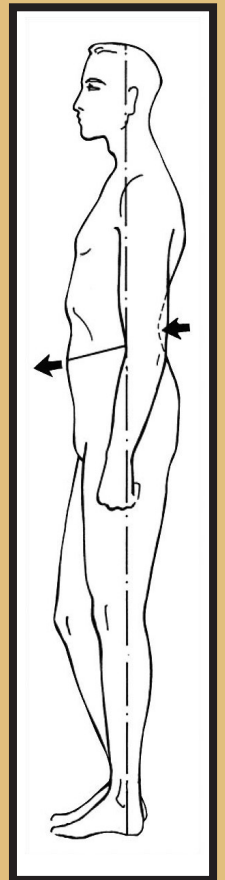
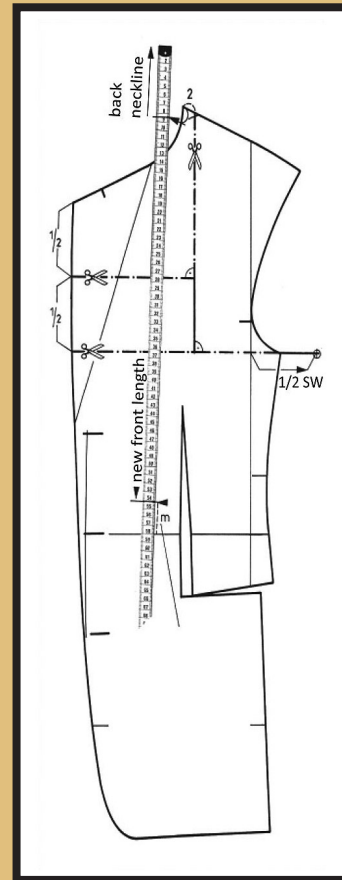
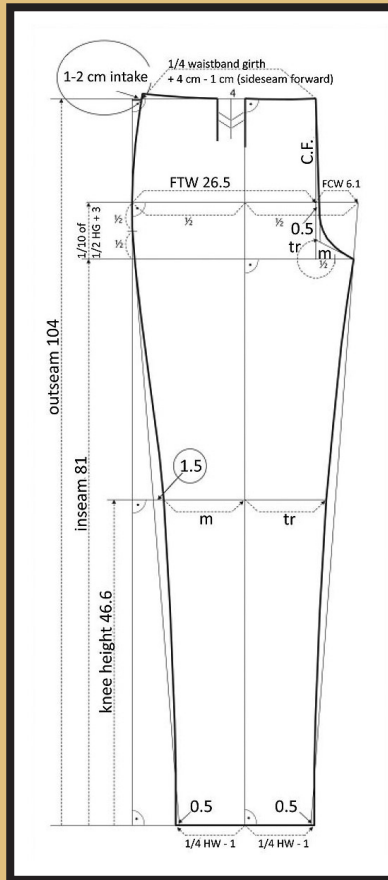
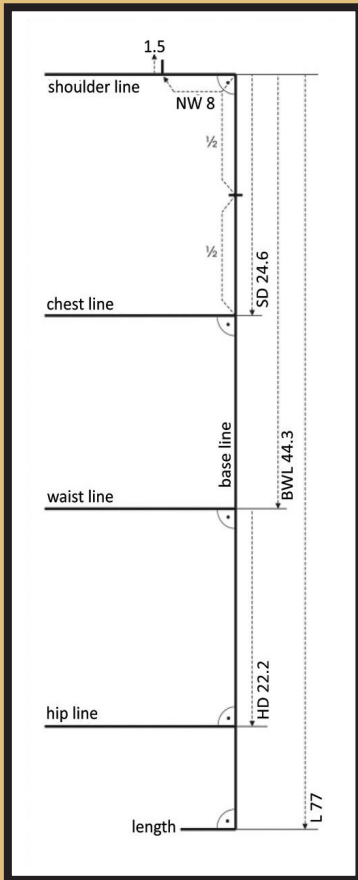


FUNDAMENTALS



MENSWEAR

M. MÜLLER & SOHN
THE ORIGINAL PATTERN-SYSTEM EST. 1891



FUNDAMENTALS

MENSWEAR



M. MÜLLER & SOHN

THE ORIGINAL PATTERN-SYSTEM EST. 1891

Publisher: Deutsche Bekleidungs-Akademie, Munich
Executive Editor: Friederike Meyer
Author: Alexander SEXTL
Illustrations/Layout: Tatjana Sanftenberg, Eva Küpper
Translation: Sabine David
Print: Holzmann Druck GmbH & Co. KG, 86825 Bad Wörishofen, Germany
ISBN: 978-3-929305-91-3, Original German Edition ISBN: 978-3-929305-81-4

The "Deutsche Nationalbibliothek" lists these publications in the "Deutsche Nationalbibliothek". Detailed bibliographic data is accessible on the Internet at <http://dnb.d-nb.de>:

Deutsche Bekleidungs-Akademie, München (Hrg.).

"HAKA Schnittaufstellung – Grundwissen"

First Edition 2016

"Ausgewählte Beiträge der

RUNDSCHAU FÜR INTERNATIONALE HERRENMODE"

Munich, Rundschau Verlag 2007

English edition: ISBN: 978-3-929305-91-3

Original German edition: ISBN: 978-3-929305-81-4

2017 by Rundschau-Verlag Otto G. Königer GmbH & Co. KG,
D-80335 München, Bayerstraße 16a, Germany, Phone 0049 89/3 81 60 50

www.muellersohn.com

E-mail: redaktion@rundschauverlag.de

All rights reserved, especially the translation in different languages. No part of this publication may be translated, reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, whether for private, educational or commercial use, without the permission of the publisher.

Preface

Pattern drafting made easy!

METRIC PATTERNMAKING – MENSWEAR – FUNDAMENTALS is a compact guide to patternmaking with step-by-step instructions and illustrations. The internationally renowned and worldwide used SYSTEM M. MÜLLER & SOHN is published by DEUTSCHE BEKLEIDUNGS-AKADEMIE MÜNCHEN.

Quickly you will learn how to develop perfect fitting menswear patterns, from taking measurements, drafting basic blocks to developing pants, shirt, vest and jacket patterns.

This exceptional guide is suitable for self-studies from beginners to advanced patternmakers, tailors, dressmakers, fashion designers, educators, students and professionals in the garment industry.

You can find more design ideas and pattern books in our online shop at: www.muellersohn.com

Contents

Measurements and Calculations	07	Dress Shirts	
Trousers		Basic Shirt Block for Normal Sizes, Size 50	49
Basic Block: Trousers with One Pleat, Size 50	13	Topstitched Standard Placket	57
Verify the Hip Measurement	19	Pleated Placket	58
Check the Seam Transitions	20	Concealed Fly Front Placket	59
Front Fly Adjustment	20	Classic Shirt Collar	60
Pattern Adaptation	21	London Collar	60
Basic Block: Trousers with Two Pleats, Size 50	23	Kent Collar	61
Verify the Hip Measurement	27	Spread Collar	61
Adjusting the Front Pattern from One Pleat to Two Pleats	27	Waistcoats	
Basic Block: Trousers with Dart, Size 50	29	Basic Waistcoat Block for Normal Sizes, Size 50	62
Verify the Hip Measurement	33	Check the Seam Transitions	67
Alternative Dart Placement on the Front Trousers	33	Basic Waistcoat Block for a Stocky Figure, Size 25	68
Basic Block: Trousers without Dart, Size 50	34	Design Pattern Waistcoat for a Stocky Figure	71
Verify the Hip Measurement	38	Basic Waistcoat Block for a Belly Figure, Size 51	72
Back Trouser Pattern with One Dart	38	Design Pattern Waistcoat for a Belly Figure	75
Adjusting the Front Pattern from One Dart to No Darts	39		
Trouser Pocket Variations		Figure Deviations	
Double Welt Pocket	40	Upright Posture	76
Slanted Side Pocket	40	Round Back	77
Cross Pocket	41	Sway Back & Protruding Abdomen	79
Back Pocket with Two Darts	42		
Back Pocket with One Dart	42	Suit Jackets	
Figure Deviations		Basic Suit Jacket Block for Normal Sizes, Size 50	80
Flat Seat	43	Check the Seam Transitions	90
Full Seat	44	Basic Two-Piece Sleeve Block	91
Protruding Lower Body	45	Design Pattern Two-Piece Sleeve	95
Strong Calves	46	Check the Seam Transitions	95
Inward Foot Position	47	Pattern Adaptation	96
Outward Foot Position	48	Variables for Figure Adaptation	100

Front Variations

Single-Breasted Jacket with Two Buttons	101
Single-Breasted Jacket with Three Buttons	103
Double-Breasted Jacket with Three Button Pairs	104
Basic Suit Jacket Block for a Stocky Figure, Size 25	105
Design Pattern Suit Jacket for a Stocky Figure	110
Basic Suit Jacket Block for a Belly Figure, Size 51	111
Design Pattern Suit Jacket for a Belly Figure	116

Figure Deviations

Balance Measurements	117
Upright Posture	118
Round Back & Forward Slouching	121
Swayback & Protruding Abdomen	124

High Shoulders (One Sided or Both)	125
Sloping Shoulders	126
Strong, Rounded Neck	126
Rounded Back	127
Strong Shoulder Blades	128

Roll Lapel Collar	129
-------------------	-----

Adding Seam Allowances	131
------------------------	-----

Jacket Pattern with Seam Allowances	133
-------------------------------------	-----

Abbreviations	138
---------------	-----

PATTERN DRAFTING TOOLS

The following tools are required for drafting patterns by hand:

- pencil
- eraser
- sharpener
- scissors
- tape

Pattern Drafting Paper

40g/sm - strong but transparent enough for tracing
No. 930045



Tailor's Square

60 cm long and 37 cm wide
Acrylic square with multi curve
No. 940002

The illustrations show more products that are useful for measuring and drafting:

order online at
www.muellersohn.com

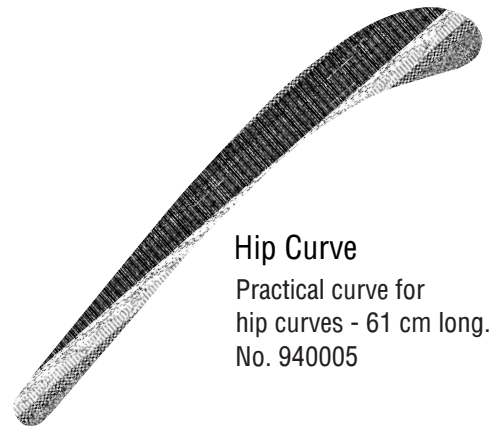
Acrylic Ruler in 1/6 Scale

Measure M. Mueller & Son pattern publications with this handy ruler in 1/6 scale
No. 940006



French Curve

Practical curve for neckline and armholes - 32 cm long.
No. 940003



Hip Curve

Practical curve for hip curves - 61 cm long.
No. 940005

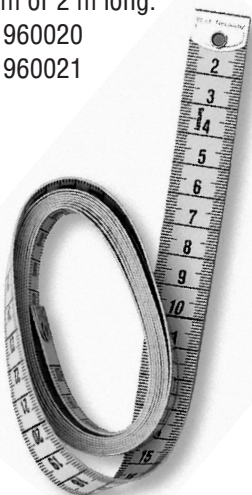
Waist Tape Measure

1.5 m long with hook & eyes between 60 cm and 120 cm.
No. 960022



Tape Measure

1.5 m or 2 m long.
No. 960020
No. 960021



Plumblines Tape Measure

2 m long with Steel weight.
No. 960024

Crotch Tape Measure

1.5 m long. First 10 cm reinforced.
No. 960023



Before you can start drafting a made-to-measure pattern, you need to take the client's body measurements and calculate measurements that cannot be taken accurately. For drafting a standard size, you can refer to the measurements displayed in the standard measurement chart.

The most important feature of the M. Mueller & Son menswear cutting system is that each pattern has its own measurement calculations, which have been set up to match the design. Nevertheless, it is still possible to affect the fit with different amounts of ease or to take the client's posture into account.

The measurement chart always begins with the body measurements which can be measured at the client or taken from a standard size. These are followed by the auxiliary measurements, which are calculated from the body measurements and are established for the specific pattern construction.

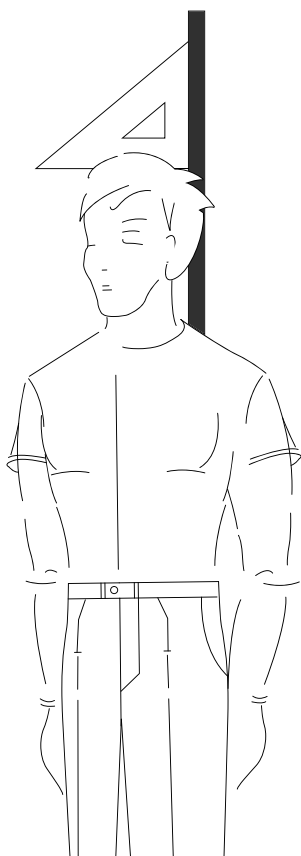
For upper body patterns, the different parts of the girths measurements are then added up. The result shows the ease included in the garment and therefore the fit which can be adjusted by altering the allowances.

The client should wear a narrow shirt or a close-fitting T-shirt and trousers. The measurements are taken over the clothes for menswear.

Keep the measuring tape snug around the body to make up for that and do not measure over your belt. The following measurements are needed for the pattern construction:

Body Height

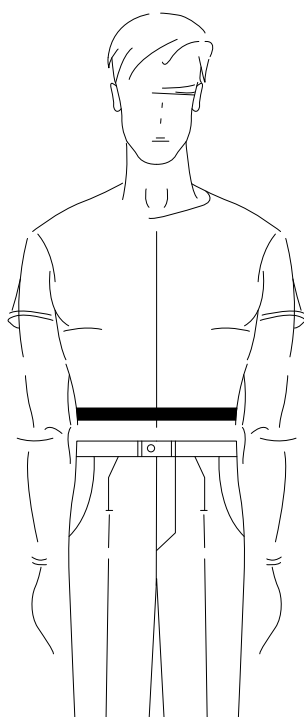
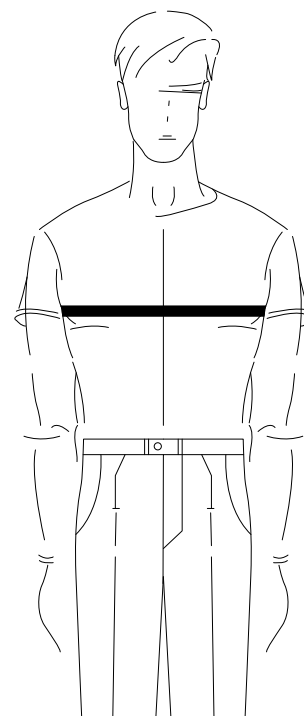
Measure the distance from the highest point of the head to the sole of the foot. Deduct the height of the heel if shoes are worn.



Chest Girth

Measure the chest girth horizontally over the fullest part of the chest (bust points), under the arm towards the back and slightly upwards over the shoulder blades.

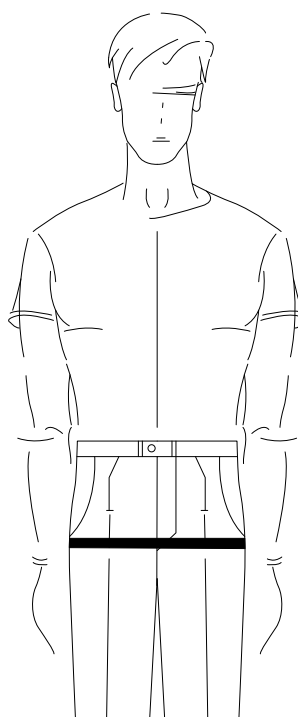
The client should breathe normally and do not breathe out or hold his breath. The measuring tape should be snug around the body but not too tight.



Waist Girth

Measure the waist girth horizontally in the waist indentation above the hip bone. The position for the waist girth measurement can be easily determined from the side even with slightly bigger men.

Measure the waist girth slanted down over the belly for protruding figures. The measuring tape should be snug around the body but not too tight.



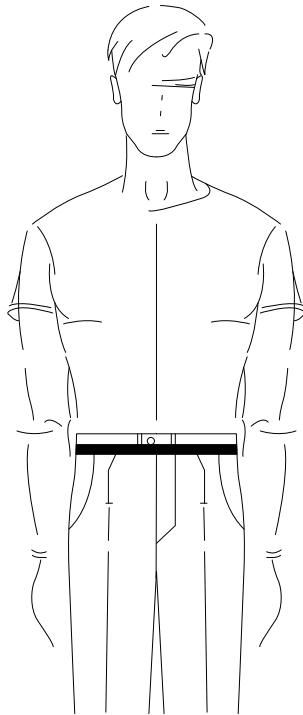
Hip Girth

Measure the hip girth horizontally over the widest part of the hip.

The measuring tape should be snug around the body but not too tight. The widest part of the hip is usually higher for men compared to a female figure.

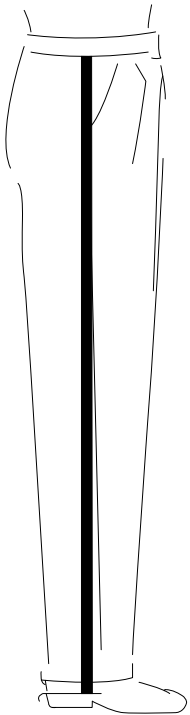
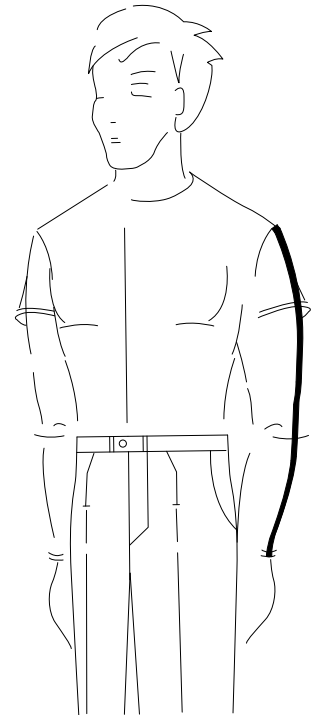
Waistband Girth

Measure the waistband girth horizontally around 3 cm above the hipbone or measure the finished waistband over well fitting trousers and hold the tape measure tight.



Sleeve Length

The sleeve length is measured from the slightly protruding shoulder bone to the wrist bone above the thumb. The shoulder bone might be difficult to find on client's with a fuller figure. In this case, measure the finished sleeve length of a good fitting jacket and adjust the sleeve length if necessary. The shirt cuff should be visible under the jacket sleeve hem.

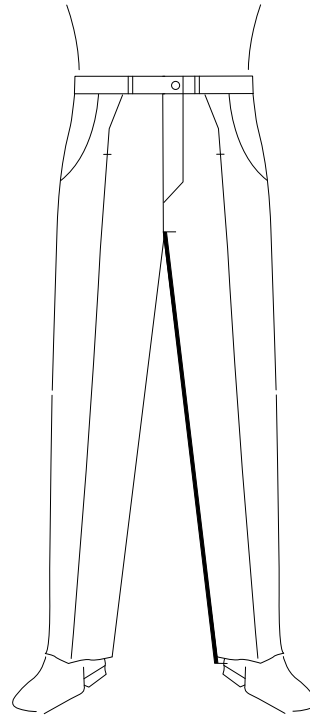


Side Length

Measure the side length vertically from the bottom of the waistband to the top of the sole. Make sure that the trousers sit right and the waistband is at the right positions.

Hem Width

Measure the finished hem width on a pair of trousers or choose the hem width depending on style and preference.



Inseam Length

The inseam is the distance from the crotch to the top of the sole measured with the trousers pulled up moderately.

Use a crotch tape measure with reinforced tip and hold it 5 cm to 6 cm away from the tip to avoid touching the client's crotch area.

The calculated measurements are also called proportion measurements since they are derived from the primary body measurements of the body height (Bh) and the chest girth (Cg). Proportion thereby means the relation of the individual measurements to each other. Such proportions are given also in a size chart of the pattern industry. The secondary or auxiliary measurements are calculated with the help of a measurement chart. A comparison of the calculated and measured results should be done for the scye depth (Sd) and the back width (Bw). The back waist length (Bwl) should be measured on the body because figures with the same body height can have more or less back waist length as otherwise be determined in proportion to the body height.

Minor differences can be considered during the normal pattern construction. Greater deviations however indicate possible figure problems like round back, stooping figure or upright figure. These require further adjustments from the normal pattern. The calculations formulae are adapted to the different figure types and sizes as shown in the measurement chart.

Back Waist Length

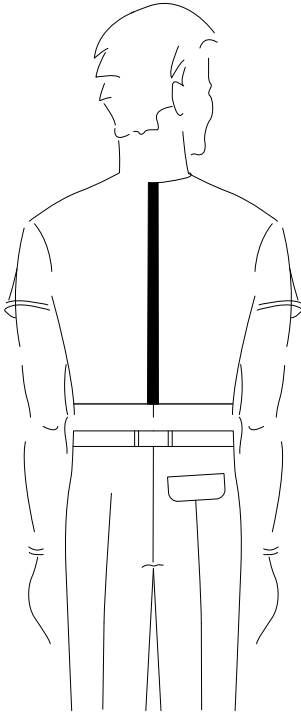
The back waist length is the vertical distance between the nape of the neck and the strongest waist indentation (the position of the waist tape measure). The nape of the neck is the slightly protruding vertebrae at the height of the collar seam, which is noticeable even for fuller figures. This point is also important for measuring the finished length and is the starting point of the pattern construction.

Calculation:

Dress Shirt: $1/4$ of the body height

Waistcoat: $1/4$ of the body height + 1.5 cm to 2 cm

Suit Jacket: $1/4$ of the body height + 0 cm to 1 cm



Scye Depth

The scye depth is an important measurement for the armhole depth. Place a cardboard strip under the arm (push the strip up until it touches the armpit if the customer wears a wide shirt). Fold the cardboard strip horizontally backwards towards the centre back. Measure the scye depth at the centre back from the nape of the neck to the upper edge of the strip.

Calculation:

Dress Shirt: $1/10$ of the chest girth + 12 cm

Waistcoat: $1/8$ of the chest girth + 12.5 cm to 13 cm

Suit Jacket: $1/8$ of the chest girth + 12 cm to 12.5 cm

Back Width

Measure the back width over the shoulder blades from the point where the arm meets the body to the other side where the arm meets the body. It is easy to find the fold between the arm and body, if the customer stands with his arms hanging down.

Calculation:

There are two different calculations depending on the chest girth (Cg) so that the proportional changes for fuller figures are taken into account.

Dress Shirt:

up to 112 cm $Cg = 2/10$ of the chest girth - 1 cm

over 112 cm $Cg = 1/10$ of the chest girth + 10.5 cm

Waistcoat:

up to 100 cm $Cg = 2/10$ of the chest girth + 0 cm to 1 cm

over 100 cm $Cg = 1/10$ of the chest girth + 10 cm to 10.5 cm

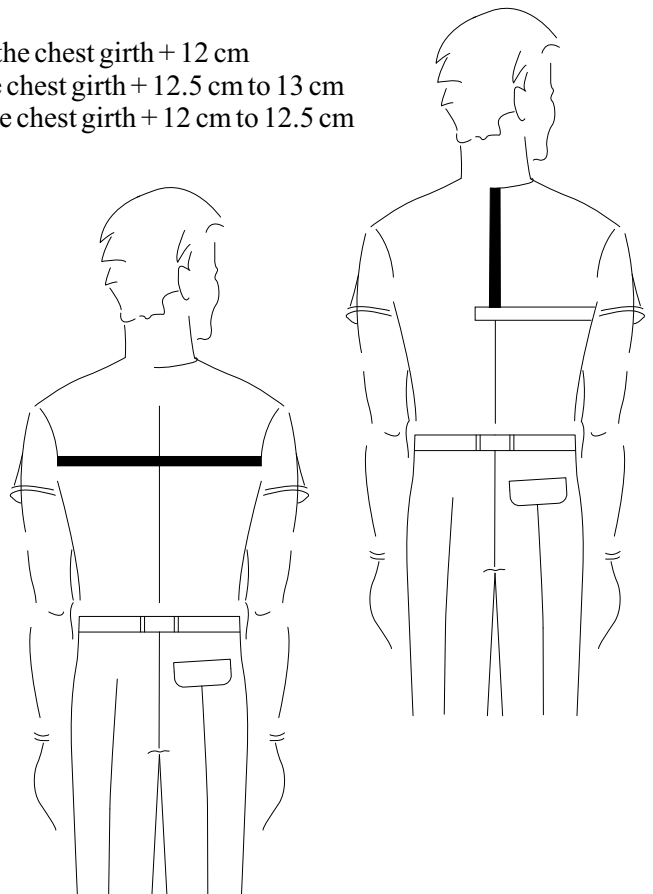
Suit Jacket:

up to 100 cm $Cg = 2/10$ of the chest girth + 0.5 cm to 2.5 cm

over 100 cm $Cg = 1/10$ of the chest girth + 10.5 cm to 12.5 cm

Finished Length

Choose the length as preferred or calculate with $1/2$ body height minus 10 cm to 13 cm (depending on current trend).



CALCULATING MEASUREMENTS & FIGURE PROPORTIONS

Measurement Evaluation:

As different pattern constructions are required for some figure proportions, it is necessary to evaluate the client, who may have either a normal figure, a stocky figure, or a belly figure and determine the correct calculation and construction. Belly figures require a special belly construction. Compare the chest girth and the waist girth:

Normal Figure

The waist girth is 8 cm to 10 cm smaller than the chest girth.

Belly Figure

The waist girth is larger than the chest girth.

Stocky Figure

The waist girth is 0 cm to 6 cm smaller than the chest girth.

All remaining measurements are calculated:

Chest Width

- Dress Shirt:

up to 112 cm $Cg = 2/10$ of the chest girth - 1 cm

over 112 cm $Cg = 1/2$ of the chest girth - back width - scye width

- Waistcoat:

$1/4$ of the chest girth - 3.5 cm to 4 cm

- Suit Jacket:

up to 100 cm $Cg = 2/10$ of the chest girth + 1 cm to 2 cm

over 100 cm $Cg = 2/10$ of the chest girth + 1.5 cm to 3 cm

Abdomen Width

Calculated from $1/4$ of the waist girth minus 0.5 cm to 1 cm. If the abdomen width is less than the chest width, it is ignored during the construction. The abdomen width cannot be less than the width of the chest.

The calculation of the abdomen width also depends on the chest width calculation. The abdomen width increases proportional to the ease included in the chest width:

Suit Jacket - Chest Width (Cw):

$Cw = 2/10$ of the chest girth + 0.5 cm to 1.0 cm

$Cw = 2/10$ of the chest girth + 1.0 cm to 1.5 cm

$Cw = 2/10$ of the chest girth + 1.5 cm to 2.0 cm

$Cw = 2/10$ of the chest girth + 2.0 cm to 2.5 cm

Suit Jacket - Abdomen Width (Abw):

$Abw = 1/4$ waist girth minus 1.0 cm to 1.5 cm

$Abw = 1/4$ waist girth minus 0.5 cm to 1.0 cm

$Abw = 1/4$ waist girth minus 0.0 cm to 0.5 cm

$Abw = 1/4$ waist girth plus 0.0 cm to 0.5 cm

Scye Width

Dress Shirt: $1/10$ of the chest girth + 2 cm

Waistcoat: $1/8$ of the chest girth + 0 cm to 0.5 cm

Suit Jacket: $1/8$ of the chest girth + 2.5 to 5.5 cm

Finished Width

Add the back width, the scye width and the chest width measurement together for the finished width of the pattern at chest level. Deduct half of the chest girth body measurement to verify the ease included in the pattern at the chest level. You can to check the calculation and also estimate the width of the garment with some experience. You can modify the amount of ease included even before the pattern was drawn to adjust the width and fit of the garment.

Select the preferred M.Mueller & Son construction based on the amount of ease included.

Choose the ease included in the dress shirt pattern depending on the preferred style:

4 cm to 6.0 cm = slim fit

6.5 cm to 8.5 cm = normal fit

approx. 9 cm = loose fitting

The ease included in the waistcoat pattern should be at least 3 cm.

Choose the ease included in the suit jacket pattern depending on the finishing (with/without hair canvas) and fabric (heavy and hard / light and soft):

5.5 cm to 6.5 cm = narrow/slim fit

6.5 cm to 8.0 cm = normal/business

8.0 cm to 9.5 cm = loose fitting

Armhole Depth

Calculated from the finished scye depth including ease.

Dress shirt:

Finished scye depth minus 0 cm to 1 cm

Waistcoat:

Finished scye depth

Suit jacket:

Finished scye depth plus 2 cm to 3 cm or more for an upright posture or belly figure.

Total Crotch Width

Calculated using the following formula: 1/4 hip girth minus 4 cm to 5 cm. The total crotch width is the width of the body from the front to the back. It can be adapted to various figure proportions such as a full seat by reducing the deduction for a wider crotch and therefore more room for the full seat. A figure with wide hips and a flat seat on the other hand needs less crotch width which can be achieved with a greater deduction.

Front Crotch Width

The crotch width at the front trouser is calculated using the following formula: 1/10 of ½ hip girth plus 1 cm.

Back Crotch Width

The crotch width at the back trouser is calculated using the following formula: total crotch width minus front crotch width.

Front Trouser Width

Calculated using the following formula: 1/4 hip girth plus 0 cm to 5 cm. The addition affects the width of the trouser front. It is usually based on the pleat depth.

Back Trouser Width

Calculated using the following formula: 1/4 hip girth plus 2.5 cm to 4 cm. The addition affects the width of the trouser.

Total Width

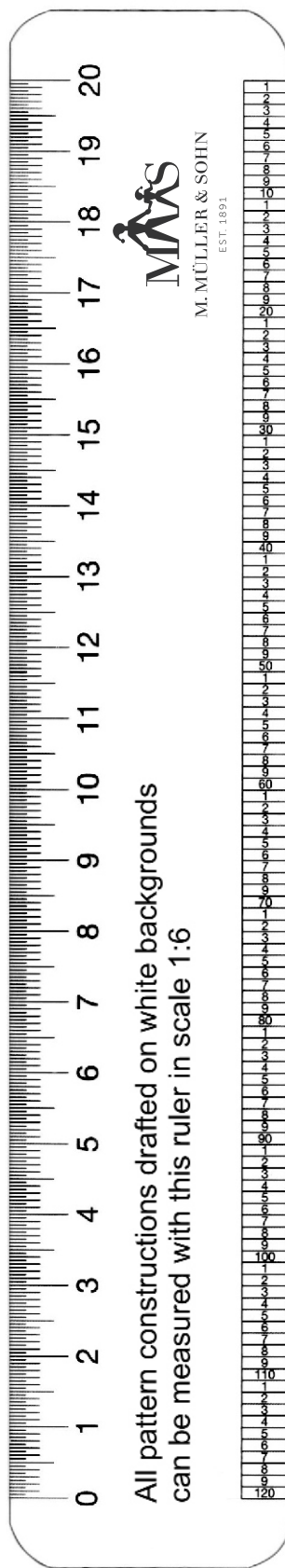
Calculated using the following formula: Back trouser width + back crotch width. Divide the result by two for the construction.

Knee Height

Calculated using the following formula: 1/2 inseam plus 1/10 inseam minus 2 cm.

Standard Sizes for MENSWEAR

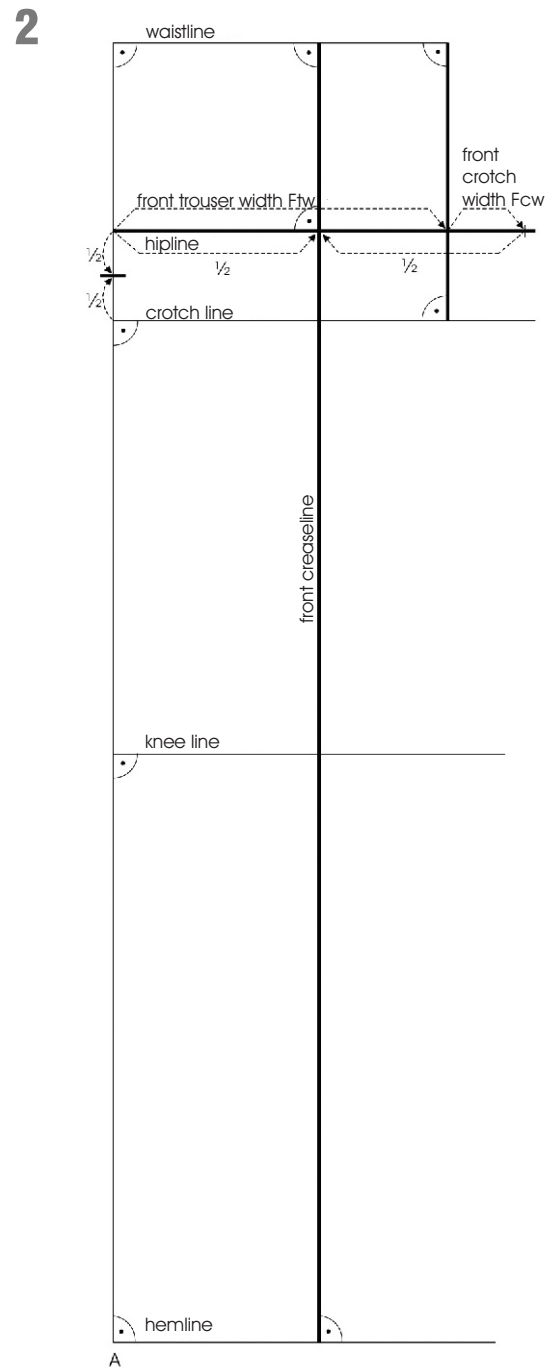
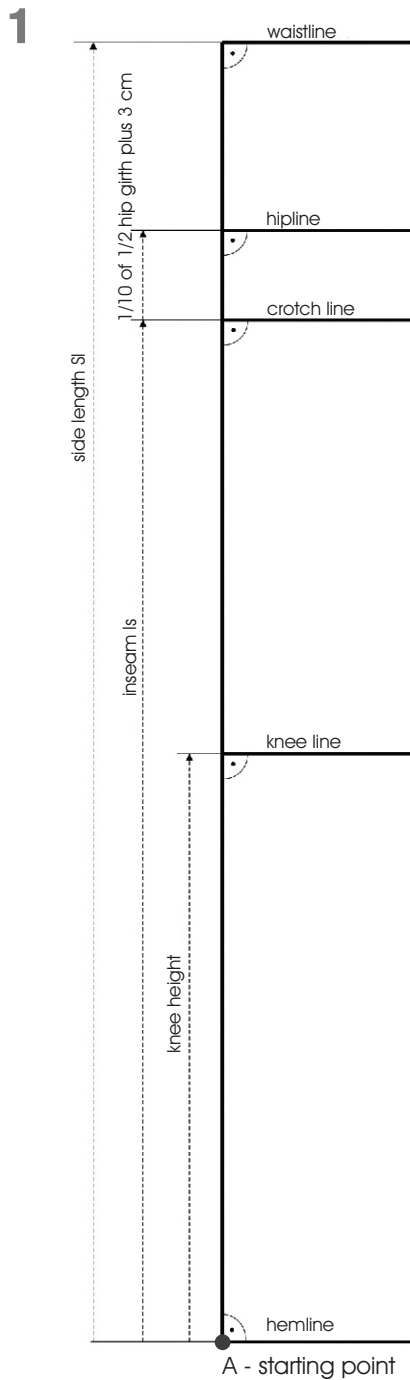
	SIZE	44	46	48	50	52	54	56	58	60	62	64
Bh	Body height	168	171	174	177	180	182	184	186	188	190	192
Cg	Chest girth	88	92	96	100	104	108	112	116	120	124	128
Wg	Waist girth	78	82	86	90	94	98	104	110	116	122	126
Hg	Hip girth	90	94	98	102	106	110	116	120	124	128	132
Slg	Sleeve length	61	62	63	64	65	66	67	68	69	70	71
Nw	Neck width	7.4	7.6	7.8	8	8.2	8.4	8.6	8.8	9	9.2	9.4
Sd	Scye depth	21.5	22.2	22.9	23.6	24.3	24.9	25.5	26.1	26.8	27.4	28
Bwl	Back waist length	42	42.8	43.5	44.3	45	45.5	46	46.5	47	47.5	48
Bw	Back width	19.6	20.4	21.2	22	22.4	22.8	23.2	23.6	24	24.4	24.8
Sw	Scye width	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20	20.5
Cw	Chest width	20.1	20.9	21.7	22.5	23.3	24.1	24.9	25.7	26.5	27.3	28.1
Abw	Abdomen width	21	22	23	24	25	26	27.5	29	30	32	33
Sl	Side length	102	103.5	105	106.5	108	109.5	111	112.5	114	115.5	117
Is	Inseam length	78	79	80	81	82	83	83.5	84	84.5	85	85.5
Br	Body rise	24	24.5	25	25.5	26	26.5	27.5	28.5	29.5	30.5	31.5
Wbg	Waistband girth	76	80	84	88	92	96	102	108	114	120	124
Haw	Hand width	31.1	31.4	31.7	32	32.3	32.6	32.9	33.2	33.5	33.8	34
Hw	Hem width	42	43	44	45	46	47	48	49	50	51	52
Kng	Knee girth	32	33	34	35	36	37	38	39	40	40	40
Cag	Calf girth	35	36	37	38	39	40	41	42	43	43	43
Ang	Ankle girth	23	24	25	26	26.5	27	27.5	28	28.5	29	29.5
Ng	Neck girth	37	38	39	40	41	42	43	44	45	46	47



Acrylic Ruler, EAN 940006,
order at:
www.muellersohn.com



BASIC BLOCK: TROUSERS WITH 1 PLEAT - FRONT PATTERN



1 Draw a vertical and a horizontal line and mark the **starting point A** at the intersection as shown in the illustration. From point **A**, measure the following along the vertical line:

- Knee height **Kh**
- Inseam length **Is**
- Side length **SI**

Square out to the right from all points, resulting in the waistline, the crotch line and the kneeline. The bottom line is the hemline. Measure $\frac{1}{10}$ of $\frac{1}{2}$ hip girth plus 3 cm from the crotch line upwards and square out to the right for the hipline.

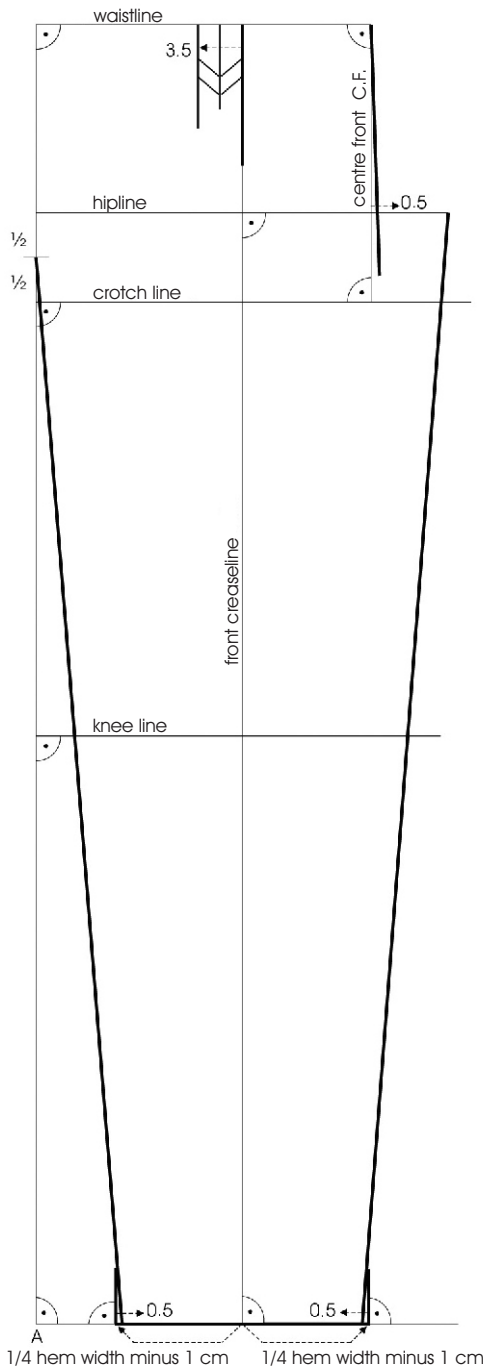
2 Mark the halfway point between the hipline and the crotch line. On the hipline, measure the front trouser width **FtW** to the right and square up to the waistline and down to the crotch line.

Measure the front crotch width **Fcw** from the perpendicular line to the right.

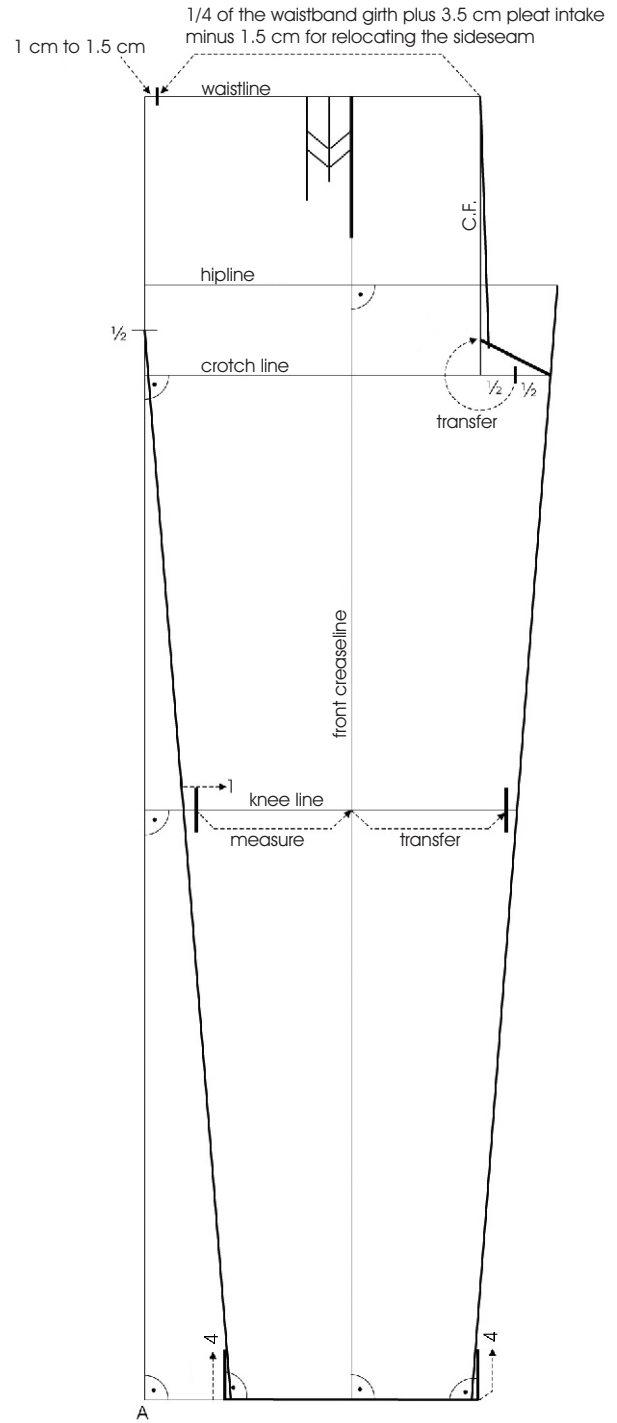
Divide the total front width in half and square up to the waistline and down to the hemline. This perpendicular line is the front creaseline and the grainline.



3



4



3 On the hemline, measure 1/4 of the hem width minus 1 cm from the front creaseline to the left and to the right and draw short perpendicular lines upwards. From these points measure 0.5 cm inwards at each side and draw the guidelines for the sideseam and the inseam as shown in the illustration. Measure 3.5 cm from the front creaseline to the left on the waistline for the pleat depth. Add 0.5 cm to the front trouser width on the hipline and draw the centre front to the waistline as shown in the illustration.

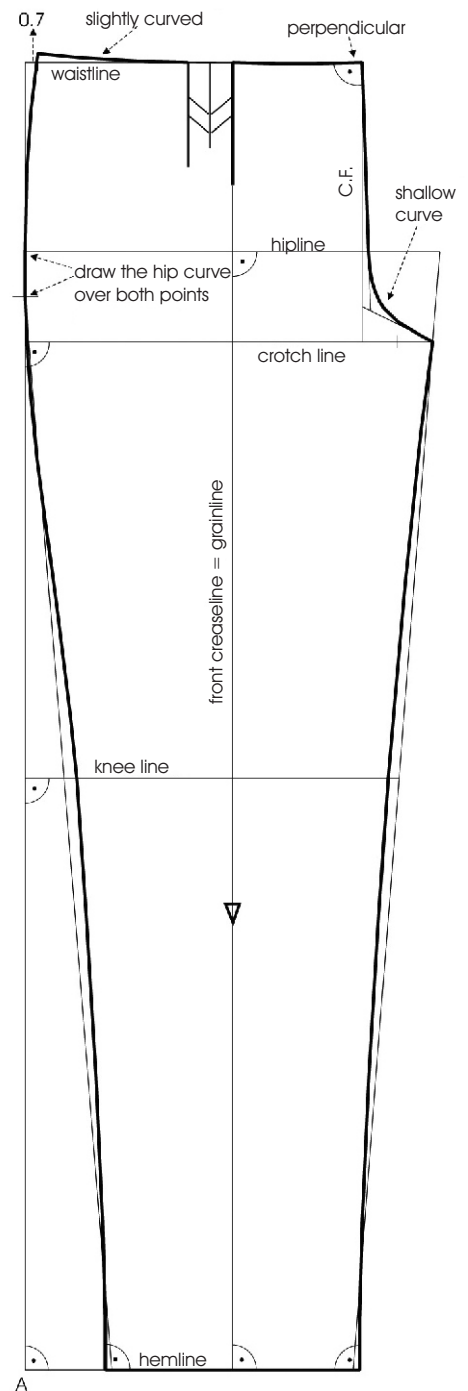
4 Lengthen the short perpendicular lines at the hemline to approximately 4 cm. The sideseam and the inseam

should be perpendicular to the hem for a cuffed hem. Taper the sideseam 1 cm at the kneeline. Measure the distance from this point to the front creaseline and transfer this amount to the right for the position of the inseam. Divide the front crotch width on the hipline in half and transfer this amount upwards on the perpendicular line. Draw a slanted guideline from this point to the front crotch point. Extend the centre front line to the slanted line. Waistband measurement: Measure 1/4 waistband girth Wbg plus 3.5 cm pleat depth minus 1.5 cm for relocating the sideseam from the centre front to the left. The resulting intake should be no larger than 1-1.5 cm for a shallow hip curve.

