

Chapter 1 The basic principles – sizing – using the blocks

<i>Metric sizing and size charts</i>	10
<i>Standard body measurements</i>	11
<i>Size charts</i>	12
<i>Using block patterns</i>	16
<i>Seam allowances</i>	17
<i>Pattern instructions</i>	18

Metric sizing and size charts

Measurement surveys

Manufacturers of mass-produced garments need body measurement data to create sizing systems. Obtaining reliable data is very costly; thousands of subjects have to be measured and it is very difficult to obtain public money to do them. The Ministry of Defence carried out this type of survey for aircrew in 1988. The government and retailers joined together to undertake the last British survey (Size UK) in 2001 using 3D scanning equipment. The system creates 3D scanning images of the body which give the added information about body shape changes in the population. Because of the cost of the studies, it is seen as commercially valuable and it is difficult for small companies to have access to this type of data. Some manufacturers undertake small scale body measurement surveys to gain information for their niche markets. Small scale surveys, particularly those done in developing countries, still use manual methods of body measuring.

An informative book *Apparel, Size and Fit A definitive guide*, was published by The Association of Suppliers to the British Clothing Industry (ASBCI) in 2015. It is a comprehensive review of the available information for companies in this complex area of size and fit.

Size standards

Pattern cutters and graders in Europe and Asia use the metric system. Many UK manufacturers now cut their patterns in metric measurements but then convert their sizing to the imperial divisions of two inches for sales labelling.

The European Committee for Standardisation (CEN) produces guides to measuring and labelling. Its aim is to provide a coherent method of sizing and labelling. It is signed up to by most European countries including the UK and is available to companies.

This book is based on metric sizing and divisions and is used globally. The size charts in this book therefore conform to the CEN standards listed in the UK as **BS EN**, and is available from British Standards.

BS EN 13402-1-2001: *Size designation of clothes – Part 1: Terms, definitions and body measurement procedure*

BS EN 13402-2-2002: *Size designation of clothes – Part 2: Primary and secondary dimensions*
A *primary dimension* denotes the size of the garment (for example, trousers would use the waist measurement, jackets the chest measurement).

Secondary dimensions give additional size information (for example, the inside leg measurement).

BS EN 13402-3-2013: *Size designation of clothes – Part 3: Measurements and intervals*

The standard offers charts showing intervals between sizes using the primary dimensions. It also shows a range of alternative measurements that manufacturers can use for secondary dimensions. This offers them a choice when developing garments for particular markets.

In March 2016, the three standards were being revised and a draft was circulated to be approved by the member countries (an English language version of the revised drafts is available from sales@beuth.de). It is expected that the revised standards will be published in the UK later in 2016, as new BS EN standards.

Note: The size chart information offered in this book is not affected by these new (2016) amendments to the earlier standards.

