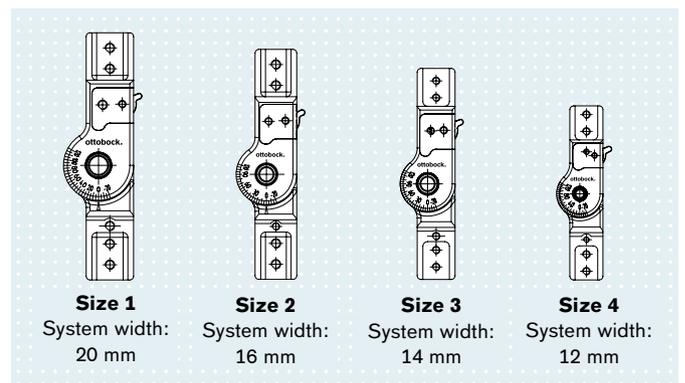
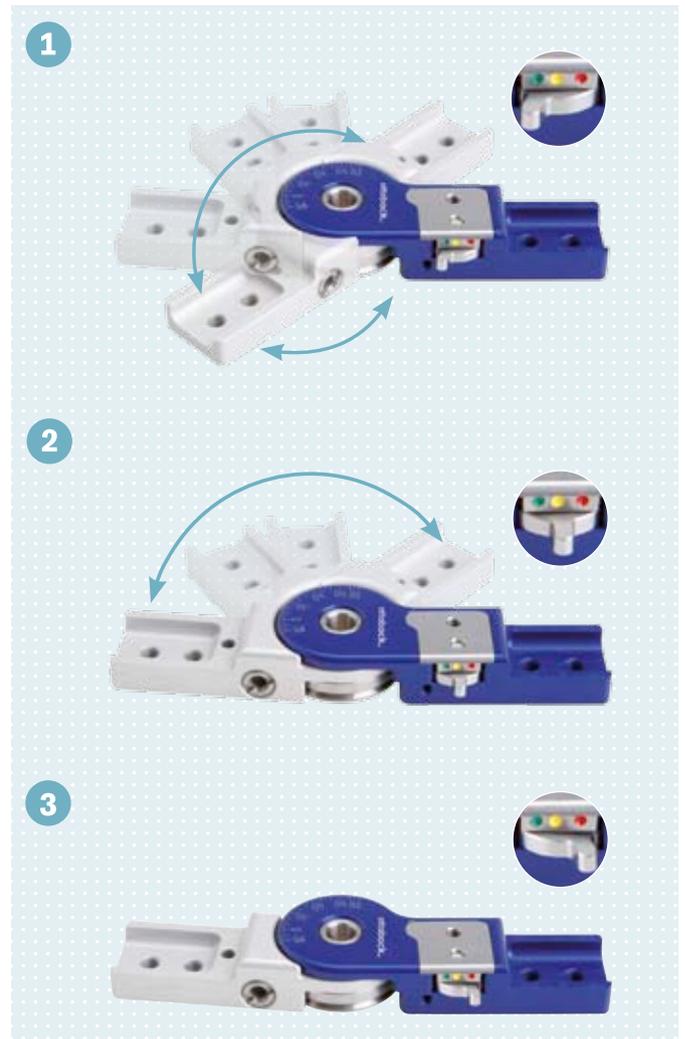
Locking function with continuously adjustable angle setting.

## Stable and lightweight

The joints are made from anodised aluminium with hardened steel worm gears.

## Size selection matrix

Easy selection of the recommended joint sizes through an easy to use matrix (see table 1).



# Dynamic Unit

17BK2

The 17BK2 Dynamic Unit is available for all four sizes of the 17BK1 Static Correction System Joint and, depending on the joint size, offers a maximum tension of approx. 10 Nm. The tension is continuously adjustable, allowing for individual dynamic treatment of contractures.

