

allard|<sub>UK</sub>

# BOSTON LITE™ MANUAL





## INTRODUCTION

The Boston LITE™ Soft Body Jacket is an effective means for treating a variety of etiologies. Its use is enhanced when applying the principles of the team approach.

### WHAT IT IS

The Boston LITE Soft Body Jacket is a spinal orthosis, designed to make postural / trunk control more effective and comfortable for patients who cannot tolerate a rigid orthosis. The orthosis remains flexible while providing support with strategically placed reinforcements.

The Boston LITE Soft Body Jacket is fabricated with the standard 1.5mm high density foam liner and 3.0mm high density foam outershell. Interposed between the two layers of foam are three 1.5mm/2mm reinforcements. The reinforcements supply rigidity to the orthosis. The Boston Lite orthosis is fabricated with a standard posterior opening. The Boston Lite is supplied with a removable 3D-spacer liner. The brace has three Velcro straps and buckles which are attached to insert nuts in the posterior reinforcements. This allows the straps and buckles to be easily replaced if required.



### INDICATIONS FOR USE

- Neuromuscular Scoliosis
- Cerebral Palsy
- Myelomeningocele
- Muscular Dystrophy
- Postural Positioning
- Improve Seating
- Postoperative protection
- Pain Relief

## CHARACTERISTICS OF THE BOSTON LITE™ SOFT BODY JACKET

### ADAPTABILITY TO PATIENTS

Due to the flexibility of the foam, and the strategically placed reinforcements, the Boston Lite Soft Body Jacket can be used to treat a variety of etiologies.

### ACCEPTABILITY

In order to be effective, a brace must be accepted and worn by the patient. Due to its soft features, edge pressure on the patient is negligible. The Boston LITE external contours are aesthetically pleasing and are generally accepted by patients and parents. The Boston LITE Soft Body Jacket is lighter in weight than a conventional TLSO. The addition of a removable 3D spacer liner allows air to circulate around the body, thus providing more comfort to the wearer.

### MATERIALS

The foam inner liner is made of 1.5mm high density thermofoam. The external foam shell is made of 3 mm high-density thermofoam. The Boston LITE orthosis is flexible yet durable. In most cases, the inherent strength of the material used, together with the reinforcements in the brace, provide sufficient rigidity for support.

Each brace is supplied with a liner made from high-tech 3D spacer material. The liner technology centres on the 3D construction, which reduces heat build-up, allows consistent air circulation and provides high moisture transfer. Additional benefits include comfort cushioning and shock absorbency with excellent recovery properties.

The reinforcements have been designed to provide the maximum amount of support whilst allowing areas of the brace to be removed creating windows to access feeding tubes, surgical hardware or wounds if required.

## MEASURING, FITTING AND FABRICATION

### PATIENT EVALUATION BY THE ORTHOTIST

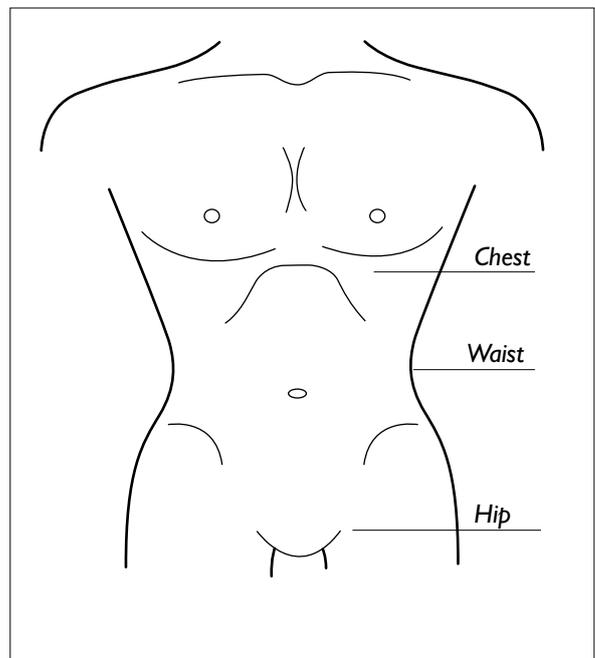
Patient measurement and selection of an appropriate Boston Lite Soft Body Jacket Module.