Size charts and labelling

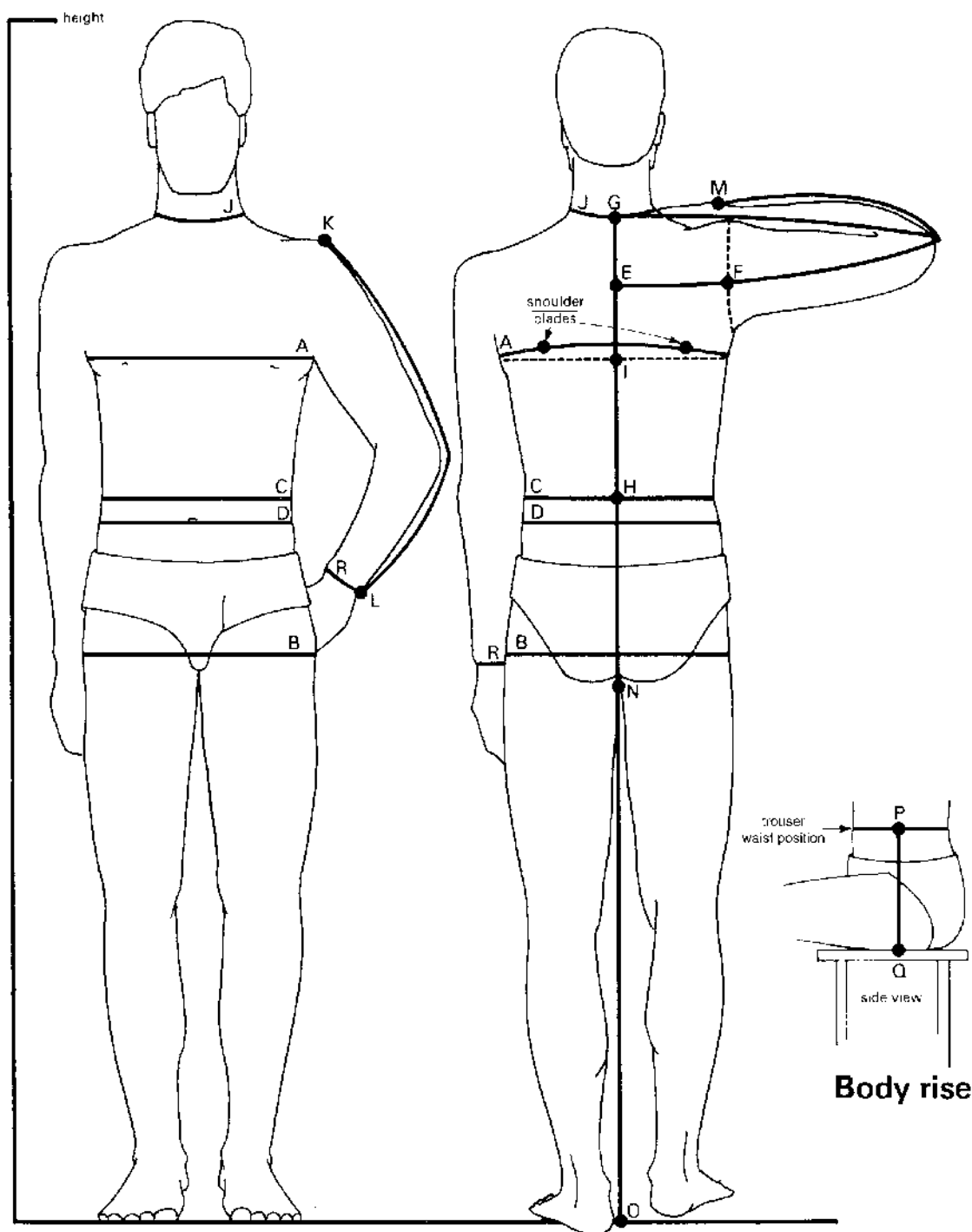
The use of standards by manufacturers is voluntary and explains the confusing differences between size charts and labels in the retail stores and online. Some producers manufacture for a particular market; for example, young fashion designed for an athletic figure. Some garments in the stores are simply labelled by codes for example; S, M, L, XL. However, large retailers' websites offer more detailed information with body diagrams of body measurement positions (pictograms), size charts and coding conversions.

Most menswear designed or manufactured in the UK or USA use imperial sizing or dual measurements on their labels or on their size charts. Page 15 offers an imperial size chart that has been converted from the metric sizing.

Size charts of body measurements in this book

- 1 Standard body measurements young men – athletic figures of regular height (4cm intervals), page 12.
- 2 Standard body measurements mature figures of regular height (4cm intervals), page 13.
- 3 Standard body measurements young men – athletic figures of regular height (5cm intervals – approximately two inches), page 14.
- 4 Body measurement chart for Small Medium Large Xlarge sizes: athletic figures of regular height (8cm intervals), page 15.

