Multi**Motion**

Dynamic Correction System Components

allard USA

Professional instructions

Basko

Healthcare

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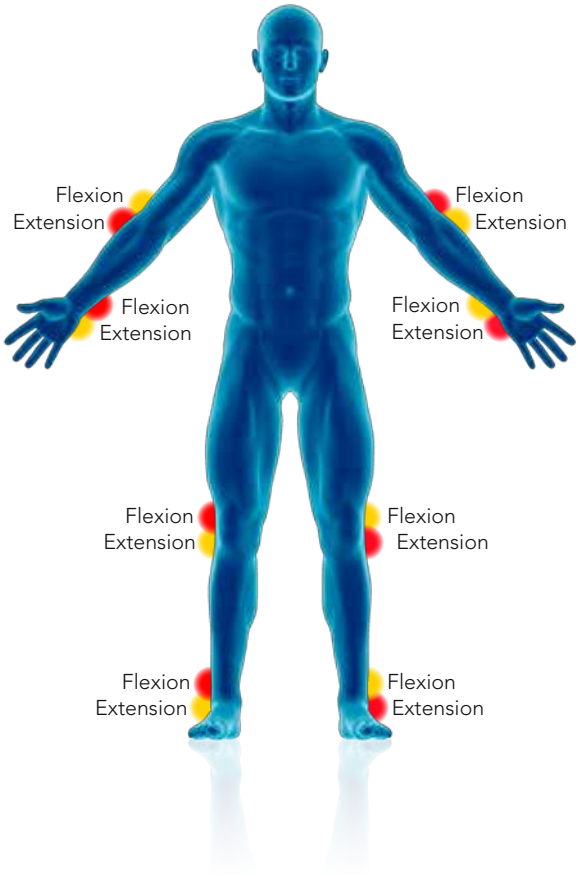
Multi**Motion**

Dynamic Correction System Components

Neuro-Orthotics

Fig. A


Flexion
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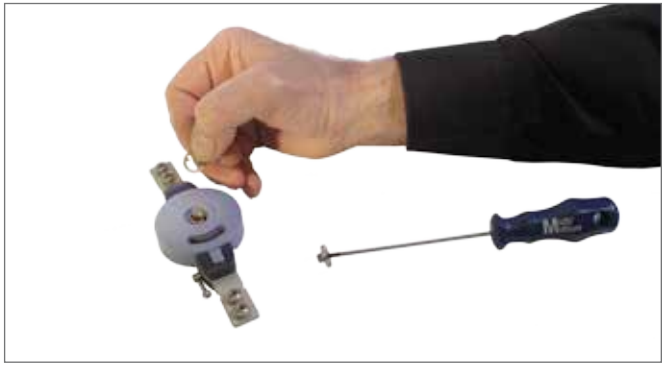

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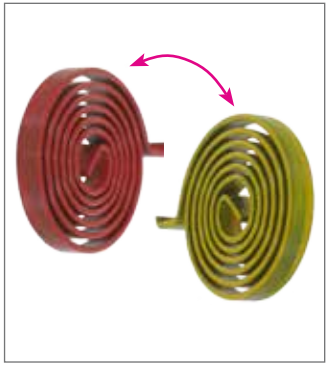

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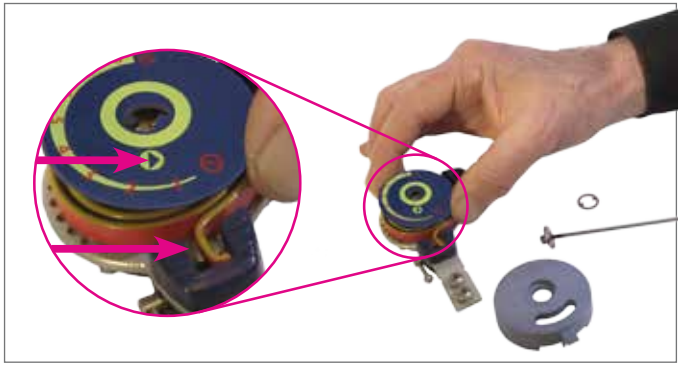


6.

Multi**Motion**

Please read these instructions carefully before using the product. Pay particular attention that the safety instructions are followed.