Fashion stockinette to the appropriate width and length to cover the patient, or use a cast shirt. The stockinette over the underwear preserves the patient's modesty and provides a sense of security. Eliminate wrinkles in the stockinette or cast shirt after it is applied to the patient.

Select the module size from the size chart, with reference to the patient's data sheet. Refer to size chart. However, it is important to point out that a "Custom Made" Boston Lite Soft Body Jacket can be fabricated on request. In these cases, all measurements on the Universal Spinal Measurement Form must be recorded. An appropriate size of the 3D spacer liner will be provided with the Boston Lite Jacket.

The standard sizes have been designed to minimise the number of custom-made braces needed. Orthotic facilities with considerable experience in fitting the Boston Lite Soft Body Jackets have found that by carrying a reasonable inventory of stock modules, they are able to meet all their needs by performing minor adjustments to the standard sizes. Standard sizes have been found to work best in the Cerebral Palsy population.

The waist measurement is most important and should be used first to determine the proper size. Due to the flexibility of the modules, they can be 2 cm larger or smaller at the inferior and superior borders (i.e. hips smaller while the chest is larger, or vice versa).



## TRIM LINES

Lines are drawn on the module with a wax pencil or a whiteboard marker to indicate where the foam is to be cut away. There are referred to as the trim lines.

### STANDARD TRIM LINES

Anterior inferior Trim Lines are kept as low as the patient can tolerate. The added length below allows for more growth without replacing the module and prevents the soft tissues from being pinched between the symphysis pubis and the brace. The Mid-point should extend over the pubis when the patient is standing. The trim lines for the thighs allow just 90° of flexion for sitting on a firm chair. Depress the patient's thigh by inserting one finger between the brace and the thigh when the patient is sitting in this 90° position to determine whether the brace fits properly. See Figure 2.

(The standard trim lines may be altered if more than 90° of hip flexion is necessary.)



**Fig. 2**

### LATERAL INFERIOR

The standard lateral trim line flows from the anterior inferior line, passing approximately one cm above the top of the greater trochanter, flowing down to the posterior inferior line. See Fig. 3



**Fig. 3**

## TRIM LINES

### POSTERIOR INFERIOR

The standard posterior inferior trim line extends as low as possible, but not more than one finger width from the seat or a firm chair when the patient is sitting with hips flexed at 90°. Establishing this line too high will result in increased lumbar lordosis and often unsightly bulges of soft tissues. See Fig. 4



Fig. 4

### OPENING POSTERIOR:

The width of the opening should not be less than 2 cm or more than 5 cm when the brace is completed and should be vertical on the patient. See Fig.5



Fig. 5

## TRIM LINES

### **ANTERIOR SUPERIOR TRIM LINES**

The standard anterior superior trim line originates 2.5 cm below the sternal notch. The trim line flows into the lateral trim line. See Fig 6.



*Fig. 6*

### **POSTERIOR SUPERIOR TRIM LINE**

The standard posterior superior trim line originates at the spine of the scapula. The trim line flows into the lateral trim line. See Fig. 7.

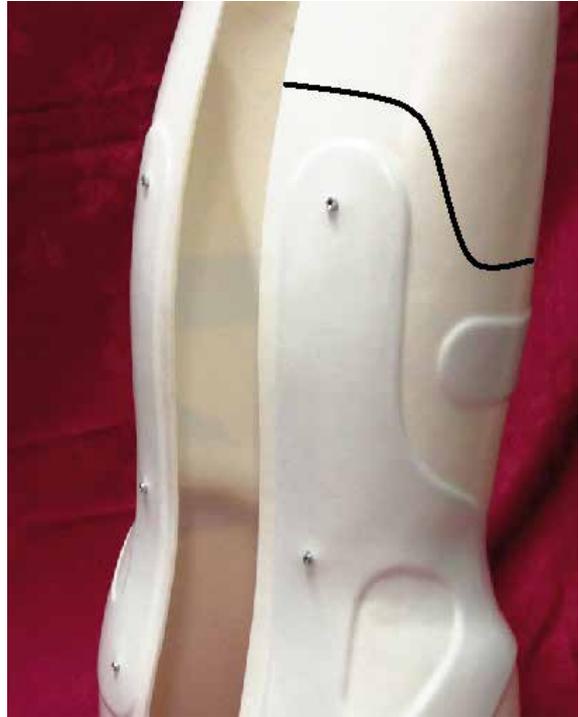


*Fig. 7*

## TRIM LINES

### **LATERAL SUPERIOR TRIM LINE**

The standard lateral trim line originates 5 cm below the level of the axilla. (The patient should have full range of motion in the arms.) See fig.8