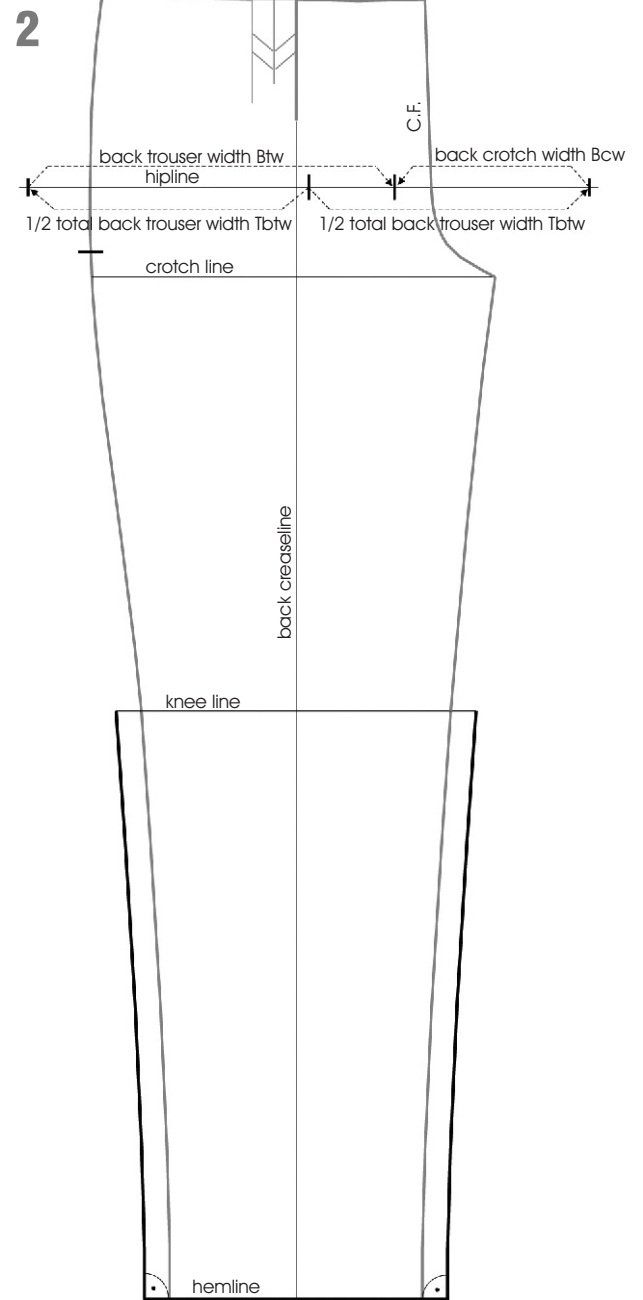
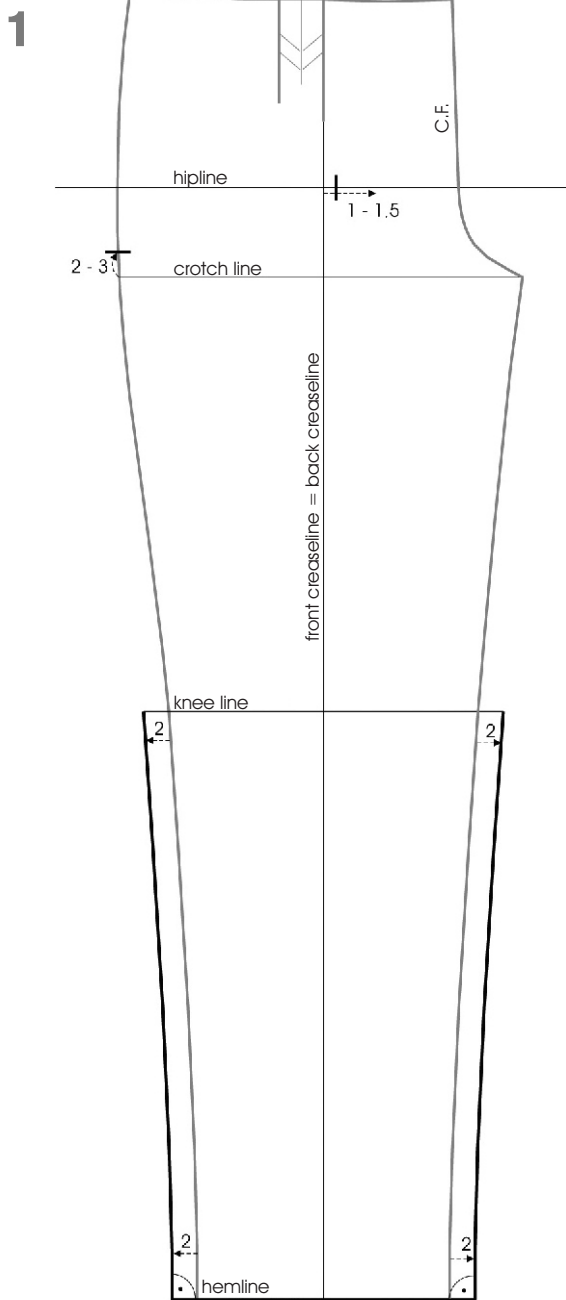


5 Raise the waistline 0.7 cm at the sideseam. Draw the inseam slightly hollow from the crotch to the kneeline. Shape the sideseam as shown in the illustration. Draw the hip curve from the midpoint between crotch line and hipline to the raised waistline. Draw the front crotch seam in a shallow curve for sufficient comfort. Finally draw the waistline curve perpendicular to the centre front.

5



MEASUREMENT CHART SIZE 50			
BODY MEASUREMENTS		1/2	1/4
Wbg	Waistband girth	88.0 cm	44.0 22.0
Hg	Hip girth	102.0 cm	51.0 25.5
Hw	Hem width	44.0 cm	22.0 11.0
Sl	Side length	103.0 cm	
Is	Inseam	81.0 cm	
CALCULATION			
Br	Body rise	22.0 cm	= Sl - Is
Kh	Knee height	46.6 cm	= 1/2 Is + 1/10 Is - 2 cm
AUXILIARY MEASUREMENTS			
Ftw	Front trouser width	26.5 cm	= 1/4 Hg + 0 cm to 1 cm
Cw	Crotch width	21.5 cm	= 1/4 Hg - 4 cm to 5 cm
Fcw	Front crotch width	6.1cm	= 1/10 of 1/2 Hg + 1 cm
Bcw	Back crotch width	15.4 cm	= Cw - Fcw
Btw	Back trouser width	29.0 cm	= 1/4 Hg + 3 cm to 4 cm
Tbtw	Total back trouser width	44.4 cm	= Btw + Bcw



1 Trace a copy of the front trouser pattern and extend the horizontal lines to the outside. Draw the back trouser pattern on the copied front trouser pattern. Add 2 cm parallel to the inseam and outseam from the knee line to the hem. On the hipline, relocate the centre of the back trouser pattern 1 – 1.5 cm to the right for the back creaseline. The position of the back creaseline determines the location of the upper part of the back trouser pattern. Relocate the centre of the back trousers more for a straight back pattern or less for a more slanted centre back. Choose a greater increase for larger sizes so that the amount of addition remains proportionally equal compared to the increase for smaller sizes. From the crotchline, measure 2–3 cm upwards along the sideseam for the slant of the centre back seam. Measure a larger amount for a straight back pattern and a smaller amount for a more slanted centre back.

The slant of the back trouser pattern:

Choose the slant of the centre back and therefore the fit, as preferred by the customer and according to the preferred silhouette.

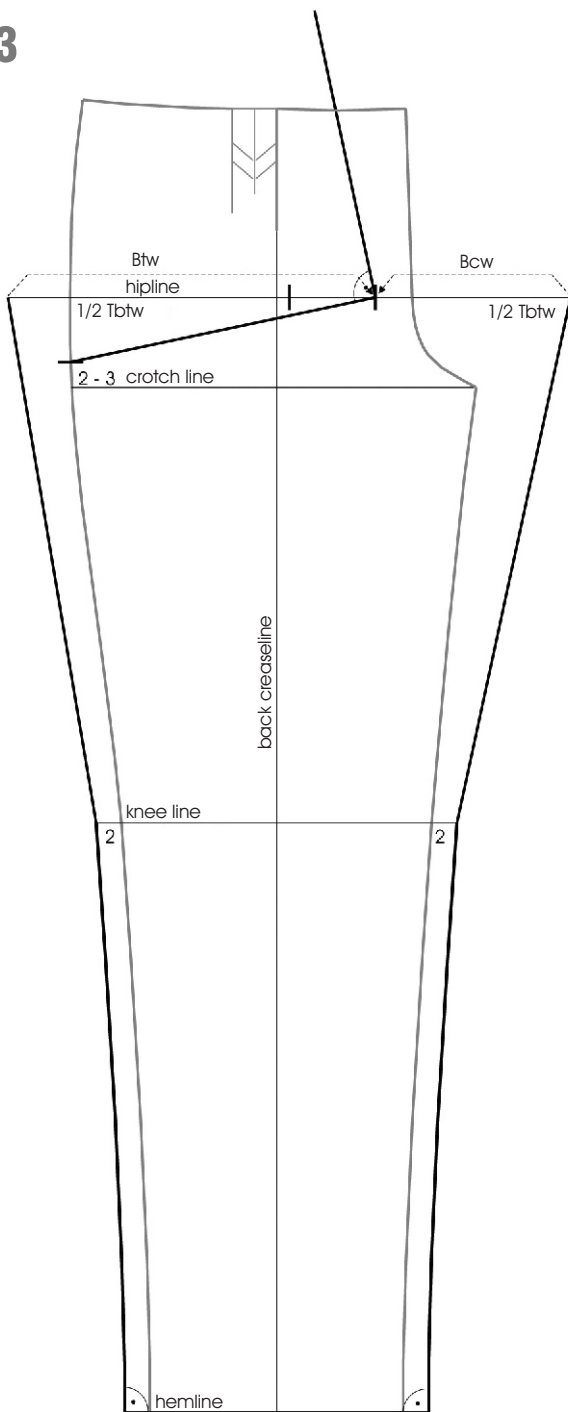
A straighter back trouser pattern offers a more accurate fit, especially while standing. A more slanted back trouser pattern offers considerably more length, which increases the wearing comfort, especially in a sitting position. A figure with a wide seat needs more length in addition to more width (= more slanted), whereas a flat seat needs exactly the opposite.

2 Measure $\frac{1}{2}$ of the total back trouser width **Tbtw** from the centre of the back pattern to the left and to the right. Measure the back crotch width **Bcw** back to the left. The remaining width at the hipline is the back trouser width.



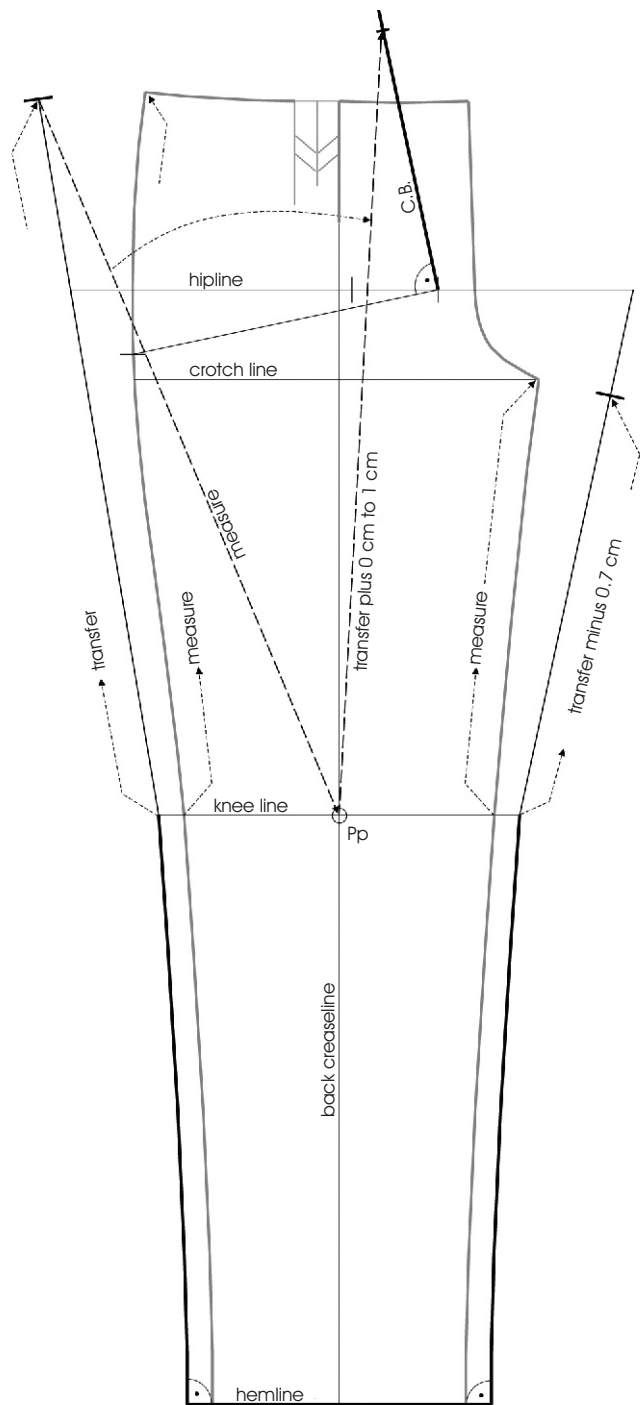
BASIC BLOCK: TROUSERS WITH 1 PLEAT - BACK PATTERN

3



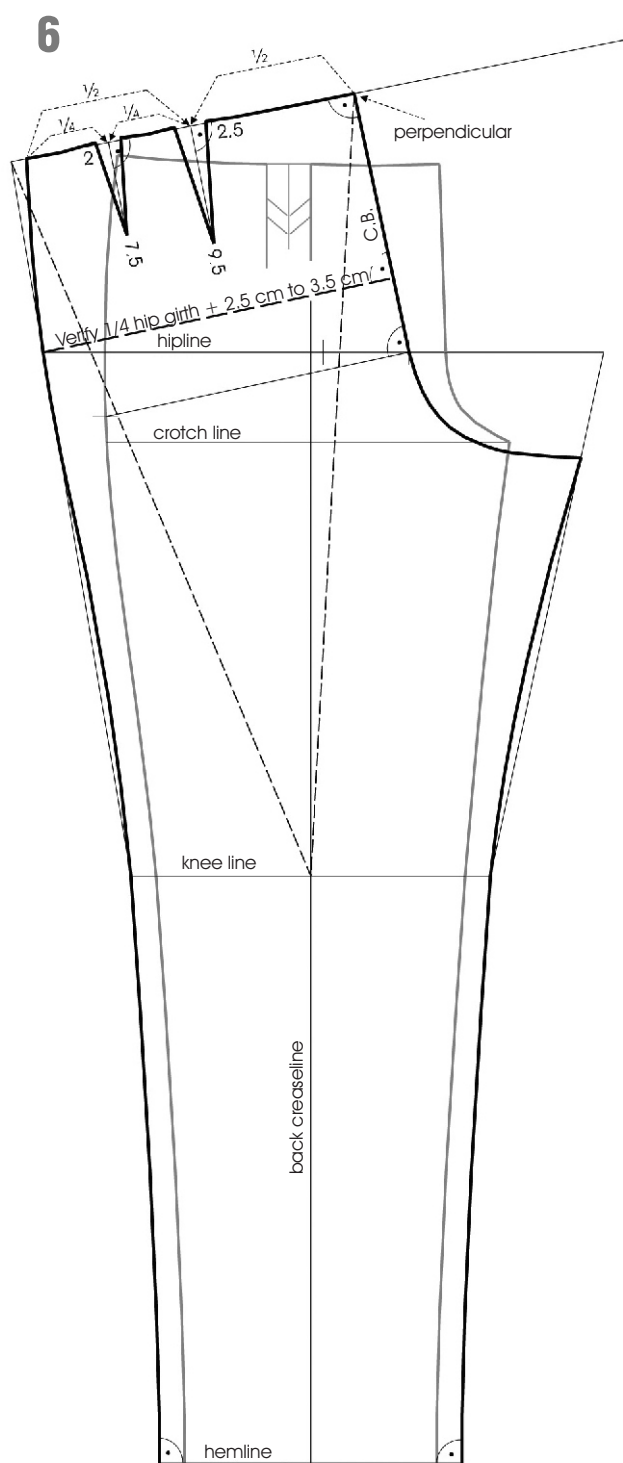
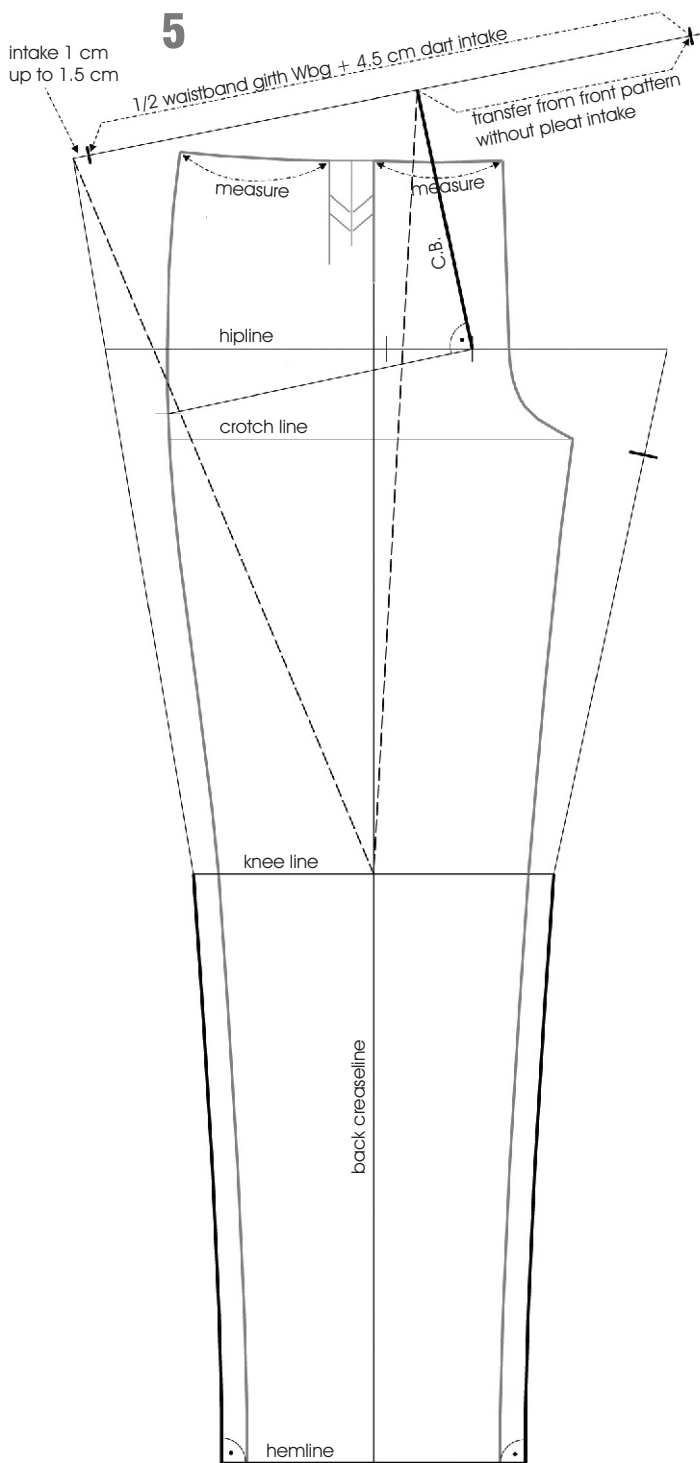
3 Connect the sideseam and the inseam from the knee line to each side of the $\frac{1}{2}$ back trouser width. Draw a guideline from the 2–3 cm raised point at the sideseam to the back crotch width and square up. The perpendicular line is the centre back.

4



4 Transfer the front inseam length minus 0.7 cm to the back inseam. Extend the guideline for the sideseam upwards. Measure the front sideseam and transfer this length to the guideline. Determining the trouser height at the centre back: Measure from the centre of the knee line to the new sideseam point on the guideline and transfer this measurement plus 0 cm to 1 cm from the knee point upwards towards the centre back. The additional length affects also the (seat) length of the trousers. Moreover, it is also possible to adjust the angle at the transition of the waistline and the centre back (see fig. 5).

BASIC BLOCK: TROUSERS WITH 1 PLEAT - BACK PATTERN



5 Draw the waistline from the sideseam to the centre back and extend it to the right. Check if the angle at the centre back is almost perpendicular.

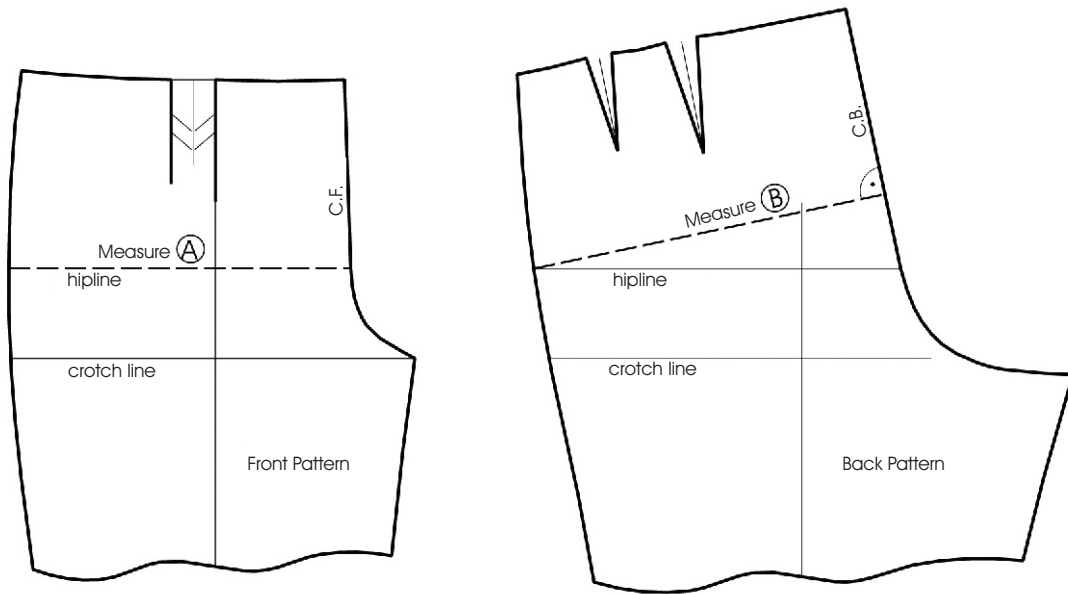
Waist measurement: Measure the waistline on the front pattern minus the front pleat and transfer this measurement along the guideline to the right. From this point measure $\frac{1}{2}$ waistband girth **Wbg** plus dart intake for 1 to 2 waist darts to the left (depending on the shape of the seat). The remaining amount should be around 1 cm to 1.5 cm for a well shaped sideseam. Here, the waist measurement is calculated with 4.5 cm for two darts with 2 cm and 2.5 cm intake.

6 Draw the inseam in a slightly curved from the knee line to the marked crotch point. Draw the crotch line as shown in the illustration. Starting from the knee line, draw the sideseam first slightly hollow and then curved over the hipline upwards to the marked point at the waistline.

Divide the waistline in half for the position of the larger waist dart. Mark the smaller waist dart on $\frac{1}{4}$ of the waistline from the side seam. Square down for each dart centre line. Construct the darts with the specified length and intake. Draw the waistline slightly curved between the darts. Draw a perpendicular line from the centre back to the intersection of the sideseam and the hipline. Verify the back trouser width on this line. The calculated measure should be approx. $\frac{1}{4}$ hip girth + 2.5-3.5 cm.



VERIFY THE HIP MEASUREMENT



Measure the hipline (A) on the front trouser pattern and the perpendicular line (B) on the back trouser pattern. Add both measurements and deduct $\frac{1}{2}$ of the hip girth. The remaining amount is the fullness (wearing ease) included in the pattern.

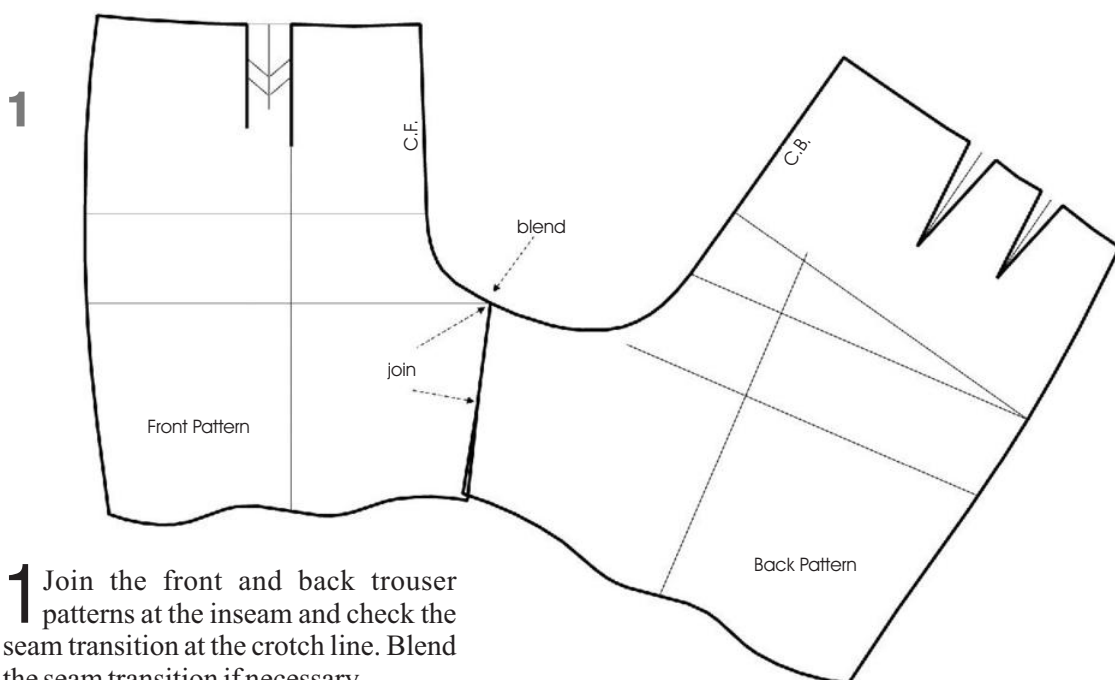
The ease included varies depending on the construction and the allowances and should be matched to the material. This example shows average measurements for trousers with a classic fit made from non-stretch fabric

Example:

A + B	= 55.3 cm
<u>minus 1/2 hip girth</u>	= 51.0 cm
= 1/2 ease	= 4.3 cm



BLEND THE SEAM TRANSITIONS

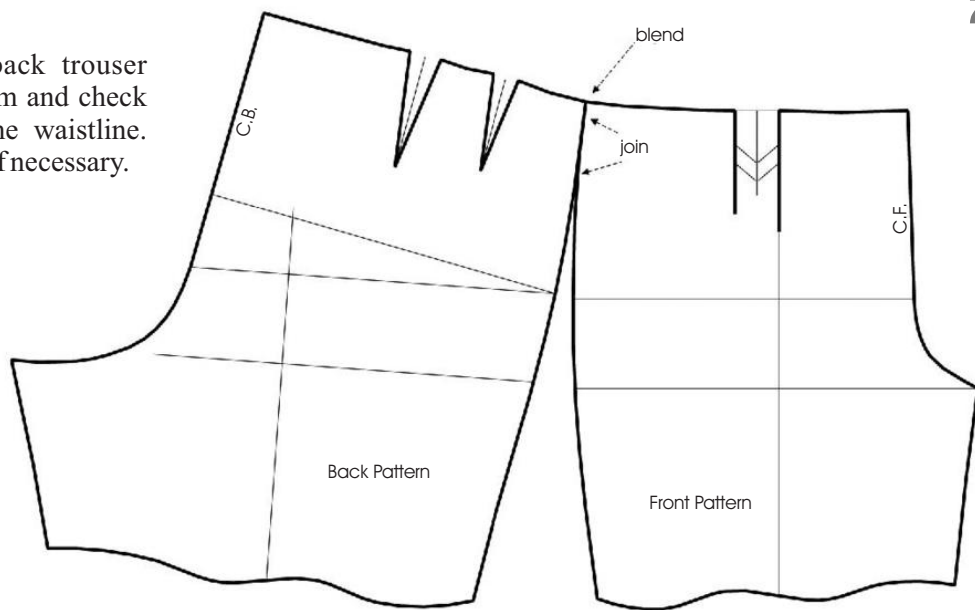


1 Join the front and back trouser patterns at the inseam and check the seam transition at the crotch line. Blend the seam transition if necessary

CHECK THE SEAM TRANSITIONS



2 Join the front and back trouser patterns at the sideseam and check the seam transition at the waistline. Blend the seam transition if necessary.



2

FRONT FLY ADJUSTMENT



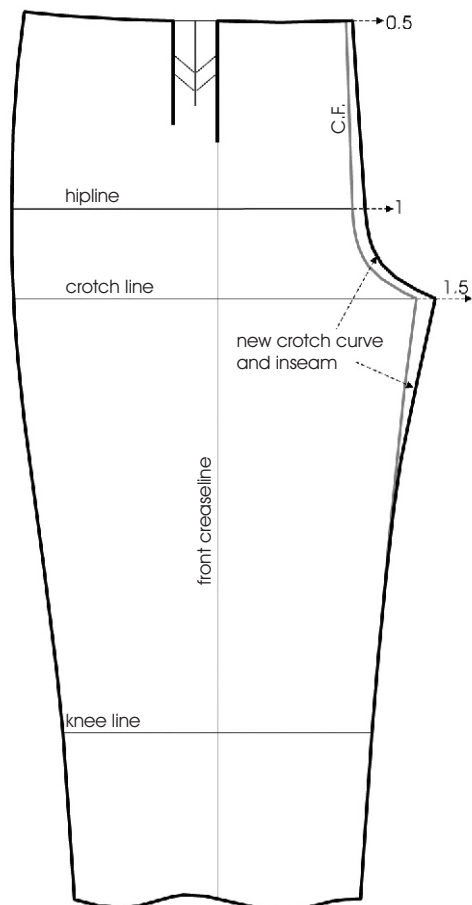
Sometimes the question comes up, how the front crotch width should be handled. Tailors vary the front crotch width during the cutting but this is not possible for industrial manufacturing.

If you want to change the seam position for anatomical reasons, the corresponding side of the trouser front is cut out. Tailors add fullness to the front crotch and later cut off the added fullness at the respective side.

Example: Addition on the left fly.

Shift the centre front seam 0.5 cm at the waistline and 1 cm at the hipline. Extend the crotch 1.5 cm and draw the new inseam and the crotch seamline.

Add this width to both sides when cutting from doubled layers and trim the extra width at the right front panel.





Fashion professional sometimes claim that the patternmaking system M. Mueller & Son is too complicated. However, the relative technical and mathematical approach to pattern construction makes the patternmaking system M. Mueller & Son so flexible and offers a variety of modifications compared to other pattern systems. The patterns can be adapted to a variety of proportions and postures. Figure proportions can be determined from the measurement chart.

As a rule: the indicated variables should be adapted only to some extent. Otherwise, the pattern might go out of proportion. Major changes due to the client's figure of the customer should be made later at the basic block.

Maximal Intake

The hip curve should be shallow and not too round. Adjust the calculation if necessary: reduce the ease at the front trouser width or change the pleat intake or the seam relocation.

Tapering the Knee

This amount determines the width at the knee area and the leg shape. Adapt the width to the overall appearance and the width at the hip.

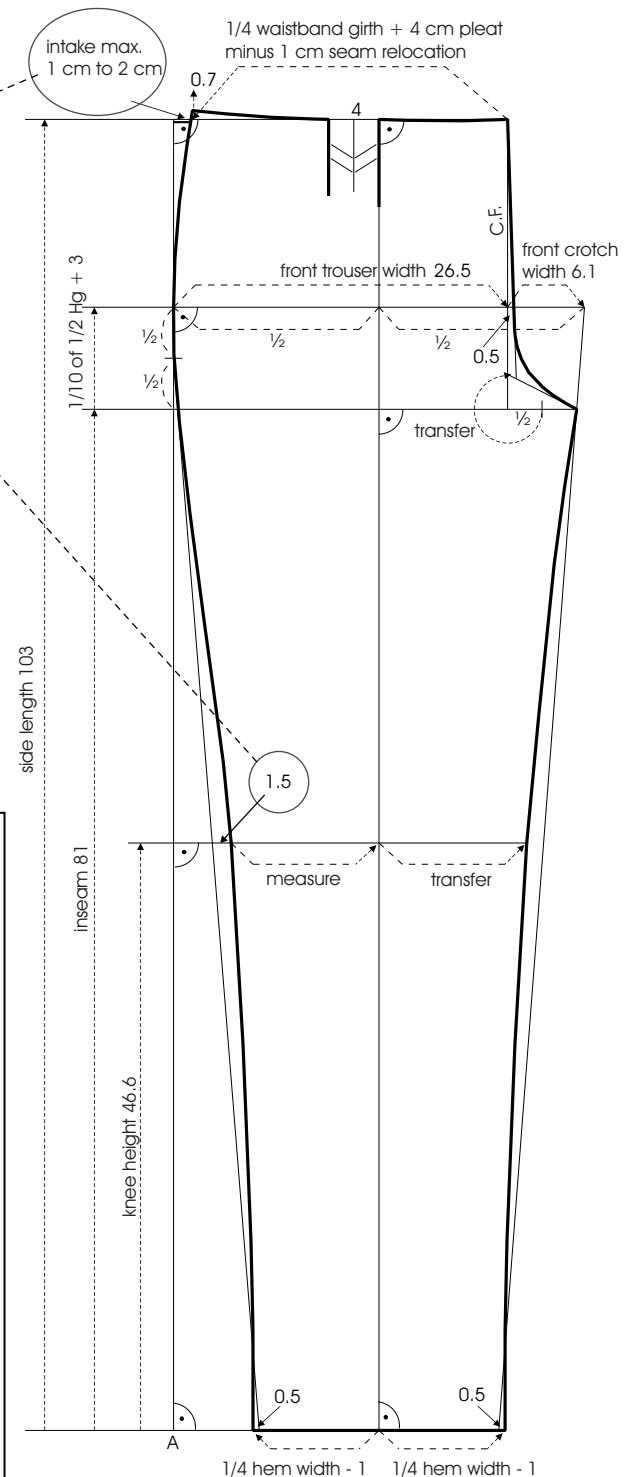
Front Trouser Width Ease

Adapt the ease included in the front trouser width to the fit of the trousers, the pleat intake or the dart.

Crotch Width Calculation

Deduct more or less depending on the client's figure. Less deduction results in a larger crotch which is needed for a strong seat.

MEASUREMENT CHART SIZE 50			
BODY MEASUREMENTS			
Wbg Waistband girth	88.0 cm	1/2	1/4
Hg Hip girth	102.0 cm	44.0	22.0
Hw Hem width	44.0 cm	22.0	11.0
Sl Side length	103.0 cm		
Is Inseam	81.0 cm		
CALCULATION			
Br Body rise	22.0 cm	$= Sl - Is$	
Kh Knee height	46.6 cm	$= 1/2 Is + 1/10 Is - 2 cm$	
AUXILIARY MEASUREMENTS			
Ftw Front trouser width	26.5 cm	$= 1/4 Hg + 0 cm to 1 cm$	
Cw Crotch width	21.5 cm	$= 1/4 Hg - 4 cm to 5 cm$	
Fcw Front crotch width	6.1 cm	$= 1/10 of 1/2 Hg + 1 cm$	
Bcw Back crotch width	15.4 cm	$= Cw - Fcw$	
Btw Back trouser width	29.0 cm	$= 1/4 Hg + 3 cm to 4 cm$	
Tbtw Total back trouser width	44.4 cm	$= Btw + Bcw$	



Back Trouser Width Ease

Adapt the ease included in the back trouser width to the fit of the trousers.



Maximal Intake

Same as on the front pattern. The hip curve should be shallow and not too round. Adjust the dart intake to reduce the intake at the side.

Relocating the Back Trouser Centre

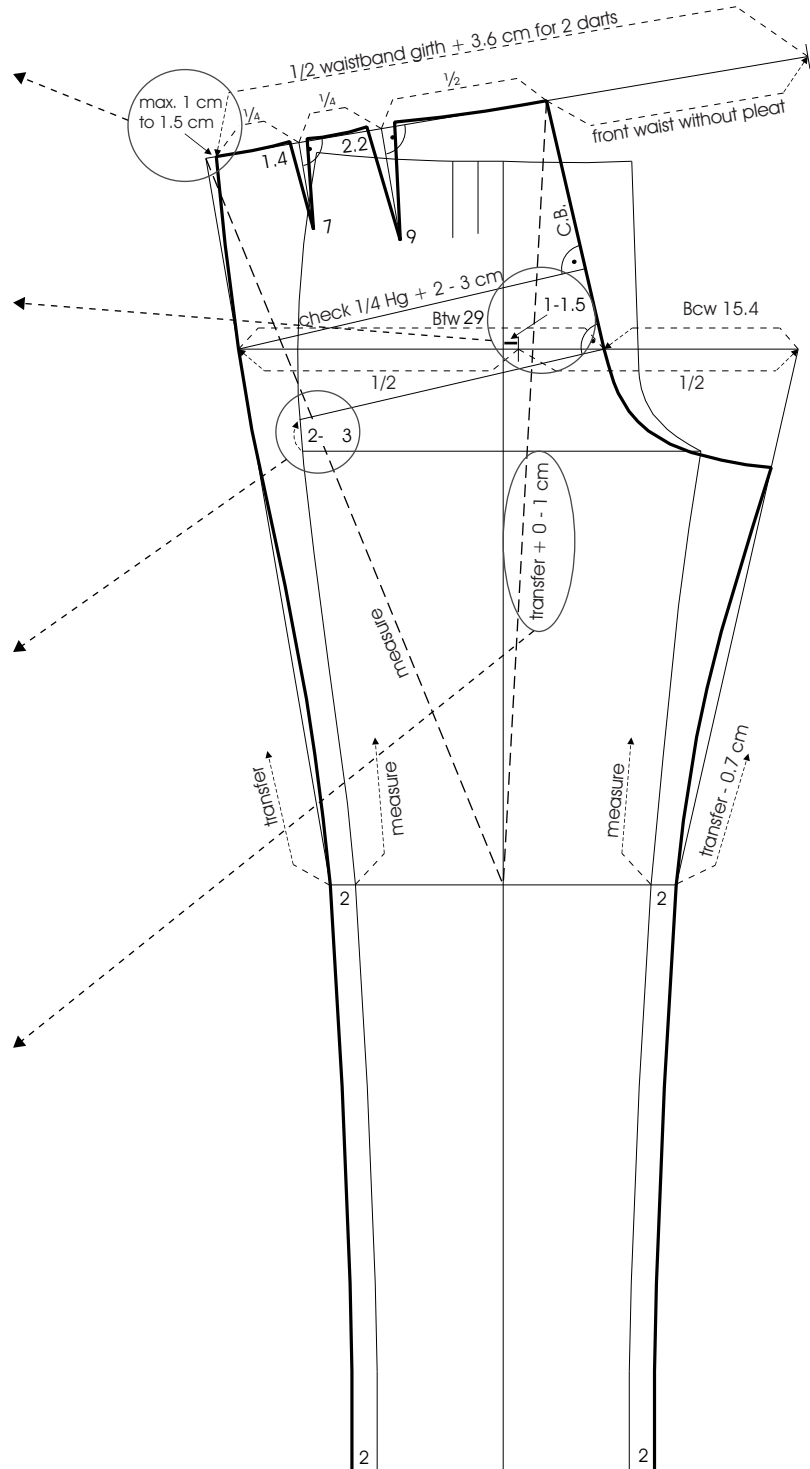
This amount affects the slant of the back trouser. With a larger amount, the back trouser is straighter and with less relocation the back pattern has more slant. Relocate the back trouser centre more for larger sizes.

Back Trouser Slant

A larger amount moves the hip line up which results in a straight centre back seam. A small amount up means a more diagonal hip line and a longer, more slanted centre back seam. The more slanted the back trousers, the better is freedom of movement and the wearing comfort in the seat but more creases form under the seat. Draft the back trouser straight for a correct and smooth fall (standing trousers).

Centre Back Length

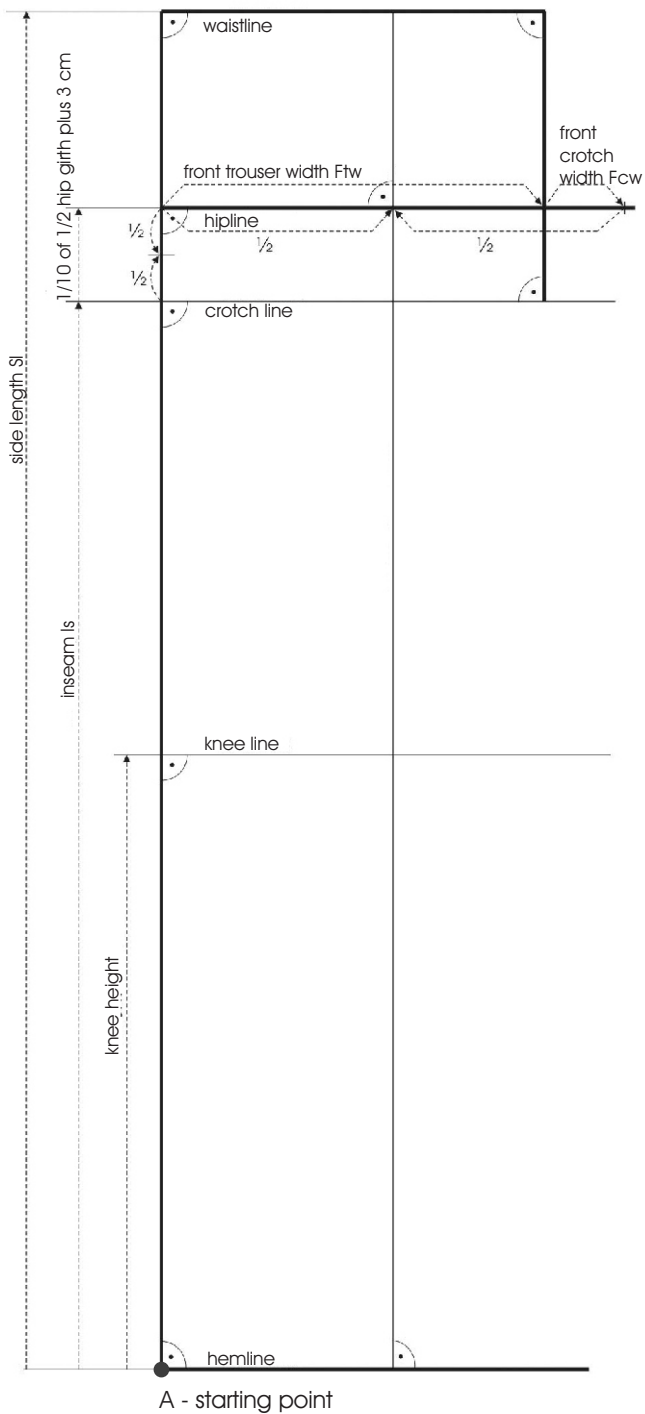
Increase the length at the centre back with this addition. A full seat needs more length and therefore more addition. This amount also regulates the transition at the centre back seam at the waist.