Usage guidelines

- The product may only be fitted by or under the supervision of a competent professional
- Special precautions must always be taken for patients with a visual impairment, cognitive limitations and/or reduced sensibility in the upper and/or lower extremity.
- Changes, modifications and adjustments to the product that are not described in these instructions, are done at the sole responsibility of the person carrying them out.

Intended use of the product

By using MultiMotion dynamic corrective system joints – hereafter: corrective joints – dynamically correctable contractures in the limbs can be treated. The corrective joints are to be used exclusively in orthotics for the upper or lower extremities and should not be weight bearing. For correct functioning, it should always be combined with a MultiMotion free motion joint at the contralateral side of the affected joint and ensures sufficient torsional stiffness of the orthosis.

Indications / contraindications and function

MultiMotion joints are suitable for use in orthotics for wrist, elbow, knee and ankle joints for adults and children. The joints are used for the treatment of dynamic correctable contractures resulting from neurological and/or orthopedic disorders.

Neurological indications:

- Apoplexia (CVA)
- Cerebral paresis
- Multiple sclerosis
- Skull and brain trauma
- Spastic paralysis, hereditary
- Spina bifida
- Spinalparalyse, spastic
- Tetraparesis, spastic

Orthopedic indications:

- Ligament rupture
- Burns
- Endoprosthesis implant
- Fracture
- Lower leg amputation

The diagnosis is made by the physician or a competent medical professional.

Contraindications
- Ankylosis
- Deformation of muscles and bones
- Fibrosis
- Ossification

General safety instructions
Risk of injury as a result of incorrect use; the professional should verify correct functioning of the joints prior to delivery of the orthosis to the user. The patient and his/her care giver(s) should also be instructed on donning and doffing of the orthosis and have the joint functionality explained to them. It should also be made clear that the spring tension setting should never be changed by anybody else than the professional or therapist, unless the treating physician decides otherwise. The joints should not come into contact with water.

Comment
Specialists opting for and/or fitting and customizing these products, should use their professional judgment in choosing the product, fitting it and adequately educating the patient or care giver so as to minimize potential risks for each individual patient. These risks may include the mentioned contraindications, but may also be associated with the unique patient characteristics or circumstances of the patient's care giver.

Used materials
The MultiMotion functional corrective joints incorporate components made of various types of materials, including:
- Aluminum
- Steel/stainless steel
- Brass
- Synthetic PC ABS

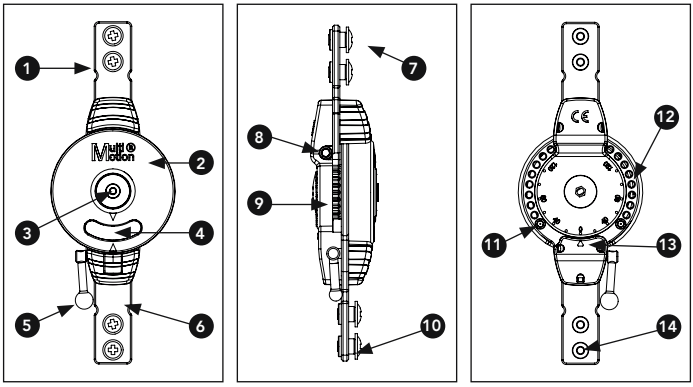
Maintenance recommendation
The tension spring in the orthosis has already been greased during joint assembly. If the tension spring needs to be greased again, a standard white grease (e.g. Molykote) should be used. Insufficient grease on the tension spring may cause undesired friction sounds. We recommend checking the joints at least once every six months, or as often as the technician decides in the patient's individual situation, for functionality and wear and tear.

Package content

- MultiMotion corrective joint
- Roundhead hexagonal allen screwdriver
- Technical instructions
- Direction of force Quick Start Guide
- Patient documentation

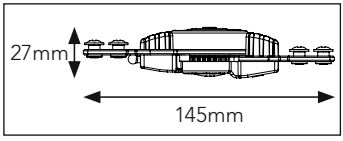
The corrective joint comes in two variations; Small (692000000) and Regular (691000000). Check the package label to make sure the shown article number corresponds with the content of the package.