*Fig. 8*

## FABRICATION OF THE BRACE

1. Remove excess foam with scissors or an edge trimmer.
2. Establish smooth flowing lines using a belt sander. Fine sanding is necessary to prevent any nicks, which can lead to the foam tearing. See Fig 9, 9A and 9B



**Fig. 9**



**Fig. 9A**



**Fig. 9B**

## FABRICATION OF THE BRACE

3. Attach the buckle and loop using plastic cover with 4mm screws as shown in fig 10.
4. Attach velcro strap and plastic cover with 4mm screw as shown in fig 10A.
5. Repeat process for all three straps. See Fig 11. Trim straps as required, see figure 12.



Fig. 10

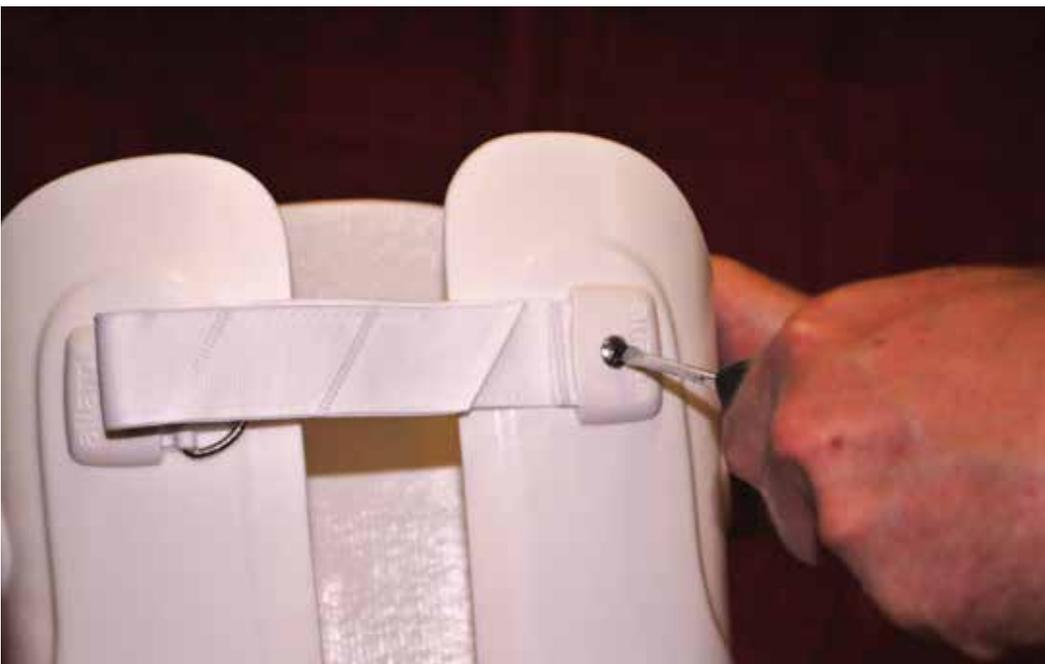


Fig. 10A



**Fig. 11**



**Fig. 12**

The reinforcements have been designed to provide the maximum amount of support whilst allowing areas of the brace to be removed creating windows to access feeding tubes, surgical hardware or wounds if required as shown in fig 13,13A and 13B.



**Fig. 13**



**Fig. 13A**



**Fig. 13B**

## FITTING OF THE BRACE

### **3D SPACER LINER**

Open the liner and wrap loosely around torso. Attach the middle Velcro strap and then the top and bottom Velcro straps. Adjust the straps alternatively until liner is at the required tightness.

### **THE BOSTON LITE**

Open Boston Lite Orthosis and wrap loosely around torso. Align waist rolls (bumps in center of brace) so that they fall above the hips and below the ribs. Exert medial force on the module with your hands and force down on the iliac crests. Tighten middle strap first, then the top and bottom.