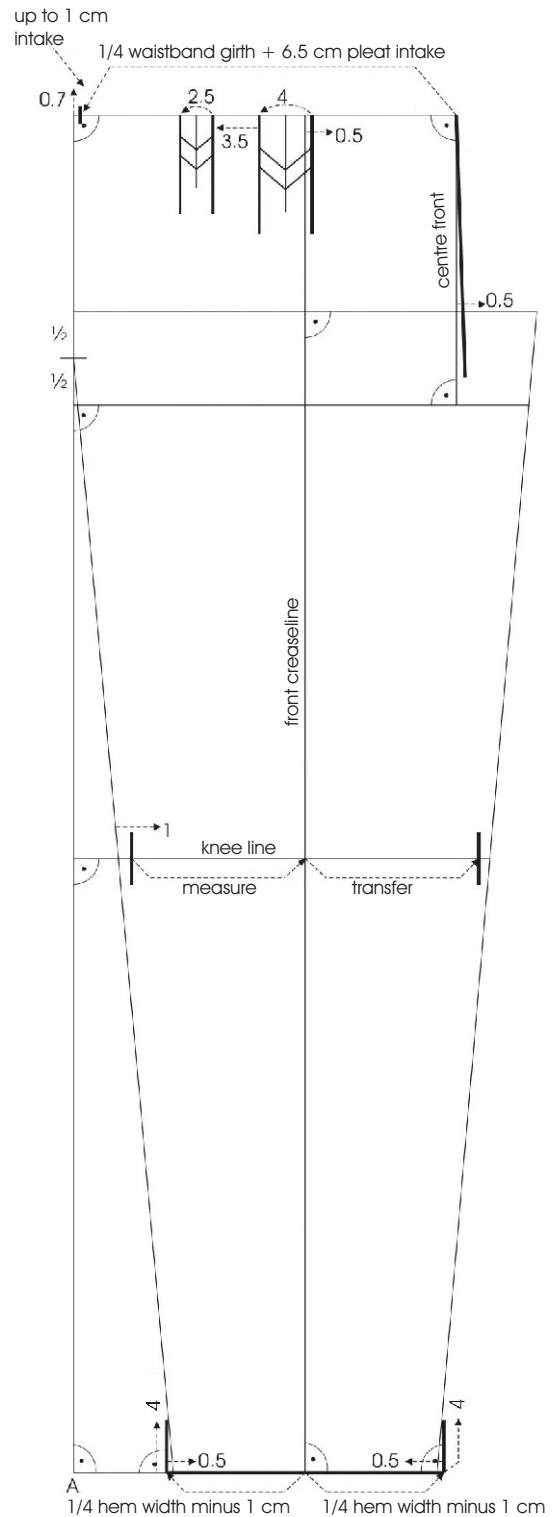


BASIC BLOCK: TROUSERS WITH 2 PLEATS - FRONT PATTERN

1



2

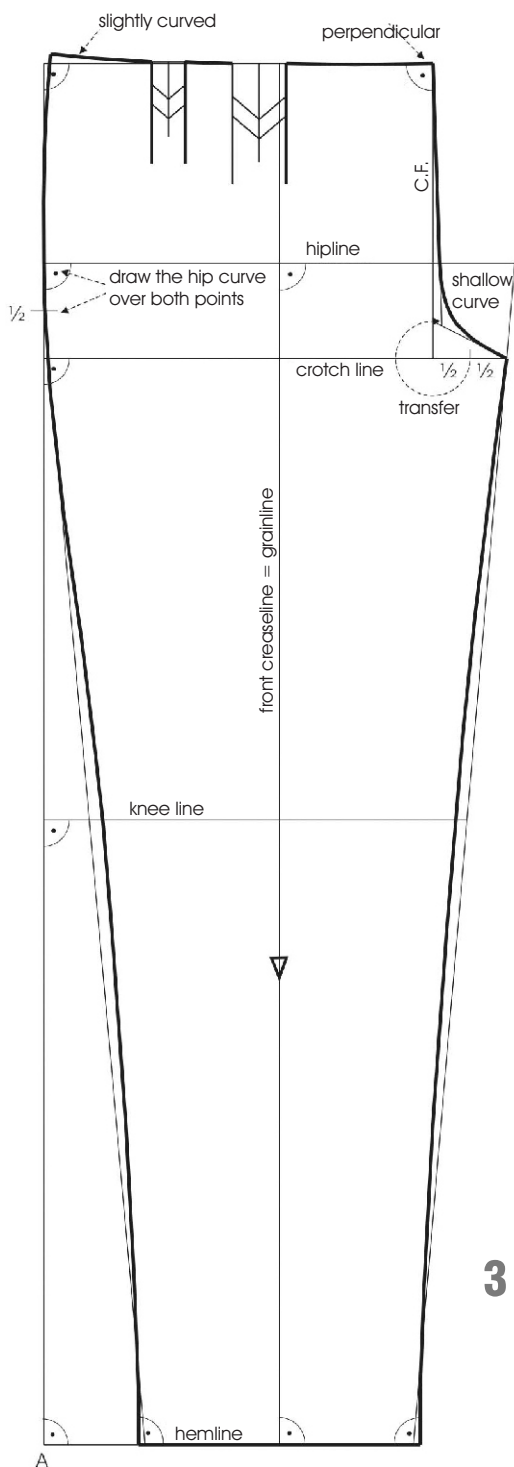


1 Draw a vertical and a horizontal line and mark point A at the intersection as shown in the illustration. From point A, measure the following along the vertical line: knee height **Kh**, inseam length **Is**, side length **Sl**. Square out to the right from all points, resulting in the waistline, the croch line and the knee line. The bottom line is the hemline. Measure $1/10$ of $1/2$ hip girth plus 3 cm from the croch line upwards and square out to the right for the hipline. Mark the halfway point between the hipline and the croch line. On the hipline, measure the front trouser width **Ftw** to the right and square up and down to the waistline and to the croch line. Measure the front crotch width **Fcw** from

the perpendicular line to the right. Divide the total front width in half and square up and down to the waistline and to the hemline. This perpendicular line is the front creaseline and the grainline.

2 On the hemline, measure $1/4$ of the hem width minus 1 cm from the front creaseline to the left and to the right and draw short perpendicular lines upwards. From these points measure 0.5 cm inwards at each side and draw the guidelines for the sideseam and the inseam as shown in the illustration. Lengthen the short perpendicular lines at the hemline to approximately 4 cm.

BASIC BLOCK: TROUSERS WITH 2 PLEATS - FRONT PATTERN



MEASUREMENT CHART SIZE 50

BODY MEASUREMENTS		1/2	1/4
Wbg	Waistband girth	88.0 cm	44.0
Hg	Hip girth	102.0 cm	51.0
Hw	Hem width	44.0 cm	22.0
Sl	Side length	103.0 cm	11.0
Is	Inseam	81.0 cm	
CALCULATION			
Br	Body rise	22.0 cm	= $Sl - Is$
Kh	Knee height	46.6 cm	= $1/2 Is + 1/10 Is - 2 cm$
AUXILIARY MEASUREMENTS			
Ftw	Front trouser width	29.0 cm	= $1/4 Hg + 2 cm$ to $5 cm$
Cw	Crotch width	21.5 cm	= $1/4 Hg - 4 cm$ to $5 cm$
Fcw	Front crotch width	6.1cm	= $1/10$ of $1/2 Hg + 1 cm$
Bcw	Back crotch width	15.4 cm	= $Cw - Fcw$
Btw	Back trouser width	29.2 cm	= $1/4 Hg + 3 cm$ to $4 cm$
Tbtw	Total back trouser width	44.6 cm	= $Btw + Bcw$

The ease included in the front trouser width is about equal to half of the pleat intake. The back trouser width is also slightly increased.

The sideseam and the inseam should be perpendicular to the hem for a cuffed hem. Taper the sideseam 1 cm at the knee line. Measure the distance from this point to the front creaseline and transfer this amount to the right for the position of the inseam.

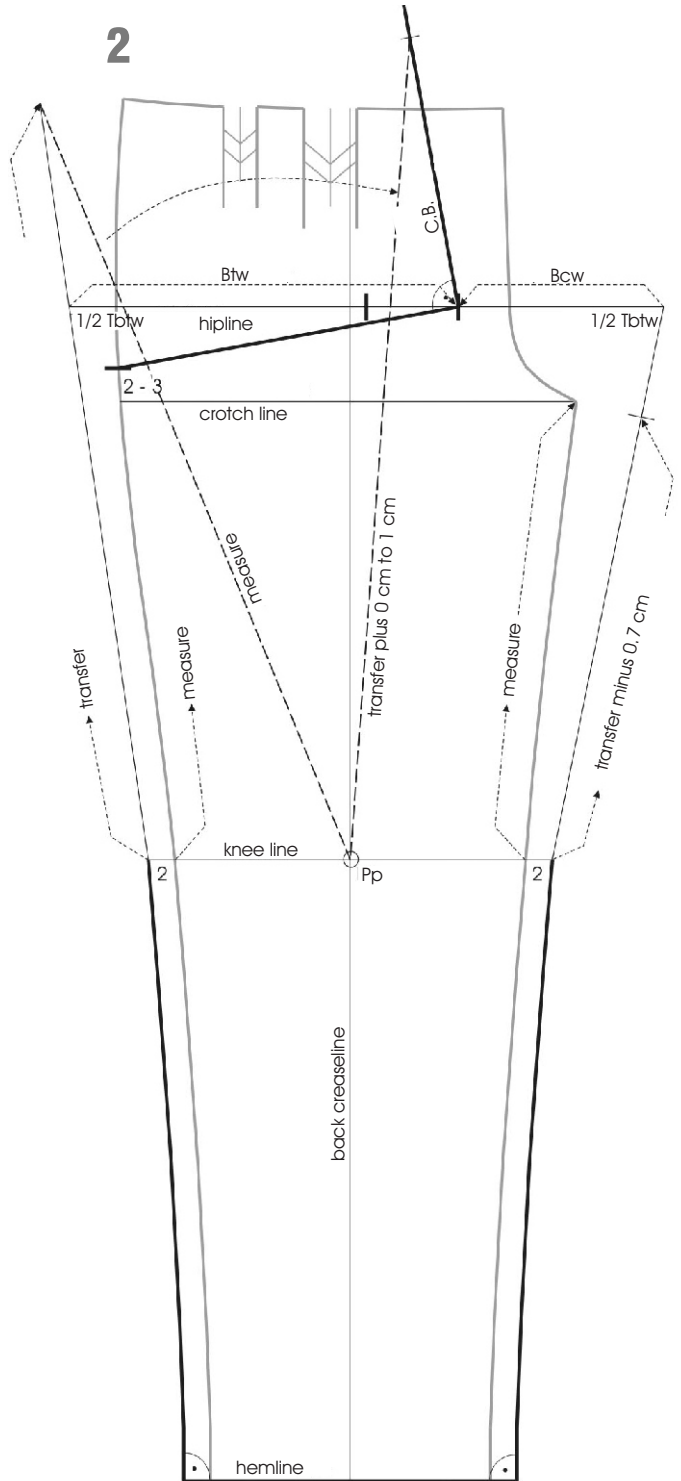
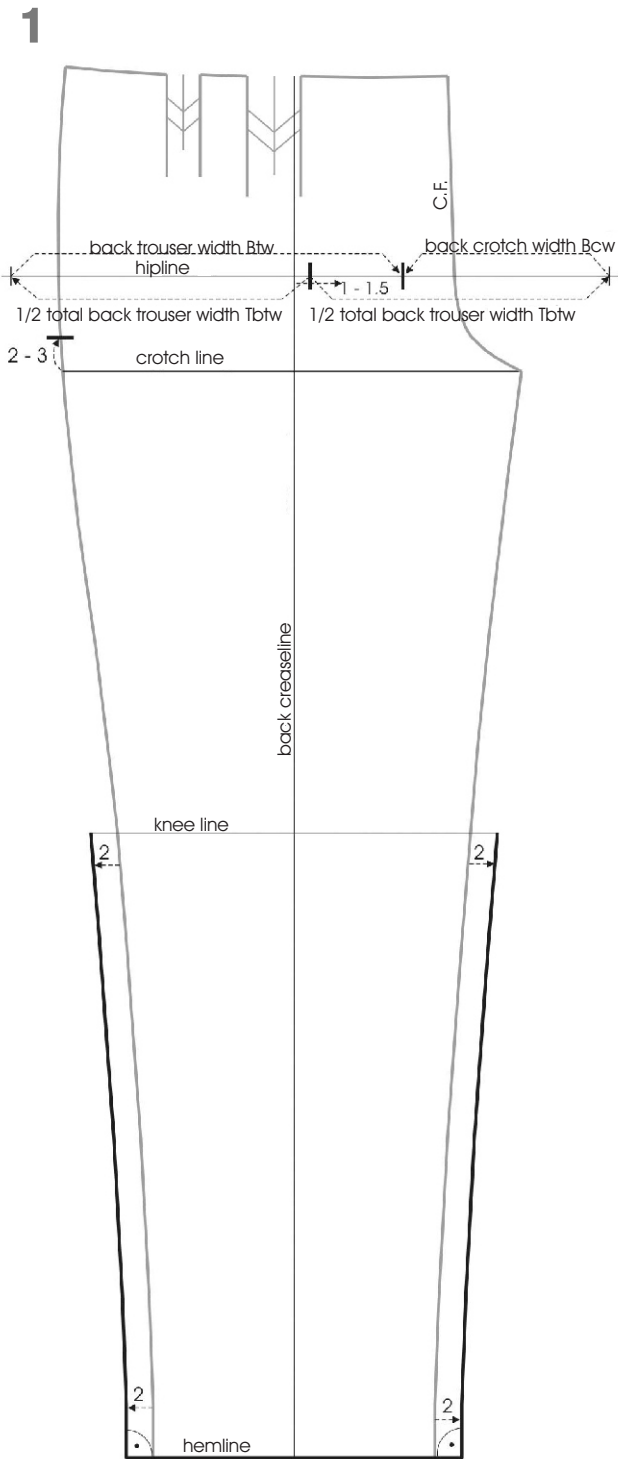
Waistband measurement: Measure 1/4 waist girth plus 6.5 cm pleat depth from the centre front to the left. The resulting intake should be no larger than 1 cm for a shallow hip curve. Measure 0.5 cm from the front creaseline to the right and mark the 4-cm wide pleat as shown. Place the second pleat 3.5 cm away from the first one. Add 0.5 cm to the front trouser width on the hipline and draw the centre front to the waistline as shown in the illustration.

3 Divide the front crotch width on the hipline in half and transfer this amount upwards on the perpendicular line. Draw a slanted guideline from this point to the front crotch point. Extend the centre front line to the slanted line. Raise the waistline 0.7 cm at the sideseam. Draw the inseam slightly hollow from the crotch to the knee line. Shape the sideseam as shown in the illustration.

Draw the hip curve from the midpoint between crotch line and hipline to the raised waistline. Draw the front crotch seam in a shallow curve for sufficient comfort. Finally draw the waistline curve perpendicular to the centre front. Fold the pleats and blend the waistline.



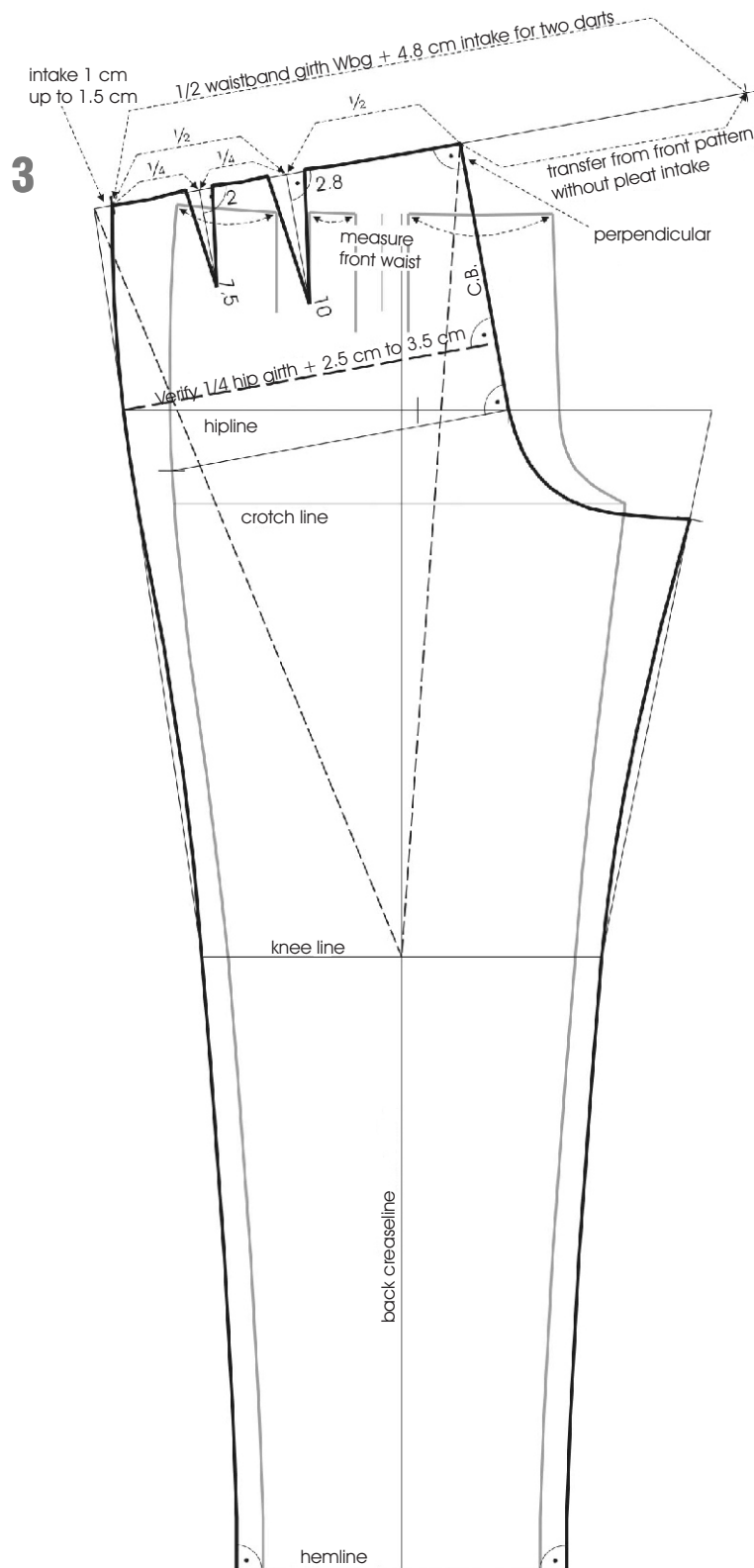
BASIC BLOCK: TROUSERS WITH 2 PLEATS - BACK PATTERN



1 Trace a copy of the front trouser pattern and extend the horizontal lines to the outside. Draw the back trouser pattern on the copied front trouser pattern. Add 2 cm parallel to the inseam and the sideseam from the knee line to the hem. On the hipline, relocate the centre of the back trouser pattern 1 cm to 1.5 cm to the right for the back creaseline. The position of the back creaseline determines the location of the upper part of the back trouser pattern. Relocate the centre of the back trousers more for a straight back pattern or less for a more slanted centre back. Choose a greater increase for larger sizes so that the amount of

addition remains proportionally equal compared to the increase for smaller sizes. From the crotch line, measure 2 cm to 3 cm upwards along the sideseam for the slant of the centre back seam. Measure a larger amount for a straight back pattern and a smaller amount for a more slanted centre back.

Measure $\frac{1}{2}$ of the total back trouser width **Tbtw** from the centre of the back pattern to the left and to the right. Measure the back crotch width **Bcw** back to the left. The remaining width at the hipline is the back trouser width **Btw**.



2 Connect the sideseam and the inseam from the knee line to each side of the $\frac{1}{2}$ back trouser width. Draw a guideline from the 2 cm to 3 cm raised point at the sideseam to the back crotch width and square up. The perpendicular line is the centre back. Transfer the front inseam length minus 0.7 cm to the back inseam. Extend the guideline for the sideseam upwards. Measure the front sideseam and transfer this length to the guideline.

Determining the trouser height at the centre back: Measure from the centre of the knee line to the new sideseam point on the guideline and transfer this measurement + 0 cm to 1 cm from the knee point upwards towards the centre back.

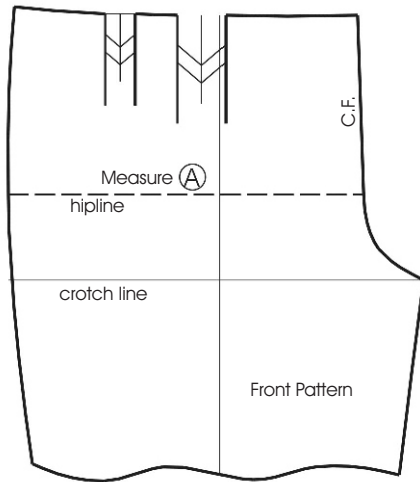
3 Draw the waistline from the sideseam to the centre back and extend it to the right. Verify that the angle at the centre back is almost perpendicular. Waist measurement:

Measure the waistline on the front pattern minus the front pleats and transfer this measurement along the guideline to the right. From this point measure $\frac{1}{2}$ waistband girth plus dart intake for 1 to 2 waist darts to the left (depending on the shape of the seat). The remaining amount should be 1 cm to 1.5 cm for a well shaped sideseam. We calculated the waist measurement in this example with 4.8 cm for two darts with 2 cm and 2.8 cm intake.

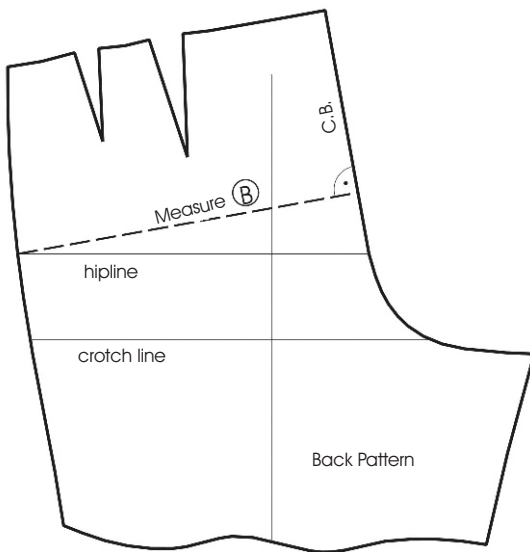
Draw the inseam in a gentle curve from the knee line to the marked crotch point. Draw the crotch line as shown in the illustration. Starting from the knee line, draw the sideseam first slightly hollow and then curved over the hipline upwards to the marked point at the waistline. Divide the waistline in half for the position of the larger waist dart. Mark the smaller waist dart on $\frac{1}{4}$ of the waistline from the side seam. Square down for each dart centre line. Construct the darts with the specified length and intake amounts. Draw the waistline slightly curved between the darts. Draw a perpendicular line from the centre back to the intersection of the sideseam and the hipline.

Verify the back trouser width on this line. The calculated amount should be around $\frac{1}{4}$ hip girth + 3 cm to 4 cm.

VERIFY THE HIP MEASUREMENT



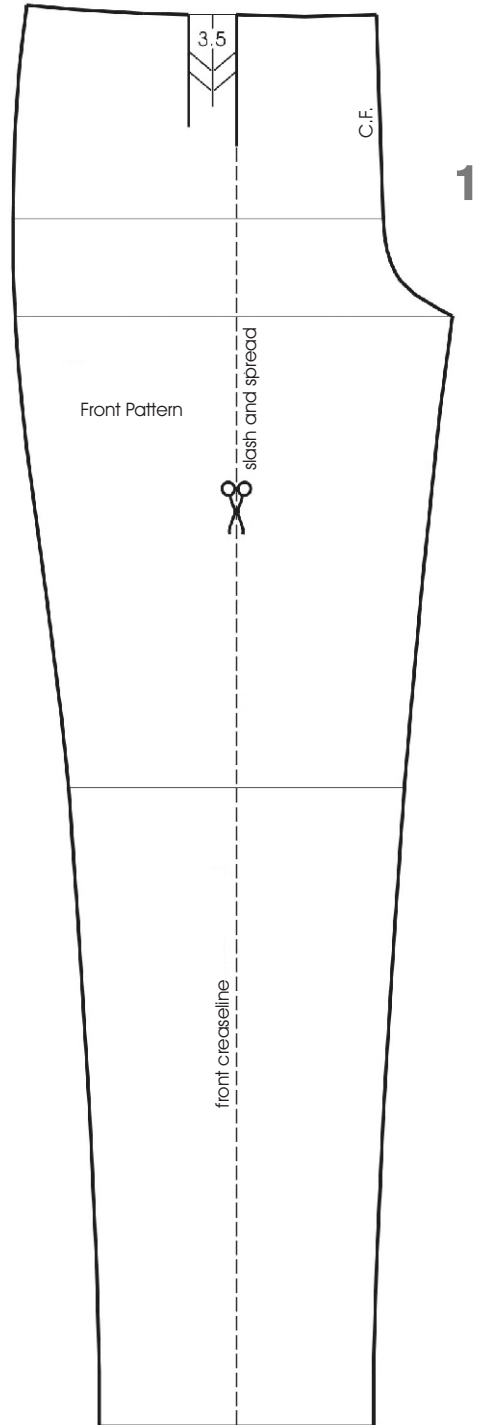
Measure the hipline (A) on the front trouser pattern and the perpendicular line (B) on the back trouser pattern. Add both measurements and deduct $\frac{1}{2}$ hip girth. The remaining amount is the fullness (wearing ease) included in the pattern.



$$\begin{array}{rcl}
 A + B & = & 58.2 \text{ cm} \\
 - \frac{1}{2} \text{ hip girth} & = & 51.0 \text{ cm} \\
 \hline
 = \frac{1}{2} \text{ ease} & = & 7.2 \text{ cm}
 \end{array}$$

The ease included varies depending on the construction and should be matched to the fabric. This pattern includes extra fullness required for the fall of the pleats.

ADJUSTING THE FRONT PATTERN FROM 1 PLEAT TO 2 PLEATS

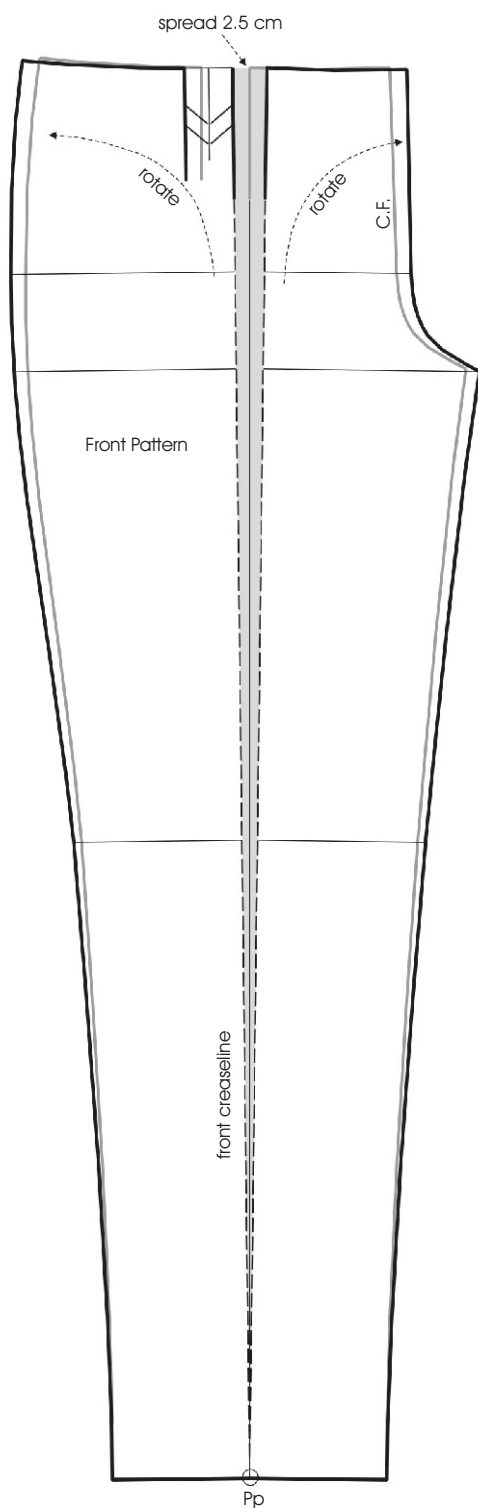


1 Trace a copy of the front trouser pattern. Slash the front pattern along the front creaseline from the waistline to the hem.

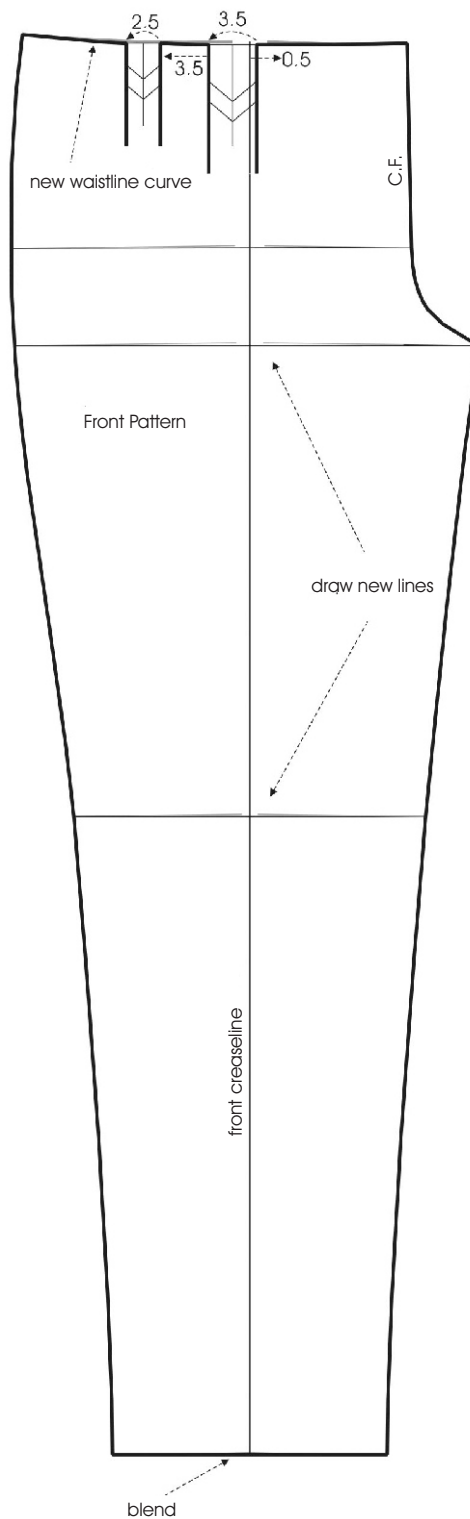
ADJUSTING THE FRONT PATTERN FROM 1 PLEAT TO 2 PLEATS



2



3

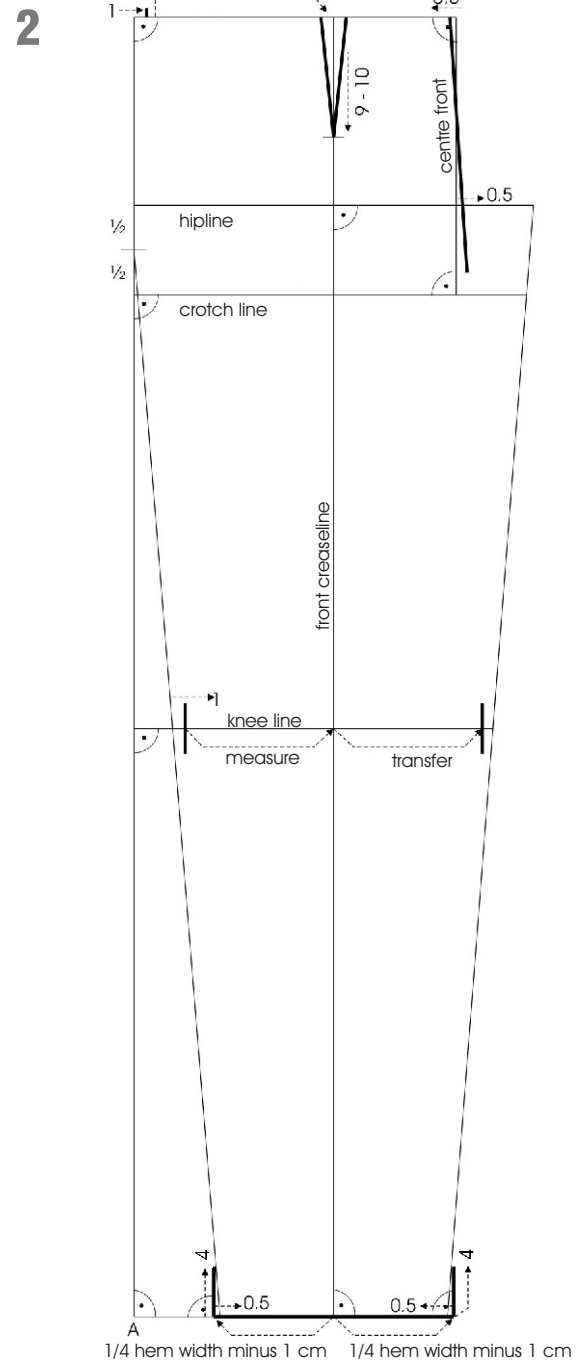
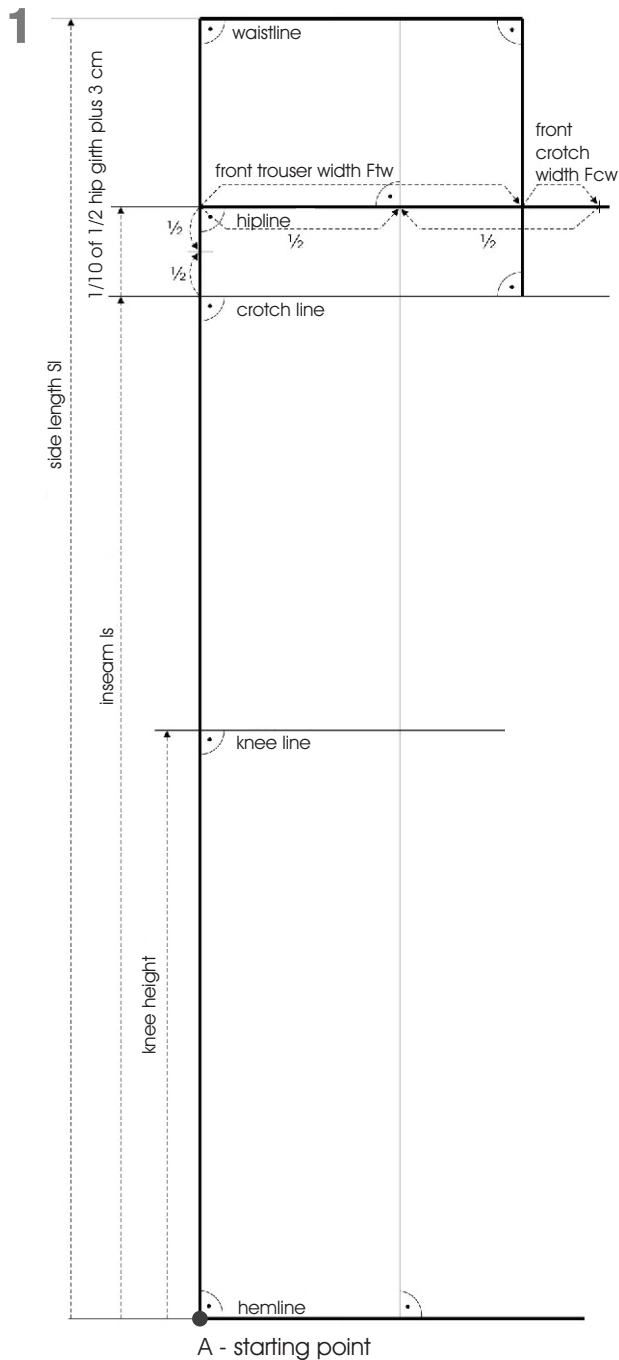


2 Rotate the pattern pieces over the pivot point **Pp** at the hem. Spread the front trouser pattern 2.5 cm at the waist.

3 Draw the new knee line, crotch line, hipline and creaseline. Blend the hemline. Specify the first pleat starting 0.5 cm away from the front creaseline with 3.5 cm intake. Place the second pleat 3.5 cm away from the first with 2.5 cm intake.



BASIC BLOCK: TROUSERS WITH DART - FRONT PATTERN

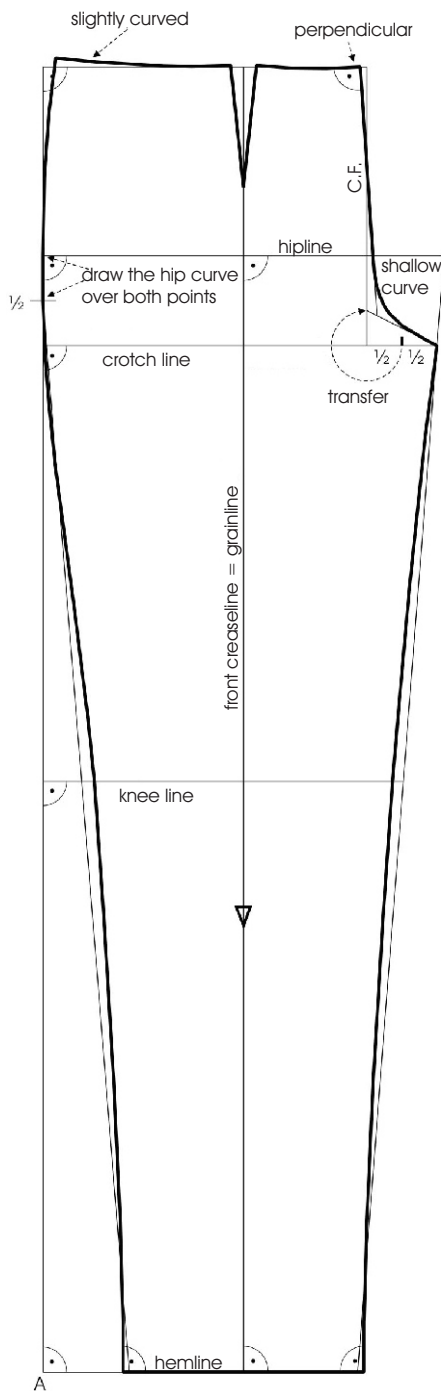


1 Draw a vertical and a horizontal line and mark the **starting point A** at the intersection as shown in the illustration. From point **A**, measure along the vertical line: knee height **Kh**, inseam length **Is**, side length **Sl**. Square out to the right from all points, resulting in the waistline, the crotch line and the kneeline. The bottom line is the hemline. Measure 1/10 of 1/2 hip girth plus 3 cm from the crotch line upwards and square out to the right for the hipline. Mark the halfway point between the hipline and the crotch line. On the hipline, measure the front trouser width **Ftw** to the right and square up to the waistline and down to the crotch line. Measure the front crotch width **Fcw** from the perpendicular line to the right. Divide the total front width in half and square up to the waistline and down to the hemline. This perpendicular line is the front creaseline and the grainline.

2 On the hemline, measure 1/4 of the hem width minus 1 cm from the front creaseline to each side and draw short perpendicular lines upwards. From these points measure 0.5 cm inwards and draw the guidelines for the sideseam and the inseam as shown in the illustration. Lengthen the short perpendicular lines at the hemline to approximately 4 cm. The sideseam and the inseam should be perpendicular to the hem for a cuffed hem. Taper the sideseam 1 cm at the knee line. Measure the distance from this point to the front creaseline and transfer this amount to the right for the position of the inseam. Draw the front dart centred on the front creaseline 9 cm to 10 cm long with 2 cm intake. Add 0.5 cm to hip at the front. Taper the centre front 0.5 cm and draw the centre front. Taper the sideseam 1 cm at the waist and raise the waistline 0.7 cm at the side.



3



MEASUREMENT CHART SIZE 50

BODY MEASUREMENTS

		1/2	1/4
Wbg	Waistband girth	88.0 cm	44.0
Hg	Hip girth	102.0 cm	51.0
Hw	Hem width	42.0 cm	21.0
Sl	Side length	103.0 cm	
Is	Inseam	81.0 cm	

CALCULATION

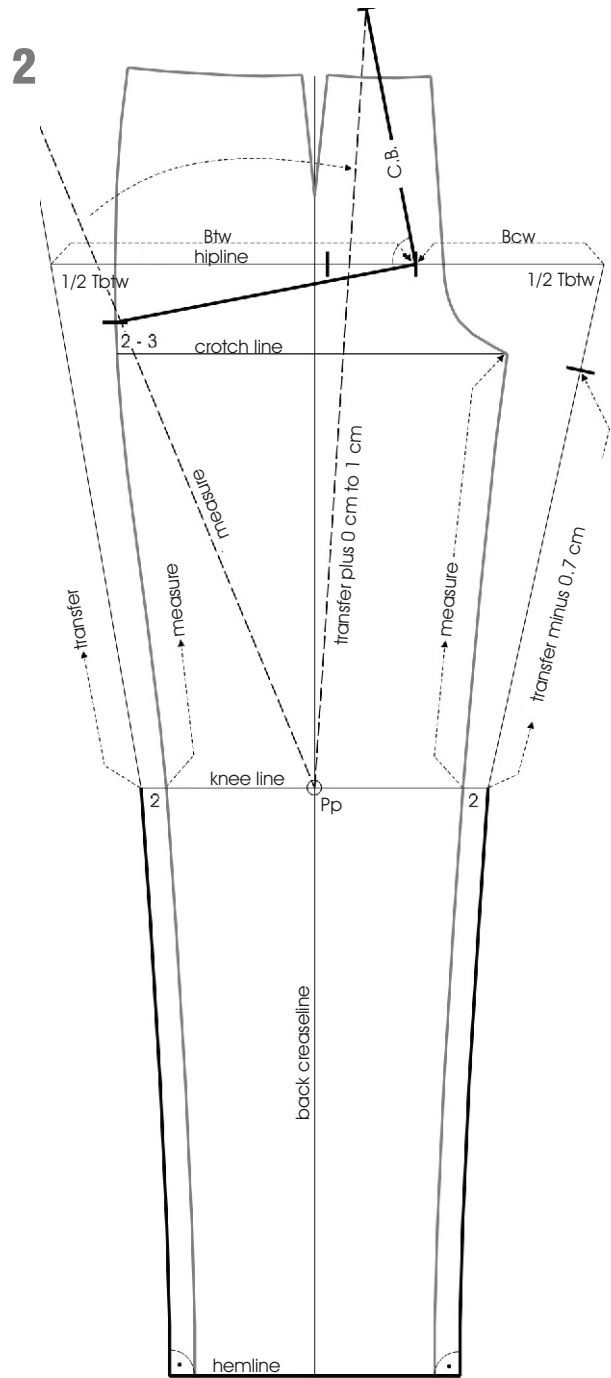
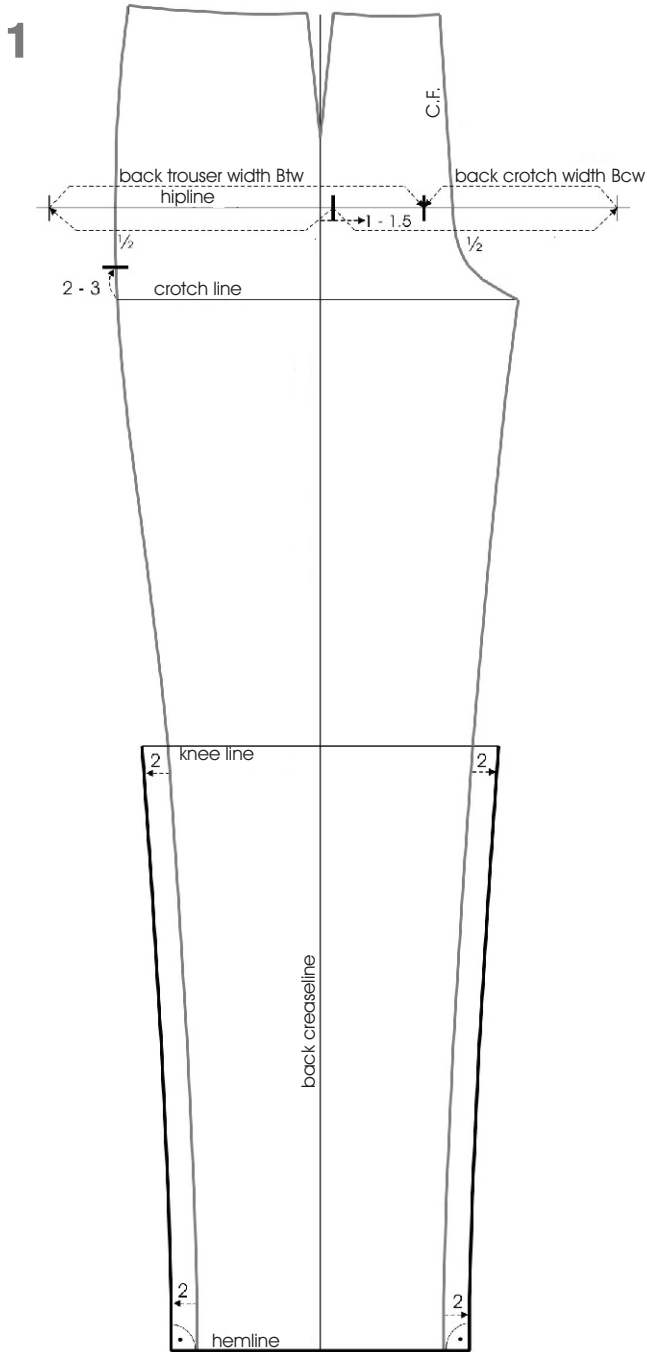
Br	Body rise	22.0 cm	= Sl - Is
Kh	Knee height	46.6 cm	= 1/2 Is + 1/10 Is - 2 cm

AUXILIARY MEASUREMENTS

Ftw	Front trouser width	25.5 cm	= 1/4 Hg + 0 cm
Cw	Crotch width	21.0 cm	= 1/4 Hg - 4 cm to 5 cm
Fcw	Front crotch width	6.1cm	= 1/10 of 1/2 Hg + 1 cm
Bcw	Back crotch width	14.9 cm	= Cw - Fcw
Btw	Back trouser width	28.9 cm	= 1/4 Hg + 3 cm to 4 cm
Tbtw	Total back trouser width	43.8 cm	= Btw + Bcw

The trousers with dart have less width than the trousers with pleats. There is no ease included in the front trouser width. The back trouser width is also slightly less. The hem is narrow to match the slim fit.

3 Divide the front crotch width **Fcw** on the hipline in half and transfer this amount upwards on the perpendicular line. Draw a slanted guideline from this point to the front crotch point. Extend the centre front line to the slanted line. Draw the inseam slightly hollow from the crotch to the knee line. Shape the sideseam as shown in the illustration. Draw the hip curve from the midpoint between crotch line and hipline to the raised waistline. Draw the front crotch seam in a shallow curve for sufficient comfort. Finally draw the waistline curve perpendicular to the centre front

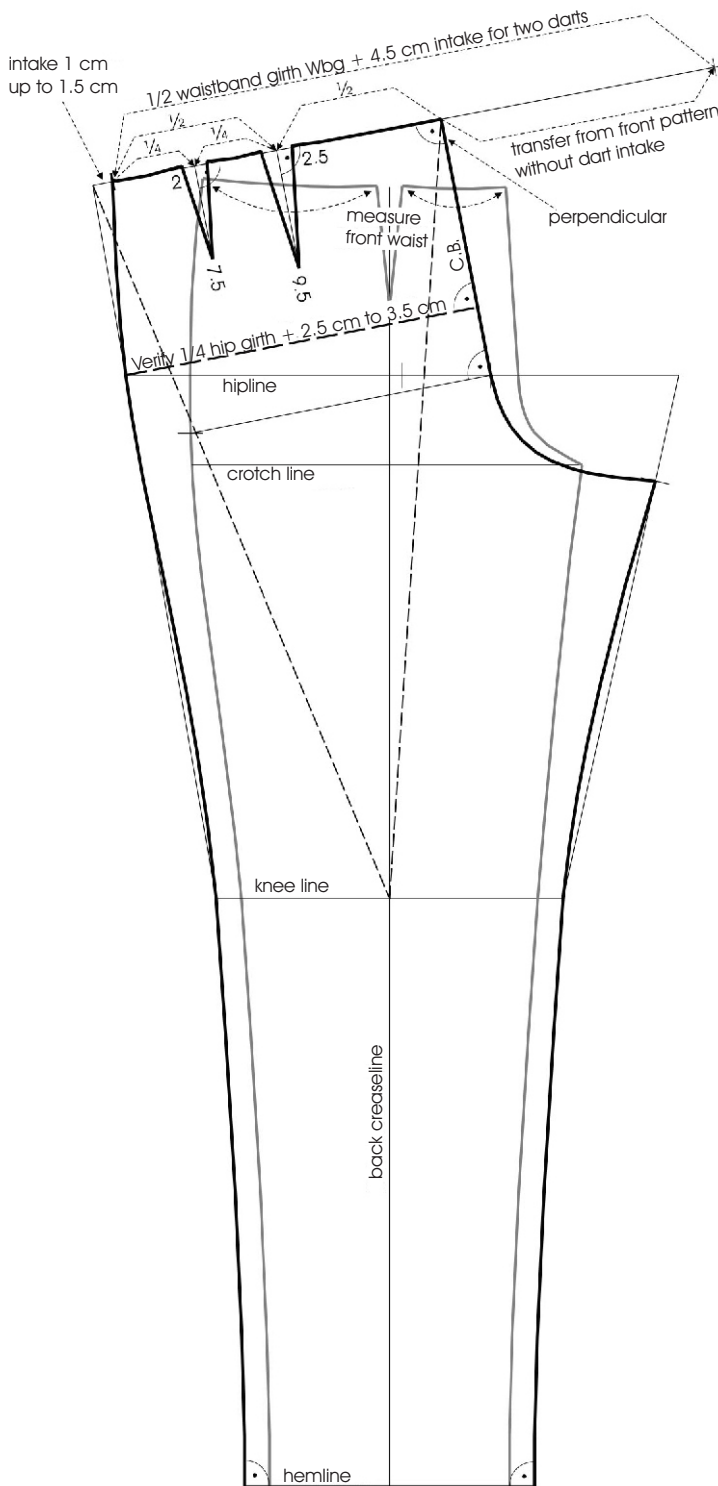


1 Draw the back trouser pattern on the copied front trouser pattern and extend the horizontal lines to the outside. Add 2 cm parallel to the inseam and sideseam from the knee line to the hem. On the hipline, relocate the centre of the back trouser pattern 1 cm to 1.5 cm to the right for the back creaseline. Relocate the centre of the back trousers more for a straight back pattern or less for a more slanted centre back. From the crotch line, measure 2 cm to 3 cm upwards along the sideseam for the slant of the centre back seam. Measure a larger amount for a straight back pattern and a smaller amount for a more slanted centre back. Measure $\frac{1}{2}$ of the total back trouser width **Tbtw** from the centre of the back pattern to the left and to the right. Measure the back crotch width **Bcw** back to the left. The remaining width at the hipline is the back trouser width **Btw**.