Components

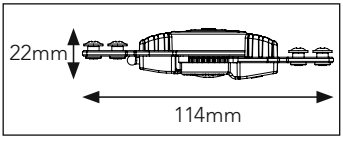


1. Joint upper part
2. Central housing
3. Central housing screw
4. Power output indicator
5. Locking/unlocking lever
6. Joint lower part
7. Proximal upright attachment
8. Spring tension adjustment screw
9. Gear wheel
10. Distal Upright attachment
11. Flexion / extension screws
12. Flexion / extension settings
13. Inclinement indicator
14. Upright attachment bushes

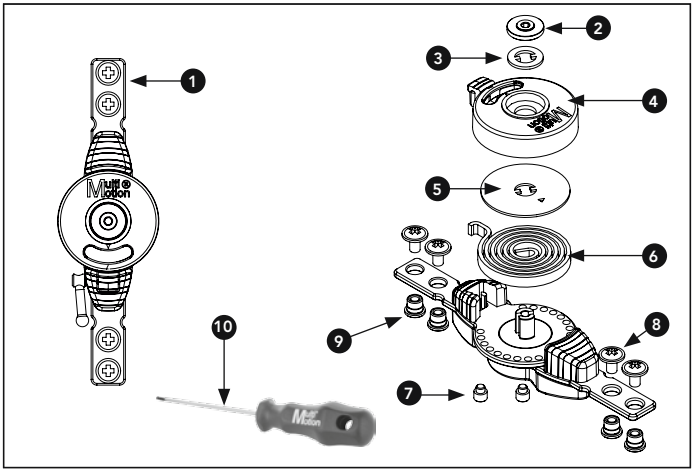
Dimensions-# 691000000
MultiMotion (Regular)



Dimensions-# 692000000
MultiMotion (Small)

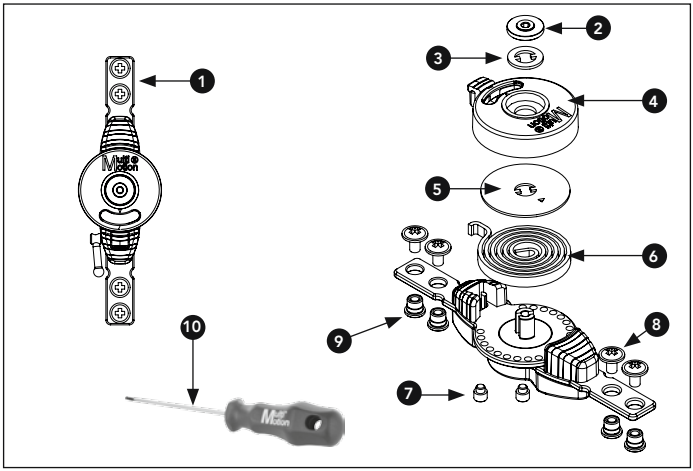


Product & Components: # 691000000 (Regular)



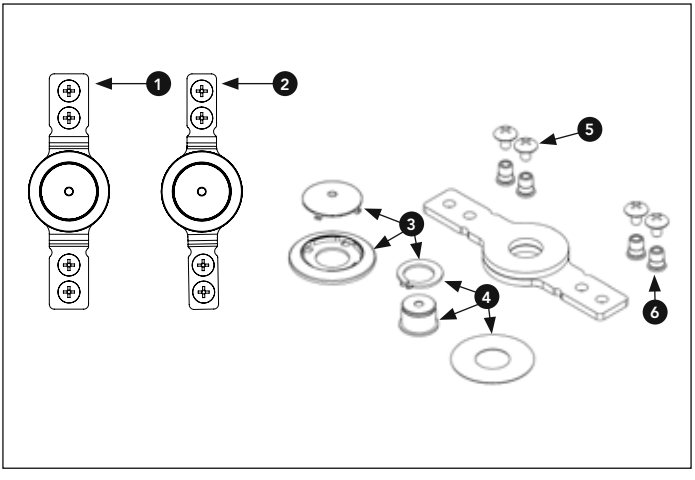
No.	Art. No.	Description	Per
1	691000000	Corrective joint	Unit
2	691010000	Central housing screw	Unit
3	691020000	Retainer ring	Unit
4	691030000	Joint housing	Unit
5	691040000	Force output disc	Unit
6	691050000	Tension spring 10,2 Nm	Unit
7	691060000	Flexion / Extension stops	Set (2x)
8	691070000	Upright screws	Set (4x)
9	691080000	Upright threaded insert	Set (4x)
10	699000000	Roundheaded allen screwdriver - 2.5mm	Unit