Standard body measurements



Standard body measurements: young men – athletic figures of regular height (4cm increments)

Height 173–180cm (5ft 8in–5ft 11in)

Size chart for overgarments and trousers										
A	chest	88	92	96	100	104	108	112		
B	seat	90	94	98	102	106	110	114		
C	waist	74	78	82	86	90	94	98		
D	trouser waist position (4–6cm below waist)	78	82	86	90	94	98	102		
E–F	half back	18.5	19	19.5	20	20.5	21	21.5		
G–H	back neck to waist	43	43.4	43.8	44.2	44.6	44.8	45		
G–I	scye depth	22	22.8	23.6	24.4	25.2	25.6	26		
J	neck size	37	38	39	40	41	42	43		
K–L	sleeve length one-piece sleeve	63	63.6	64.2	64.8	65.4	65.7	66		
E–M	sleeve length two-piece sleeve	79	80	81	82	83	83.8	84.6		
N–O	inside leg	77	78	79	80	81	82	83		
P–Q	body rise	27.2	27.5	27.8	28.1	28.4	28.7	29		
R	close wrist measurement	16.6	17	17.4	17.8	18.2	18.6	19		
Extra measurements (garments)										
garment length		varies with type of garment and with fashion								
cuff size	two-piece sleeve	27.4	28	28.6	29.2	29.8	30.4	30.8		
trouser bottom width	(varies with fashion)	21.4	21.8	22.2	22.6	23	23.4	23.8		
jeans bottom width	(varies with style)	21.4	21.8	22.2	22.6	23	23.4	23.8		

Adjustments for short or tall figures

Size charts for tall or short men have each vertical measurement adjusted as follows

	SHORT 163–170cm (5ft 4in–5ft 7in approx.)	TALL 183–190cm (6ft–6ft 3in approx.)
back neck to waist	–2cm	+2cm
scye depth	–1cm	+1cm
sleeve length	–2.5cm	+2.5cm
garment length	–4cm	+4cm
inside leg	–4cm	+4cm
body rise	no change	+1cm

Standard body measurements: mature figures of regular height (4cm increments)

Height 173–180cm (5ft 8in–5ft 11in)

Size chart for overgarments and trousers													
A	chest	88	92	96	100	104	108	112	116	120			
B	seat	92	96	100	104	108	114	118	122	126			
C	waist	78	82	86	90	94	98	102	106	110			
D	trouser waist position (4–6cm below waist)	82	86	90	94	98	102	106	110	114			
E–F	half back	18.5	19	19.5	20	20.5	21	21.5	22	22.5			
G–H	back neck to waist	43	43.4	43.8	44.2	44.6	44.8	45	45.2	45.4			
G–I	scye depth	22	22.8	23.6	24.4	25.2	25.6	26	26.4	26.8			
J	neck size	37	38	39	40	41	42	43	44	45			
K–L	sleeve length one-piece sleeve	63	63.6	64.2	64.8	65.4	65.7	66	66.3	66.6			
E–M	sleeve length two-piece sleeve	79	80	81	82	83	83.8	84.6	85.4	86.2			
N–O	inside leg	77	78	79	80	81	82	82	83	83			
P–Q	body rise	27.2	27.5	27.8	28.1	28.4	28.6	28.8	29	29.2			
R	close wrist measurement	16.6	17	17.4	17.8	18.2	18.6	19	19.4	19.8			
Extra measurements (garments)													
garment length		varies with type of garment and with fashion											
cuff size two-piece sleeve (varies with fashion)		28.4	29	29.6	30.2	30.8	31.2	31.6	32	32.4			
trouser bottom width (varies with fashion)		22.4	22.8	23.2	23.6	24	24.4	24.6	24.8	25			
jeans bottom width (varies with style)		21.4	21.8	22.2	22.6	23	23.4	23.8	24.2	24.6			

A size chart for shirts – mature and athletic figures

neck (collar size)	37	38	39	40	41	42	43	44	45
A chest	88	92	96	100	104	108	112	116	120
G–I scye depth	22	22.8	23.6	24.4	25.2	25.6	26	26.4	26.8
G–H back neck to waist	43	43.4	43.8	44.2	44.6	44.8	45	45.2	45.4
E–F half back	18.5	19	19.5	20	20.5	21	21.5	22	22.5
sleeve length for shirts	84	85	85	86	86	87	87	88	88
shirt length	78	78	80	81	81	82	82	82	82
cuff size for shirts	23	23.5	23.5	24	24	24.5	24.5	25	25