2 Connect the sideseam and the inseam from the knee line to each side of the $\frac{1}{2}$ back trouser width. Draw a guideline from the 2–3 cm raised point at the outseam to the back crotch width and square up. The perpendicular line is the centre back. Transfer the front inseam length minus 0.7 cm to the back inseam. Extend the guideline for the sideseam upwards. Measure the front outseam and transfer this length to the guideline. Determining the trouser height at the centre back: Measure from the centre of the knee line to the new sideseam point on the guideline and transfer this measurement + 0 cm to 1 cm from the knee point upwards towards the centre back. The additional length affects also the (seat) length of the trousers. Moreover, it is also possible to adjust the angle at the transition of the waistline and the centre back.



3



3 Draw the waistline from the sideseam to the centre back and extend it to the right. Verify that the angle at the centre back is almost perpendicular.

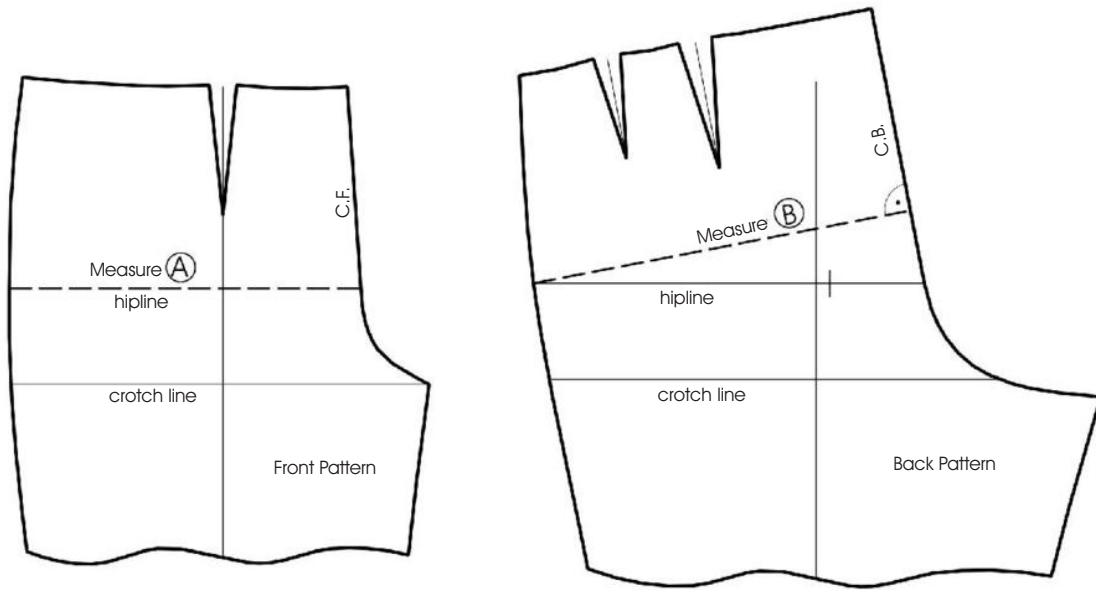
Waist measurement: Measure the waistline on the front pattern minus the front dart intake and transfer this measurement along the guideline to the right. From this point measure $\frac{1}{2}$ waistband girth plus dart intake for 1 – 2 waist darts to the left (depending on the shape of the seat). The remaining amount should be 1 cm to 1.5 cm for a well shaped sideseam. We calculated the waist measurement in this example with 4.5 cm for two darts with 2 cm and 2.5 cm intake.

Draw the inseam in a gentle curve from the knee line to the marked crotch point. Draw the crotch line as shown in the illustration. Starting from the knee line, draw the sideseam first slightly hollow and then curved over the hipline upwards to the marked point at the waistline.

Divide the waistline in half for the position of the larger waist dart. Mark the smaller waist dart on $\frac{1}{4}$ of the waistline from the side seam. Square down for each dart centre line. Construct the darts with the specified length and intake amounts. Draw the waistline slightly curved between the darts. Draw a perpendicular line from the centre back to the intersection of the sideseam and the hipline. Verify the back trouser width on this line. The calculated measure should be approx. $\frac{1}{4}$ hip girth + 2.5 cm to 3.5 cm.



VERIFY THE HIP MEASUREMENT



Measure the hipline (A) on the front trouser pattern and the perpendicular line (B) on the back trouser pattern. Add both measurements and deduct $\frac{1}{2}$ of the hip girth. The remaining amount is the fullness (wearing ease) included in the pattern.

The ease included varies depending on the construction and the allowances and should be matched to the material. This example shows average measurements for trousers with a slim fit made from non-stretch fabric

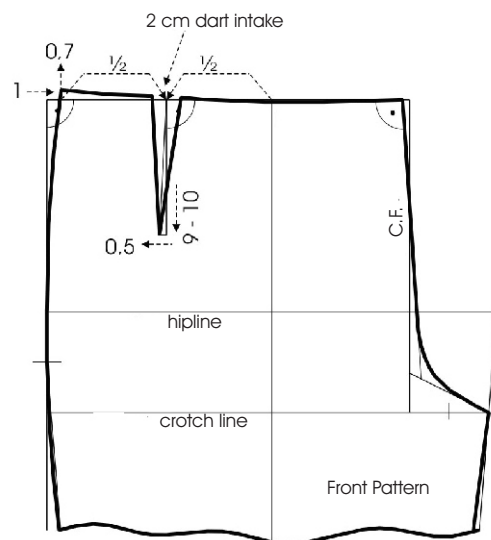
Example:

$$\begin{array}{rcl}
 A + B & = & 54.3 \text{ cm} \\
 \text{minus } 1/2 \text{ hip girth} & = & 51.0 \text{ cm} \\
 = 1/2 \text{ ease} & = & 3.3 \text{ cm}
 \end{array}$$

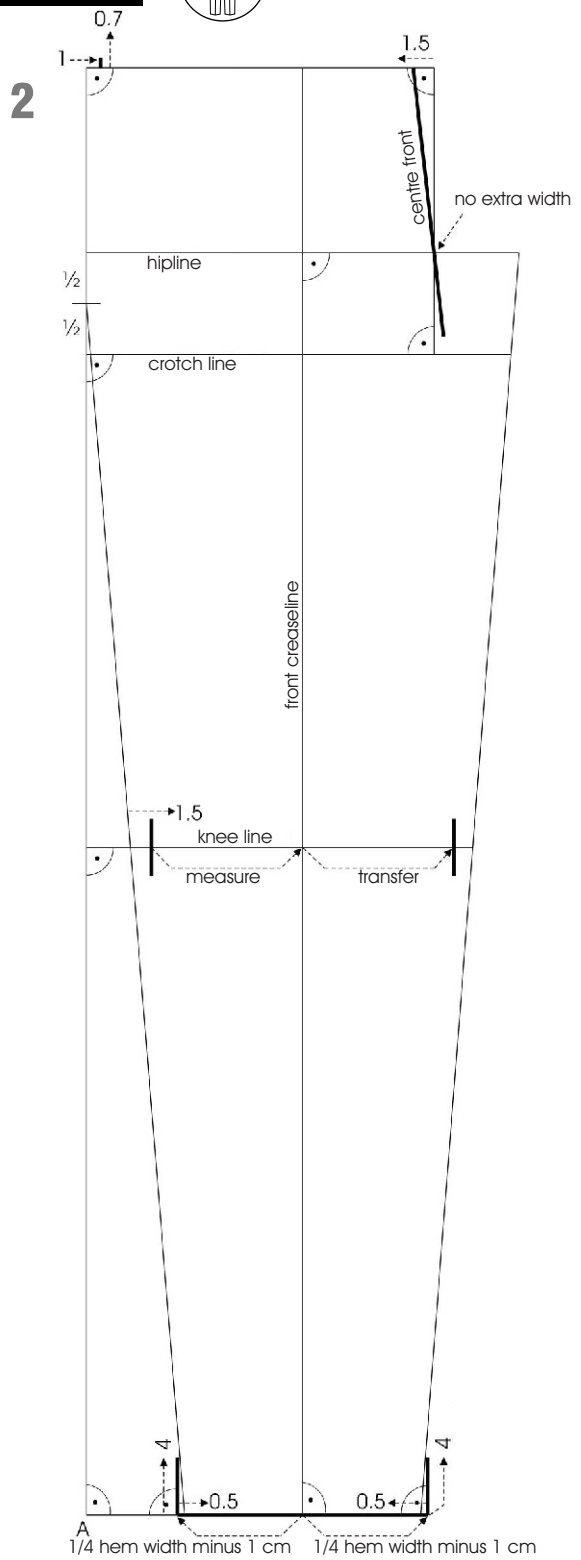
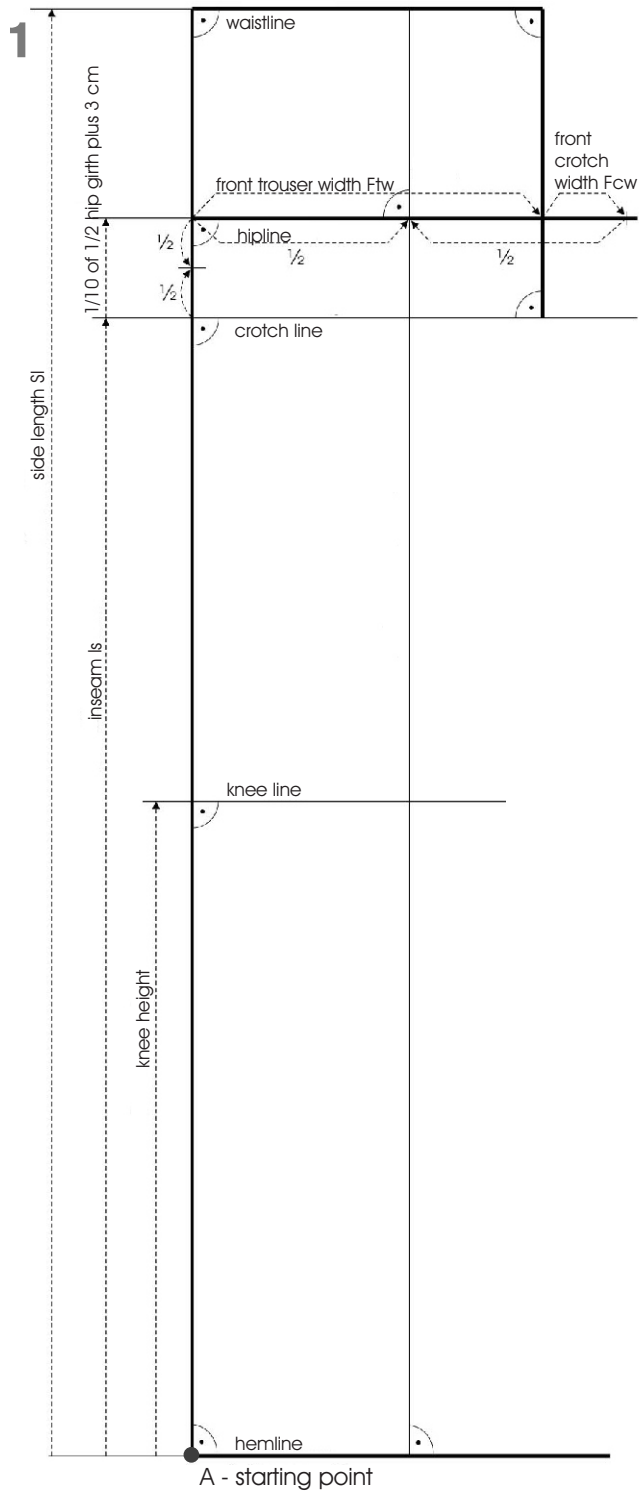


ALTERNATIVE DART PLACEMENT ON THE FRONT TROUSER PATTERN

1 Relocate the front waist dart to the side if preferred for the design or for example if the creaseline will be pressed up to the waistline. Mark the new dart position halfway between the front creaseline and the sideseam. Draw a vertical guideline for the dart centre line and shift the dart endpoint 0.5 cm to the side. Draw the dart with 2 cm intake as shown in the illustration.



BASIC BLOCK: TROUSERS WITHOUT DART - FRONT PATTERN



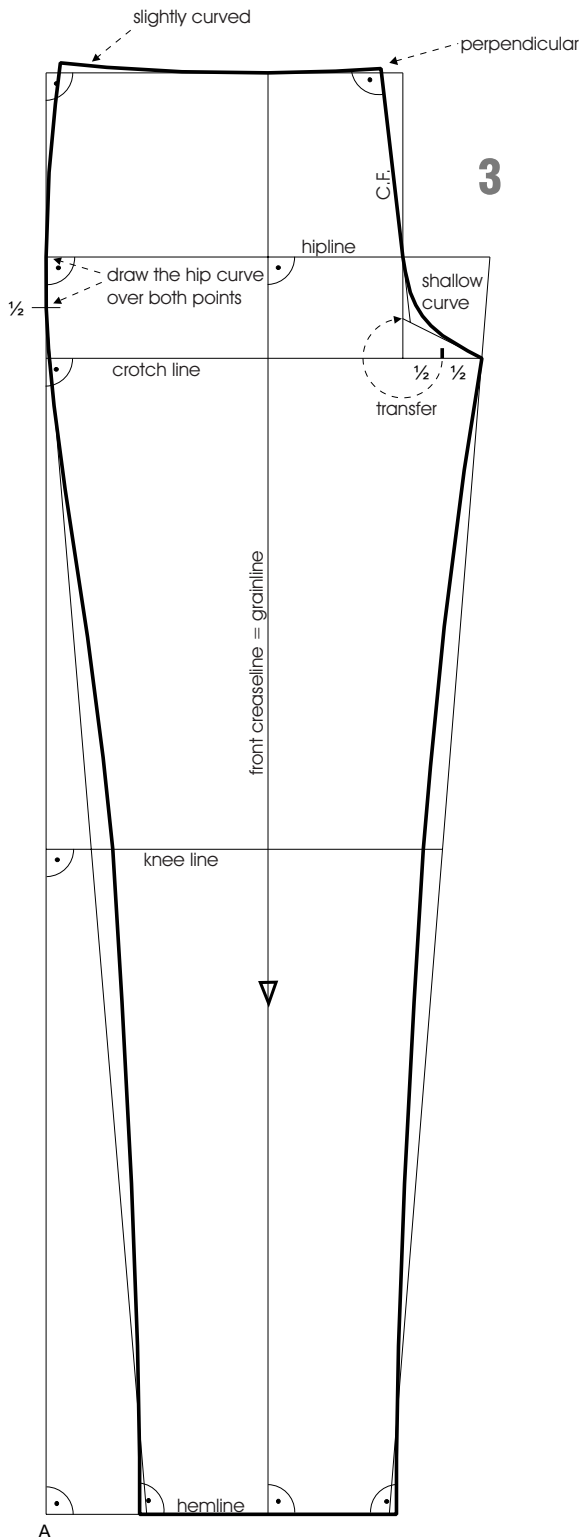
1 Draw a vertical and a horizontal line and mark the **starting point A** at the intersection as shown in the illustration. From point **A**, measure along the vertical line: knee height **Kh**, inseam length **Is**, side length **Sl**. Square out to the right from all points, resulting in the waistline, the crotch line and the kneeline. The bottom line is the hemline. Measure $\frac{1}{10}$ of $\frac{1}{2}$ hip girth plus 3 cm from the crotch line upwards and square out to the right for the hipline. Mark the halfway point between the hipline and the crotch line. On the hipline, measure the front trouser width **Ftw** to the right and square up to the waistline and down to the crotch line. Measure the front crotch width **Fcw** from the

perpendicular line to the right. Divide the total front width in half and square up to the waistline and down to the hemline. This perpendicular line is the front creaseline and the grainline.

2 On the hemline, measure $\frac{1}{4}$ of the hem width minus 1 cm from the front creaseline to the left and to the right and draw short perpendicular lines upwards. From these points measure 0.5 cm inwards at each side and draw the guidelines for the sideseam and the inseam as shown in the illustration. Lengthen the short perpendicular lines at the hemline to approximately 4 cm.



BASIC BLOCK: TROUSERS WITHOUT DART - FRONT PATTERN



MEASUREMENT CHART SIZE 50

BODY MEASUREMENTS

		1/2	1/4
Wbg	Waistband girth	88.0 cm	44.0
Hg	Hip girth	102.0 cm	51.0
Hw	Hem width	40.0 cm	20.0
Sl	Side length	101.0 cm	
Is	Inseam	81.0 cm	

CALCULATION

Br	Body rise	20.0 cm	= Sl - Is
Kh	Knee height	46.6 cm	= 1/2 Is + 1/10 Is - 2 cm

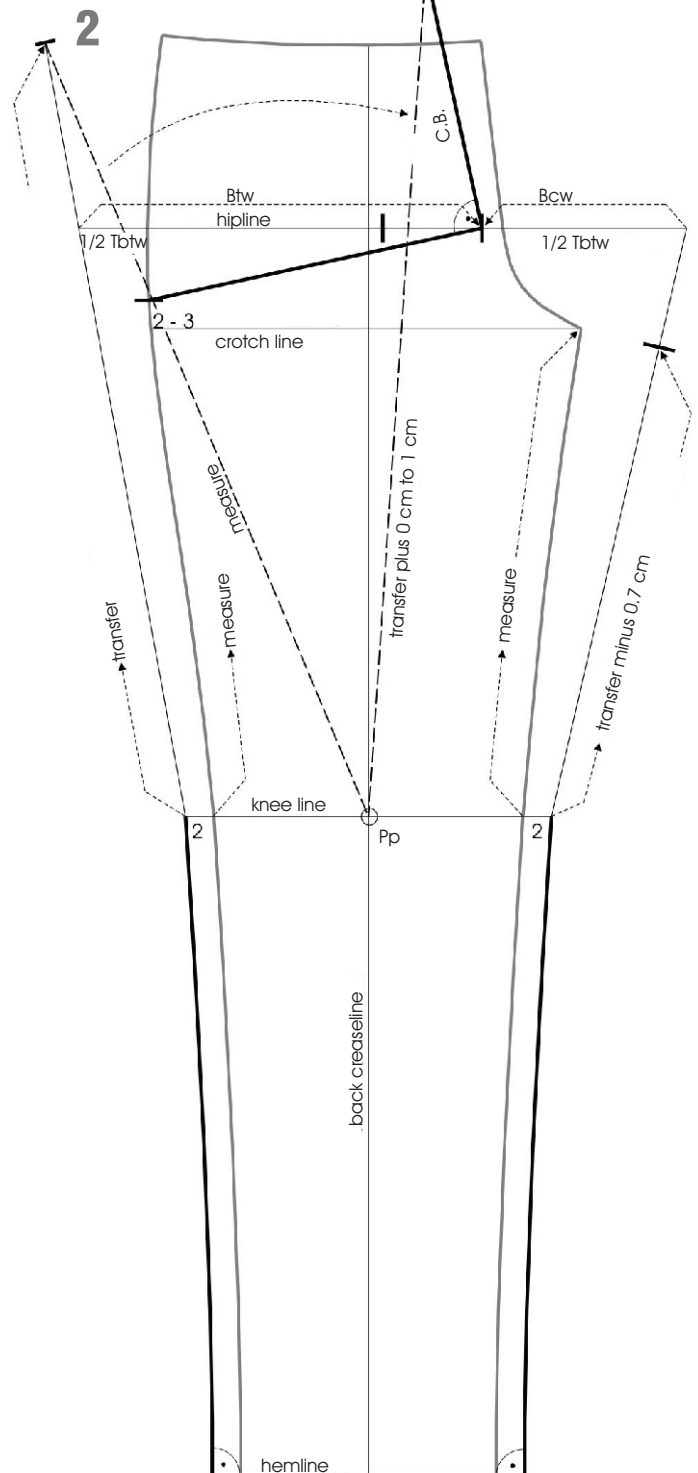
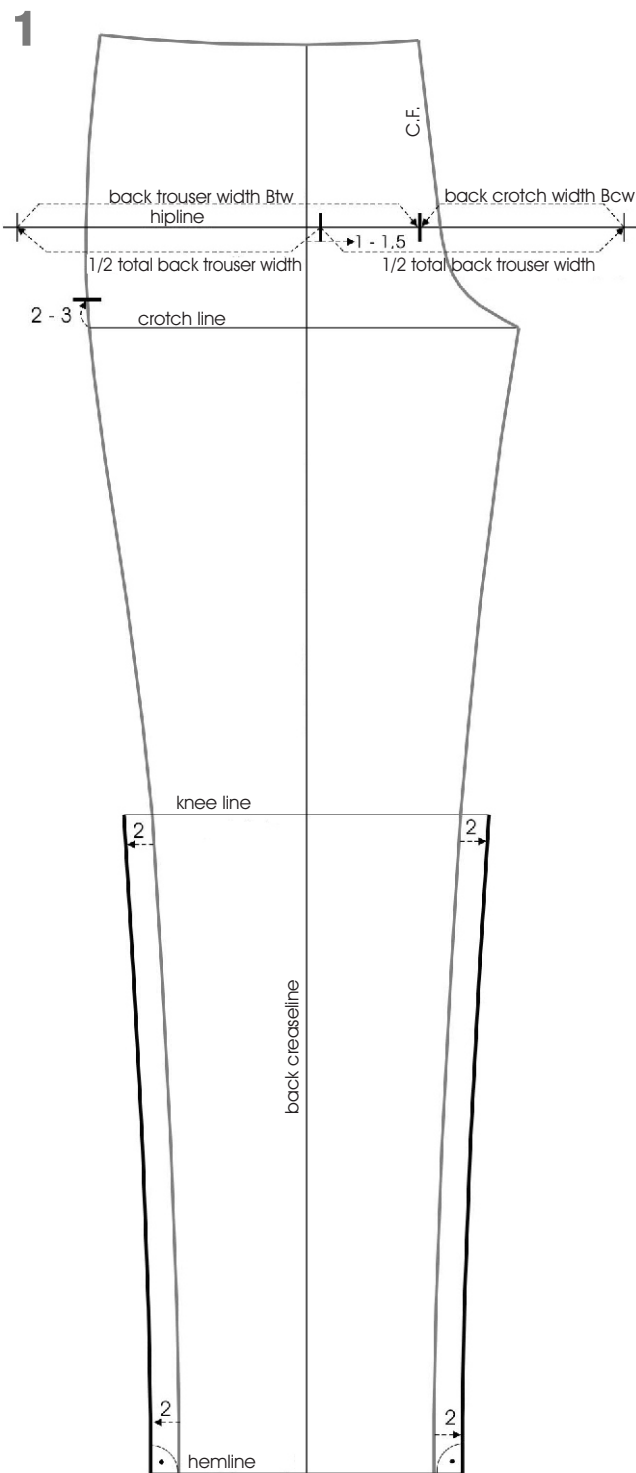
AUXILIARY MEASUREMENTS

Ftw	Front trouser width	25.0 cm	= 1/4 Hg - 0.5 cm
Cw	Crotch width	20.5 cm	= 1/4 Hg - 4 cm to 5 cm
Fcw	Front crotch width	6.1 cm	= 1/10 of 1/2 Hg + 1 cm
Bcw	Back crotch width	14.4 cm	= Cw - Fcw
Btw	Back trouser width	28.4 cm	= 1/4 Hg + 2.5 cm to 3.5 cm
Tbtw	Total back trouser width	42.8 cm	= Btw + Bcw

These trousers are calculated slightly narrower than those with a front dart. The front width and the back width include only a little ease. The hem width is reduced and matches the slim silhouette. The side length is shortened to complete the contemporary look.

The sideseam and the inseam should be perpendicular to the hem for a cuffed hem. Taper the sideseam 1.5 cm at the knee line. Measure the distance from this point to the front creaseline and transfer this amount to the right for the position of the inseam. Taper the centre front 1.5 cm at the waistline and draw the centre front as shown in the illustration. Taper the sideseam 1 cm at the waist and raise the waistline 0.7 cm at the side.

3 Divide the front crotch width on the hipline in half and transfer this amount upwards on the perpendicular line. Draw a slanted guideline from this point to the front crotch point. Extend the centre front line to the slanted line. Draw the inseam slightly hollow from the crotch to the knee line. Shape the sideseam as shown in the illustration. Draw the hip curve from the midpoint between crotch line and hipline to the raised waistline. Draw the front crotch seam in a shallow curve for sufficient comfort. Finally draw the waistline curve perpendicular to the centre front.

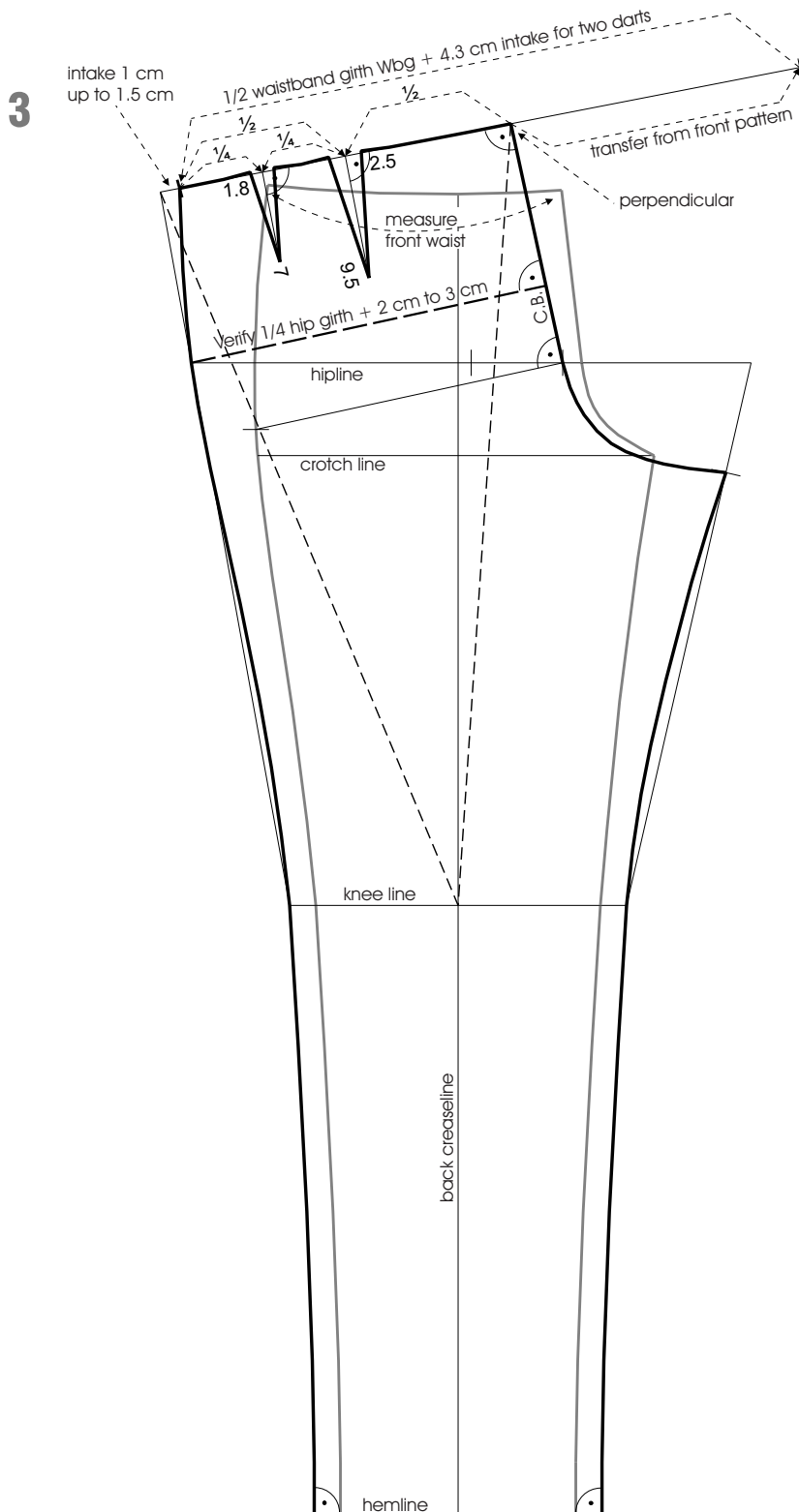


1 Trace a copy of the front trouser pattern and extend the horizontal lines to the outside. Draw the back trouser pattern on the copied front trouser pattern. Add 2 cm parallel to the inseam and outseam from the knee line to the hem. On the hipline, relocate the centre of the back trouser pattern 1 – 1.5 cm to the right for the back creaseline. The position of the back creaseline determines the location of the upper part of the back trouser pattern. Relocate the centre of the back trousers more for a straight back pattern

or less for a more slanted centre back. From the crotch line, measure 2–3 cm upwards along the sideseam for the slant of the centre back seam. Measure a larger amount for a straight back pattern and a smaller amount for a more slanted centre back. Measure $\frac{1}{2}$ of the total back trouser width (Gbr) from the centre of the back pattern to the left and to the right. Measure the back crotch width (Hsd) back to the left. The remaining width at the hipline is the back trouser width (Hhbr).



BASIC BLOCK: TROUSERS WITHOUT DART - BACK PATTERN



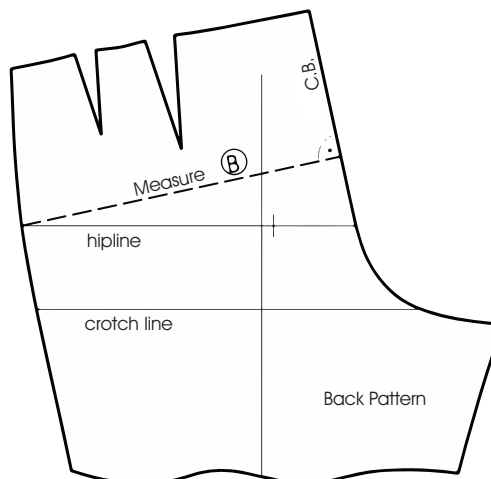
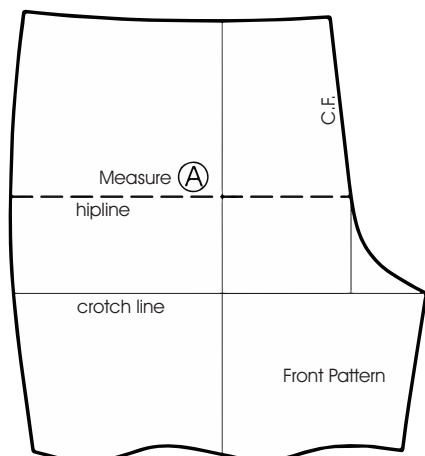
3 Draw the waistline from the sideseam to the centre back and extend it to the right. Check if the angle at the centre back is almost perpendicular. Waist measurement: Measure the waistline on the front pattern and transfer this measurement along the guideline to the right. From this point measure $\frac{1}{2}$ waistband girth plus dart intake for 1 – 2 waist darts to the left (depending on the shape of the seat). The remaining amount should be 1 cm to 1.5 cm for a well shaped sideseam. We calculated the waist measurement in this example with 4.3 cm for two darts with 1.8 cm and 2.5 cm intake. Draw the inseam in a gentle curve from the knee line to the marked curve point. Draw the crotch line as shown in the illustration. Starting from the knee line, draw the outseam first slightly hollow and then curved over the hipline upwards to the marked point at the waistline. Divide the waistline in half for the position of the larger waist dart. Mark the smaller waist dart on $\frac{1}{4}$ of the waistline from the side seam. Square down for each dart centre line. Construct the darts with the specified length and intake amounts. Draw the waistline slightly curved between the darts. Draw a perpendicular line from the centre back to the intersection of the sideseam and the hipline.

Verify the back trouser width on this line. The calculated amount should be approximately $\frac{1}{4}$ hip girth plus 2 cm to 3 cm.

2 Connect the sideseam and the inseam from the knee line to each side of the $\frac{1}{2}$ back trouser width. Draw a guideline from the 2–3 cm raised point at the sideseam to the back crotch width and square up. The perpendicular line is the centre back. Transfer the front inseam length minus 0.7 cm to the back inseam.

Extend the guideline for the sideseam upwards. Measure the front sideseam and transfer this length to the guideline. Determine the trouser height at the centre back: Measure from the centre of the knee line to the new sideseam point on the guideline and transfer this measurement plus 0 cm to 1 cm from the knee point upwards towards the centre back.

VERIFY THE HIP MEASUREMENT



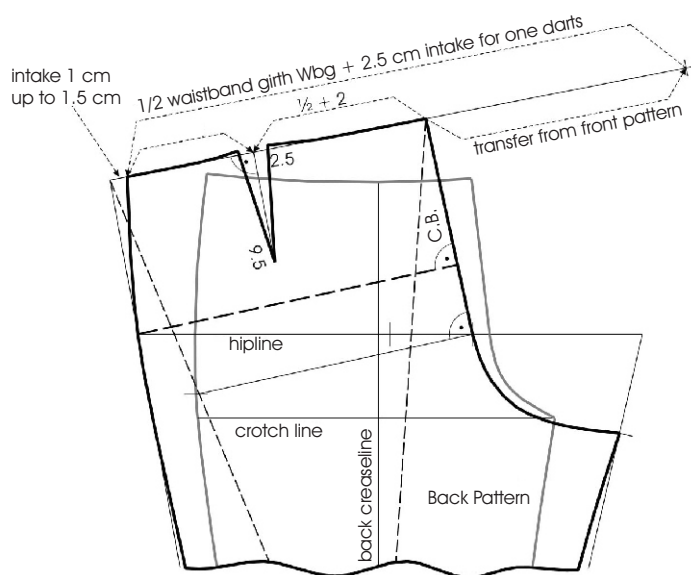
Measure the hipline (A) on the front trouser pattern and the perpendicular line (B) on the back trouser pattern. Add both measurements and deduct $\frac{1}{2}$ of the hip girth. The remaining amount is the fullness (wearing ease) included in the pattern.

The ease included varies depending on the construction and the allowances and should be matched to the material. This example shows average measurements for trousers with a slim fit made from non-stretch fabric. Use a stretch fabric for less than 1.5 cm wearing ease.

Example:

$$\begin{array}{rcl}
 A + B & = & 52.8 \text{ cm} \\
 \text{minus } 1/2 \text{ hip girth} & = & 51.0 \text{ cm} \\
 = 1/2 \text{ ease} & = & 1.8 \text{ cm}
 \end{array}$$

BACK TROUSER PATTERN WITH 1 DART



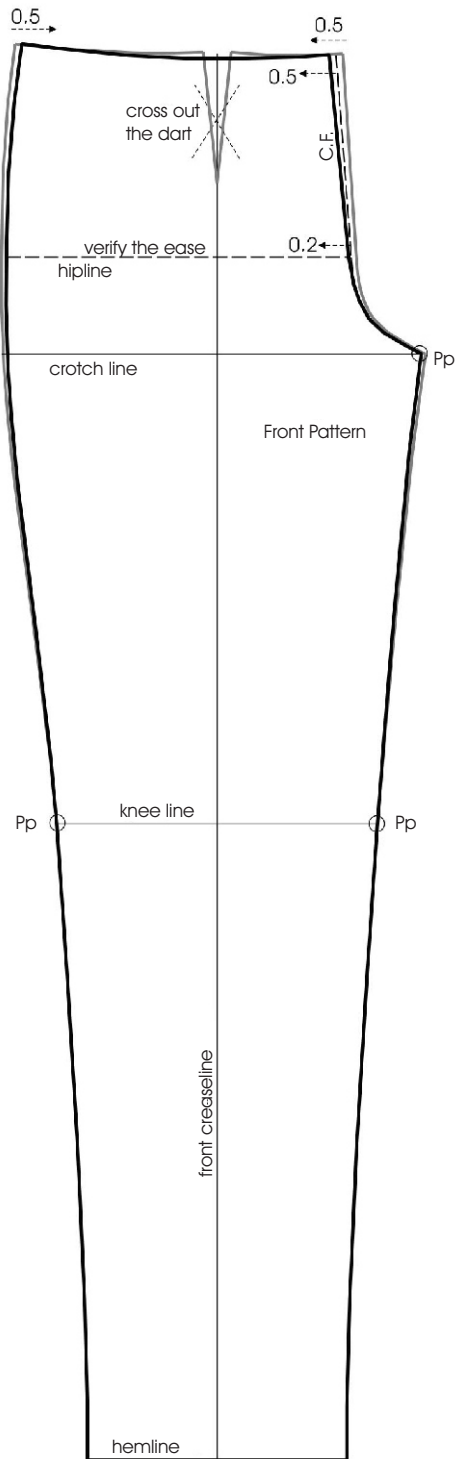
1 All previous trouser patterns showed a great difference between the measurements of the hip girth and the waist girth. The waist intake had to be distributed to two darts (maximum intake at the side seam 1-1.5 cm!). If the intake for the back darts is less than 2.5 cm, you can construct the back trouser pattern with only one dart. This is the case, if the difference of waist to hip measurement is lower and/or the trousers are calculated with less fullness at the front and the back trouser width.

Measure the waistline on the front pattern and transfer this measurement along the guideline to the right. From this point, measure $\frac{1}{2}$ of the waist girth plus dart intake (here 2.5 cm) to the left. The remaining amount should be 1-1.5 cm. Divide the waistline in half and measure 2 cm towards the sideseam for the position of the waist dart. Square down for dart centre line. Construct the dart with 2.5 cm dart intake. Draw the waistline slightly curved to the dart.

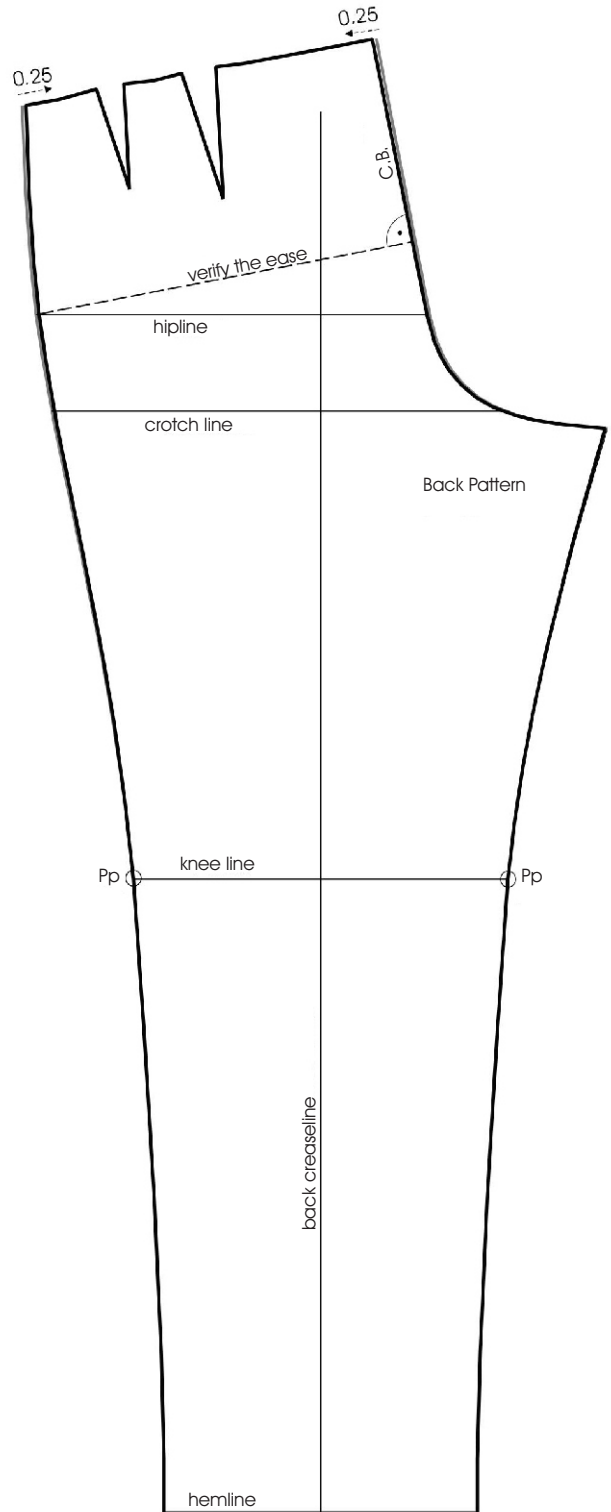


CHANGING THE FRONT TROUSER PATTERN FROM 1 FRONT DART TO NO DART

1



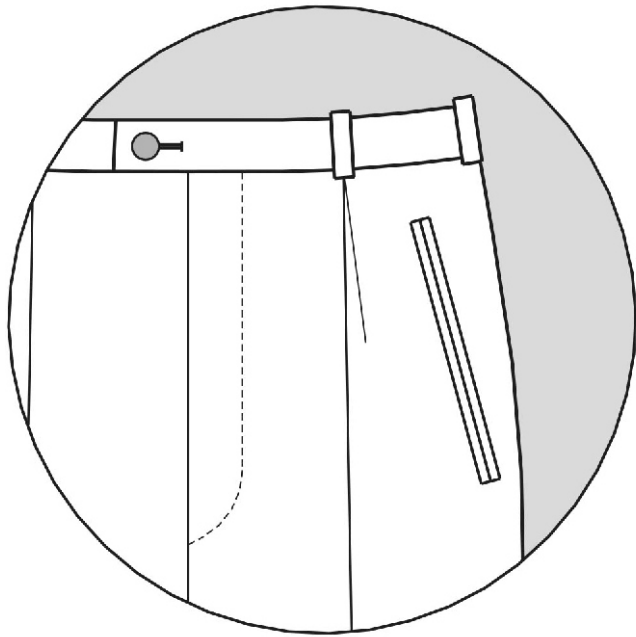
2



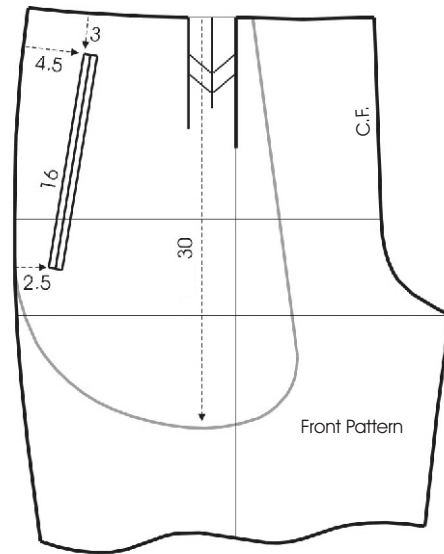
1 Trace a copy of the front trouser pattern and use the basic trouser pattern with front dart as a drawing template. Mark the pivot point (Pp) at the intersection of the knee line and the sideseam. Rotate the sideseam 0.5 cm inward at the waistline. Rotate the middle section of the front pattern 0.5 cm inwards with pivot point (Pp) at the intersection of the knee line and the inseam. Rotate the centre front again another 0.5 cm inwards with pivot point (Pp) at the front crotch seam. Draw the new waistline slightly curved and cross out the 2-cm dart intake.

2 Only 1.5 cm of the dart intake are removed at the front trouser pattern. The remaining intake of 0.5 cm will be removed at the back trouser pattern. Rotate the back pattern in the same way as the front pattern and remove 0.25 cm at each side. Draw the new waistline. Check the hip measurement and the included wearing ease.

TROUSER POCKET VARIATIONS: DOUBLE WELT POCKET

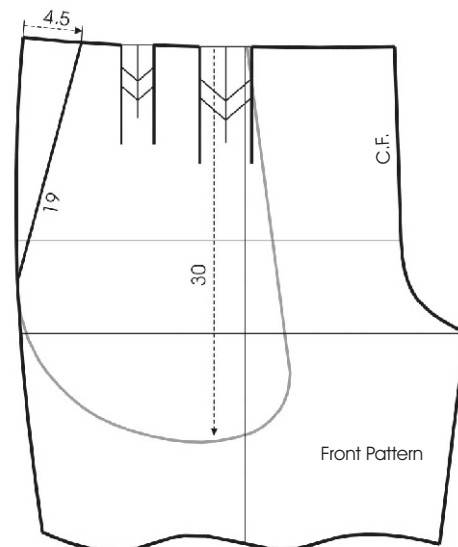
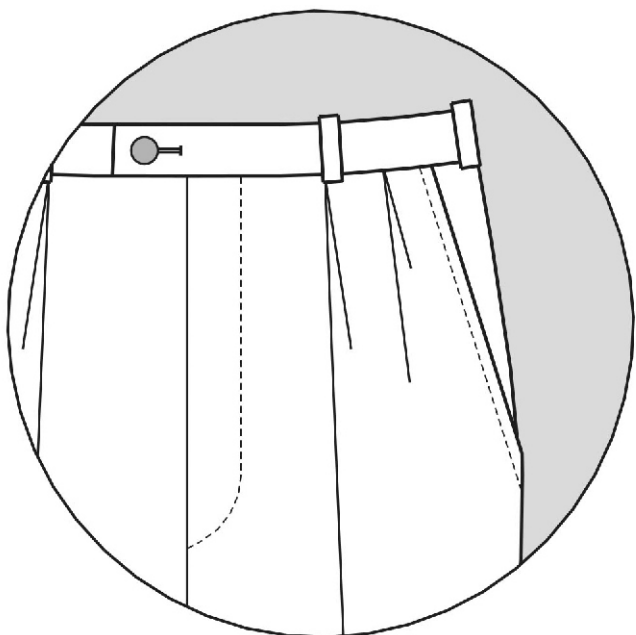


Draft a 16 cm long and slightly slanted double-welt pocket on the front trouser pattern.



