

BodyFIX®

Patient positioning for treatment accuracy Product Data



BodyFIX® enables accurate and precise patient positioning and immobilization, providing the foundation for successful imaging and treatment. This is achieved whilst giving the user confidence and ensuring patient comfort. BodyFIX is engineered to fit today's requirements for image guided radiation therapy (IGRT), stereotactic radiation therapy (SRT) and precision radiation therapy.

1. BodyFIX Main Components

- BodyFIX Vacuum Pump P3
- BlueBAG BodyFIX 14
- BodyFIX Manifold Tube
- BodyFIX Manifold Cushion
- BodyFIX Cover Sheet
- BodyFIX Hygienic Drape Manifold Tube
- BodyFIX Adhesive Tape
- BodyFIX 14 Localizer STANDARD (Can only be used directly on Elekta indexed couchtops. For non Elekta couchtops use with the BodyFIX 14 Base Plate Stereotactic STANDARD (2000 x 530 x 22 mm))
- BodyFIX 14 Target Positioner STANDARD (Can only be used directly on Elekta indexed couchtops. For non Elekta couchtops use with the BodyFIX 14 Base Plate Stereotactic STANDARD (2000 x 530 x 22 mm))
- BodyFIX Diaphragm Control (Can only be used directly on Elekta indexed couchtops. For non Elekta couchtops use with the BodyFIX 14 Base Plate Stereotactic STANDARD (2000 x 530 x 22 mm))



BlueBAG BodyFIX 14 Vacuum Cushion

2. BlueBAG® BodyFIX® Vacuum Cushion

The BlueBAG BodyFIX Vacuum Cushion provides a comfortable, stable and precise mold of the patient's position from diagnostic to radiation therapy treatment and subsequent treatment fractions. These custom-moldable vacuum cushions provide support, comfort, repositioning accuracy and immobilization during the treatment. When a BlueBAG BodyFIX Vacuum Cushion is deflated, it is molded to the contours of the patient's body providing stability in position. The materials are radiotranslucent with minimum beam attenuation and maximum patient comfort. The BlueBAG BodyFIX Vacuum Cushion has a reinforced rim where the adhesive tape is attached and an indexing strip which can be attached to the table top indexing bars. There are also BlueBAG Vacuum Cushions which have no rim and no strip. The following diagrams show the differences:



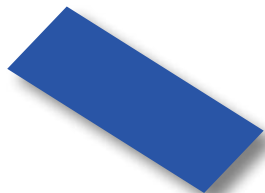
BlueBAG Vacuum Cushion



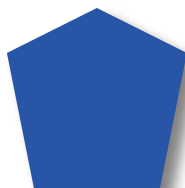
BlueBAG BodyFIX 14 Vacuum Cushion Forms

- Rectangular
- Pentagon Shape
- T-Shape

All BlueBAG BodyFIX 14 are indexed with indexing strip (Standard) and can be used with coversheets.



*BlueBAG BodyFIX 14
Rectangular Shape*



*BlueBAG BodyFIX 14
Pentagon Shape*



*BlueBAG BodyFIX 14
T-Shape*

Note: BlueBAG are not indexed and not designed for use with cover sheets.
BlueBAG is available in Rectangular, Pentagon, T and H Shapes.

Storing and Cleaning the BlueBAG BodyFIX Vacuum Cushion

Storage Instructions:

- Store at room temperature and in a dry, safe and clean place.
- When deflated, store the BlueBAG flat on a smooth flat storage area with the underside of the BlueBAG facing down.



Cleaning Instructions:

- Use mild detergents and water to clean the surface of the BlueBAG (e.g. clean with a disinfectant solution containing a maximum of 70% alcohol).

Using the Adhesive Tape:

- When replacing the adhesive tape, remove the tape from the BlueBAG and clean the area thoroughly. Then place on an even surface and apply the tape with hand pressure. Leave for 24 hours before using.

3. Using BodyFIX Stereotactic System on a Non-Elekta Indexed Couchtop:

BodyFIX 14 Base Plate Stereotactic STANDARD (2000 x 530 x 22 mm):

- This base plate is specially designed for using BodyFIX stereotactic on non-indexed couchtops.