Standard body measurements: young men – athletic figures of regular height (5cm increments)

Height 173–180cm (5ft 8in–5ft 11in)

Size chart for overgarments and trousers						
Imperial chest size approx. – inches	34	36	38	40	42	44
Imperial waist size approx. – inches	28	30	32	34	36	38
A chest	87	92	97	102	107	112
B seat	89	94	99	104	109	114
C waist	73	78	83	88	93	98
D trouser waist position (4–6cm below waist)	77	82	87	92	97	102
E-F half back	18.4	19	19.6	20.2	20.8	21.4
G-H back neck to waist	43	43.4	43.8	44.2	44.6	45
I scye depth	22	22.8	23.6	24.4	25.2	26
J neck size	36.8	38	39.2	40.4	41.6	42.8
K-L sleeve length one-piece sleeve	63	63.6	64.2	64.8	65.4	66
E-M sleeve length two-piece sleeve	78.8	80	81.2	82.4	83.6	84.8
N-O inside leg	77	78.2	79.4	80.6	81.8	83
P-Q body rise	27.2	27.6	28	28.4	28.8	29.2
R close wrist measurement	16.5	17	17.5	18	18.5	19
Extra measurements (garments)						
garment length	<i>varies with type of garment and with fashion</i>					
cuff size two-piece sleeve	27.6	28.2	28.8	29.4	30	30.6
trouser bottom width (<i>varies with fashion</i>)	21	21.5	22	22.5	23	23.5
jeans bottom width (<i>varies with style</i>)	21	21.5	22	22.5	23	23.5

Adjustments for short or tall figures

Size charts for tall or short men have each vertical measurement adjusted as follows

	SHORT 163–170cm (5ft 4in–5ft 7in approx.)	TALL 183–190cm (6ft–6ft 3in approx.)
back neck to waist	–2cm	+2cm
scye depth	–1cm	+1cm
sleeve length	–2.5cm	+2.5cm
garment length	–4cm	+4cm
inside leg	–4cm	+4cm
body rise	no change	+1cm

Small Medium Large Xlarge XXLarge sizes

The actual measurements applied under the labels SMALL, MEDIUM, LARGE, XLARGE, XXLARGE depend on the breadth and the type of market that is being targeted. Retailers who see their market as the mature man will offer sizing under a particular label that is more generous in width than a retailer selling to the younger man.

Intervals working within the range of 8cm is suggested by British Standards and many British manufacturers are now using approximately this sizing interval. The following sizing examples are taken from the size charts of two large retailers.

Example 1: chest sizes (7–8cm intervals)

SML	MED	LGE	XLGE	XXLGE
up to 94	97–102	104–109	112–117	119–125

Example 2: chest sizes (7–8cm intervals)

SML	MED	LGE	XLGE	XXLGE
94–99	99–107	107–114	114–122	122–130

Body measurement chart for Small Medium Large Xlarge sizes (8cm increments)

This chart is useful for the younger (athletic) market. There is a small extra height differential between the sizes.

Chest sizes (cm) between		SMALL (88–96)	MEDIUM (96–104)	LARGE (104–112)	XLARGE (112–120)
A	chest	92	100	108	116
B	seat	94	102	110	118
C	waist	78	86	94	102
D	trouser waist position	82	90	98	106
E–F	half back	19	20	21	22
G–H	back neck to waist	43.4	44.2	45	45.8
G–I	scye depth	22.8	24.4	26	27.6
J	neck size	38	40	42	44
K–L	sleeve length one-piece sleeve	64	65	66	67
E–M	sleeve length two-piece sleeve	80	82	84	86
N–O	inside leg	78	80	82	84
P–Q	body rise	27.6	28.2	28.8	29.4
R	close wrist measurement	17	17.8	18.6	19.4
Extra measurements (garments)		<i>varies with type of garment and with fashion</i>			
garment length					
cuff size two-piece sleeve		28	29.2	30.4	31.6
trouser bottom width (<i>varies with fashion</i>)		21.8	22.6	23.4	24.2
jeans bottom width (<i>varies with fashion</i>)		21.8	22.6	23.4	24.2

Using block patterns

Block patterns

A block is a foundation pattern constructed to fit a specific figure. A block can be drafted to fit an individual figure using personal measurements. For this method see page 164.