Draw the pocket bag 30 cm long as shown in the illustration.

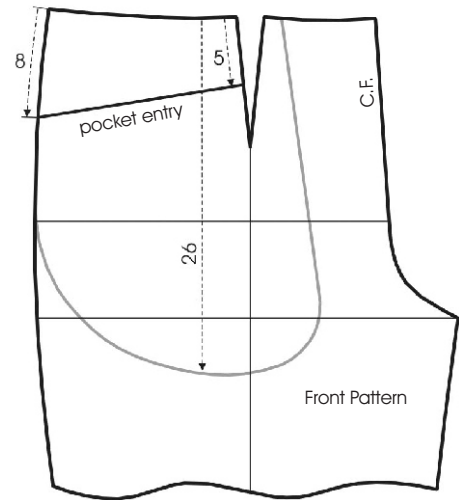
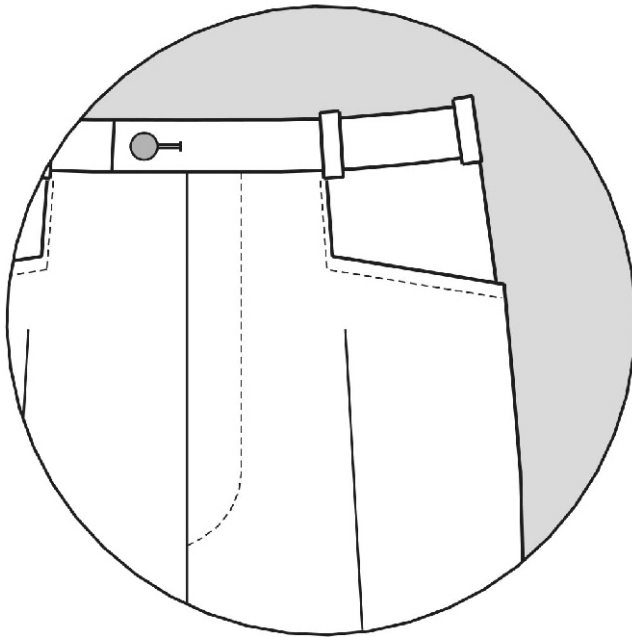
TROUSER POCKET VARIATIONS: SLANTED SIDE POCKET



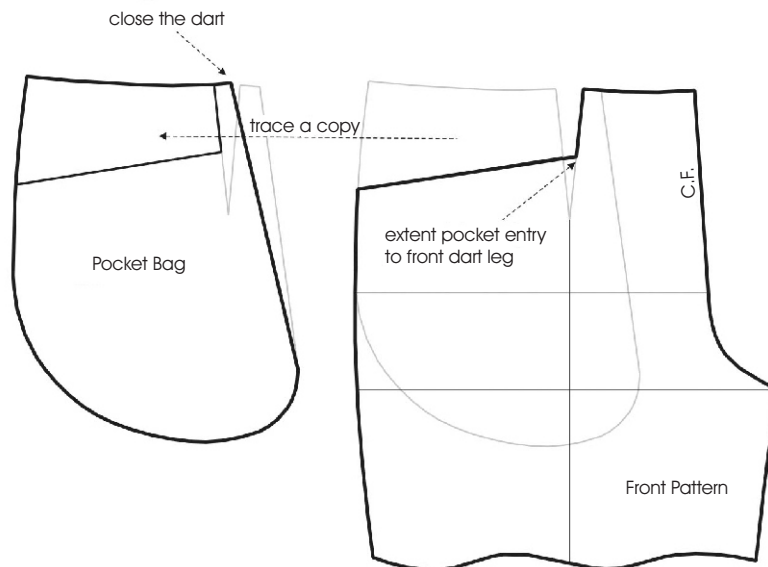
Mark the pocket entry 4.5 cm away from the side seam on the front waistline. From this point, draw the pocket entry 19 cm long to the sideseam. The pocket entry can be finished either with a separate facing and a seam, or with an attached facing on the fold. Draw the pocket bag 30 cm long as shown in the illustration.



TROUSER POCKET VARIATIONS: CROSS POCKET



Draft a 16 cm long and slightly slanted double-welt pocket on the front trouser pattern. Draw the pocket bag 26 cm long as shown in the illustration.

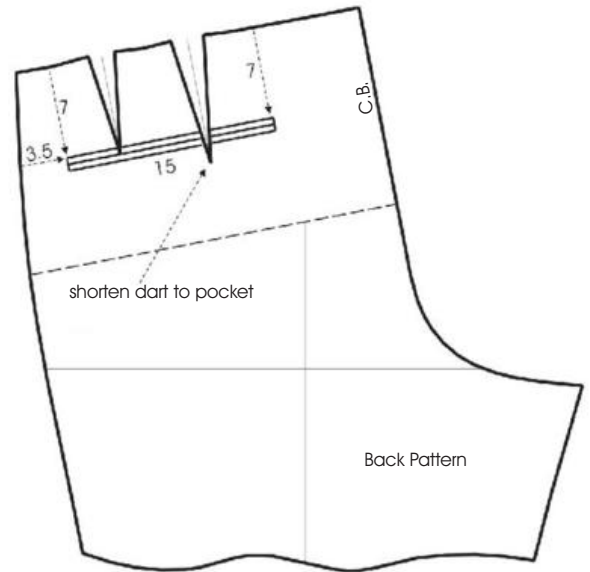
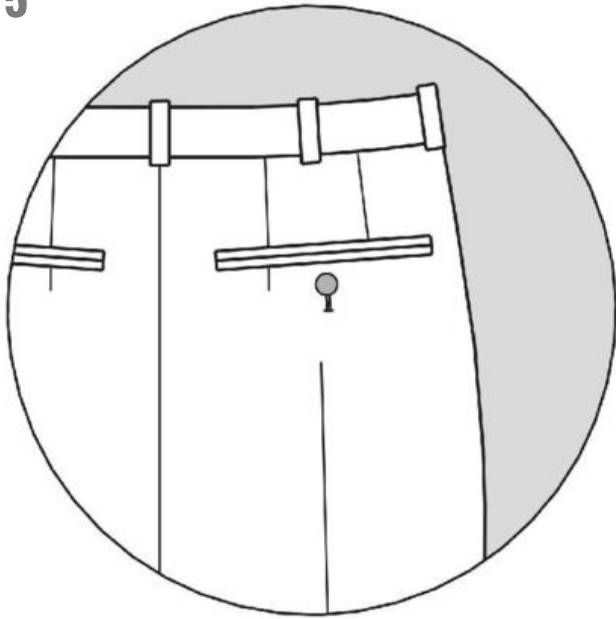


Trace a copy of the pocket backing with the pocket bag and close the dart. The small dart intake on the front trouser pattern remains in the pattern. This results in a slightly longer pocket entry which is necessary for easy access into the pocket. Sew the vertical seam of the pocket entry onto the pocket backing.

TROUSER POCKET VARIATIONS: BACK POCKET WITH TWO DARTS

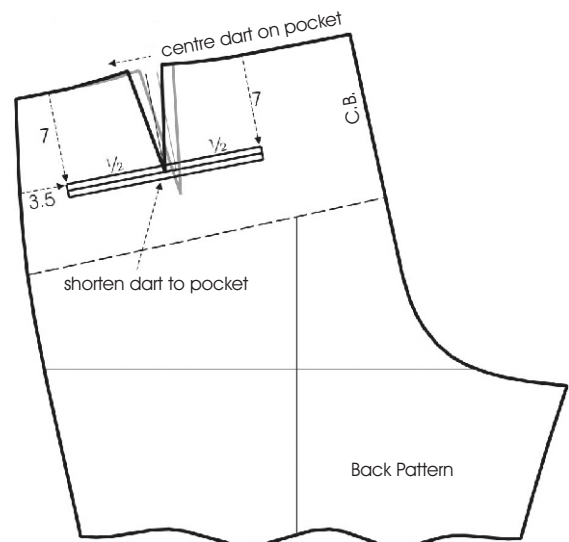
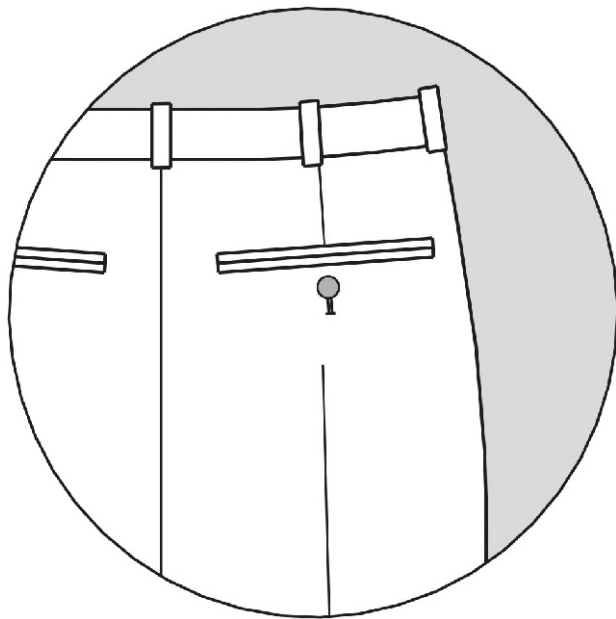


5



Draw a 15-cm long double-welt pocket on the back pattern as shown in the illustration. Shorten the darts up to the pocket entry if the dart intake allows for it. The darts can also be placed on one third of the pocket entry for a balanced appearance.

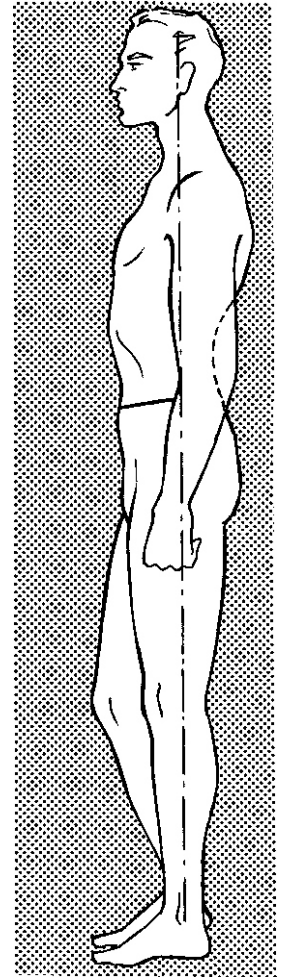
TROUSER POCKET VARIATIONS: BACK POCKET WITH ONE DART



Draw a 15-cm long double-welt pocket on the back pattern as shown in the illustration. Relocate the dart to the centre of the pocket. Shorten the dart up to the pocket entry if the dart intake allows for it.

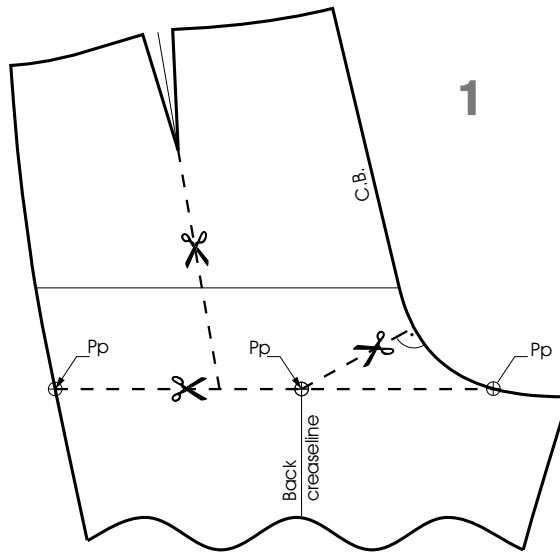


The hip girth is smaller than the standard size but the measurements alone are not enough to identify this figure deviation. The seat shape appears flat and the back length is shorter than the front length. The trousers have a poor fit and a baggy seat. Horizontal folds form under the seat at the trouser back. A plumbline placed at the shoulder area shows a gap between the plumbline and the seat although the posture is straight. The trousers are too long over the back and the extra length has to be removed from the pattern by slashing and overlapping the pattern pieces.



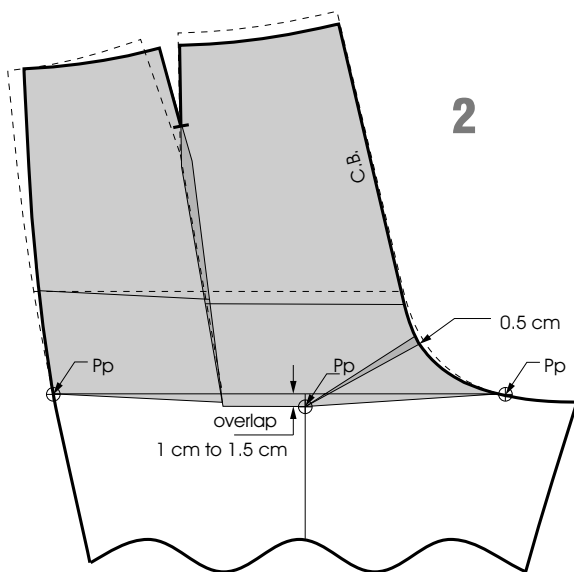
Cutting Lines

1 Mark the cutting lines on the back trouser pattern as shown in the illustration. The length will be taken out at the crotch line and at the centre back. Mark the pivot points (Pp) at these lines.



Adjustment

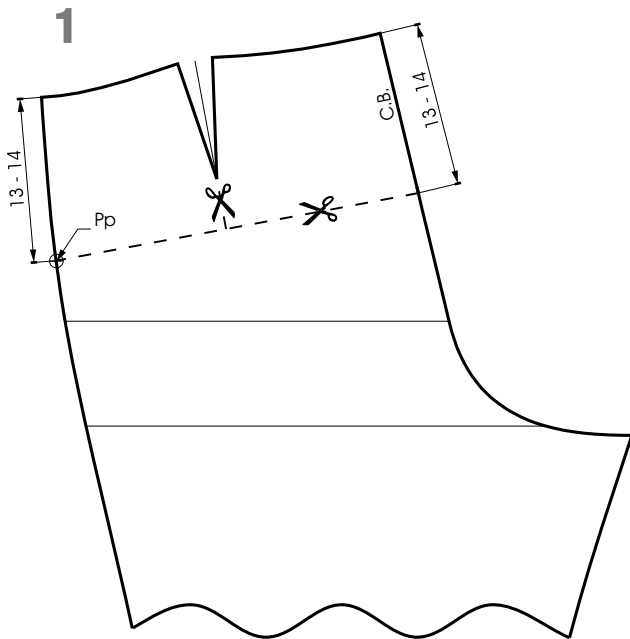
2 Cut through the back trouser pattern and overlap the pattern pieces 1 cm to 1.5 cm at the crotch line. Rotate the upper trouser pieces over the pivot points downward. This reduces the dart intake and shortens the back length. Cut from the centre back seam to the crotch line and overlap the pattern pieces 0.5 cm at the crotch to adjust the position of the centre back seam. Blend the seamlines and draw the new dart. The dashed lines show the original pattern.





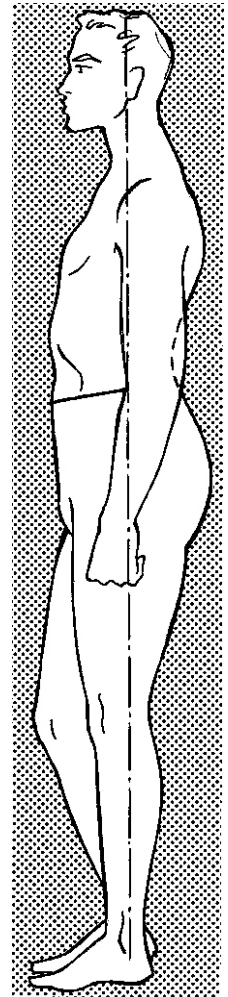
The hip girth is larger than the standard size but the measurements alone are not enough to identify this figure deviation. The seat shape is stronger and more protruding than the average figure. The trousers show a poor fit. The sideseams are not straight. A full seat causes the trousers' back waist to pull down when you sit and pull tightly in the

back crotch area when you stand. The trousers might be tight on the thighs and diagonal wrinkles form at the front. A plumbline placed at the shoulder area shows that the seat pushes into the plumbline. The trousers are too short over the back and the pattern must be opened over the seat for more length.



Cutting Lines

1 Mark the cutting lines on the back trouser pattern 13 cm to 14 cm below the waist line and from the dart downward. The back pattern will be opened for more length. Mark the pivot point (Pp) as shown.



Adjustment

2 Cut through the back trouser pattern and spread the pattern pieces 1 cm at the centre back and 0.5 cm to 0.7 cm at the centre back. The back trouser patterns has more length now and the dart is bigger. Blend the seamlines and draw the new dart.

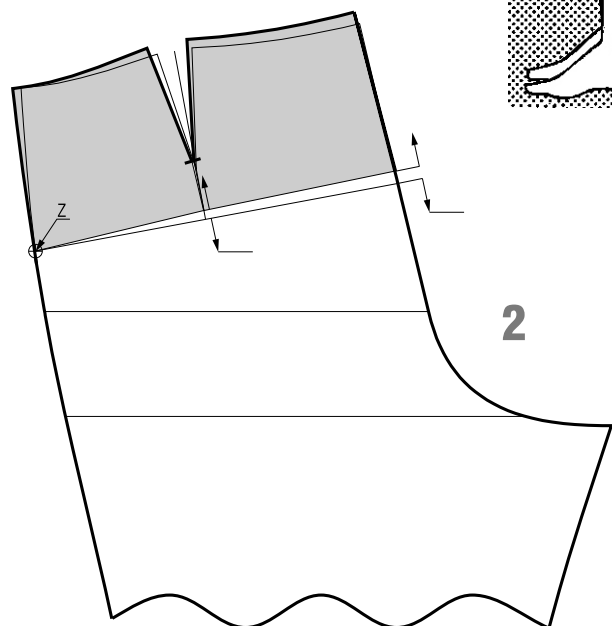
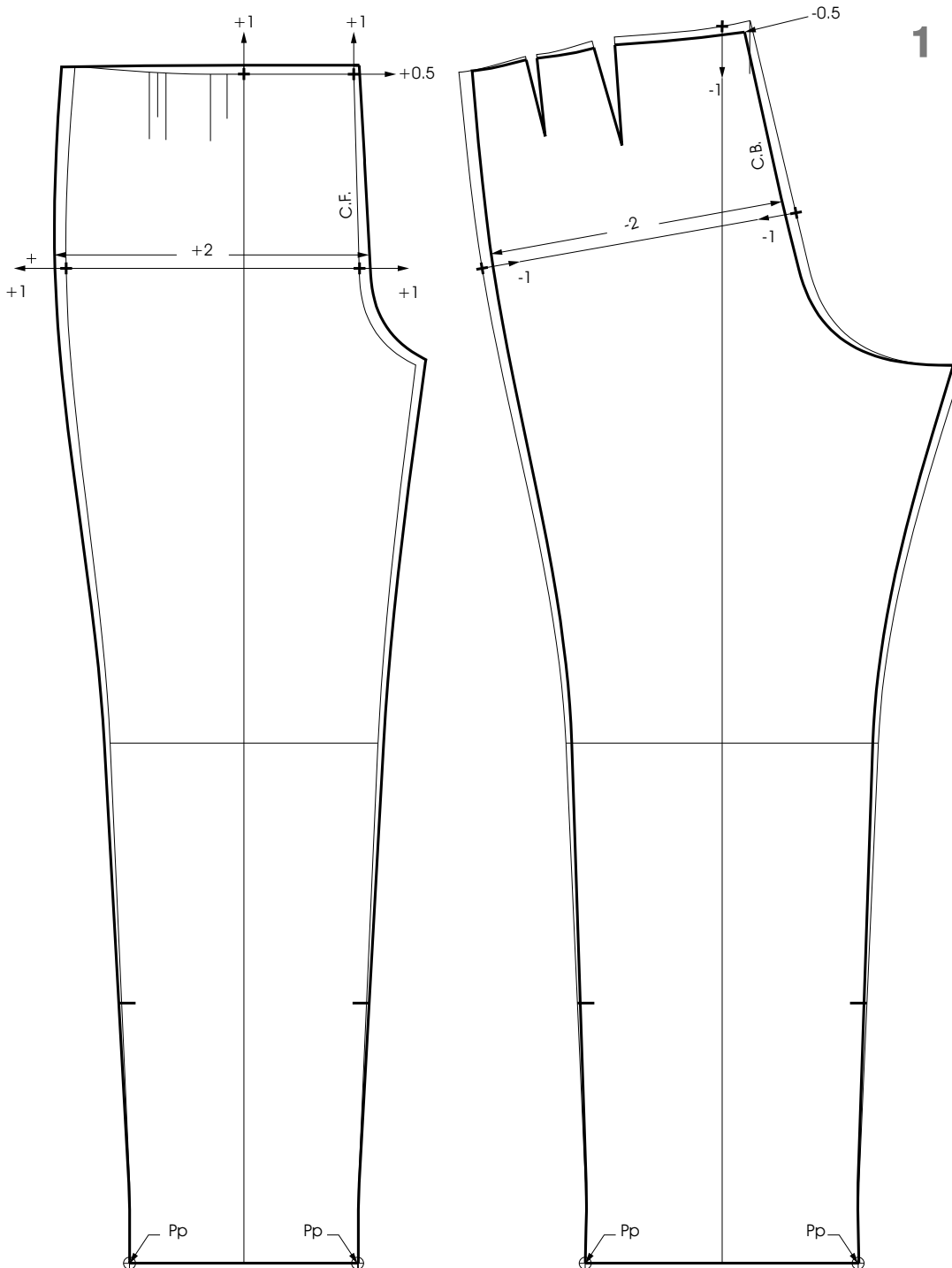




FIGURE DEVIATIONS: PROTRUDING LOWER BODY

The measurements do not reveal the figure deviation of a protruding lower body. The poor fit of the trousers shows that the sideseams are not straight. Horizontal folds form under the waistband and under the seat at the trouser back.

The trousers are too long at the back while the front is too short. The front pulls up and might be tight on the thighs. A plumbline placed at the shoulder area shows a gap between the plumbline and the seat.



Adjustment

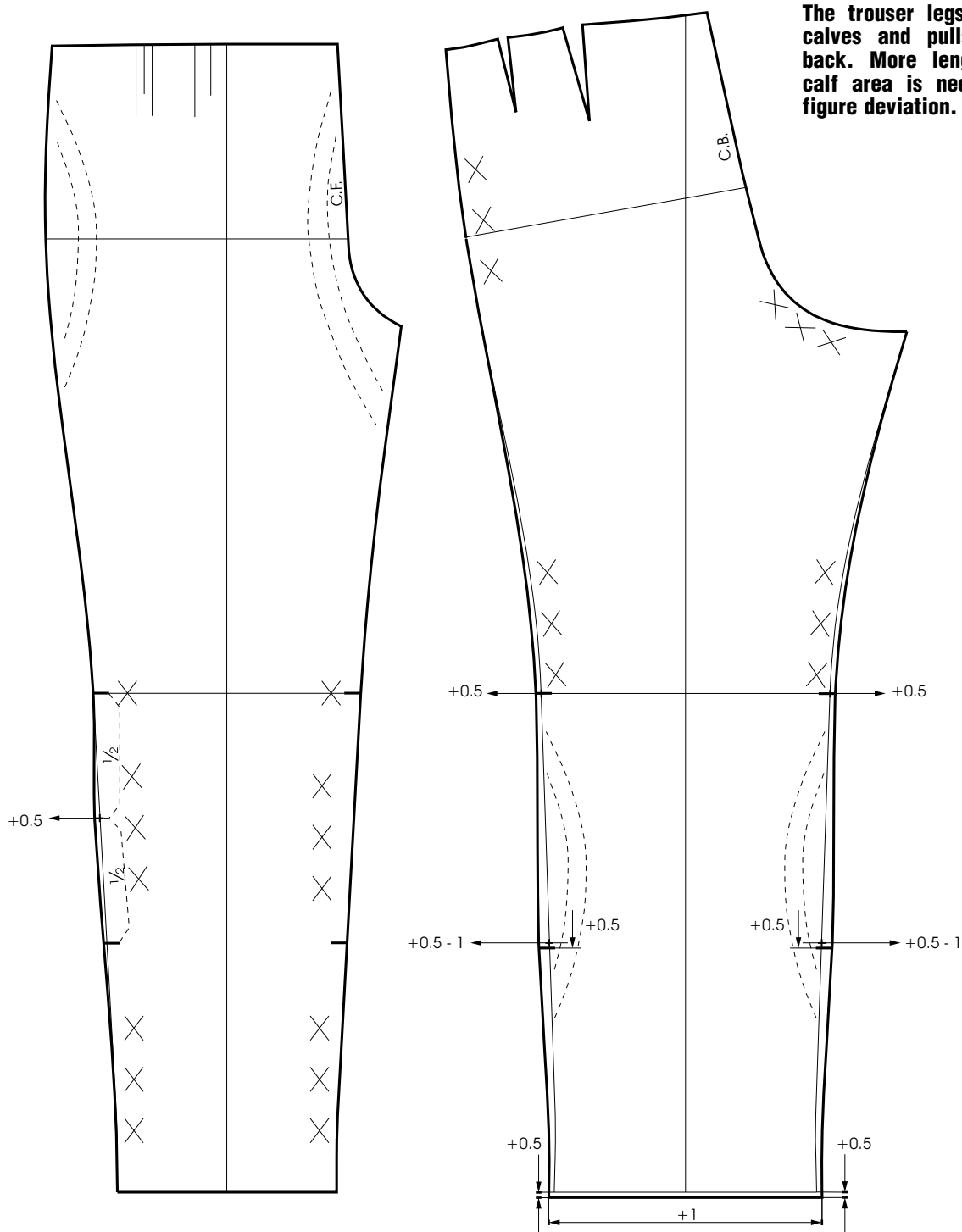
1 The front pattern must be wider and the back pattern narrower for a figure with protruding lower body. Measure the distance between the plumbline and the seat to determine the amount for the relocation (here 2 cm). Draw the front 2 cm wider and take away 2 cm from the back. Mark 1 cm to each side at the hip and mark the pivot points at the hem. Rotate the pattern pieces over the pivot

points and draw the new sideseam and inseam using the pattern as a drawing template. Adjust the balance measurements around 2 cm as well by raising the waist 1 cm at the centre front and lowering the waist 1 cm at the back. Extend the centre front 1 cm and trim the centre back 1 cm to keep the same waistband girth. Draw the new centre front and centre back as well as the new waistline.



Strong calves are easily noticeable at the poor fit of the trousers over the calves. The trouser legs rest on the calves and pulls up at the back. More length over the calf area is needed for this figure deviation.

1



Adjustment

1 The back pattern must be longer and wider over the calf area for this figure deviation. Mark matching notches at the sideseam and the inseam at the knee height and just below the calves at around 1/2 of the knee height so that the extra keeping width will be distributed to the right places. Add 0.5 cm length parallel to the hem at the back pattern and move the lower matching notches 0.5 cm

down. Add 0.5 cm at each side of the knee and calf area and down to the hem of the back pattern. Add 0.5 cm to 1 cm at the calf area depending on how wide the calves are. Draw the new sideseam and inseam shaped from the crotch to the hem as shown in the illustration. Add 0.5 cm more width at the front sideseam only over the calf area to a straight sideseam. Draw the new seamline as shown.



FIGURE DEVIATIONS: INWARD FOOT POSITION

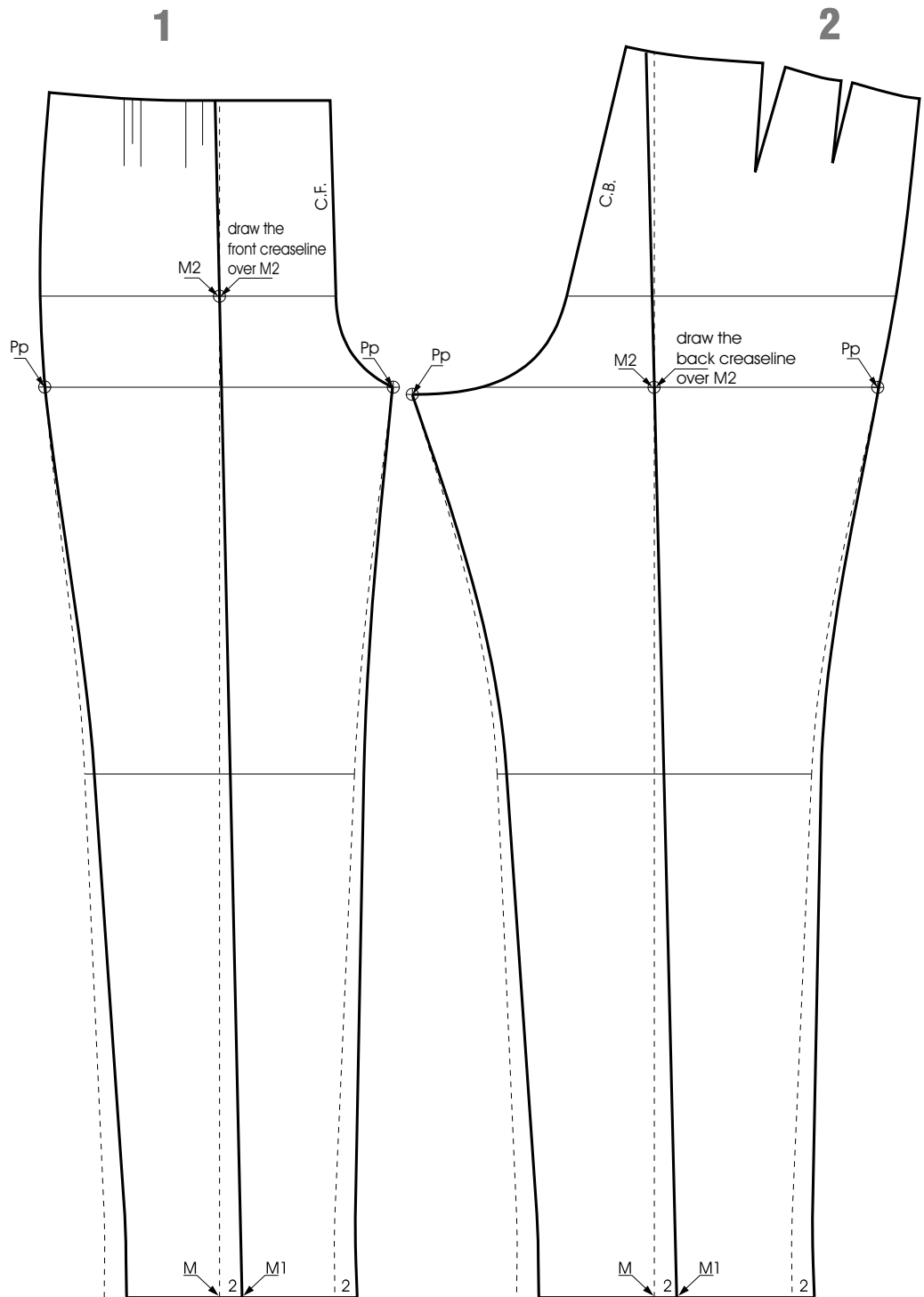
An inward foot position is also a deviation from the normal position. The inward foot position is not to confuse with bowlegs. The knee position and rotation is normal. This figure deviation causes a poor fit when wearing standard trousers. The pressed creaseline shows outward. Rotate the trouser legs of the basic pattern inwards so that the creaseline hits the middle of the shoe again. Mark the pivot points on the sideseam and inseam at crotch height.

Adjustment Front Pattern

1 Relocate the creaseline 2 cm inwards from point M to point M1. Draw the new creaseline from M1 to M2 and extend it to the waistline. Rotate the sideseam 2 cm at the hem over the pivot point (Pp). Draw the new sideseam using the pattern as a drawing template. Also rotate the inseam the same amount to the outside. Rotate the pattern with pivot point (Pp) and draw the new inseam. Blend the seamlines.

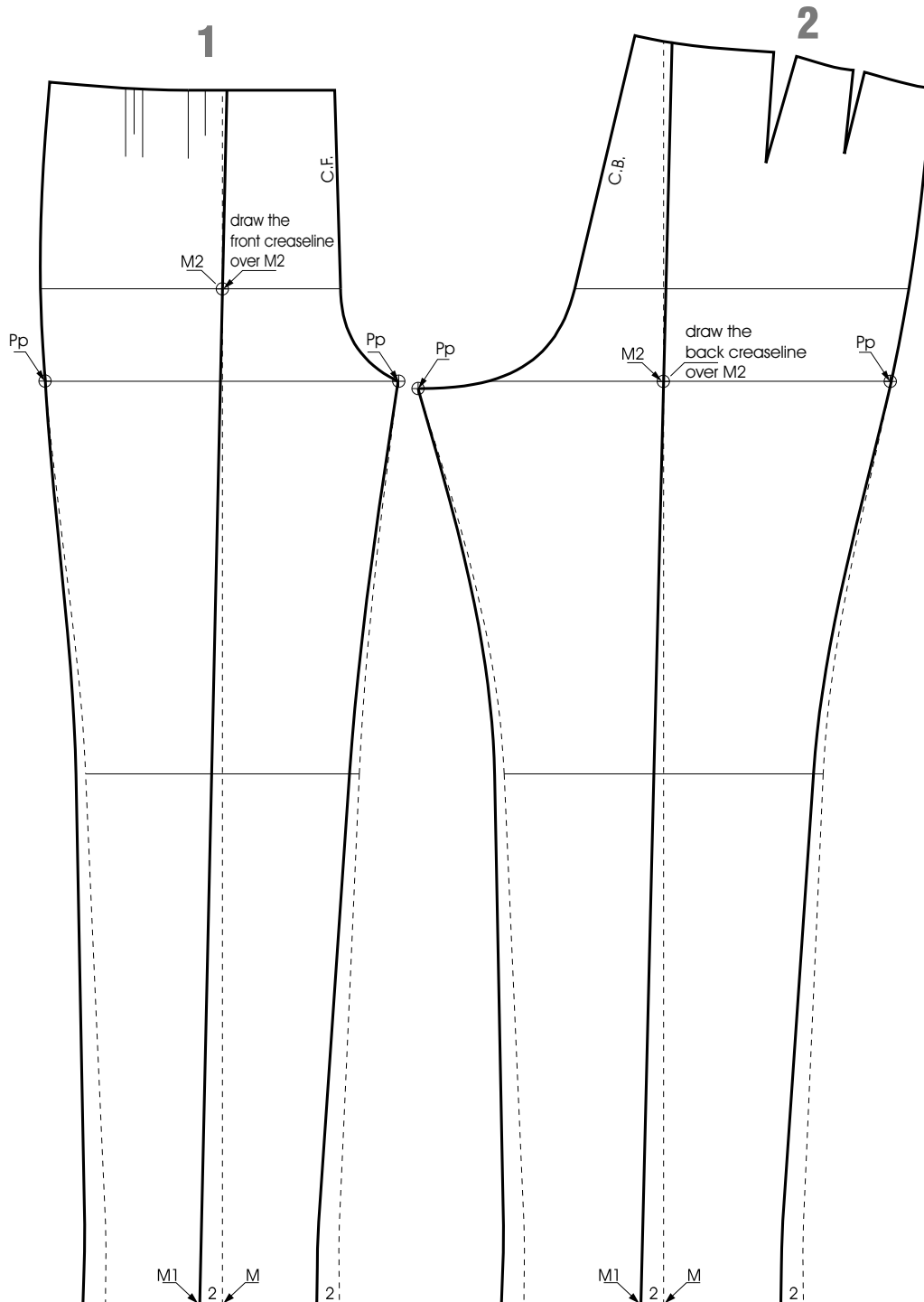
Adjustment Back Pattern

2 Relocate the creaseline 2 cm outwards from point M to point M1. Draw the new creaseline from M1 to M2 and extend it to the waistline. Rotate the sideseam 2 cm to the outside at the hem over the pivot point (Pp). Draw the new sideseam. Rotate the inseam the same amount to the inside. Rotate the pattern with pivot point (Pp) and draw the new inseam. Blend the seamlines.





An outward foot position is a figure deviation that can be noticed easily. The pressed creaseline shows inward. Rotate the trouser legs of the basic pattern outwards so that the creaseline hits the middle of the shoe again. Relocate the creaseline 2 cm at the hem. The sideseam and the inseam have to be rotated the same amount. Mark the pivot points on the sideseam and inseam at crotch height and draw the new seamlines to the crotch height.



Adjustment Front Pattern

1 Relocate the creaseline 2 cm outwards from point M to point M1. Draw the new creaseline from M1 to M2 and extend it to the waistline. Rotate the sideseam 2 cm at the hem over the pivot point (Pp). Draw the new sideseam using the pattern as a drawing template. Also rotate the inseam the same amount to the inside. Rotate the pattern with pivot point (Pp) and draw the new inseam. Blend the seamlines.

Adjustment Back Pattern

2 Relocate the creaseline 2 cm inwards from point M to point M1. Draw the new creaseline from M1 to M2 and extend it to the waistline. Rotate the sideseam 2 cm to the inside at the hem over the pivot point (Pp). Draw the new sideseam. Rotate the inseam the same amount to the outside. Rotate the pattern with pivot point (Pp) and draw the new inseam. Blend the seamlines.



BASIC SHIRT BLOCK FOR NORMAL SIZES

MEASUREMENT CHART SIZE 50 = NECK SIZE 40

BODY MEASUREMENTS		1/2	1/4	1/8	
Bh	Body height	177.0 cm	88.5	44.3	22.2
Cg	Chest girth	100.0 cm	50.0	25.0	12.5
Wg	Waist girth	90.0 cm	45.0	22.5	
Ng	Neck girth	40.0 cm			
Slg	Sleeve length	64.0 cm			
AUXILIARY MEASUREMENTS		CALCULATION		EASE	
Nw	Neck width	6.7 cm	= 1/6 neck girth (Ng)		
Sd	Scye depth	22.0 cm	= 1/10 chest girth (Cg) + 12 cm	+ 2.0 cm = 24.0 cm	
Bwl	Back waist length	44.3 cm	= 1/4 body height (Bh)	+ 1.0 cm = 45.3 cm	
Lg	Length	74.0 cm	= 1/2 body height (Bh) minus 13 cm to 15 cm		
Ad	Armhole depth	23.0 cm	= finished scye depth (Sd) minus 0 cm to 1 cm		
Bw	Back width	19.0 cm	= 2/10 Cg minus 1 cm (up to 112 Cg) + 1.25 cm = 20.2 cm = 1/10 Cg + 10.5 cm (more than 112 Cg)		
Sw	Scye width	12.0 cm	= 1/10 Cg + 2 cm	+ 3.5 cm = 15.5 cm	
Cw	Chest width	19.0 cm	= 2/10 Cg minus 1 cm (up to 112 Cg) + 0.75 cm = 19.8 cm = 1/2 Cg minus Bw minus Sw (more than 112 Cg)		
Total width		50.0 cm	= 1/2 Chest girth (Cg)	+ 5.5cm = 55.5 cm	

EASE CHART FOR SHIRTS

SHIRT FIT	SLIM FIT	REGULAR	LOOSE FIT
Sd Scye depth	+2.0cm	+3.0cm	+3.0cm
Bwl Back waist length	+1.0cm	+2.0cm	+2.0cm
Bw Back width	+1.25cm	+2.0cm	+3.0cm
Sw Scye width	+3.5cm	+4.5cm	+5.5cm
Cw Chest width	+0.75cm	+1.0cm	+2.0cm
Total ease on 1/2 chest girth	+5.5cm	+7.5cm	+10.5cm

Adding Ease to Achieve Different Fits

The basic shirt block is the foundation for many different shirt styles and fits. Add the appropriate amount of ease according to the ease chart. The ease amounts can be varied but should be applied proportional for a well balanced look. A good example is the armhole in proportion to the overall width. A slim fitting shirt should not have a low armhole to allow for freedom of movement.

SIZE CHART STANDARD SIZES VS. SHIRT SIZES

Standard Size	44	46	48	50	52	54	56	58	60
Chest girth	88	92	96	100	104	108	112	116	120
Shirt Size (Neck Size)	37	38	39	40	41	42	43	44	45

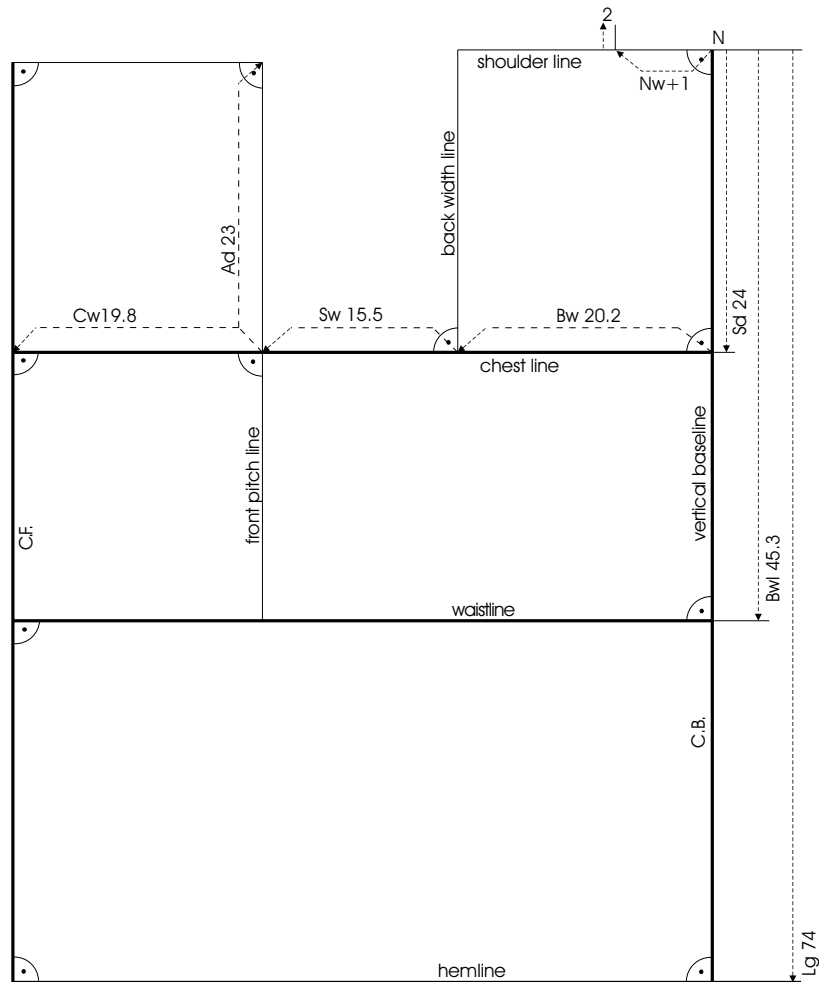
SIZE COMPARISON

Shirt sizes are defined by the neck girth but the chest girth and waist girth measurements are also needed for the pattern construction.

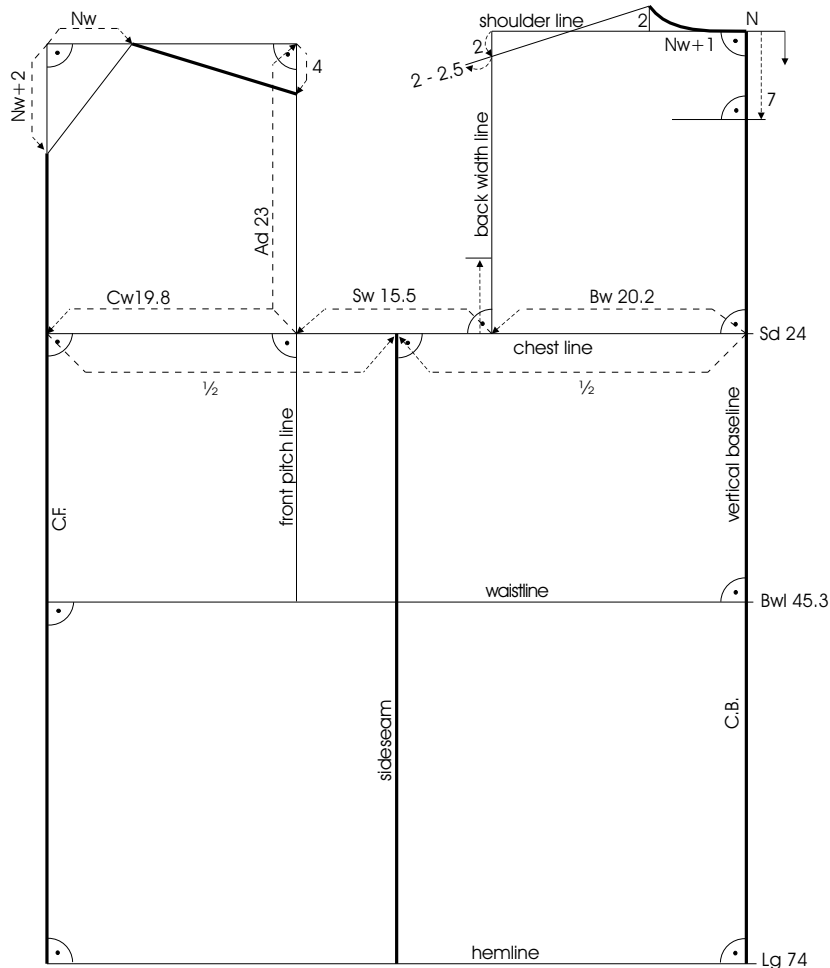
The corresponding standard sizes and neck sizes can be found in this chart.