BodyFIX Indexing Adapter P2 (Set of 3):

- The BodyFIX Indexing Adapter P2 is used for attaching the BodyFIX base plate to indexed non-Elekta tabletops. This is required for using the BodyFIX System on other tabletops.

BodyFIX Independent Indexing LINAC Couch Adapter (Set of 2):

- The BodyFIX Independent Indexing LINAC Couch Adapter enables the attachment of the BodyFIX Base Plate directly to a non-indexed Linac couch to enable the use of the BodyFIX system.

BodyFIX Independent Indexing CT Couch Adapter (Set of 2):

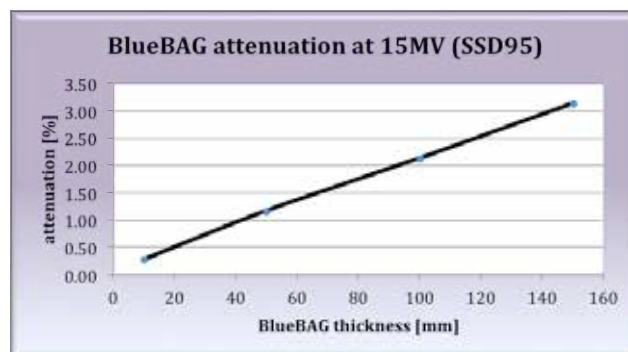
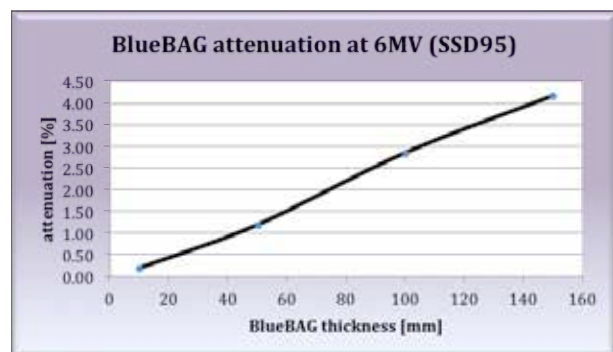
- The BodyFIX Independent Indexing CT Couch Adapter enables the attachment of the BodyFIX Base Plate directly to a non-indexed CT couch to enable the use of the BodyFIX system.

BodyFIX Repositioning Accuracy	
Innsbruck University, Nevinny- Stickel M., Sweeney RA., Bale R., Posch A., Auberger T., Lukas P.	Mean 3D repositioning error: 2.5 ± 1.1 mm
Martin Fuss, M.D., Sean X. Cavanaugh, Bill J. Salter, Ph.D., Premavathy Rassiah, Dennis Cheek, Terence S. Herman, M.D., Dept. of Radiation Oncology, University of Texas Health Science Center at San Antonio	Mean computed absolute target translation: 2.9 ± 3.3 , 2.3 ± 2.5 , 3.2 ± 2.7 mm in x, y and z directions
Meg Schneider, John Way, Robert Smee, Janet Williams, Prince of Wales Hospital, Department of Radiation Oncology, Sydney, Australia	Maximum deviation of setup accuracy: < 2 mm

4. Attenuation Measurements for BodyFIX BlueBAG, Base Plate and Diaphragm Control

The CT images of the BodyFIX components were acquired with a Siemens Somatom Sensation Open CT scanner. The CT data were transferred to the Pinnacle³ treatment planning system. Plans were generated with a beam setup of Elekta Synergy 6 MV and Elekta Synergy 15 MV machines. The beam attenuation was calculated with a field size of 10 x 10 cm² and SSD 95 cm (d = 5 cm).