Product & Components: # 692000000 (Small)



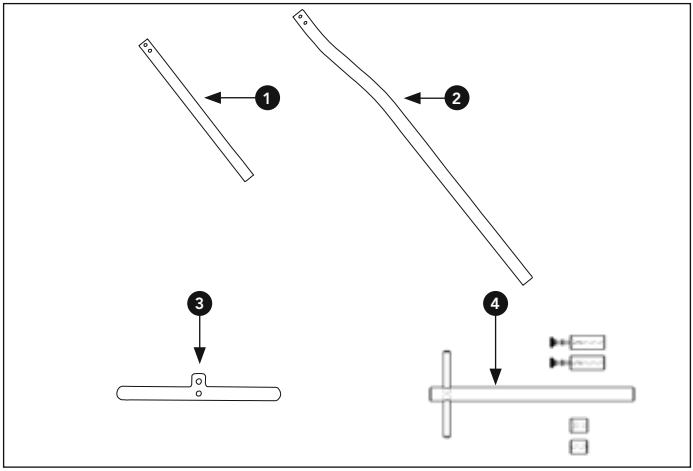
No.	Art. No.	Description	Per
1	692000000	Corrective joint	Unit
2	692010000	Central housing screw	Unit
3	692020000	Retainer ring	Unit
4	692030000	Joint housing	Unit
5	692040000	Force output indicator disc	Unit
6	692050000	Tension spring 3,4 Nm	Unit
7	692060000	Flexion / Extension stops	Set (2x)
8	692070000	Upright screws	Set (4x)
9	692080000	Upright threaded insert	Set (4x)
10	699000000	Roundheaded allen screwdriver - 2.5 mm	Unit

Product & Components: 695000000 (Regular) / 695050000 (Small)



No.	Art. No.	Description	Per
1	695000000	Free moving joint, 16 mm	Unit
2	695050000	Free moving joint, 12 mm	Unit
3	695010000	Cap set	Set
4	695020000	Joint axis set	Set
5	695030000	Upright screws	Set
6	695040000	Upright threaded insert	Set

Overview Uprights & Accessories



No.	Art. No.	Description	Per
1	697010000	Upright, straight 200 x 12 x 3.2 mm	Set (2x)
	697020000	Upright, straight 200 x 16 x 4 mm	Set (2x)
2	697050000	Upright, offset 350 x 12 x 3.2 mm	Set (2x)
	697060000	Upright, offset 450 x 16 x 4 mm	Set (2x)
3	697090000	Upright, T-Stirrup 150 x 12 x 3.2 mm	Set (2x)
	697100000	Upright, T-Stirrup 150 x 16 x 3.2 mm	Set (2x)
4	699500000	Alignment device	Set

Joint selection
Determine which corrective joint is suitable to support the patient's joint. The MultiMotion model "Small" (692000000) has a maximum torque output of 3.4 Nm. The "Regular" model (691000000) has a maximum torque output of 10.2 Nm.

MultiMotion joints are suitable for children and adults. Both models are adjustable in angles of 0° up to 120°. The joint is supplied ready for assembly including a roundhead allen screwdriver for setting the direction of force, the spring tension and to set the flexion and extension stops.

Note: make sure the joint is properly mounted, meaning the MultiMotion logo on the housing should be readable (not upside down).

The joints can be used at both the left and right side and can be set with force into flexion or extension. This direction of force depends on the side of the body and the patient's joint for which the joint is used (see page 3, fig. A). The tension spring is painted red on one side and yellow on the other. The quick start guide and these instructions demonstrate which color at which side of the body shows the joint specific direction of force. The standard assembly of the spring is with the red side facing upward.