1



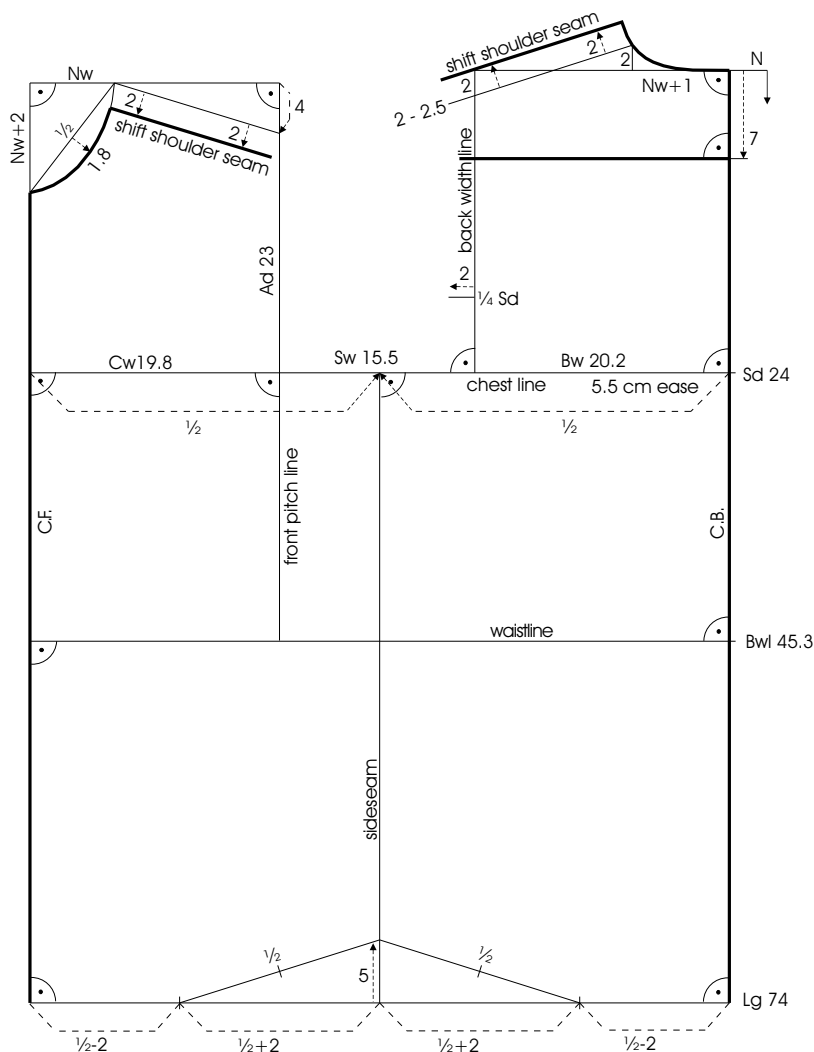
1 The basic shirt block is drafted on a vertical baseline (= centre back) from the left to the right. Start at the neck point (N) which represents the nape of the neck. From this point, measure the scye depth, the back waist length and the finished length downward on the vertical line. Square out to the left for the shoulder line, the chest line, the waistline, and the hem. Measure the neck width from the neck point (W) to the left and square up 2 cm. On the chest line, measure the back width to the left and square up from this point. Measure the scye width on the chest line to the left and square up and down to the waistline (= front pitch line). Measure the chest width to the left and square the centre front up and down. On the front pitch line, measure the armhole depth upward from the chest line. Square out to the centre front from this point.

**2**

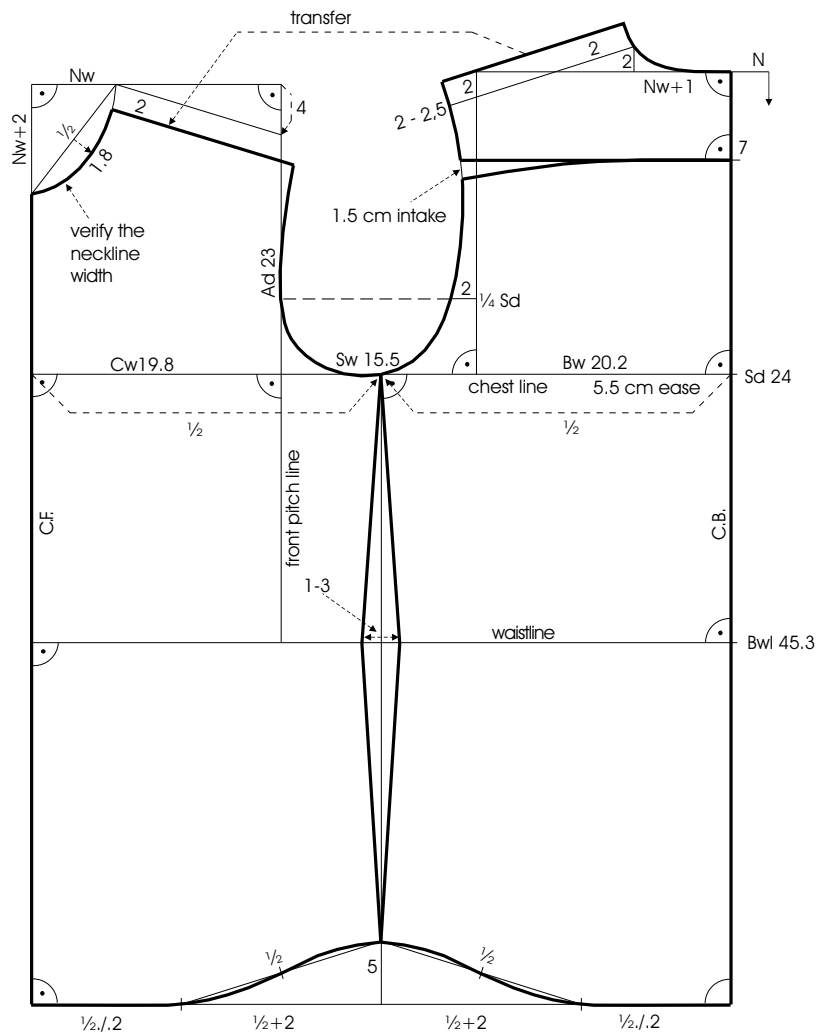
2 Draw the back neckline perpendicular to the centre back. Mark the yoke at the centre back 7 cm wide and square out to the left. Determine the shoulder slope with 2 cm. Draw a guideline to the neckline. For the shoulder width extend this line 2 cm to 2.5 cm from the back width to the left. From the chest line, measure $\frac{1}{4}$ of the scye depth (Sd) upwards along the back width line and square out to the left. Square out to the left from the armhole depth to the centre front. From the intersection with the centre front measure the neck width (Nw) to the right and the neck width (Nw) plus 2 cm downward. Connect both points with a guideline. Measure 4 cm for the front shoulder slope and connect the neckline corner and the shoulder slope with a guideline. Measure the distance between the centre front and the centre back and mark the halfway point. Square down from the halfway point to the hemline for the side seam.



3



3 Extend the yoke line over the back width line. Measure 2 cm from the $1/4$ -scye-depth point to the left. Shift the shoulder seam to the front. Draw a parallel line 2 cm above the back shoulder line. Extend the back neckline to the new shoulder seam. Mark the halfway point on the guideline for the front neckline and square down 1.8 cm. Draw the front neckline from the shoulder point over this point to the centre front as shown in the illustration. Relocate the front shoulder seam 2 cm to the front. Draw a parallel line 2 cm below the front shoulder seam. Measure 5 cm from the hemline upward. Mark the halfway point on the front and back hemline and measure 2 cm toward the centre front and centre back. Draw the slanted guidelines for the scooped hemline as shown in the illustration.

**4**

4 Draw the front and back hemline as shown in the illustration. Taper the sideseam at the waist and draw the sideseam slightly curved. Plot the back armhole from the shoulder seam to the $\frac{1}{4}$ -scye-depth point and further to the sideseam. Mark 1.5 cm intake at the armhole for contouring and draw the back yoke line. Measure the back shoulder seam and transfer this measurement to the new front shoulder seam. Plot the front armhole from the shoulder seam to the $\frac{1}{4}$ -scye-depth point and further to the side seam. Check the neck width. Measure the front and back neckline and compare this amount with the neck size of the measurement chart. If necessary, adjust the shape of the neckline to achieve the required length. Measure and check the amount of ease included, cut out all pattern pieces and check all seam transitions.

BASIC SHIRT SLEEVE BLOCK - MEASUREMENTS



Armhole Measurements

Measure the front and back armhole without the intake at the back yoke line and calculate the sleeve measurements according to the measurement chart.

Sleeve Width

Calculate the sleeve width from half the armhole circumference minus 0.2 cm to 0.4 cm.

Sleeve Cap Height

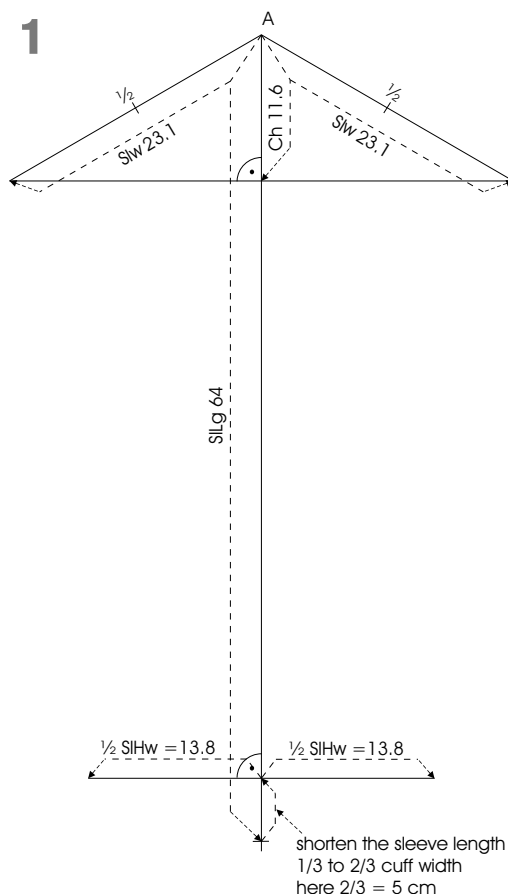
Calculate the sleeve cap height from one third of the armhole circumference minus 4 cm to 6 cm.

SLEEVE MEASUREMENTS			1/2
Ac	Armhole circumference	46.8 cm	23.4
SILg	Sleeve length	64.0 cm	
CALCULATIONS			
Slw	Sleeve width	23.1 cm	= 1/2 Ac minus 0.2 to 0.4 cm
Ch	Cap height	11.6 cm	= 1/3 Ac minus 4 to 6 cm
SIHw	Sleeve hem width	27.5 cm	= cuff length (23 cm) + pleat intake (4 cm) + slit overlap (0.5 cm)

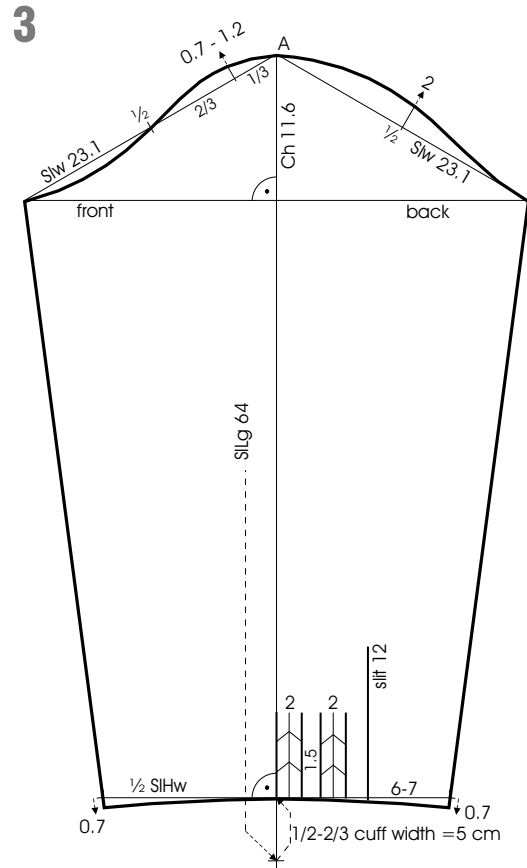
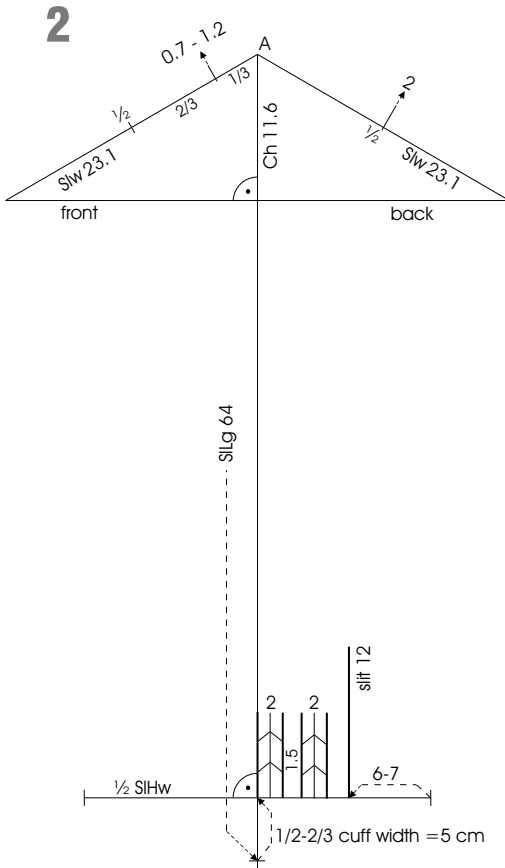
Sleeve Hem Width

Add the pleat intake and the slit overlap to the cuff length for the total sleeve hem width. The intake for the pleats is variable and determines the width of the lower sleeve. The addition of 0.5 cm for the slit overlap is calculated from the overlap width of 2.5 cm minus 1 cm seam allowance. This results in 1.5 cm for the overlap and underlap which is not wide enough for 2 x 1 cm seam allowance. 0.5 cm more width are needed.

BASIC SHIRT SLEEVE BLOCK

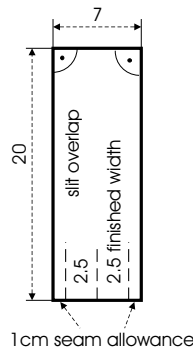
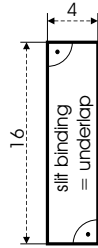
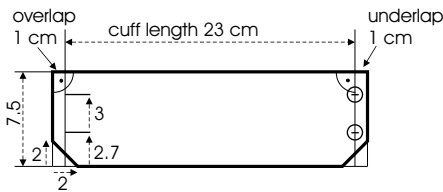


1 Draw the sleeve pattern on a vertical line. From the starting point (A) measure the sleeve cap height (Ch) and the sleeve length (SILg) downward. Shorten the sleeve length by 1/2 - 2/3 cuff width and measure 1/2 hem width to the left and right. Square out to the left and right at the sleeve cap height for the biceps line. Measure the sleeve width to both sides from the starting point diagonal to the biceps line and draw guidelines to these points. Mark the halfway points on the slanted guidelines.



2 Mark auxiliary points and short guidelines for the sleeve cap line as shown in the illustration. The position of the short perpendicular guidelines determines the shaping for the front and back sleeve. Mark the slit 12 cm long on the back sleeve hemline. Mark the pleats as shown with 2 cm intake. This corresponds to the sleeve hem calculation with a total of 4 cm intake for the pleats.

3 Plot the sleeve cap line according to the illustration. Draw the sleeve seams from the intersection of the sleeve width line and the biceps line to the hem width. Lengthen the sleeve seams 0.7 cm and draw the hemline slightly curved. Measure and compare the sleeve cap line and the armhole. If necessary, cut through the sleeve and adjust the included ease by overlapping or spreading the sleeve pieces at the cutting line.



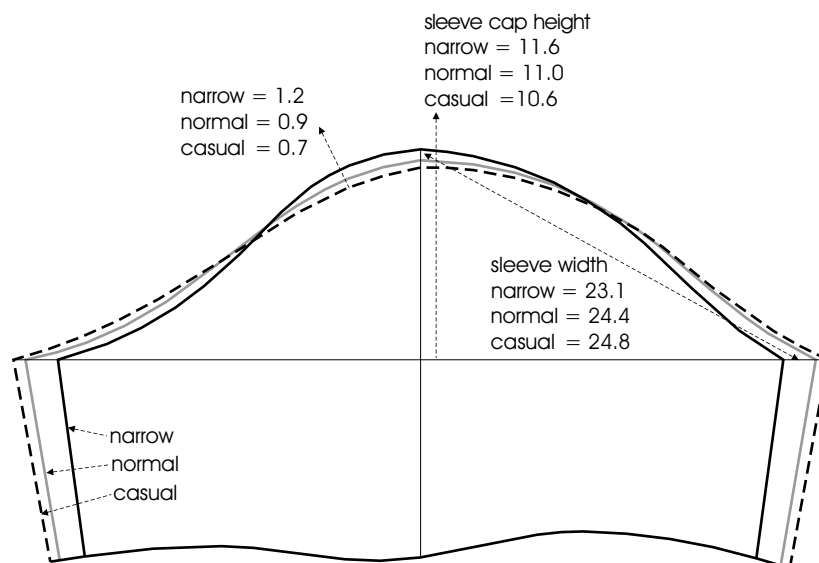
Cuff and Slit Pattern

Draw the cuff with the desired cuff width and length. Plot the cuff with the desired width and length. Add 1 cm overlap and underlap as shown on the illustration. Mark the button and buttonhole positions. Mitre the cuff corners. Draft the slit binding and the slit overlap. The overlap piece is two times the finished width of 2.5 cm plus the seam allowances of two times 1 cm = 7 cm in total.

Adapting the Sleeve Width and Cap Height

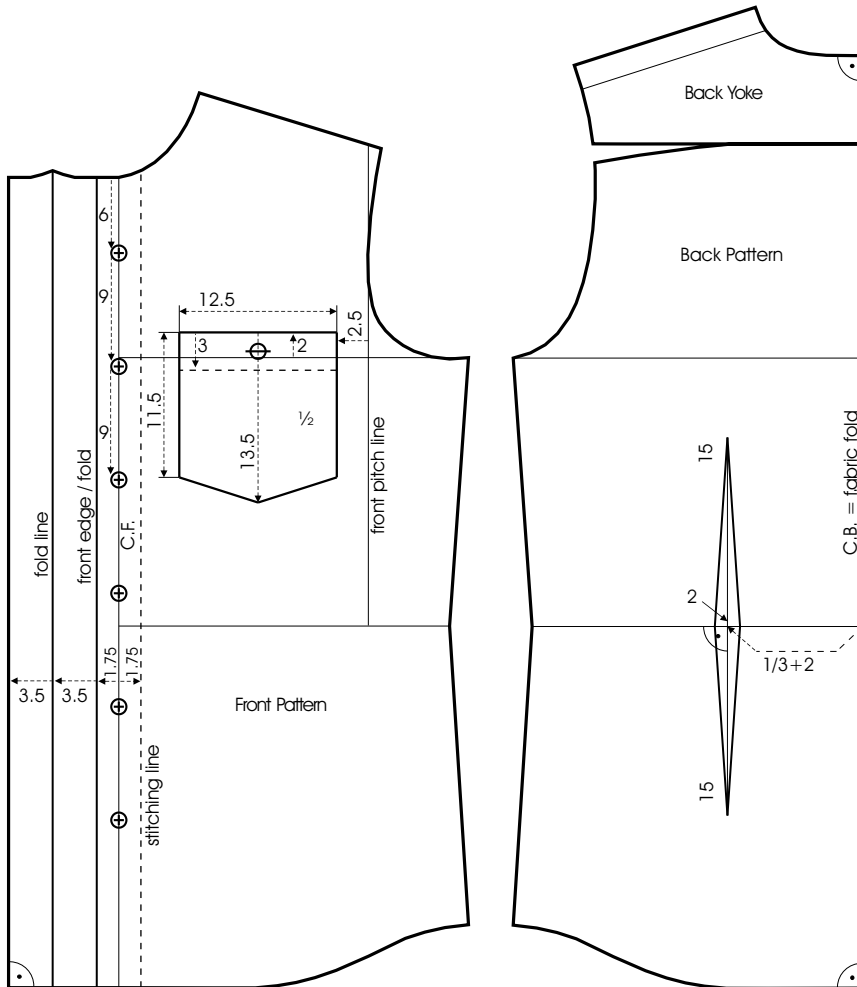
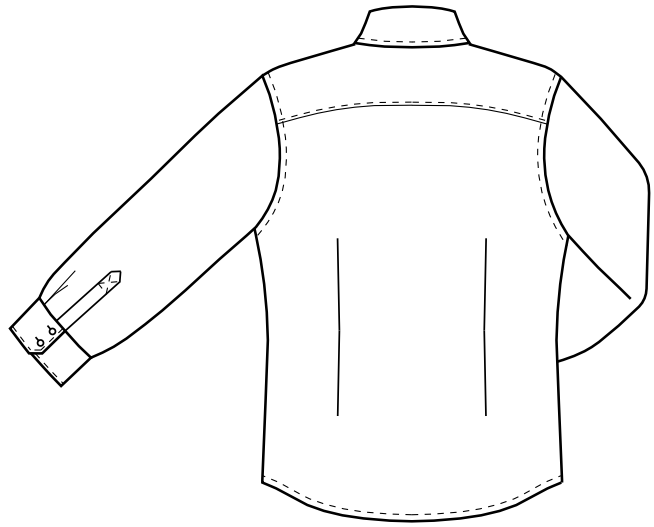
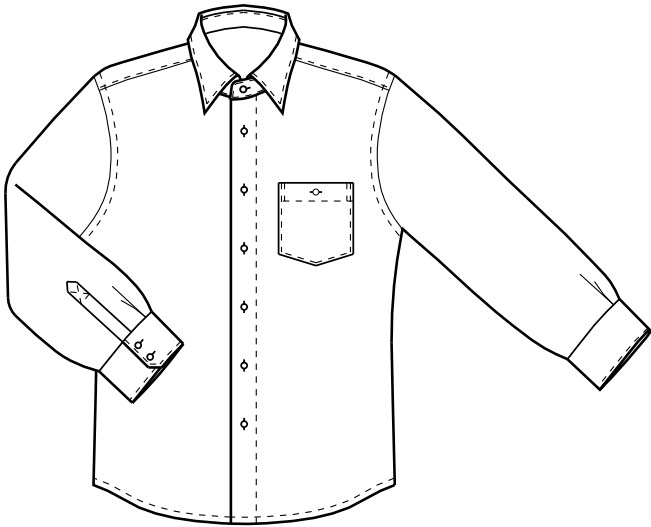
The illustration shows different sleeve variations for a narrow, normal and loose fitting sleeve pattern. The width of the sleeve and the height of the sleeve cap can be changed with different amounts used in the calculation. The sleeve shape should match the style of the shirt. A slim fitting shirt looks better with a narrow sleeve and a higher sleeve cap. The more correct fall of a narrow sleeve is also more comfortable due to a better comfort of movement.

A casual and loose fitting shirt can have a wider sleeve with a flat sleeve cap. Use less deduction for the calculation of the sleeve cap height to receive a higher sleeve cap ($1/3$ of the armhole circumference minus 4 cm) and deduct more for a more flat sleeve cap ($1/3$ Ac minus 6 cm). Mark the short perpendicular guidelines for the back sleeve cap 1.2 cm long for a higher sleeve cap and only 0.7 cm for a flat sleeve cap curve.





DRESS SHIRT PLACKET VARIATIONS: TOPSTITCHED STANDARD PLACKET



Front and Back Pattern

Draw the back waist dart with 2 cm intake as shown in the illustration. Add 1.75 cm overlap parallel to the centre front for the 3.5 cm wide buttonstand. Mark the same distance to the right side of the centre front for the position of the stitching line. Add two times 3.5 cm parallel to the front edge for the buttonstand fold. Mirror the neckline over the front edge and again over the fold line. Mark the button positions and draw the patch pocket as shown. Mark the grainline parallel to the front edge. Mark the centre back as fabric fold.

Buttonstand

The standard buttonstand is finished the same way on both sides. Fold the buttonstand twice and press. Topstitch the buttonstand as shown.

Lg 74

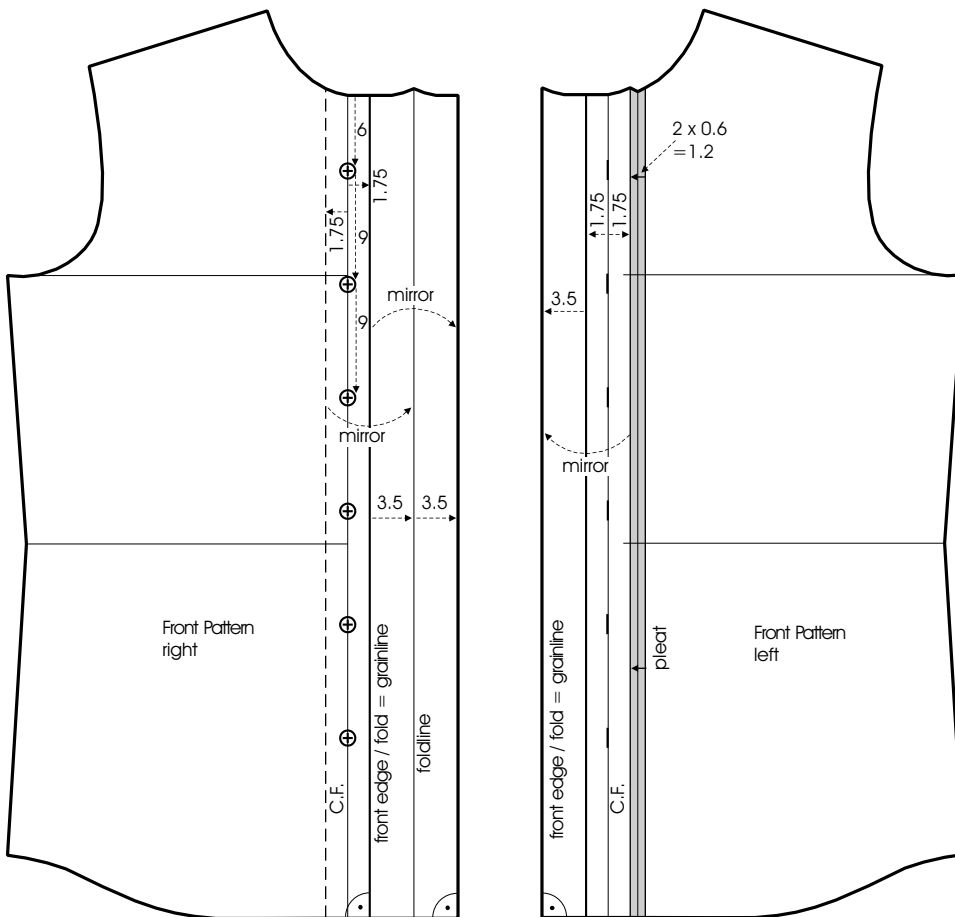
fold twice and topstitch





Front Pattern

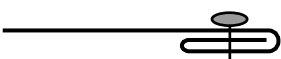
Add 1.75 cm overlap parallel to the centre front for the 3.5 cm wide buttonstand. Mark the same distance to the right side of the centre front. Separate the buttonstand from the left front pattern. Add two times 6 mm for the pleat intake and place the buttonstand piece back on the pleat intake. Add two times 3.5 cm parallel to the front edge for the buttonstand fold. Mirror the neckline over the front edge and again over the fold line. Sew the buttons through the folded underlap to keep the placket in place. Mark the grainline parallel to the front edge.



Buttonstand

Press the placket fold twice; topstitch the pleat depth with 6 mm distance to the edge and press the placket back to the front. Then topstitch the front edge. The placket has a clean appearance with this technique since there are no seam allowances visible on the left side of the placket. Fold and press the underlap at the right front pattern and secure the underlap with the buttons or topstitch if preferred.

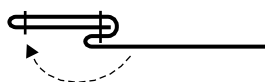
Placket Right:
- fold and press
- secure with button



1. Placket Left
- fold and press
- stitch 6 mm away from edge

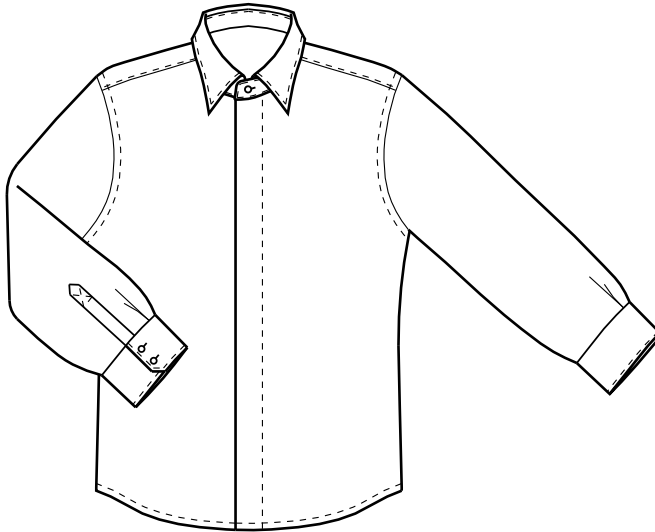


2. Placket Left
- fold placket to the front
- press forward
- topstitch 6 mm away from edge



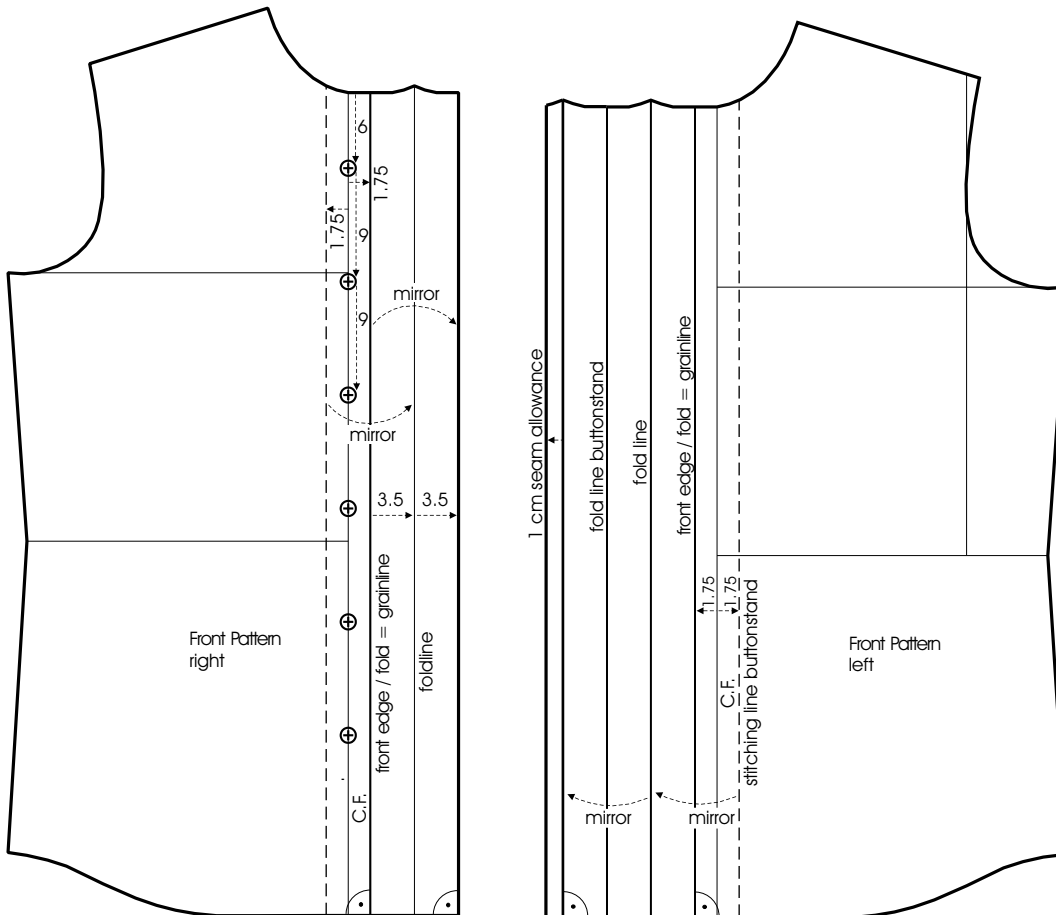


DRESS SHIRT PLACKET VARIATIONS: CONCEALED FLY FRONT PLACKET

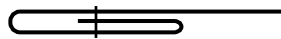


Front Pattern

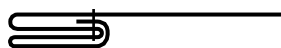
Add 1.75 cm overlap parallel to the centre front for the 3.5 cm wide placket. Mark the same width to the right side of the centre front for the stitching line. Mirror the placket width three times to the left for the concealed front fly. Add two times the placket width at the right front pattern for the underlap. The buttons will hold the placket together without topstitching. Mirror the neckline at the fold lines for the shape of the upper edges. Mark the button positions according to the illustration. Mark the grainline parallel to the front edge.



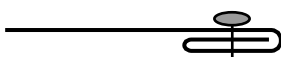
1. Fly Front Left:
 - fold and press
 - stitch centre line



2. Fly Front Left
 - fold to the front
 - press forward



- Fly Front Right:
- fold and press
 - secure with button



Buttonstand

Fold and press the placket at the left front twice and sew through the centre of the folded placket. Fold and press the lower part to the front. Sew the buttonholes on the lower part of the placket. Fold and press the underlap at the right front pattern and secure the underlap with the buttons or topstitch if preferred.

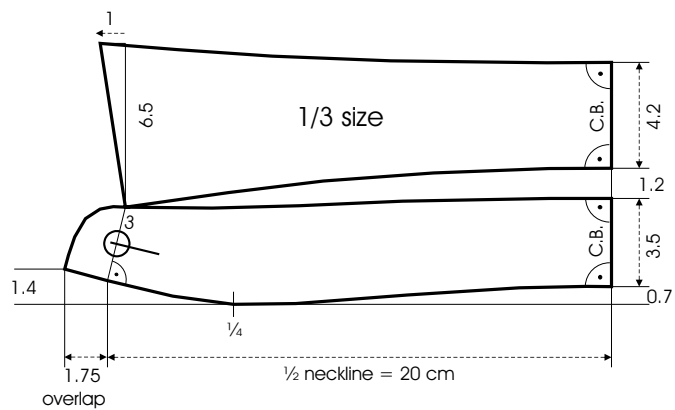
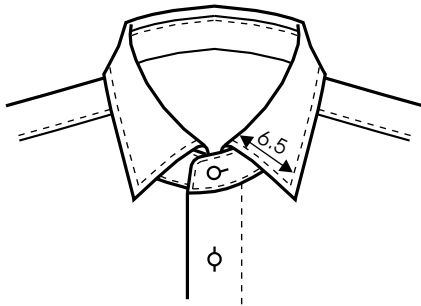
SHIRT COLLAR STYLES: CLASSIC SHIRT COLLAR



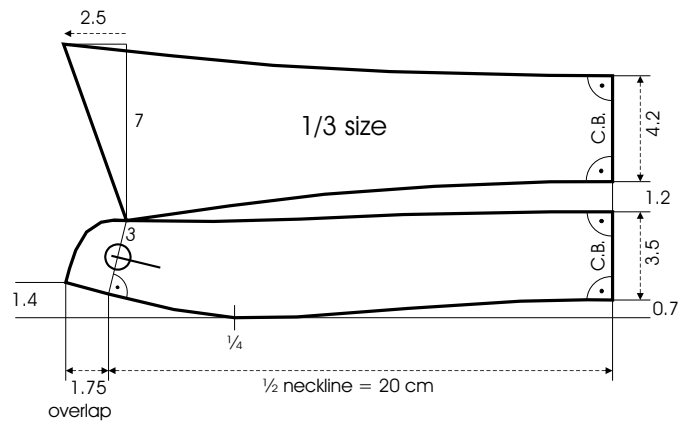
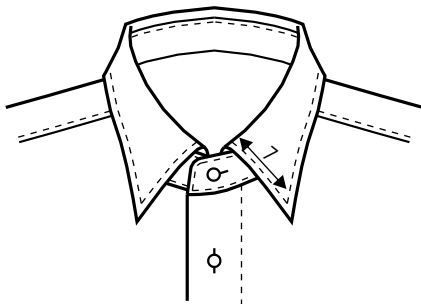
The following illustrations show the most common shirt collar styles. Collar width and shape can be varied according to the current trend or as desired. More collar styles can be found in our monthly periodical -Herren Rundschau- and other publications available in our web shop.

On a horizontal baseline measure $\frac{1}{2}$ of the neckline length and square up at the centre front and centre back. At the centre back measure first 0.7 cm for the shape of the stand and then the collar stand width upward. Measure 1.2 cm for the roundness of the collar and then the collar width. Draw short perpendicular lines to the left from all points. Add 1.75 cm at the centre front for the overlap. Square up 1.4 cm for the collar stand (raise the front less for a smaller overlap, e.g. 1.3 cm rise for 1.5 cm overlap).

Mark $\frac{1}{4}$ of the horizontal baseline. Draw the collar line over the $\frac{1}{4}$ -point as shown in the illustration. Draw the centre front of the collar stand perpendicular to the collar line. Plot the shape of the collar stand. Measure the collar width from the centre front upward and plot the collar shape according to the illustration. Mark the position for the buttonhole on the collar stand. Measure and compare the collar line and the neckline. Adjust the collar length at the centre back if necessary.

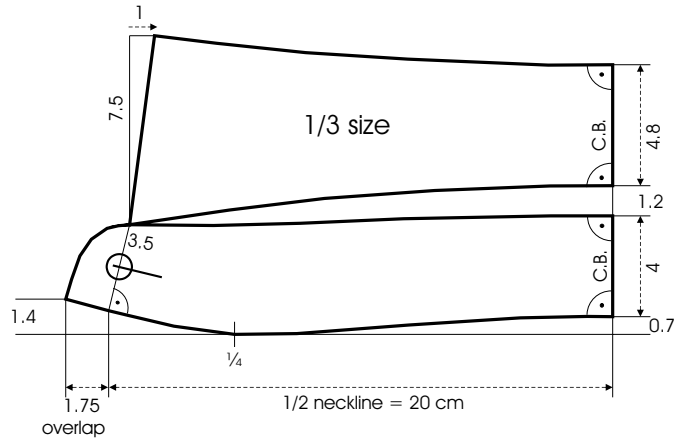
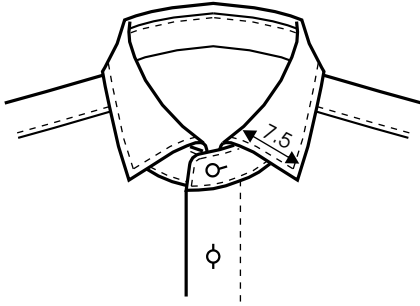


SHIRT COLLAR STYLES: LONDON COLLAR

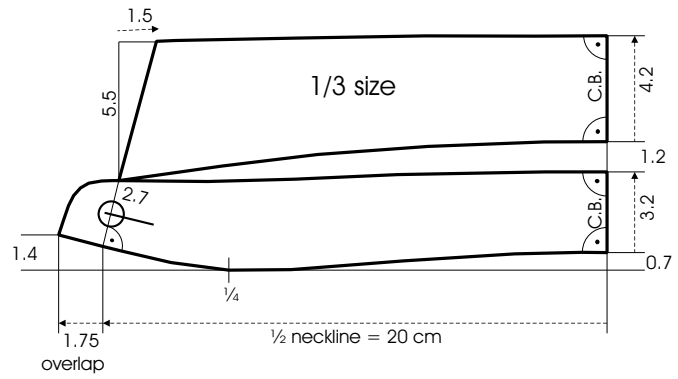
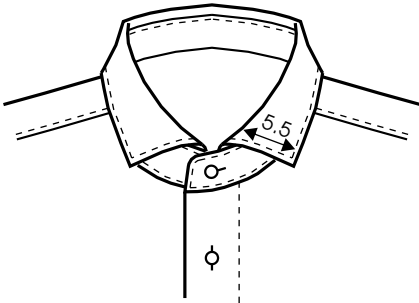


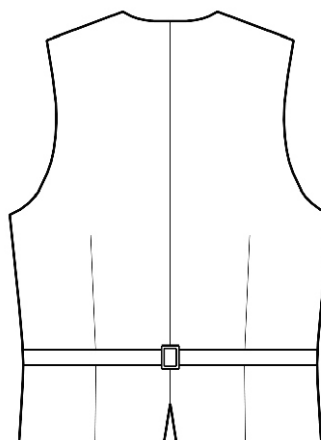
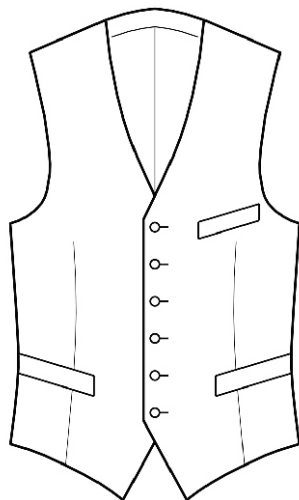


SHIRT COLLAR STYLES: KENT COLLAR



SHIRT COLLAR STYLES: SPREAD COLLAR





MEASUREMENT CHART SIZE 50

BODY MEASUREMENTS

			1/2	1/4	1/8
Bh	Body height	177.0 cm	88.5	44.3	22.2
Cg	Chest girth	100.0 cm	50.0	25.0	12.5
Wg	Waist girth	90.0 cm	45.0	22.5	

AUXILIARY MEASUREMENTS

Nw	Neck width	8.0 cm
Sd	Scye depth	25.0 cm
Bwl	Back waist length	46.0 cm
Ad	Armhole depth	25.0 cm

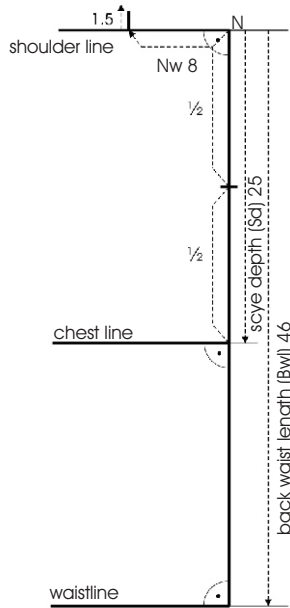
CALCULATION

			= 1/10 of 1/2 chest girth (Cg) + 3 cm
			= 1/8 chest girth (Cg) + 12.5 cm
			= 1/4 body height (Bh) + 1.5 cm to 2 cm
			= finished scye depth (Sd)
Bw	Back width	20.5 cm	= 2/10 Cg + 0 cm to 1 cm (up to 112 Cg) = 1/10 Cg + 10 cm to 10.5 cm (more than 112 Cg)
Sw	Scye width	13.0 cm	= 1/8 Cg + 0 cm to 0.5 cm
Cw	Chest width	21.0 cm	= 1/4 Cg minus 3.5 cm to 4 cm
Total width		54.5 cm	
		minus 50.0 cm	= 1/2 chest girth (Cg)
		= 4.5 cm	= ease at 1/2 chest

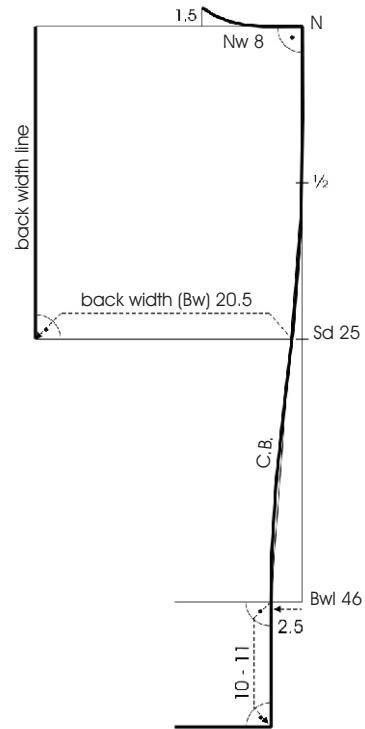
Abw	Abdomen width	21.5 cm	= 1/4 waist girth (Wg) minus 0.5 cm to 1 cm
------------	---------------	----------------	--



1



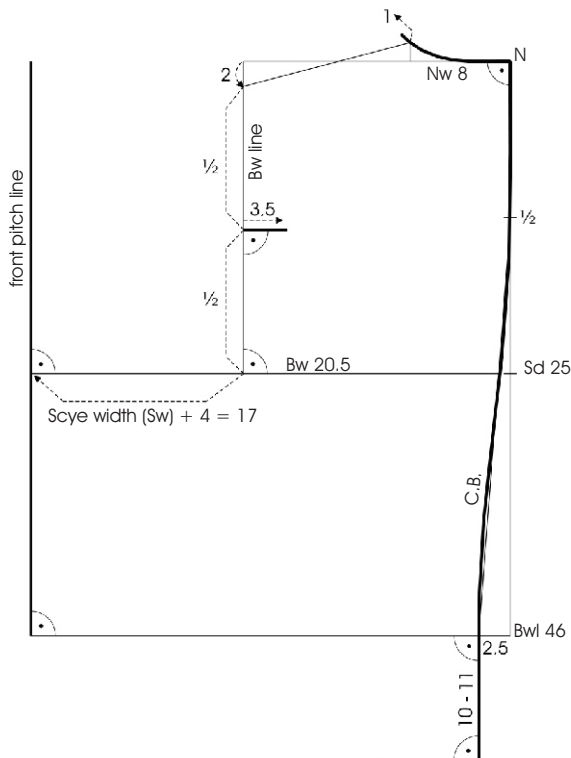
2



1 Draft the waistcoat pattern from the back to the front on a vertical baseline from right to left. Mark the neck point (N) as a starting point for the length measurements. This point corresponds to the nape of the neck. Measure the scye depth and the back waist length from the starting point downward. Square out to the left from all points for the shoulder line, the chest line and the waistline. Mark half the scye depth with a point.

2 Taper the centre back 2.5 cm at the waist and draw a guideline from this point to the 1/2-scye depth point. Square down and measure 10 – 11 cm perpendicular to the waistline at the centre back. Draw a short perpendicular guideline for the hemline. Draw the centre back seam as shown in the illustration. Measure the neck width from the neck point N to the left and square up 1.5 cm. Draw the back neckline as shown. On the chest line, measure the back width from the centre back to the left and square up to the shoulder line = this results in the back width line.