Sit the patient upright. The edges of the brace should not be uncomfortable in any area.

The inferior anterior edges of the brace should flow into the patient's sitting lines at the thigh when they are flexed at 90°. The inferior posterior edge of the brace should not be touching the firm surface on which the patient is sitting. The anterior superior edges of the brace should flow into the axilla, as should the posterior superior edge. Make sure that the edges of the 3D spacer liner are seen all around the whole brace. Remove the brace from the patient and check if there are any signs of the irritation.

## INSTRUCTIONS

### PATIENT HYGIENE

The Boston LITE Soft Body Jacket should be cleaned daily with soap and water, and thoroughly rinsed, especially if patients have considerable incontinence, drooling or vesicostomes. A terrycloth towel can be used to dry the brace.

The spacer liner can be machine washed at 60° and dried overnight. The liner should be put in a washing bag and the Velcro closed properly. Don't use a tumbler or a drying cabinet.

### SKIN CARE

It is important to prevent skin breakdown, i.e. sore, red raw skin. To protect the skin, the patient should:

1. Bathe daily (bath or shower)
2. Apply rubbing alcohol to all parts of the skin that the brace covers, especially where the skin is pink, this is done to toughen the skin (alcohol treatments should cease after two weeks)
3. Avoid the use of creams and lotions under the brace – they soften the skin.
4. Observe skin frequently when the brace is first used, looking for pressure areas.
5. A t-shirt can be worn under the liner.
6. If there is skin breakdown (sore, red, raw skin) the brace must not be re-applied until the skin heals – one day or more.

The 3D Spacer Liner should always be used together with the brace. The patient can use the liner directly on the skin or with a Boston T-shirt underneath.

The spacer liner can be machine washed in 60° and dried overnight. The liner should be put in a washing bag and the Velcro closed properly. Don't use a tumbler or a drying cabinet.

## MEASUREMENTS

<b>Size</b>	<b>Chest cm</b>	<b>Waist cm</b>	<b>Hips cm</b>	<b>Item Number</b>
<b>Juvenile</b>				
<b>J1</b>	<b>49</b>	<b>40</b>	<b>54</b>	<b>SBBL-15J1</b>
<b>J2</b>	<b>51</b>	<b>42</b>	<b>58</b>	<b>SBBL-15J2</b>
<b>J3</b>	<b>54</b>	<b>45</b>	<b>62</b>	<b>SBBL-15J3</b>
<b>J4</b>	<b>56</b>	<b>47</b>	<b>64</b>	<b>SBBL-15J4</b>
<b>Youth</b>				
<b>Y1A</b>	<b>55</b>	<b>51</b>	<b>66</b>	<b>SBBL-15Y1A</b>
<b>Y1</b>	<b>56</b>	<b>46</b>	<b>67</b>	<b>SBBL-15Y1</b>
<b>Y2</b>	<b>60</b>	<b>47</b>	<b>71</b>	<b>SBBL-15Y2</b>
<b>Y2A</b>	<b>62</b>	<b>55</b>	<b>72</b>	<b>SBBL-15Y2A</b>
<b>Y3</b>	<b>63</b>	<b>48</b>	<b>75</b>	<b>SBBL-15Y3</b>
<b>Y3A</b>	<b>69</b>	<b>57</b>	<b>78</b>	<b>SSBL-15Y3A</b>
<b>Y4</b>	<b>64</b>	<b>51</b>	<b>79</b>	<b>SSBL-15Y4</b>
<b>Y4F</b>	<b>66</b>	<b>57</b>	<b>80</b>	<b>SSBL-15Y4F</b>



## ABOUT US

Allard Support UK Ltd (previously Boston Brace Europe Ltd), continue to manufacture and promote the original Boston Brace product range, which provide a proven philosophy based on the foundation of evidence based medicine and vigorously supported by education and training. Today, Allard Support UK Ltd supplies the Original Boston product range directly to our customers in the UK and through our distribution partners in Europe, Japan, Korea, India, and many other countries. Visit [www.allarduk.co.uk](http://www.allarduk.co.uk) for information on distributors and our product range.

For more information please visit [www.allarduk.co.uk](http://www.allarduk.co.uk)  
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