Joint selection

Body Joint	Body Weight	Corrective Joint		Free Motion Joint	
		Small Art. No. 692000000	Regular Art. No. 691000000	Small Art. No. 695050000	Regular Art. No. 695000000
Wrist	< 22 kg	X		X	
	> 22 kg	X		X	
Elbow	< 22 kg	X		X	
	> 22 kg		X		X
Knee	< 22 kg	X		X	
	> 22 kg		X		X
Ankle	< 22 kg	X		X	
	> 22 kg		X		X

Selection flexion / extension

Body Joint	Body side	Flexion force		Extension force	
		Yellow	Red	Yellow	Red
Wrist	left	X			X
	right		X	X	
Elbow	left		X	X	
	right	X			X
Knee	left	X			X
	right		X	X	
Ankle	left	X			X
	right		X	X	

Changing the direction of force
The following description assumes that the joint is delivered ex-factory and therefore the tension spring has been assembled with the red side facing up. Make sure the joint faces with the logo readable in front of you, is in the neutral position (0°) as to minimize spring force, and the joint is unlocked (see page 4, fig. 1).

Step 1
Loosen the central screw on the housing using the allen screwdriver. Remove the screw and the underlying retainer ring (see page 4, fig. 2).

Step 2
Lift the housing over the central axis and lay it aside. Now the power indicator disc with the red indicator and circles is visible. Lift it from the axis and lay it aside safely. Using your fingers, lift the spring up over the central joint axis and remove it (see page 4, fig. 3).

Step 3
Now turn the spring around it's axis with the yellow side facing upward, flex the joint 90° allowing you to reposition the spring over the central axis. CAUTION: Make sure the spring is correctly positioned between the recess of the central axis and the tail of the spring in the distal recess of the joint (see page 5, fig. 4).

Step 4
Using a cloth, wipe the power indicator disk clean and position it – but now with the yellow indicator and circles facing upward – back over the central axis. CAUTION: the small circle with the triangular recess should be placed distally from the central axis (see page 5, fig. 5).

Step 5
Reposition the housing and retainer ring correctly and screw them back onto the joint (see page 5, fig. 6).

Aligning the joint
In order for the joints to function correctly, it is important they are aligned correctly and a construction with sufficient torsion rigidity is built. Make sure to take the necessary precautions, or use the alignment device (Art. Nr. 699500000).

Bending the joint
The material from both the corrective joint and the free motion joint is proximal and distal partly depleted (just below and above the upright adapter). This allows to bend the joint as needed up to a maximum angle of 20°. Do not use bending irons but rather position the joint with a mounted Upright horizontally in a vice and push / pull the hinge into the desired position by hand.

Mounting the joint onto the Uprights
Various upright models are available in several widths and thicknesses. Select the upright you need. Once you have adjusted the uprights to the contours of the limb, place the bars with the countersunk part facing down (!) over the attachment bushes of the joint. Use the supplied screws to fasten the bars and secure them with Loctite. TIP: If needed, you may loosen the Upright threaded inserts and place them the other way around, allowing you to mount the uprights underneath instead of on top.

Locking the joint
For easier donning and doffing of the orthosis, the joint can be locked at virtually each desired angle. Distally from the power indicator window is the locking mechanism. The locking lever points distal as long as the joint is unlocked. In order to lock the joint, the lever should be pushed forward/up.

CAUTION
BEWARE OF RISK OF INJURY BY UNLOCKING. BEFORE UNLOCKING THE JOINT, NOTE THE SPRING TENSION SETTING. IF TENSION IS SET HIGH, IT MAY BE ADVISABLE TO HAVE A CARE GIVER ASSIST WITH UNLOCKING IN ORDER TO GRADUALLY GUIDE THE ORTHOSIS TOWARDS THE SET FLEXION OR EXTENSION FORCE.

Setting flexion and extension stops
There are two screws at the back of the corrective MultiMotion joint to set the range of motion. The standard stop settings of the joints are at 90° flexion and 90° extension. In the "Small" model, flexion and extension stops can be set in 14° increments. In the "Regular" model, the increments are 12°. Use the supplied roundhead allen screwdriver to loosen the flexion and extension screws, position them as needed and retighten them.

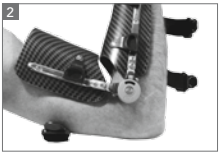
Setting the spring tension
The screw at the side of the joint is to set the spring tension using the allen screwdriver. In each phase, the optimal objective is to realize a wearing time of 7-8 hours a day, uninterrupted and without complications.