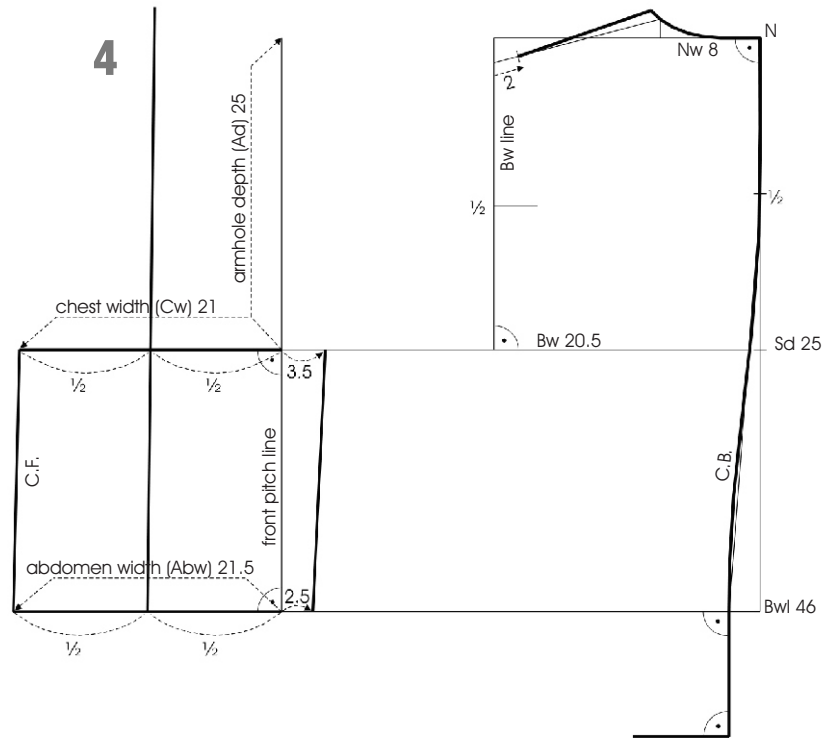
3



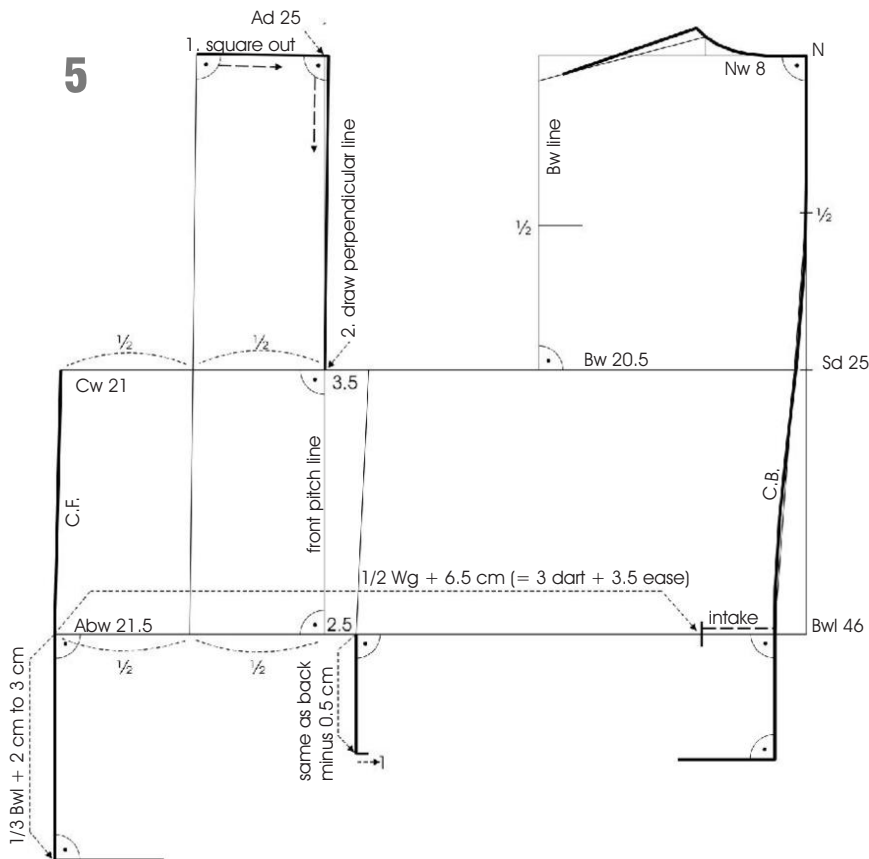
3 On the back width line, measure 2 cm from the shoulder line downwards for the shoulder slope and draw a guideline for the shoulder seam to the neckline. On the back width line, mark the halfway point between the shoulder seam and the chest line and measure 3.5 cm from this point to the right. Extend the neckline 1 cm as shown in the illustration. On the chest line, measure the scye width plus 4 cm for the separation of the front and back pattern to the left. Square up and down from this point and draw the front pitch line.



4 Extend the guideline for the shoulder seam 2 cm to the left and draw the finished shoulder seam from this point to the extended neckline. On the front pitch line, measure the armhole depth from the chest line upwards. On the chest line, measure the chest width from the front pitch line to the left. On the waistline, measure the abdomen width from the front pitch line to the left. Connect both points with a line. Divide the chest width and the abdomen width in half and connect the halfway points with a line. Extend this line upwards. On the chest line, measure 3.5 cm from the front pitch line to the right. On the waistline, measure 2 cm from the front pitch line to the right and draw the front side seam over both points.



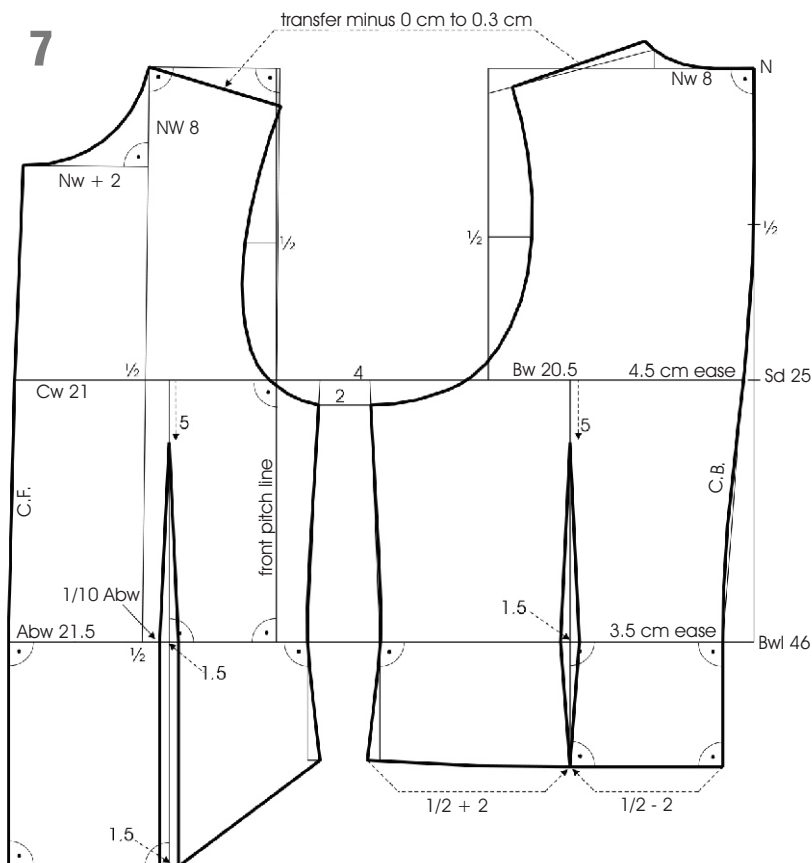
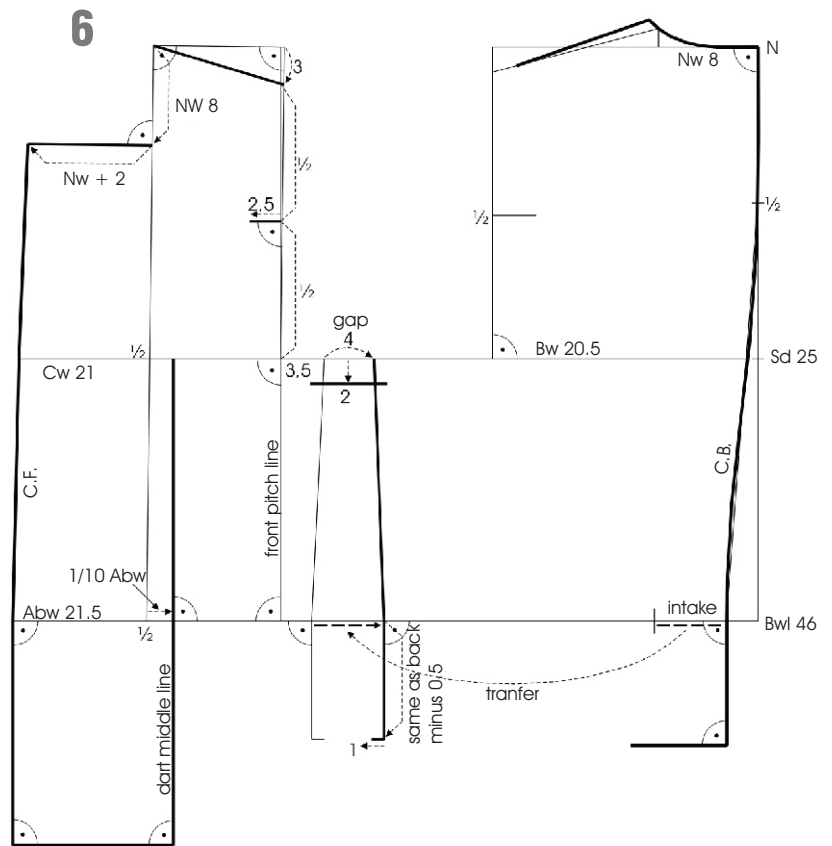
5 Draw a line from the armhole depth perpendicular to the extended middle line of the chest and abdomen width. Then draw another line downwards to the intersection of the front pitch line and the chest line and also perpendicular to the new line that is connecting the armhole depth and the front middle line. Square down from the intersection of the waistline and the centre front and calculate the length below the waist with $\frac{1}{3}$ of the back waist length plus 2 cm to 3 cm. Draw a short perpendicular guideline for the front hemline. Square down from the waistline at the front side seam and mark the length of the front side seam the same as the centre back minus 0.5 cm. From this point, measure 1 cm to the right. Calculate the waist measurement: On the waistline, measure $\frac{1}{2}$ of the waist girth plus 6.5 cm (3 cm for the dart and 3.5 cm ease) from the centre front to the right. Measure the intake from this point to the centre back.





BASIC WAISTCOAT BLOCK FOR NORMAL SIZES

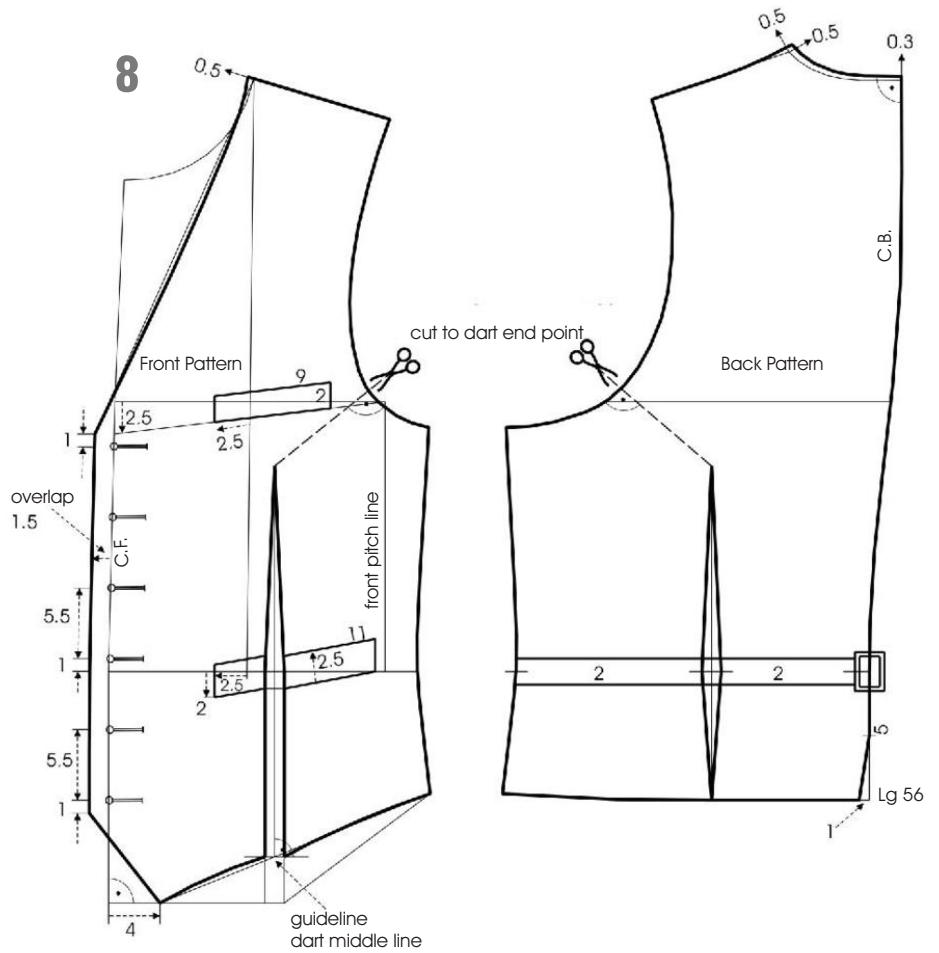
6 On the chest line, measure 4 cm from the front side seam to the right for the position of the back side seam. This amount corresponds to the separation of the front and back pattern. Measure the intake of the waist measurement as marked at the centre back. Transfer this amount to the back side seam at the waist. Draw the back side seam the same length as the front side seam and measure 1 cm to the left. Lower the armhole 2 cm at the side seam. For the front shoulder slant, measure 3 cm from the armhole depth downwards and draw a guideline to the front neckline. Mark the halfway point between the front shoulder guideline and the chest line and measure 2.5 cm from this point to the left. Measure the neck width from the front neck point downwards along the front middle line and square out to the left. Measure the neck width plus 2 cm along this perpendicular line and draw the centre front line to this point. The centre front line runs over two corners - this is quite normal for menswear design and reflects the body contour. The centre front line will be blended later at these corners.



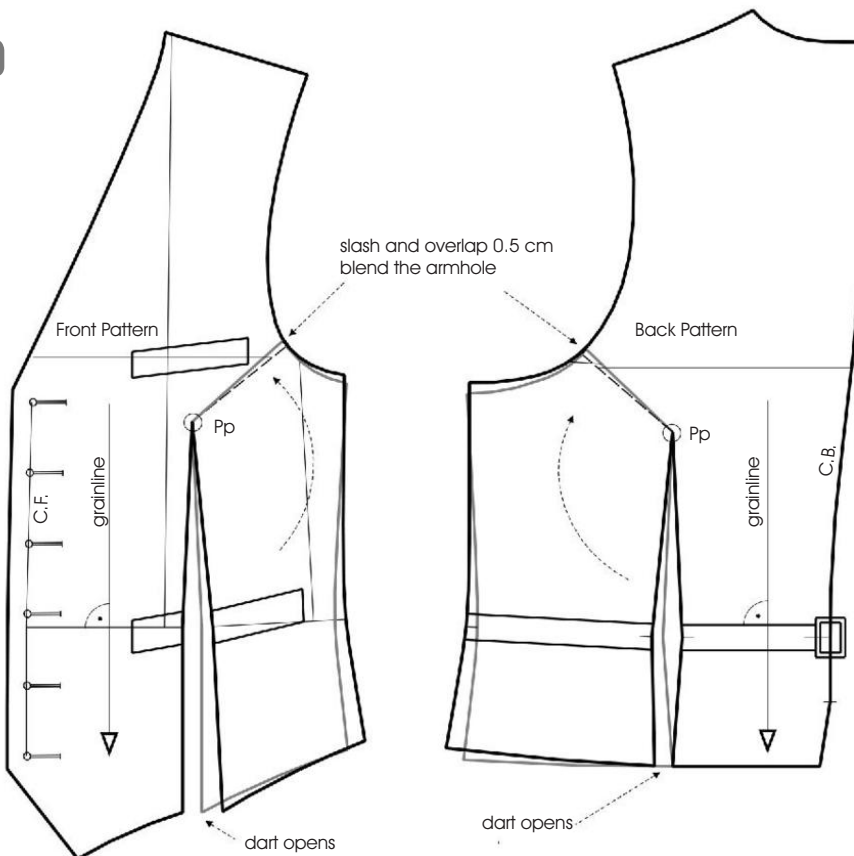
7 Measure the back shoulder seam and transfer this length minus 0 cm to 0.3 cm to the front shoulder seam. Extend the front shoulder seam towards the armhole. Draw the front neckline and the front and back armhole as shown in the illustration. Shape the front and back side seam as shown. Draw the front waist dart with 1.5 cm dart intake at the waist and at the hem. Mark the dart end point 5 cm below the chest line. Draw the front hemline from the right dart leg to the front side seam. Mark the halfway point at the back hemline and mark the position of the back waist dart 2 cm more to the back. Draw a perpendicular line to the waist line and extend this line upwards. Draw the back waist dart with 1.5 cm intake. Mark the dart end point 5 cm below the chest line. Finish the back hemline slightly curved and at right angles to the centre back and the waist dart. Measure and verify the amount of ease included at the chest and at the waist and compare these measurements with the calculation in the measurement chart.



8 For a better fit at the shirt collar, raise the back shoulder seam 0.5 cm. Also raise the back and front neckline 0.5 cm at the shoulder and 0.3 cm at the centre back. Redraw the back neckline and the back shoulder seam. Mark the back vent as shown in the illustration and draw the back tab. Mark the button positions and the front length: Mark the middle button 1 cm above the waistline. Mark the remaining buttons 6 cm apart. Add 1.5 cm overlap between the upper button and the lower button. Extend the front edge 1 cm above and below the upper and lower button height. On the guideline for the front hemline, measure 4 cm from the centre front to the right and draw the pointed hemline as shown in the illustration. Draw the front neckline slightly hollow to the raise neck point. Draw the welt pocket according to the illustration. Mark the cutting lines for the armhole shaping from the dart end points perpendicular to the front and back armhole. Mark the position of the front waist dart. Calculate the distance between the front middle line and the dart centre line with $1/10$ of the abdomen width. Square up and down from the waistline from the dart centre line.



9

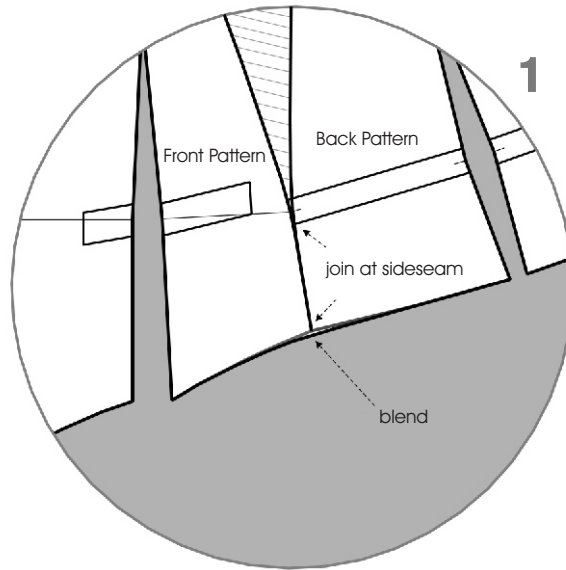


9 Cut through the front and back pattern from the armholes to the dart end points. Cut out the dart intake on the front and back pattern. Overlap the front and back pattern pieces 0.5 cm each at the armhole curves for a better fit at the armhole. The back dart opens at the hem and the front dart intake at the hem is larger. The armhole fit is more contoured and closer to the body. Blend the front and back armhole curve. Mark the grainline perpendicular to the waistline on the front and back pattern.

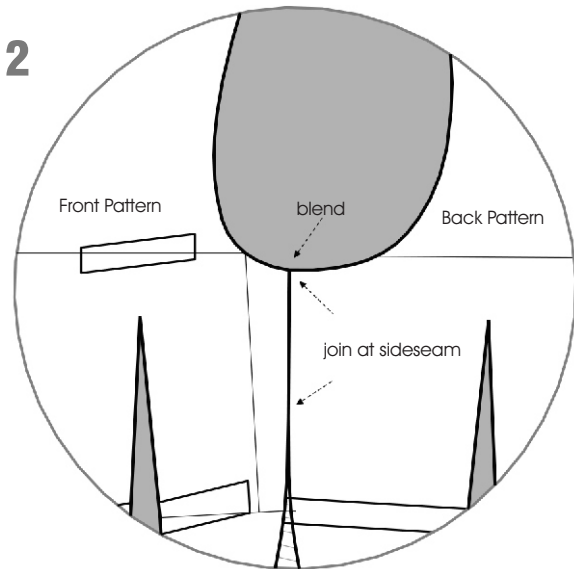


Check the Seam Transitions:

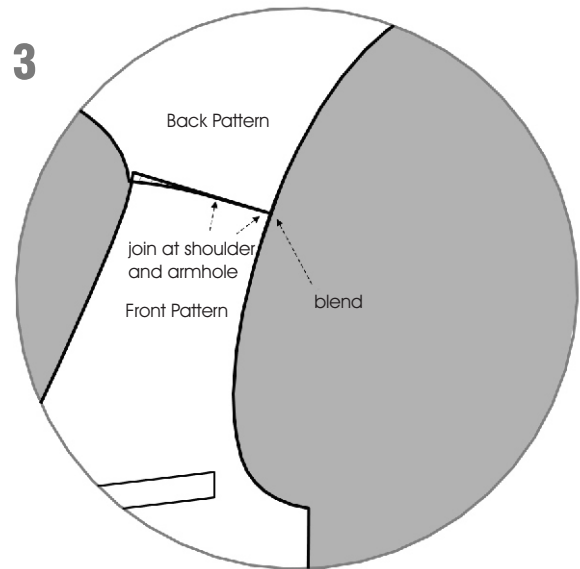
Cut out the pattern pieces, join them at the seams and check the seam transitions. Adjust and blend the seam transitions if necessary.



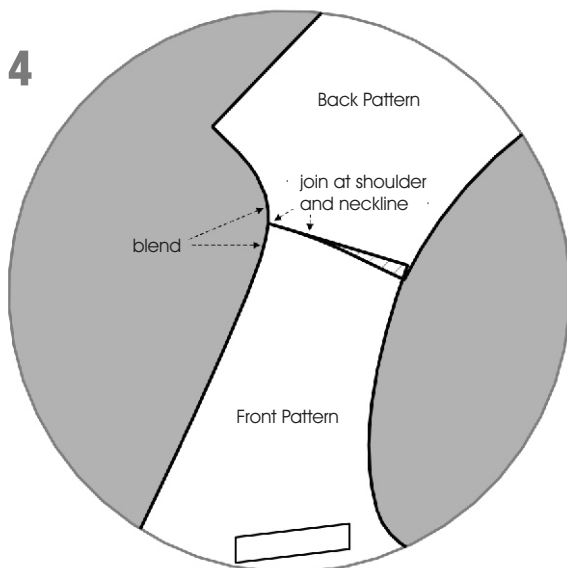
1.Hemline at the side seam



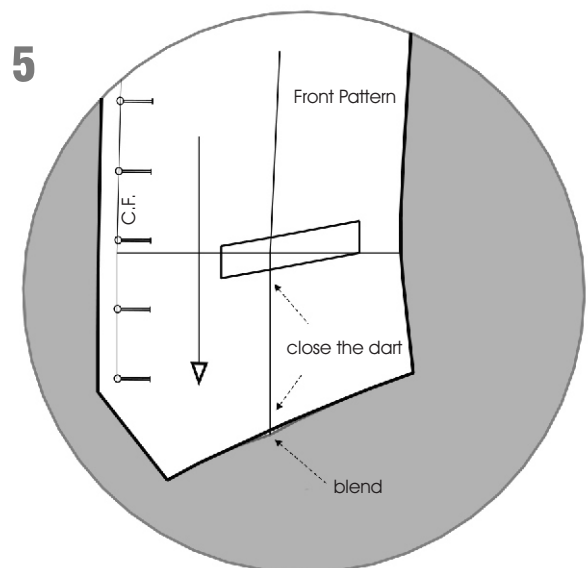
2.Armhole at the side seam



3.Armhole at the shoulder



4.Neckline at the shoulder

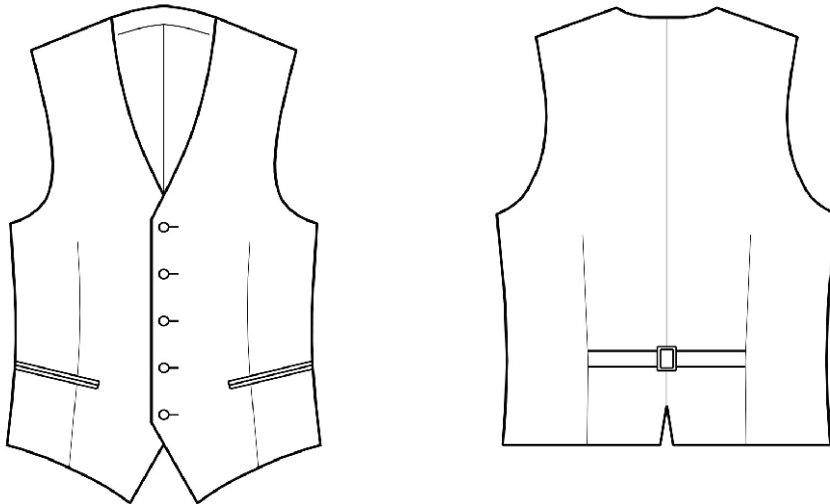


5.Hemline with closed front dart



Basic Waistcoat Block for a Stocky Figure with Protruding Belly - Construction with Front Dart -

The measurement charts shows body measurements typical for a stocky figure with a slightly protruding belly. The construction of the front pattern for a protruding belly varies from the standard waistcoat pattern to accommodate the belly and to prevent an excessively round front edge. At the same time, the excess width below the protruding belly has to be taken out at the chest dart. This ensures a better fit at the front.

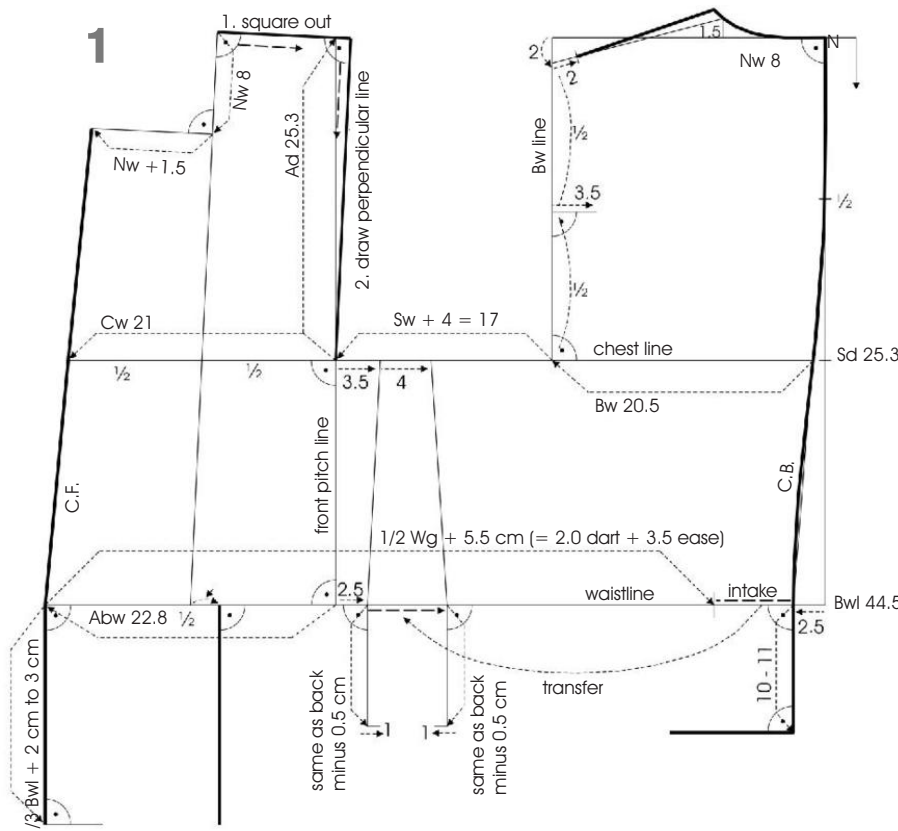


1 On a vertical line, measure the scye depth and the back waist length from the starting point (N) downward. Square out to the left from all points for the shoulder line, the chest line and the waistline. Mark half the scye depth with a point. Taper the centre back 2.5 cm at the waist and draw a guideline from this point to the 1/2-scye depth point. Square down and measure 10 cm to 11 cm perpendicular to the waistline at the centre back. Draw a short perpendicular guideline for the hemline. Draw the centre back seam as shown in the illustration.

Measure the neck width from the neck point N to the left and square up 1.5 cm. Draw the back neckline as shown. On the chest line, measure the back width from the centre back to the left and square up to the shoulder line. Measure 2 cm from the shoulder line downwards for the shoulder slope and draw a guideline for the shoulder seam to the 1.5-cm point at the neckline. Trim the shoulder width 2 cm and extend the neckline 1 cm. Draw the shoulder seam as shown in the illustration.

On the back width line, mark the halfway point between the shoulder seam and the chest line and measure 3.5 cm from this point to the right. On the chest line, measure the scye width plus 4 cm for the separation of the front and back pattern to the left. Square up and down from this point and draw the front pitch line.

On the front pitch line, measure the armhole depth from the chest line upwards. On the chest line, measure 3.5 cm from the front pitch line to the right. On the waistline, measure 2 cm from the front pitch line to the right and draw the front side seam over both points. Lengthen the side seam the same length as the centre back minus 0.5 cm and square out to the right.





BASIC WAISTCOAT BLOCK FOR A STOCKY FIGURE

On the chest line, measure the chest width from the front pitch line to the left. On the waistline, measure the abdomen width from the front pitch line to the left. Connect both points with a line. Divide the chest width and the abdomen width in half and connect the halfway points with a line. Extend this line upwards. Draw a line from the armhole depth perpendicular to the extended middle line of the chest and abdomen width. Then draw another line downwards to the intersection of the front pitch line and the chest line and also perpendicular to the new line that is connecting the armhole depth and the front middle line. Square down from the intersection of the waistline and the centre front and

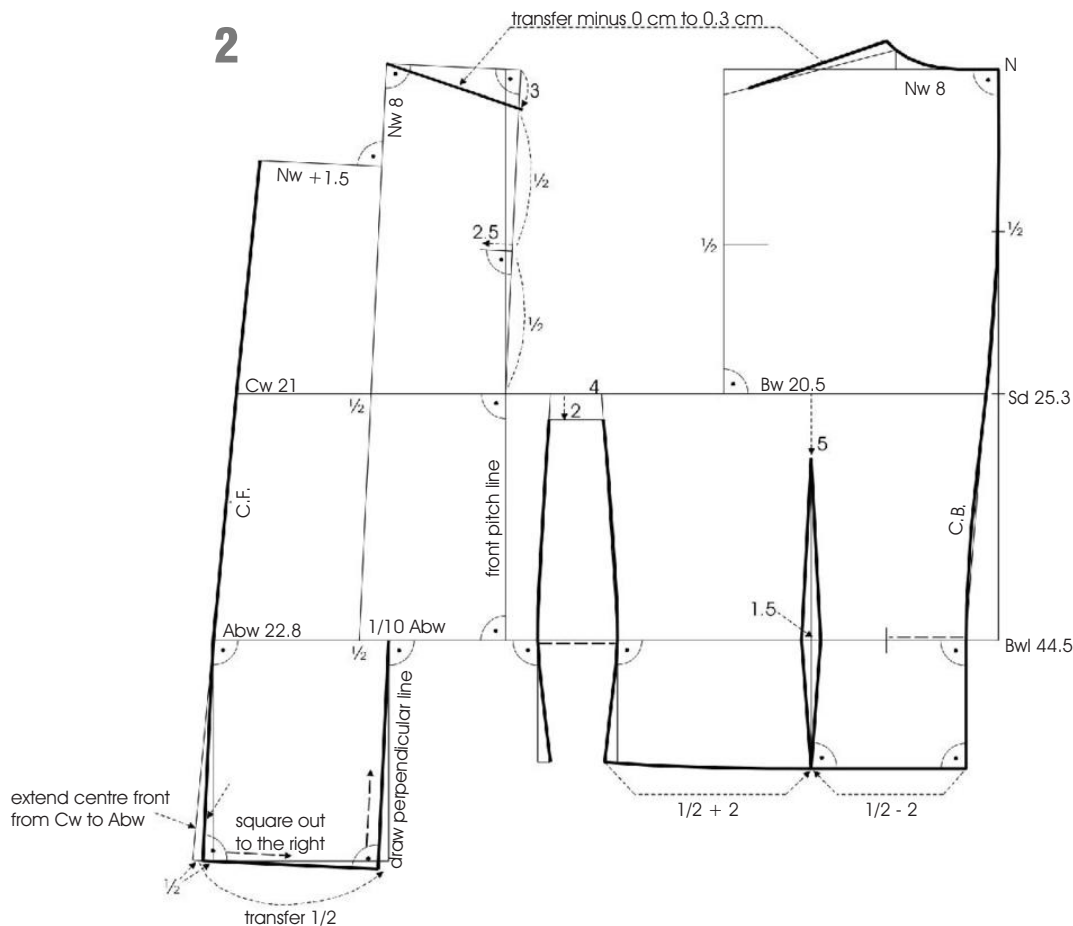
calculate the length below the waist with $\frac{1}{3}$ of the back waist lengths plus 2 cm to 3 cm. Draw a short perpendicular guideline for the front hemline. Calculate the waist measurement:

On the waistline, measure $\frac{1}{2}$ of the waist girth plus 5.5 cm (2 cm for the dart and 3.5 cm ease) from the centre front to the right. Measure the intake from this point to the centre back. On the chest line, measure 4 cm from the front side seam to the right for the position of the back side seam. This amount corresponds to the separation of the front and back pattern. Measure the intake of the waist measurement as marked at the centre back.

2 For the front shoulder slant, measure 3 cm from the armhole depth downwards and draw a guideline to the front neckline. Measure the back shoulder seam and transfer this length minus 0 cm to 0.3 cm to the front shoulder seam. Extend the front shoulder seam towards the armhole. Mark the halfway point between the front shoulder guideline and the chest line and measure 2.5 cm from this point to the left. Lower the armhole 2 cm at the side seam. Shape the front and back side seam as shown. Mark the halfway point at the back hemline and mark the position of the back waist dart 2 cm more to the back. Draw a perpendicular line to the waistline and extend this line upwards. Draw the back waist dart with 1.5 cm intake. Mark the dart end point 5 cm below the chest line. Finish the back hemline slightly curved and at right angles to the centre back and the waist dart. Lengthen the centre front

from the chest line over the waistline downwards to the same length as the vertical guideline. Mark the new centre front halfway between the extended line and the vertical line as shown in the illustration. Square out to the right for the new front hemline and draw a perpendicular line from the abdomen point ($\frac{1}{10}$ abdomen width) downward to the new front hemline. The construction of the angled line transfers the reduction at the centre front to the front dart at $\frac{1}{10}$ abdomen width.

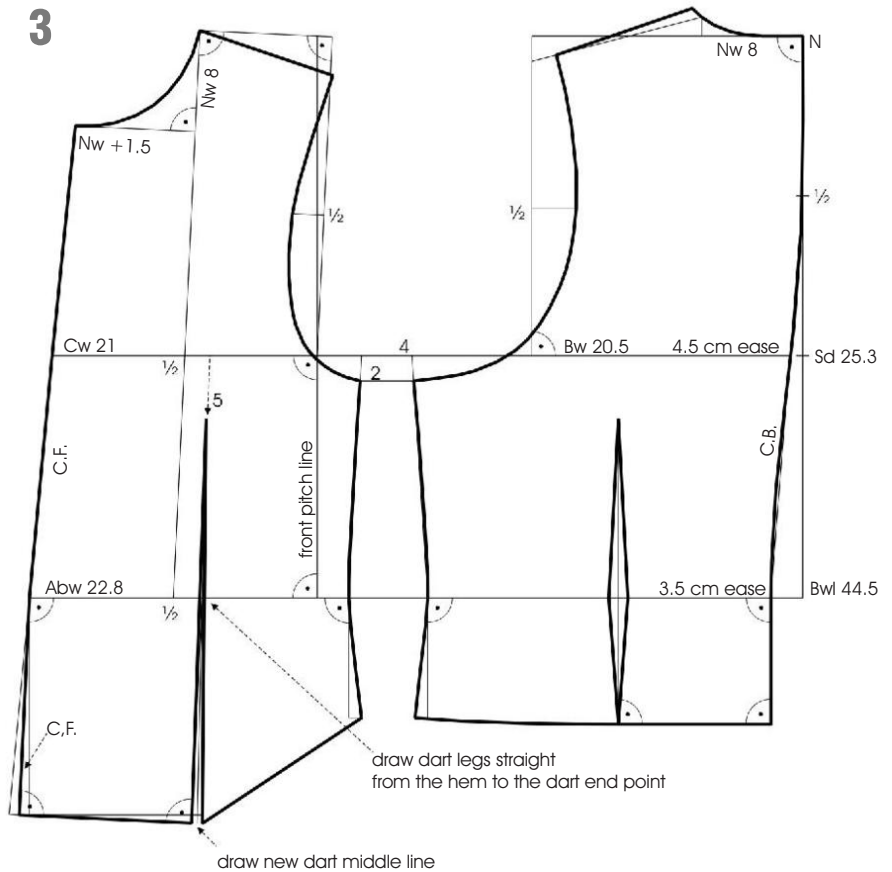
Transfer this amount to the back side seam at the waist. Draw the back side seam the same length as the front side seam and measure 1 cm to the left. Mark the position of the front waist dart. Calculate the distance between the front middle line and the dart centre line with $\frac{1}{10}$ of the abdomen width. Square up and down from the waist line for the dart centre line.



BASIC WAISTCOAT BLOCK FOR A STOCKY FIGURE



3 Draw the front neckline and both armholes as shown in the illustration. Transfer the intake at the centre front to the 1/10-abdomen line and draw the front dart to the dart end point 5 cm below the chest line. Equalize the seam lengths of the dart legs and draw the remaining front hemline from the dart to the side seam. Measure and verify the amount of ease included at the chest and at the waist and compare these measurements with the calculation in the measurement chart.



MEASUREMENT CHART SIZE 25

BODY MEASUREMENTS

		1/2	1/4	1/8	
Bh	Body height	171.0 cm	85.5	42.8	21.4
Cg	Chest girth	100.0 cm	50.0	25.0	12.5
Wg	Waist girth	94.0 cm	47.0	23.5	

AUXILIARY MEASUREMENTS

Nw	Neck width	8.0 cm
Sd	Scye depth	25.3 cm
Bwl	Back waist length	44.5 cm
Ad	Armhole depth	25.3 cm

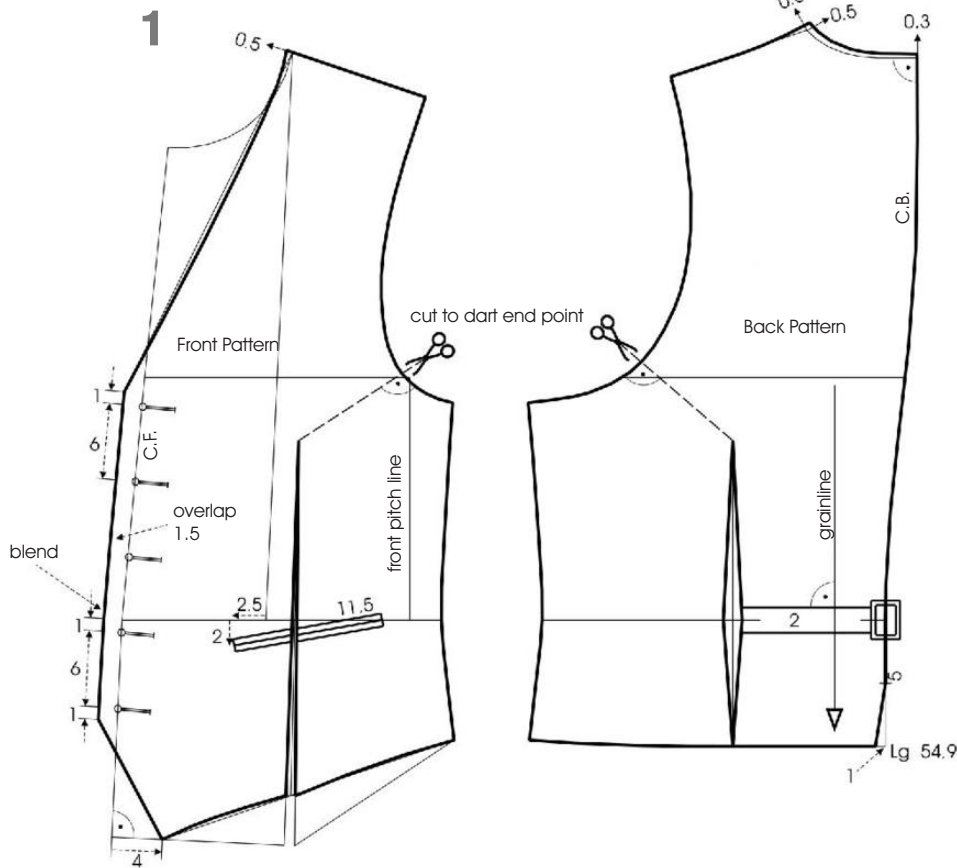
CALCULATIONS

Nw	Neck width	8.0 cm	= 1/10 of 1/2 Cg + 3 cm
Sd	Scye depth	25.3 cm	= 1/8 Cg + 12.5 cm to 13 cm
Bwl	Back waist length	44.5 cm	= 1/4 Bh + 1.5 cm to 2 cm
Ad	Armhole depth	25.3 cm	= finished Sd
Bw	Back width	20.5 cm	= 2/10 Cg + 0 cm to 1 cm (up to 100 Cg) = 1/10 Cg + 10 cm to 10.5 cm (over 100 Cg)
Sw	Scye width	13.0 cm	= 1/8 Cg + 0 cm to 0.5 cm
Cw	Chest width	21.0 cm	= 1/4 Cg - 3.5 cm to 4 cm
Total		54.5 cm	
		- 50.0 cm	= 1/2 Cg
		= 4.5 cm	= ease at chest

Abw	Abdomen width	22.8 cm	= 1/4 Wg - 0.5 cm to 1 cm
------------	---------------	---------	---------------------------



BASIC WAISTCOAT BLOCK FOR A STOCKY FIGURE



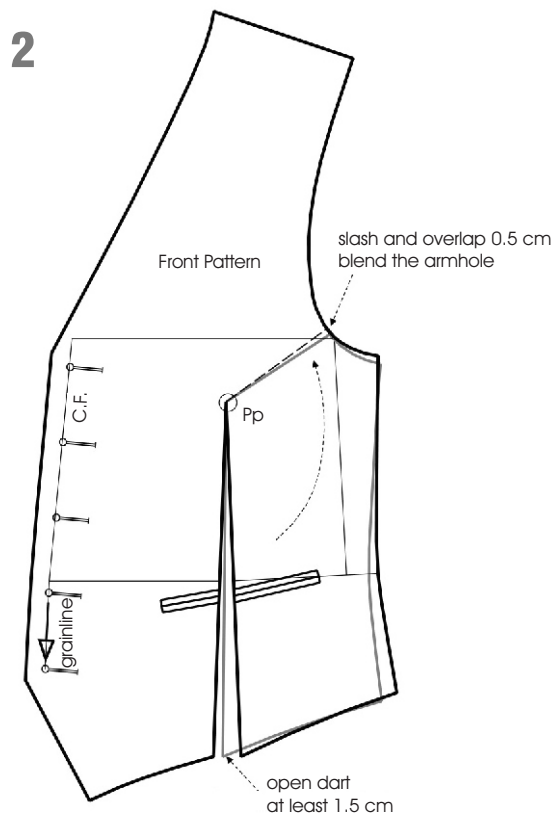
1 For a better fit at the shirt collar, raise the back shoulder seam 0.5 cm. Also raise the back and front neckline 0.5 cm at the shoulder and 0.3 cm at the centre back. Draw the new back neckline. Mark the back vent as shown in the illustration and draw the back tab which is attached in the waist dart.

Mark the button positions and the front length: Mark the centre button 1 cm below the waistline. Mark the buttons 6 cm apart. Add 1.5 cm overlap between the upper button and the lower button. Extend the front edge 1 cm above and below the upper and lower button. On the guideline for the front hemline, measure 4 cm from the centre front to the right and draw the pointed hemline as shown in the illustration. Draw the front neckline slightly hollow to the raise neck point. Draw the double welt pocket according to the illustration. Mark the cutting lines for the armhole shaping from the dart end points perpendicular to the front and back armhole.

Mark the grainline perpendicular to the waist line on the back pattern.

2 Cut through the back pattern (not shown here) from the armhole to the dart end point. Cut out the dart intake on the back pattern. Overlap the back pattern pieces 0.5 cm at the armhole curve for a better fit at the armhole. Cut through the front pattern from the armhole to the dart end point and overlap the front pattern pieces so far at the armhole that the waist dart opens at least 1.5 cm at the hem.

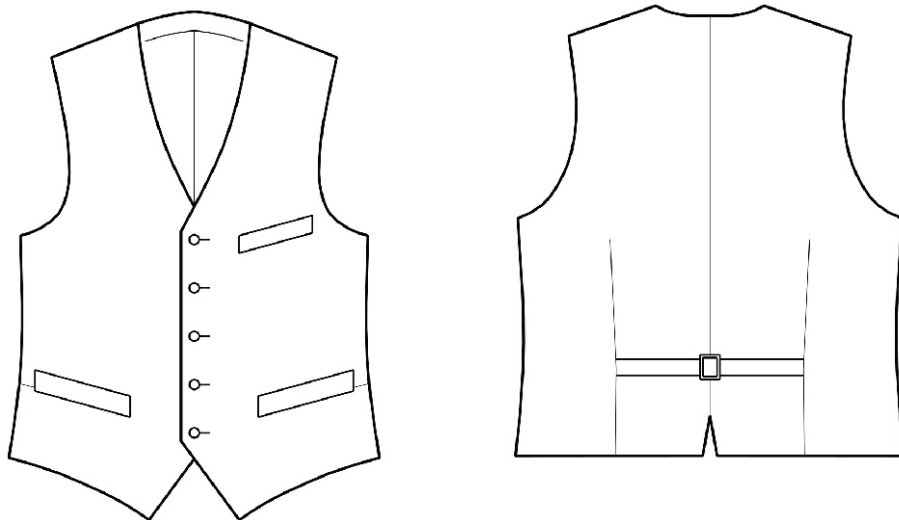
This amount corresponds to twice the seam allowance. The overlap at the armhole should be at least 0.5 cm for a closer fit. Blend the front and back armhole curve. Mark the grainline along the lower part of the centre front on the front pattern.