In the clothing industry the blocks are constructed to the standard (average) measurements for specific groups of men, e.g. young men, regular sized men, tall men, etc. Size charts for these groups are based on the relationship of different measurements (e.g. chest to waist) of an average man in a particular group. The block is constructed to a set of standard measurements for a particular size. It is used as a basis for interpreting a design and producing a finished pattern. The design shape may change dramatically but the basic fit of the pattern will conform to the size of the basic block.

The blocks include the basic amount of ease required for the function of the block (e.g. a jacket has less ease than a coat).

Types of blocks

This edition of the book has been designed to separate two types of cutting that are used currently in the men's clothing industry. 'Flat' cutting is used for easy fitting garments and garments in stretch fabrics. It predominates in areas such as sportswear, nightwear, weatherwear and workwear.

Classic formal wear is based on 'form' cutting. It relies not only on fitting the body shape, the pattern shape is also a reflection of the particular garment's heritage, for example, the man's classic suit or the classic shirt.

Some casual garments are cut from 'form' blocks. They are usually more expensive because the pattern cutting, grading and manufacturing processes are more complex.

The 'flat' blocks

1. **The 'flat' trouser blocks** (page 20) Blocks for some casual wear, sportswear, weatherwear and workwear.
2. **The 'flat' shirt and overgarment blocks** (page 22) Easy fitting blocks for some casual wear, sportswear, weatherwear and workwear.
3. **The tee shirt and overgarment jersey blocks** (page 24) These blocks are very simple shapes constructed to be used for jersey fabrics only.
4. **The 'flat' kimono block** (page 26) A block adaptation for both woven and jersey fabrics.
5. **The basic jeans blocks** (page 40) A close fitting jeans block with easy fitting adaptation.
6. **The pyjama block** (page 58) The standard pyjama block.

The 'form' blocks

1. **The classic suit jacket block** (page 98) A basic suit block, to be used with rever collars and a two-piece sleeve. For more extreme designs use the casual jacket block, which is a simpler basic shape.
2. **The classic easy fitting jacket suit block** (page 100) An easy fitting version of the suit block with extended shoulder line, to be used with rever collars and a two-piece sleeve.
3. **The suit two-piece sleeve block** (page 102)
4. **The classic waistcoat block** (page 108).
5. **The classic trouser block** (page 110) A basic trouser block with parallel leg shaping.
6. **The classic shirt block** (page 120) To be used for standard easy fitting shirts. Includes its own sleeve block.
7. **The tailored shirt block** (page 122) Includes its own sleeve block and short sleeve adaptation.
8. **The casual shirt block** (page 124) A basic simple block to be used for styled casual shirts. Includes its own sleeve block.
9. **The basic jacket block** (page 130) A close fitting block to be used for casual jackets. The one-piece or two-piece sleeve can be used with the block.
10. **The easy fitting casual jacket block** (page 132) An easy fitting block with extended shoulder line, to be used for casual jackets. The one-piece or two-piece sleeve can be used with the block.
11. **The basic overgarment block** (page 134) A close fitting block to be used for overgarments and overcoats. The one-piece or two-piece sleeve can be used with the block.
12. **The easy fitting overgarment block** (page 136) An easy fitting block with extended shoulder line, to be used for easy fitting coats, anoraks and very loose jackets. The one-piece or two-piece sleeve can be used with the block.
13. **The one-piece sleeve block** (page 138)
14. **The two-piece sleeve block** (page 140)

Adapting the blocks – basic points

1. Choose the correct block, e.g. if an easy fitting shape is required select the easy fitting overgarment block or the easy fitting 'flat' block.
2. Decide the length; lengthen or shorten the block.
3. Decide if more ease is required in the armhole (ref. 8, page 70).