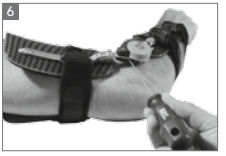
1st phase
Adaptation phase: set spring tension at minimal tension (Fig. 1) and position the orthosis on the patient (Fig. 2).

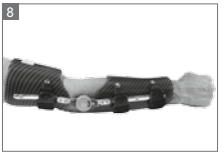
2nd phase
Work up to sub-maximum spring tension: this is the maximum spring tension the patient can tolerate for a period of 7-8 hours a day. Finding the sub-maximum spring tension is done progressively. This means: start at the lowest tension and gradually increase the spring tension (Fig. 3) until the spasm is triggered. At that point, the tension should be slightly reduced (Fig. 4) in order to relieve the spasm.

3rd phase
Rehabilitation: this is the phase where the patient's range of motion is progressively improved. As long as motion continues to be gained (Fig. 5), spring tension is **not** increased. Only if motion is no longer gained, spring tension is increased (Fig. 6), provided a wearing time of 7 to 8 hours a day continues to be respected. This is normally done every 3 to 4 weeks. This phase is repeated until the patient's rehabilitation objective is achieved. With each change of force, prevention to trigger spasm should be a specific caution.

4th phase
Follow-up: this is the phase where the achieved objective (Fig. 7) is retained. It is recommended to wear the orthosis daily for one hour in order to avoid recurrence of contractures (Fig. 8).







Documenting Spring Tension

1st Step
The course of the LLPS therapy can best be observed by measuring the Range of Motion. After sub-maximum spring tension is set (see page 17,Fig. 3 and 4), the next step is to determine the Active Range of Motion (A-ROM) while wearing the orthosis. This can be measured using a goniometer (see below Fig. 9). The obtained result is to be documented in the appropriate chart (Fig. 10).

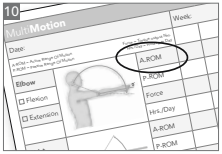
2nd Step
Remove the orthosis from the patient. Documenting spring tension always has to be done with the joint locked and the orthosis in full extension (0°-position). If extension or flexion stops are used and prevent full extension just extend the orthosis up to the stop and lock the joint. The value shown on the indicator disc (Fig. 11) is recorded in the chart (Fig. 12).
At the next adjustment of the spring tension, the orthosis is again locked in full extension, and the set value recorded in the chart.

While the patient is wearing the orthosis the indicator disc in the joint turns along with the orthosis. Consequently, at that time it gives no indication of the set spring tension.

3rd Step
Measure the Passive Range of Motion (P-ROM) (Fig. 13), again using a goniometer, without the patient wearing the orthosis and record the result in the appropriate chart (Fig. 14).

Spring tension will be increased, as described in the 3rd stage - the rehabilitation phase - on several occasions. To keep track of the progress of the treatment, the results are measured and listed.


9



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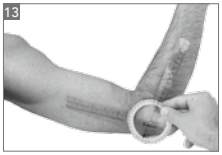
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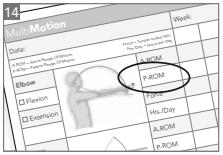

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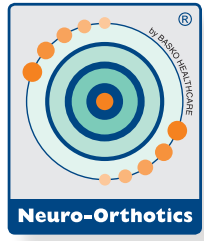
Cleaning instructions
The plastic joint components may be cleaned with naphtha, but are unsuitable for aggressive agents such as acetone or similar. Try to keep the joint free from dust and dirt as much as possible. The spring should always be sufficiently greased. Use a standard white grease (e.g. Molycoat GS4500) to grease the spring.

Liability
Basko Healthcare as the manufacturer is solely liable if the product is used in accordance with the prescribed conditions and the purpose for which it is intended. Basko Healthcare recommends handling the product in accordance with applicable rules and performing maintenance as described in these instructions. Non-compliance with the above may cause the MultiMotion joints to not function or function inadequately and may impact guarantee.

Changes, adjustments and modifications to the product not described in these instructions, are the responsibility and liability of the person who performs them.

CE conformity
These products meet requirements in Directive 93/42/EEC for medical devices. These products have been included in Class I based on classification criteria for medical devices as per annex IX of the Directive. Basko Healthcare therefore wrote up this conformity statement entirely at its own responsibility as per annex VII of the Directive.



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