BodyFIX Component	Beam attenuation (%) SSD95		Water equivalent (mm)
	@ 6 MV / 0° gantry	@ 15 MV / 0° gantry	
BlueBAG (10 mm thickness)	0.2	0.3	0.90
BlueBAG (50 mm thickness)	1.2	1.2	4.5
BlueBAG (100 mm thickness)	2.9	2.1	9.0
Stereotactic Base Plate (Sandwich 22mm thickness)	1.3	1.1	4.28
Diaphragm Control (wall thickness: 1.5 mm) / frame only	1.0	1.0	3.72



5. BodyFIX Vacuum Pump P3 specification

General Parameters	
Applied part	B
Protection class	I
Dimensions (approx.)	600 × 988 × 510 mm
Weight (approx.)	77 kg
Noise	60 dB (A)
Operating time	continuous (unattended running)

Electrical Parameters	
Power	maximum 1000 VA
Voltage	100; 110; 120; 220; 230; 240; V AC
Current	maximum 8 A
Fuses	T8 A/250 V AC






Performance Data	BlueBAG Pump	BodyFIX Pump
Max. negative pressure	-800 mbar	-100 mbar
Max. positive pressure	+500 mbar	n.a.
Max. capacity	42 l/min	40 m³/h (~700 l/min)



6. General Product Data Information

BodyFIX Item	Material	Dimension / weight	Remarks / images
BodyFIX® Comfort Module	Foam Nylon	500 x 200 mm 500 x 400 mm	
BodyFIX Tube	EVA PVC	Diameter 32 mm, length 5000 mm	
BodyFIX 14 Base Plate Stereotactic STANDARD	Carbon fiber Rohacell HGW 2082	2000 x 530 x 22 mm 11 kg	
BodyFIX 14 Localizer STANDARD	PMMA (plexiglass) PA 6 GF 30	530 x 310 x 358 mm 3,9 kg	Fiducials aluminum Rods (AlMg3) Fiducials plastic tubes 

BodyFIX 14 Positioner STANDARD	PMMA (Plexiglass) PA 6 GF 30	542 x 310 x 356 mm 5 kg	Marking Set (Polycarbonate (Makrolon)) 288 x 310 x 1 mm 288 x 310 x 1 mm 310 x 470 x 1 mm 
BodyFIX Diaphragm Control	Carbon fiber PA 6 GF 30 PVC	550 x 340 x 56 mm 0,72 kg	Minimum allowed inner diameter on the diagnostic equipment: 650 mm Scale screws: type 1 (45-85 mm) type 2 (85-125 mm) type 3 (125-165mm) type 4 (165-205mm) Plates: type 1 (150 x 117 x 10 mm) type 2 (170 x 142 x 10 mm) 
BodyFIX Manifold Cushion	80% Polyamide 20% Spandex Styropore Cotton	600 x 200 mm 700 x 200 mm 800 x 200 mm 900 x 200 mm	
BodyFIX Manifold Tube	EVA PVC Towel Cloth	Diameter 46 mm, length 1000 mm 1500 mm 2000 mm	
BodyFIX Cover Sheet	PU Foil 1800 x 1600 mm 2700 x 1600 mm PE Foil 2000 x 1400 mm 2200 x 1400 mm 2700 x 1400 mm	2000 x 1400 mm 2200 x 1400 mm 1800 x 1600 mm 2700 x 1600 mm 2700 x 1400 mm	Latex-free 
BodyFIX Sleeve Tube	PU adhesive	110 x 82 mm	
BodyFIX Hygenic Drape Manifold Tube	Fleece	2 x 15000 mm	

BodyFIX Adhesive Tape	Polyester adhesive (Gerband 932)	25 x 50000 mm	Shelf life: 1 year 
BodyFIX Anti Friction Sheet	Chitosan 1% PP foil	1000 x 700 mm	Shelf life: 1 year 
BodyFIX Independent Indexing Couch Adapter	Niro V2A AlZnMgCu 1,5 F48		CT, Linac 
BodyFIX Indexing Adapter	POM C Black		
BlueBAG BodyFIX 14	Styropore Nylon	Different sizes available	

www.elekta.com

Human Care Makes the Future Possible

Corporate Head Office:

Elekta AB (publ)
Box 7593, SE-103 93 Stockholm,
Sweden

Tel +46 8 587 254 00
Fax +46 8 587 255 00
info@elekta.com

Regional Sales, Marketing and Service:

North America

Tel +1 770 300 9725
Fax +1 770 448 6338
info.america@elekta.com

**Europe, Middle East, Africa,
Eastern Europe, Latin America**

Tel +46 8 587 254 00
Fax +46 8 587 255 00
info.europe@elekta.com

Asia Pacific

Tel +852 2891 2208
Fax +852 2575 7133
info.asia@elekta.com