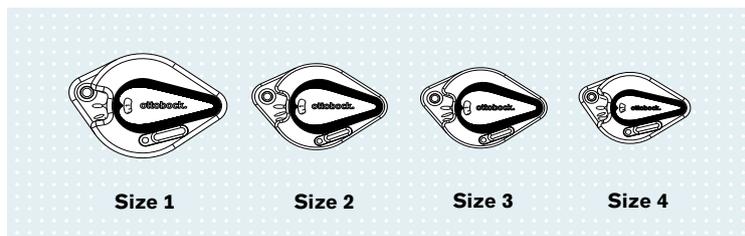
## Effects

- See 17BK1 Static Correction System Joint effects, but in this case with dynamic contracture treatment through individually adjustable tension

## Characteristics

- Continuously adjustable tension up to ~10 Nm for dynamic contracture treatment
- Individual therapy range from -20° to +120° (continuously adjustable)

- Locking function with switch for complete temporary locking under tension in the desired flexion position.
- Fast installation/removal
- Only for use in combination with the 17BK1 Static Correction System Joint and system splints, we also categorically recommend the use of a medial joint (e.g. 17BK3)
- Can be supplied to fit 17BK1 in four sizes and, corresponding to the size, three different strengths (~ 3 Nm; ~ 6 Nm; and ~10 Nm)



# Technical Information

## 17BK1 / 17BK2

**Table 2: Size Chart**

The selection of sizes and sides always relates to therapy in the extension direction

Order no. Correction System Joint	Side	System width	Order no. Dynamic Unit	Max. tension	Medial joint order no.
17BK1=L1	left	20 mm	17BK2=L1	~ 10 Nm	17BK3=18
17BK1=R1	right	20 mm	17BK2=R1	~ 10 Nm	
17BK1=L2	left	16 mm	17BK2=L2	~ 6 Nm	
17BK1=R2	right	16 mm	17BK2=R2	~ 6 Nm	
17BK1=L3	left	14 mm	17BK2=L3	~ 6 Nm	17BK3=14
17BK1=R3	right	14 mm	17BK2=R3	~ 6 Nm	
17BK1=L4	left	12 mm	17BK2=L4	~ 3 Nm	
17BK1=R4	right	12 mm	17BK2=R4	~ 3 Nm	

**Table 3: Selection of the Otto Bock system splints to match the 17BK1 joints**

Order no.	Material	for	Width	Thickness	Length
17F52=12x3x220	Light metal	17BK1=L/R4	12 mm	3 mm	220 mm
17F52=14x3x220		17BK1=L/R3	14 mm	3 mm	220 mm
605P8=16		17BK1=L/R2	16 mm	5 mm	approx. 2000 mm
605P8=20		17BK1=L/R1	20 mm	5 mm	approx. 2000 mm

Alternately, suitable steel or titanium splints can also be used.

**Caution:**

These indications are only recommendations. The correct size for the respective patient has to be determined and specified by the orthotist. The selection of sizes and sides shown in this brochure always relate to therapy in the extension direction. Depending on the application the joints are to be used individually or in pairs. In order to ensure that the orthosis is stable, using a medial joint such as 17BK3 or an integrated plastic joint is categorically recommended. In case of knee and ankle joints, bilateral fitting (in pairs) is mandatory. The 17BK2 Dynamic Unit is always used singly on the lateral joint. The left/right side indications refer to application of the joints on the wrist, knee joint or ankle joint. Due to anatomical characteristics, the sides must be reversed for elbow applications (right to left and left to right).

Delivery condition: The 17BK1 Static Correction System Joint is delivered with an Allen key to make adjustments and to adjust the tension of the 17BK2 Dynamic Unit.

### Order example

Example 1	Example 2
<b>Patient</b>	Adult, body height of 1.80 m
<b>To treat</b>	Knee joint on the right leg, 17BK1 Static Correction Joint incl. 17BK2 Dynamic Unit
<b>Order recommendation</b>	1x 17BK1=L1 1x 17BK1=R1 1x 17BK2=R1
<b>Splint material</b>	e.g. 605P8=20
<b>Patient</b>	Child, body height of 1.30 m
<b>To treat</b>	Elbow joint on the left arm, 17BK1 Static Correction Joint incl. 17BK2 Dynamic Unit
<b>Order recommendation</b>	1x 17BK1=R3 1x 17BK3=14 (medial joint) 1x 17BK2=R3
<b>Splint material</b>	e.g. 17F52=14x3x220

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