If this procedure is followed, any styling will be carried out on the required basic shape and therefore the proportions will be correct.

Seam allowances

The decision to include seam allowances in the blocks and to retain them during pattern construction was made so that students could gain some experience of working with added seam allowance. This is because they will encounter this method in the garment manufacturing industry.

The reasons for the decision to include seam allowances are discussed in more detail in the Special Note on page 5. It is recommended that this note be read before continuing with this section.

Working with seam allowances

A 1cm seam allowance is allowed on the blocks except where stated no seam allowance. Therefore if a seam is required at the centre back or side seam of the casual blocks or overgarment blocks, seam allowance must be added. The fitting line on the blocks is marked with a dotted line; this shows clearly which lines have seam allowance added. Where seam lines are drawn and the block is separated, seam allowances must be added.

The 1cm seam allowance allowed on the block is suitable for plain seams. Other seams usually require extra seam allowance, which must be added to the pattern. The extra width of seam allowance required will depend on the type of seam and the distance between the seam and the top stitching. Two examples are shown opposite.

For mass-production of lightweight garments, enclosed seams (e.g. collars, cuffs) may have their seam allowance reduced to 0.5cm.

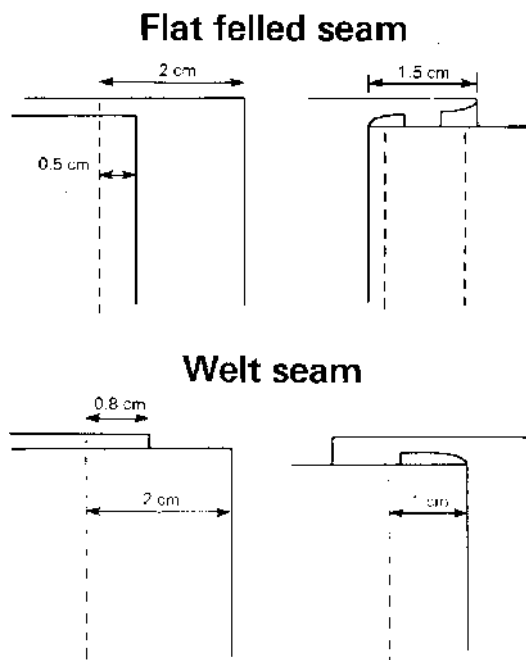
Inlays

Inlays are extra material allowed on some seams in case an alteration is necessary. They are always allowed on garments cut for individual customers (bespoke tailoring). Most manufacturers allow inlays on certain seams.

Working without seam allowances

If you wish to work without seam allowance during pattern adaptation, construct the blocks following the instructions given, then cut off the seam allowances where marked. You can then use them as nett blocks.

You will be able to follow the pattern procedures in the book, *but you must ignore any instruction that tells you to add seam allowances, and ignore*



any of the shaded sections of seam allowance on the diagrams. When the pattern is completed, the appropriate seam allowances can be added where they are required.

Note. The construction of the kimono blocks (pages 26 and 66) should be based on a block that *includes* seam allowance.

Pattern instructions

The following instructions should be marked on patterns. Those marked with an asterisk are sometimes marked on an accompanying technical data sheet instead of the pattern.

1. The name of each piece.
2. Pattern size.
3. Centre back or centre front.
4. Fold lines (these are often marked by a fold symbol).
5. Balance marks (these are matching points marked by a notch).
6. Grain lines (these are usually marked by arrow lines).
7. Construction marks (these include darts, buttonholes, pocket placings, pleats. These lines are often marked by notches or punch holes).
8. * Seam allowances.
9. * The number of pieces to be cut (state if it is a single piece or a paired pattern piece).