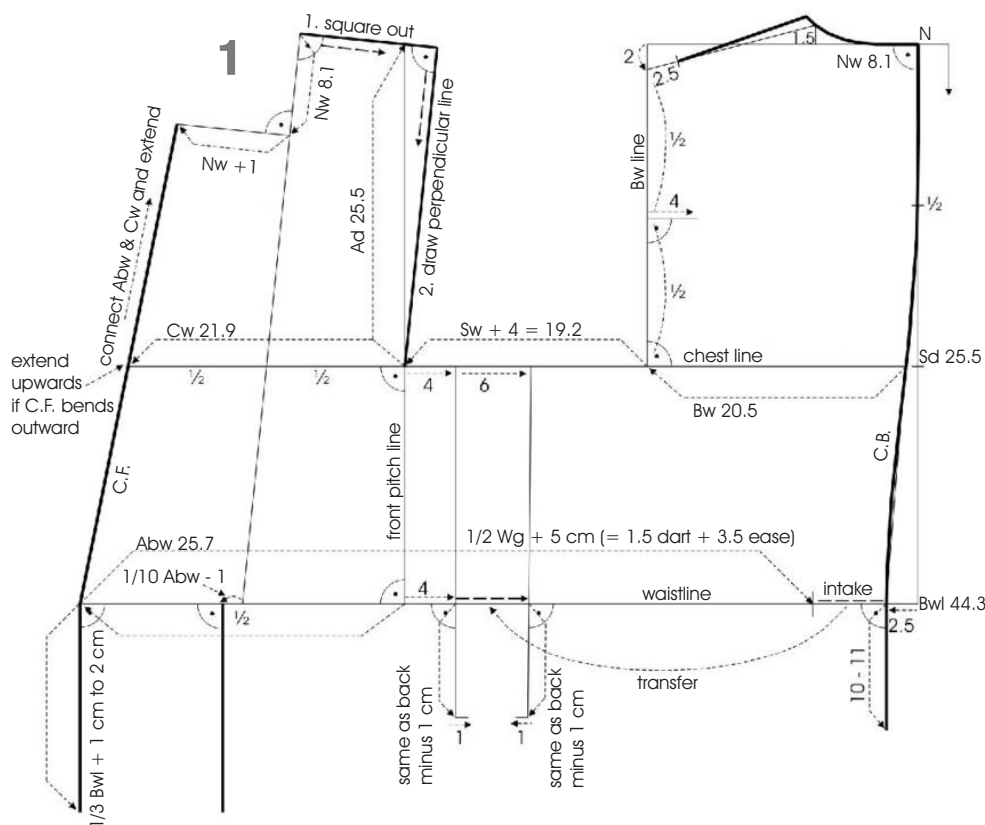


Basic Waistcoat Block for a Full Figure with Protruding Belly - Construction with Side Dart -

The measurement charts shows body measurements typical for a figure with a protruding belly. The front pattern must be adjusted to accommodate the belly figure and to prevent an excessively bent front edge. At the same time, the excess width below the protruding belly will be taken out at the hem and relocated to the side dart for a better fit below the belly.



1 On a vertical line, measure the scye depth and the back waist length from the starting point (N) downward. Square out to the left from all points. Mark half the scye depth with a point. Taper the centre back 2.5 cm at the waist and draw a guideline from this point to the 1/2-scye depth point. Square down and measure 10 – 11 cm perpendicular to the waistline at the centre back. Draw the centre back seam as shown in the illustration. Measure the neck width from the neck point W to the left and square up 1.5 cm. Draw the back neckline as shown and extend the neckline 1 cm. On the chest line, measure the back width from the centre back to the left and square up to the shoulder line. Measure 2 cm from the shoulder line downwards for the shoulder slope and draw a guideline for the shoulder seam to the 1.5-cm point at the neckline. Trim the shoulder width 2.5 cm. Draw the shoulder seam as shown in the illustration. On the back width line, mark the halfway point between the shoulder seam and the chest line and measure 4 cm from this point to the right. On the chest line, measure the scye width plus 6 cm for the separation of the front and back pattern to the left. Square up and down from this point and draw the front pitch line. On the front pitch line, measure the armhole depth from the chest line upwards. On the chest line, measure 4 cm from the front pitch line to the right. On the waistline, measure 4 cm from the front pitch line to the right and draw the front side seam over both points. Lengthen the side seam the same length as the centre back minus 1 cm and square out 1 cm to the right. On the chest line, measure the chest width from the front pitch line to the left. On the waistline, measure the abdomen width from the front pitch line to the left. Connect both points with a line.





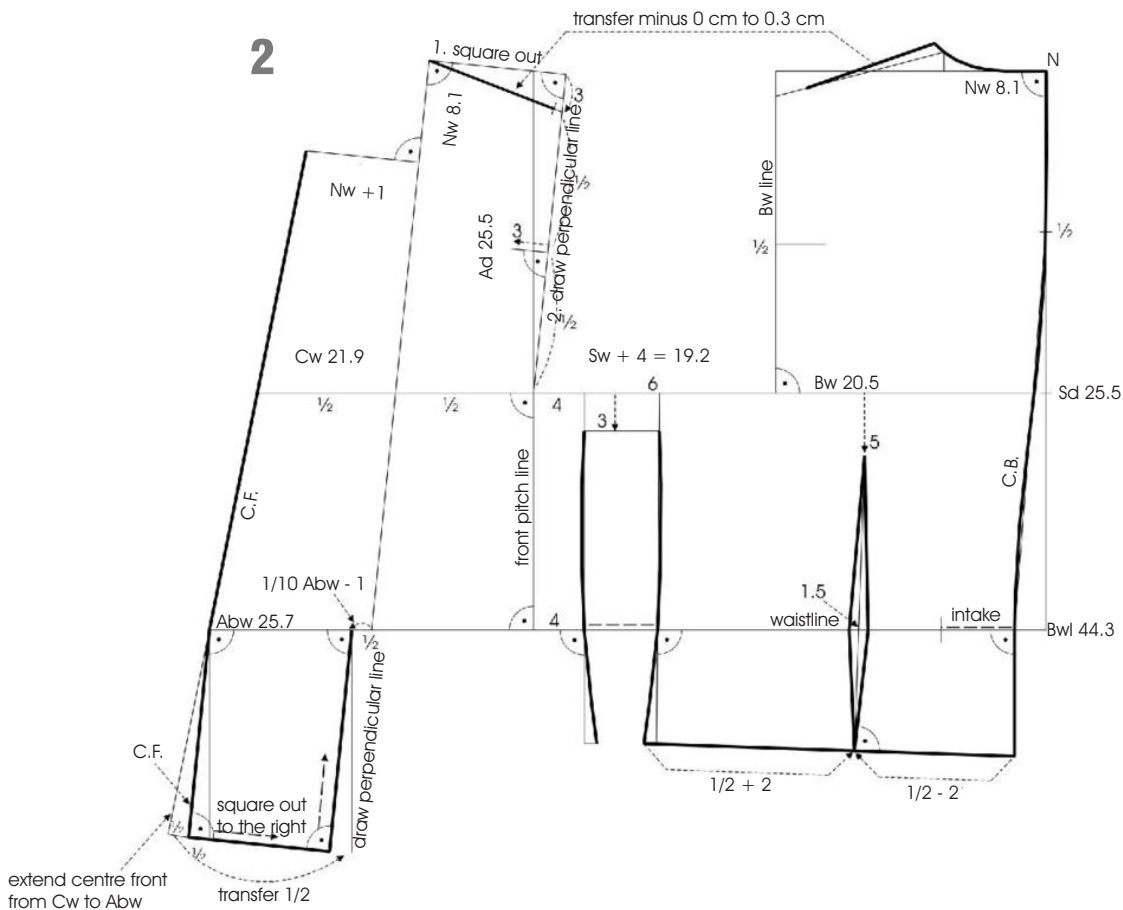
BASIC WAISTCOAT BLOCK FOR A BELLY FIGURE

Divide the chest width and the abdomen width in half and connect the halfway points with a line. Extend this line upwards. Draw a line from the armhole depth perpendicular to the extended middle line of the chest and abdomen width. Then draw another line downwards to the intersection of the front pitch line and the chest line and also perpendicular to the new line that is connecting the armhole depth and the front middle line. Measure the neck width from the front neck point downwards along the front middle line and square out to the left. Measure the neck width plus 1 cm along this perpendicular line and draw the centre front line to this point. Check the shape of the centre front at the transition at the chest line and adjust the centre front if necessary. Reduce the ease at the front neckline if required for a smooth transition. Square down from the intersection of the waistline and the centre front and calculate the length below the waist with $\frac{1}{3}$ of the back waist length plus 1 cm to 2 cm. Calculate the waist measurement: On the waist line, measure $\frac{1}{2}$ of the waist girth plus 5 cm (1.5 cm for the

dart and 3.5 cm ease) from the centre front to the right. Measure the intake from this point to the centre back. On the chest line, measure 6 cm from the front side seam to the right for the position of the back side seam. This amount corresponds to the separation of the front and back pattern. Measure the intake at the centre back. Transfer this amount to the back side seam at the waist. Draw the back side seam the same length as the front side seam and measure 1 cm to the left. Mark the position of the front waist dart. Calculate the distance between the front middle line and the dart centre line with $\frac{1}{10}$ of the abdomen width minus 1 cm. Measure this amount to the left and square down from the waistline. Transfer this amount to the back side seam at the waist. Draw the back side seam the same length as the front side seam and measure 1 cm to the left. Mark the position of the front waist dart. Calculate the distance between the front middle line and the dart centre line with $\frac{1}{10}$ of the abdomen width. Square up and down from the waistline for the dart centre line.

2 For the front shoulder slant, measure 3 cm from the armhole depth downwards and draw a guideline to the front neckline. Measure the back shoulder seam and transfer this length minus 0 cm to 0.3 cm to the front shoulder seam. Extend the front shoulder seam towards the armhole. Mark the halfway point between the front shoulder guideline and the chest line and measure 3 cm from this point to the left. Lower the armhole 3 cm at the side seam. Shape the front and back side seam as shown. Mark the halfway point at the back hemline and mark the position of the back waist dart 2 cm more to the back. Draw a perpendicular line to the waist line and extend this line upwards. Draw the back waist dart with 1.5 cm intake.

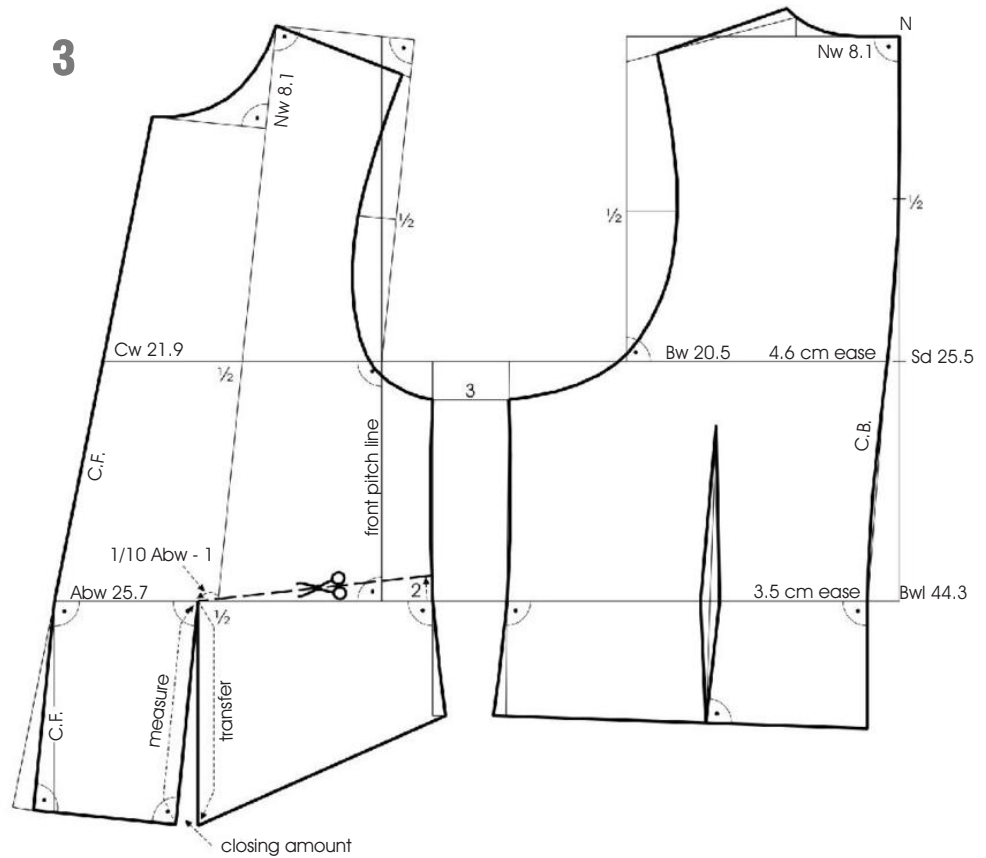
Mark the dart end point 5 cm below the chest line. Finish the back hemline slightly curved and at right angles to the centre back and the waist dart. Lengthen the centre front line from the chest line over the waist line downwards to the same length as the vertical guideline. Mark the new centre front halfway between the extended line and the vertical line as shown in the illustration. Square out to the right for the new front hemline and draw a perpendicular line from the abdomen point ($\frac{1}{10}$ minus 1 cm abdomen width) downward to the new front hemline. The construction of the angled line transfers the reduction at the centre front to the closing amount at abdomen point.



BASIC WAISTCOAT BLOCK FOR A BELLY FIGURE



3 Draw the front neckline and both armholes as shown in the illustration. Transfer the intake at the centre front to the 1/10-abdomen line and draw the remaining front hemline from the intake to the side seam. Mark a cutting line for the side dart from. Measure 2 cm above the waistline and draw the cutting line from the side seam to the abdomen point. Measure and verify the amount of ease included at the chest and at the waist and compare these measurements with the calculation in the measurement chart. Cut out the pattern pieces and check the seam transitions.



MEASUREMENT CHART SIZE 51

BODY MEASUREMENTS

		1/2	1/4	1/8
Bh	Body height	170.0 cm	85.0	42.5
Cg	Chest girth	102.0 cm	51.0	25.5
Wg	Waist girth	106.0 cm	53.0	26.5

AUXILIARY MEASUREMENTS

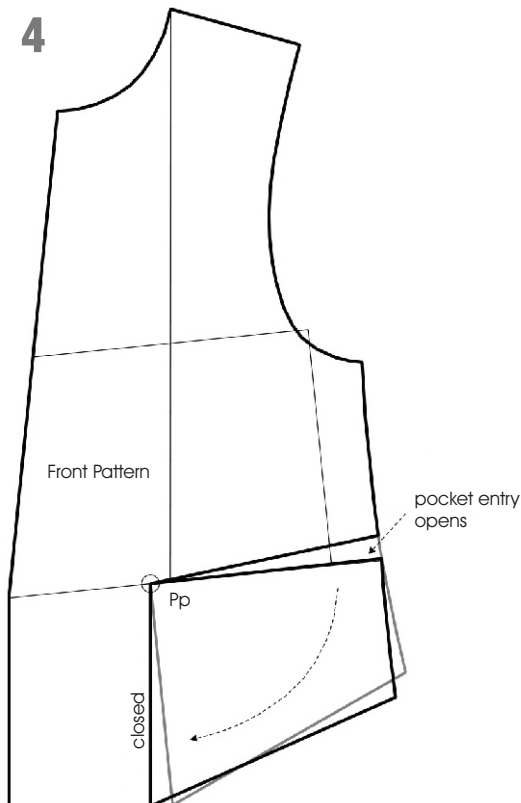
CALCULATIONS

Nw	Neck width	8.1cm	= 1/10 of 1/2 Cg + 3 cm
Sd	Scye depth	25.5 cm	= 1/8 Cg + 12.5 cm to 13 cm
Bwl	Back waist length	44.3 cm	= 1/4 Bh + 1.5 cm to 2 cm
Ad	Armhole depth	25.5 cm	= finished Sd
Bw	Back width	20.5 cm	= 1/10 Cg + 10 cm to 10.5 cm (over 100 Cg) = 2/10 Cg + 0 cm to 0.5 cm (up to 100 Cg)
Sw	Scye width	13.2 cm	= 1/8 Cg + 0 cm to 0.5 cm
Cw	Chest width	21.9 cm	= 2/10 Cg + 1 cm to 2 cm (over 100 Cg) = 2/10 Cg + 0.5 cm to 1 cm (up to 100 Cg)
Total		55.6 cm	
		- 51.0 cm	= 1/2 Cg
		= 4.6 cm	= ease at chest

Abw	Abdomen width	25.7 cm	= 1/4 Wg - 0.5 cm to 1 cm
------------	---------------	----------------	---------------------------

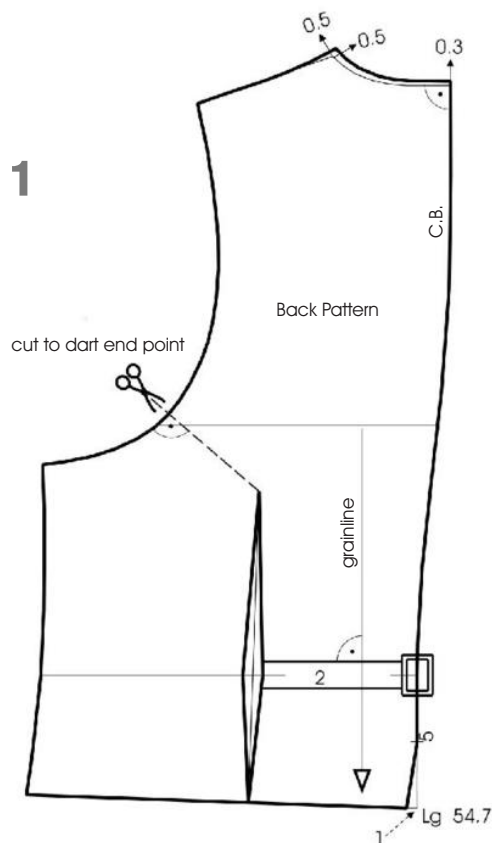
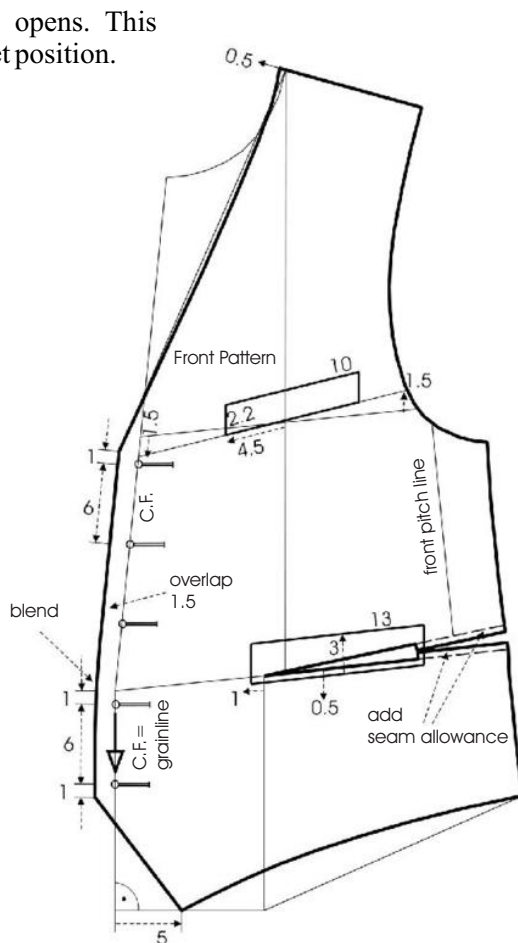


BASIC WAISTCOAT BLOCK FOR A BELLY FIGURE



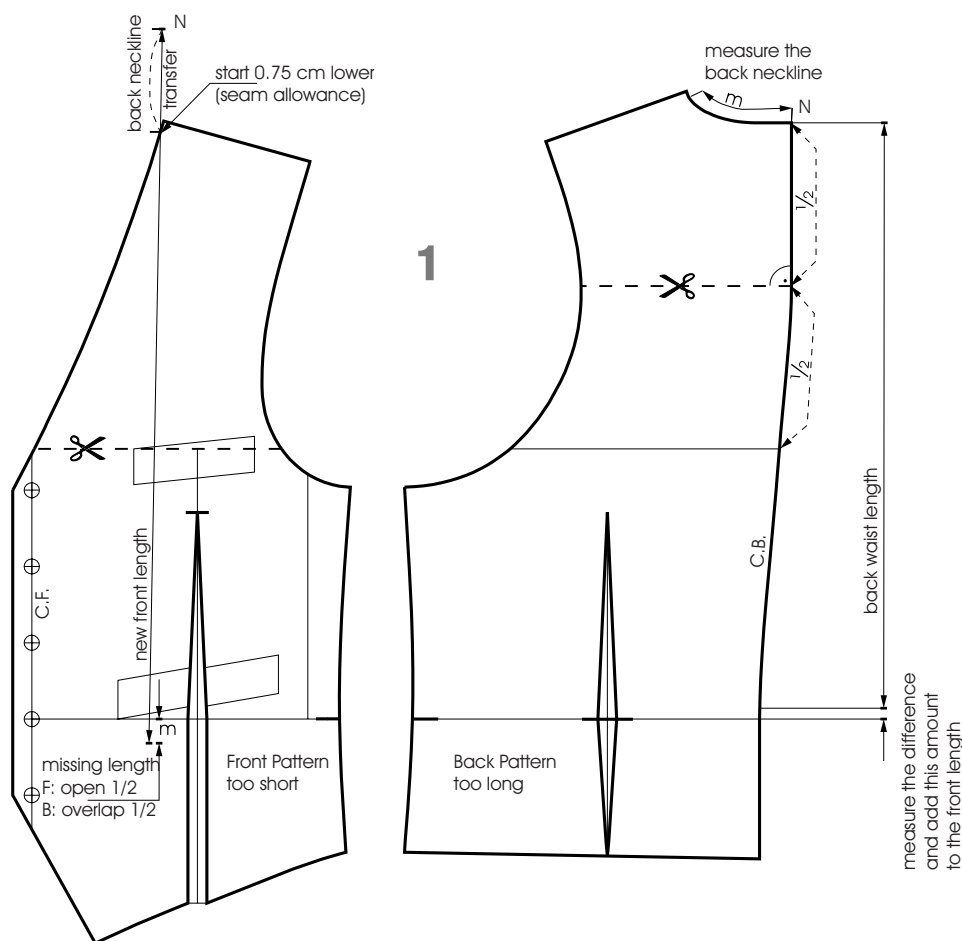
1 For a better fit at the shirt collar, raise the back shoulder seam 0.5 cm. Also raise the back and front neckline 0.5 cm at the shoulder and 0.3 cm at the centre back. Draw the new back neckline. Mark the back vent as shown in the illustration and draw the back tab which is attached in the waist dart. Mark the button positions and the front length: Mark the centre button 1 cm below the waist line. Mark the buttons 6 cm apart. Add 1.5 cm overlap between the upper button and the lower button. Extend the front edge 1 cm above and below the upper and lower button. On the guideline for the front hemline, measure 5 cm from the centre front to the right and draw the pointed hemline as shown in the illustration. Draw the welt pocket at the side dart according to the illustration. Sew the pocket 5 mm below the dart to conceal it. Add seam allowance to the remaining part of the dart. Plot the chest pocket as shown. On the back pattern, mark the cutting line for the armhole shaping from the dart end point perpendicular to the back armhole. Overlap the back pattern pieces 0.5 cm at the armhole curve for a better fit at the armhole. The waist dart opens at the hem (not shown here). Mark the grainline perpendicular to the waistline on the back pattern. Mark the grainline along the lower part of the centre front on the front pattern.

4 Cut through the front pattern from the side seam to the 1/10-abdomen width point and close the intake below the belly. The side dart opens. This seam line is also the pocket position.





Characteristic for an upright posture is the protruding chest and the shifted backwards shoulders. A waistcoat for a standard figure shows creases at the shoulders and too much length and roundness at the back on a client with an upright figure. The waistcoat is also too short in the front and pulls up. Bias lines show at the side seam. A waistcoat for a client with an upright figure needs more length at the front and less length at the back. Draw the waistcoat pattern according to the client's measurements and then open the finished pattern pieces at the front and overlap the back pieces to reduce the back length.



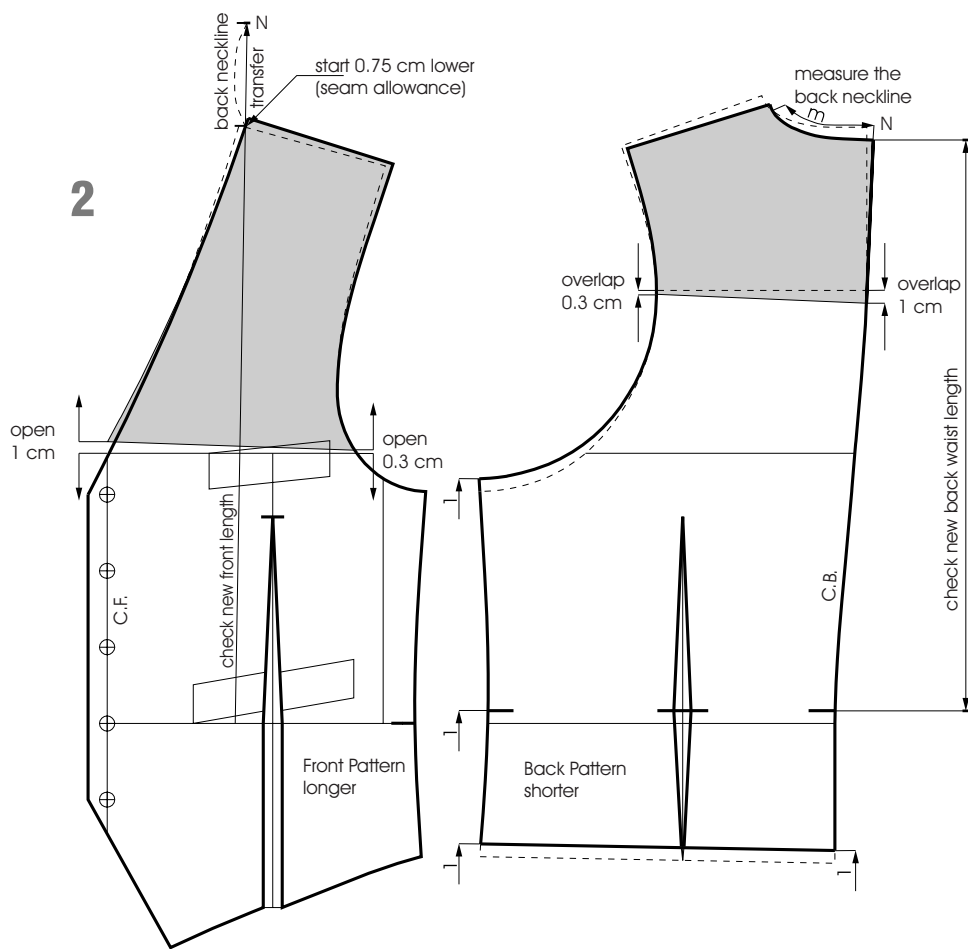
Cutting Lines

1 Mark the cutting lines on the front and back pattern as shown in the illustration. The opening and closing amounts are approximate. Check the balance measurements of the back waist length and the front length. If the measured back waist length is shorter than the calculated one, add the difference to the front length. Measure the back neckline and transfer this measurement from the shoulder point upwards (without seam

allowance). Then measure the new front length from this point downward. Measure the difference to the front length on the pattern and divide it in half. Shorten the back pattern around $\frac{1}{2}$ of the amount and lengthen the front pattern around $\frac{1}{2}$ of this amount. Check the balance measurements for the right proportion of front length and back waist length. However, crucial for a proper adjustment is the visual evaluation of the figure deviation.



FIGURE DEVIATIONS - UPRIGHT POSTURE



Pattern Adjustment

2 Slash and spread the front pattern at the cutting line. Open the front pattern 1 cm at the centre front and 0.3 cm at the armhole for more front length. Measure the finished length of the back neckline without seam allowance. There is 0.75 cm seam allowance at the shoulder seam. The neckline and the centre back are finished seamline.

To check the new front length, mark the shoulder point without seam allowance and measure the back neckline

length upwards. Then measure the new front length from this point downward. Verify and adjust the opening amounts if necessary. Slash and overlap the back pattern as shown in the illustration. Blend the centre back. Shorten the back pattern 1 cm at the hem and move the waistline notch 1 cm up.

Raise the back armhole 1 cm and draw the new armhole. Check the new back waist length and adjust the overlapping amounts if necessary. Blend all seamlines.

The rounded back and the sunken chest are obvious deviations for this posture. A standard waistcoat shows fitting problems. The back is too short and pulls up. The centre back shows strain at the shoulder area. The front is too long and shows too much fabric over the chest area. Bias lines show at the sideseam. Draw the waistcoat pattern according to the client's measurements and then open the finished pattern pieces at the back and overlap the front pieces to reduce the front length. Check the balance measurements of the back waist length and the front length.

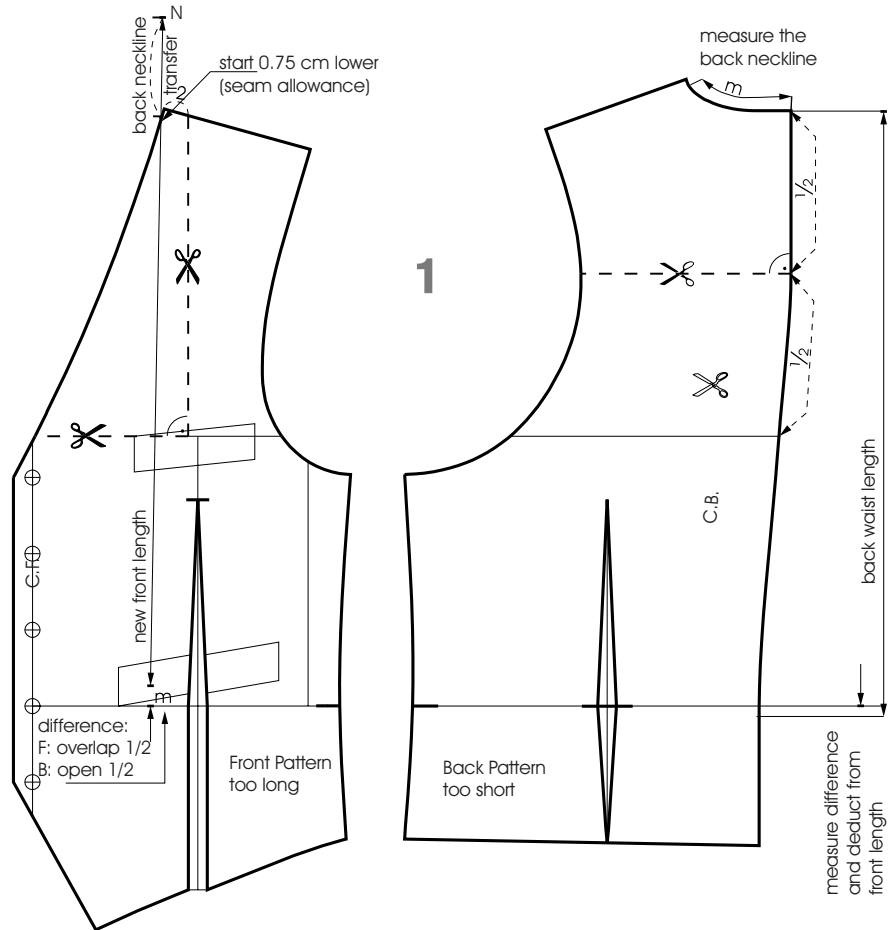
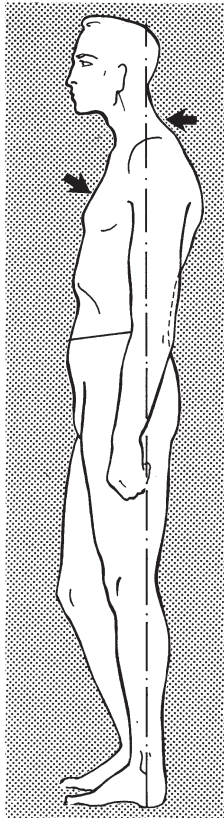
Cutting Lines

1 Mark the cutting lines on the front and back pattern as shown in the illustration. The opening and closing amounts are approximate.



FIGURE DEVIATIONS - ROUND BACK

Check the balance measurements of the back waist length and the front length. If the measured back waist length is longer than the calculated one, deduct the difference from the front length. Measure the back neckline and transfer this measurement from the shoulder point upwards (without seam allowance). Then measure the new front length from this point downward. Measure the difference to the front length on the pattern and divide it in half. Lengthen the back pattern around $\frac{1}{2}$ of the amount and shorten the front pattern around $\frac{1}{2}$ of this amount. Check the balance measurements for the right proportion of front length and back waist length. However, crucial for a proper adjustment is the visual evaluation of the figure deviation.



Pattern Adjustment

2 Slash and overlap the front pattern at the cutting line. Overlap the front pattern 1 cm for less front length. Measure the back neckline without seam allowance, mark the shoulder point without seam allowance and measure the back neckline length upwards. Then measure the new front length from this point downward. Verify and adjust the overlapping amounts if necessary. Slash and open the back pattern as shown in the illustration. Blend the centre back. Lengthen the back pattern 1 cm at the hem and move the waistline notch 1 cm down. Lower the back armhole 1 cm and draw the new armhole. Check the new back waist length and adjust the opening amounts if necessary. Blend all seamlines.

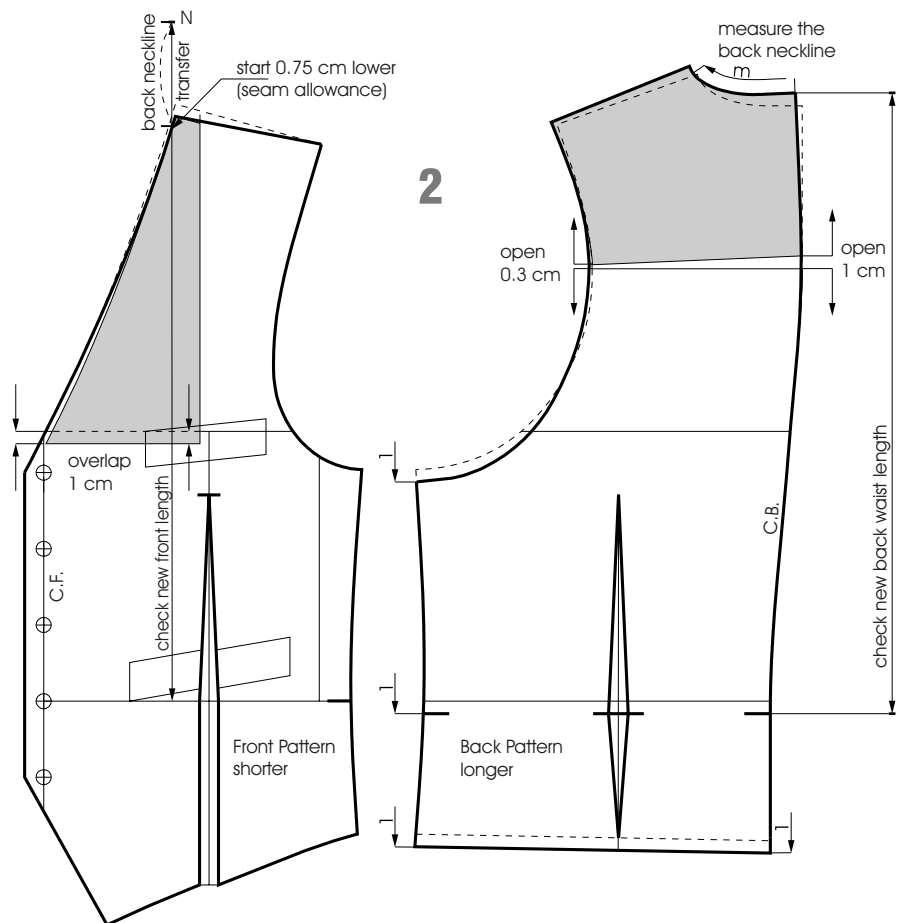
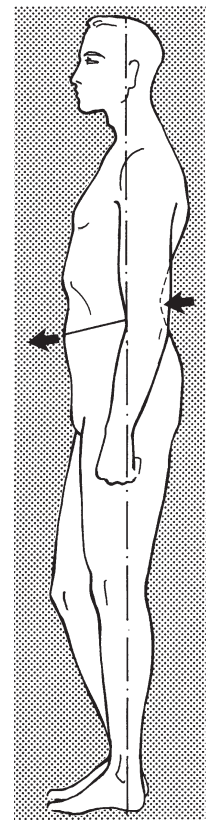
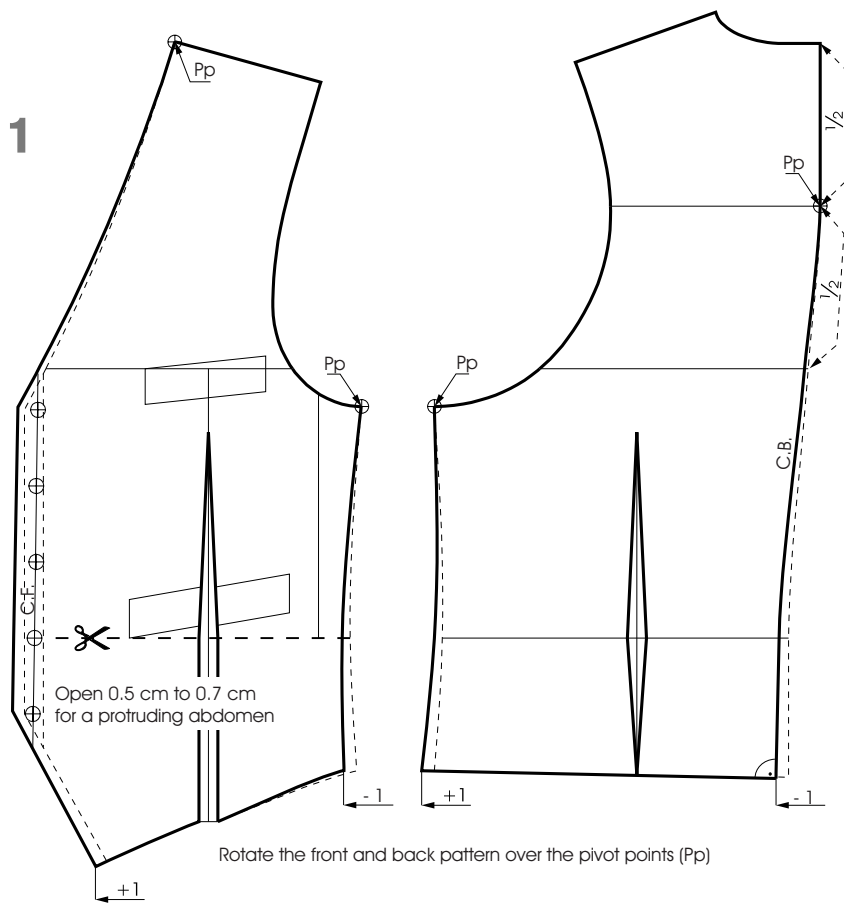




FIGURE DEVIATIONS - SWAYBACK & PROTRUDING ABDOMEN

This figure deviation is not noticeable in the measurement chart. The measurements are all normal and balanced but the side view shows a similar silhouette as a belly figure. This posture can also be detected and measured by holding a plumb line onto the shoulder area of the client. A normal posture shows about 4 cm to 6 cm distance between the plumb line and the waist. This distance increases for a swayback to about 7 cm to 9 cm. Adjust the standard waistcoat pattern by rotating the front and back pattern as shown in detail below.



Pattern Adjustment

1 Trace the front and back pattern and mark the pivot points (Pp) as shown in the illustration. Rotate the pattern pieces over the pivot points 1 cm to the front and draw the new seamlines using the pattern as a drawing template. Draw the back hemline perpendicular to the centre back. If more front length is needed, open the front pattern 0.5 cm to 0.7 cm at the waist for a protruding abdomen.



MEASUREMENT CHART SIZE 50

BODY MEASUREMENTS

		1/2	1/4	1/8
Bh	Body height	177.0 cm	88.5	44.3
Cg	Chest girth	100.0 cm	50.0	25.0
Wg	Waist girth	90.0 cm	45.0	22.5
Hg	Hip girth	102.0 cm	51.0	
Slg	Sleeve length	64.0 cm		

AUXILIARY MEASUREMENTS

CALCULATION

Nw	Neck width	8.0 cm	= 1/10 of 1/2 chest girth (Cg) + 3 cm
Sd	Scye depth	25.0 cm	= 1/8 chest girth (Cg) + 12 cm to 12.5 cm
Bwl	Back waist length	46.0 cm	= 1/4 body height (Bh)
Hd	Hip depth	22.2 cm	= 1/8 body height (Bh) from waist
Lg	Length	77.0 cm	= 1/2 body height (Bh) minus 11 cm to 13 cm
Ad	Armhole depth	26.8 cm	= Sd + 2 cm to 2.5 cm

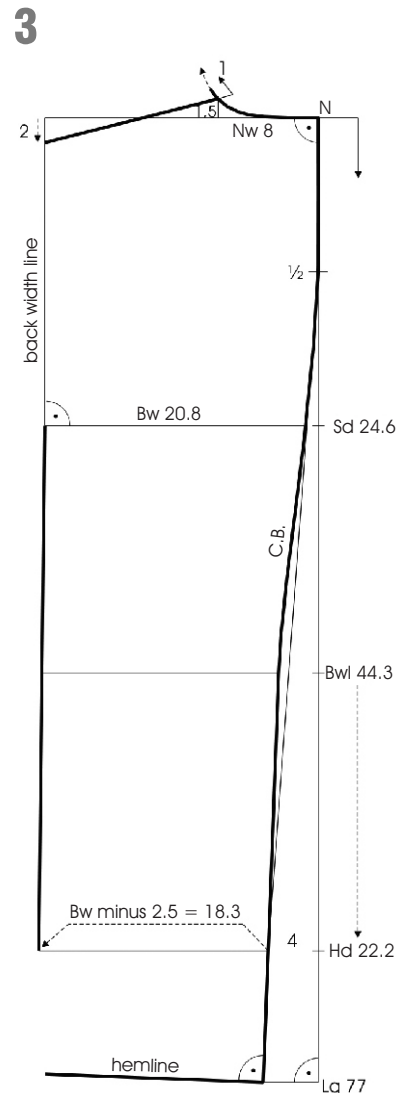
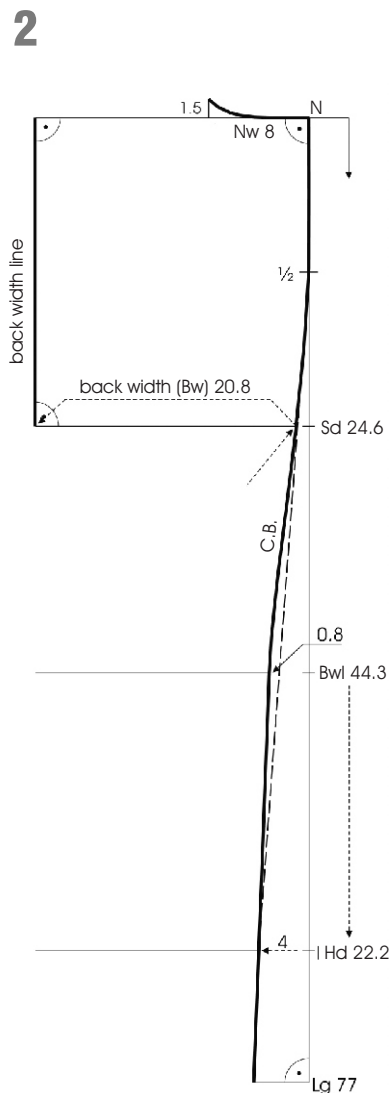
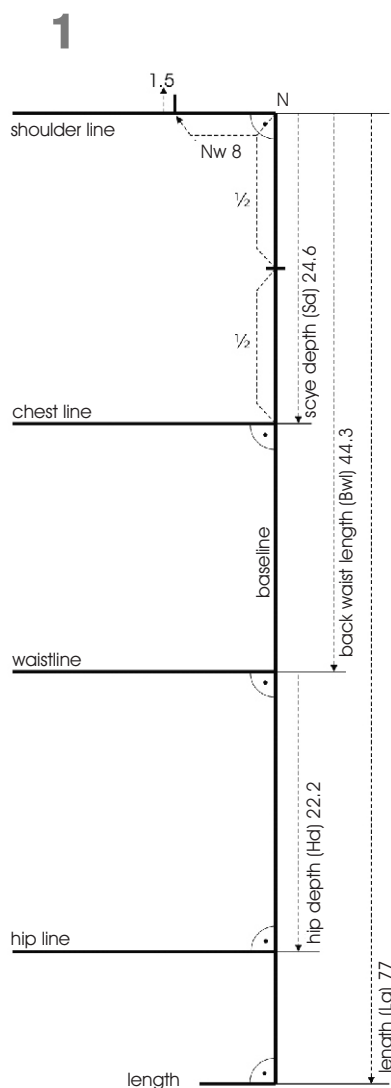
Bw	Back width	20.8 cm	= 2/10 Cg + 0.5 cm to 1 cm (up to 100 Cg) = 1/10 Cg + 10.5 cm to 11 cm (more than 100 Cg)
Sw	Scye width	15.7 cm	= 1/8 Cg + 2.5 cm to 3.5 cm
Cw	Chest width	21.3 cm	= 2/10 Cg + 1 cm to 1.5 cm

Total width	57.8 cm	
	minus 50.0 cm	= 1/2 chest girth (Cg)
	= 7.8 cm	= ease at 1/2 chest

Abw	Abdomen width	21.8 cm	= 1/4 waist girth (Wg) minus 0.5 cm to 1 cm
------------	---------------	----------------	---

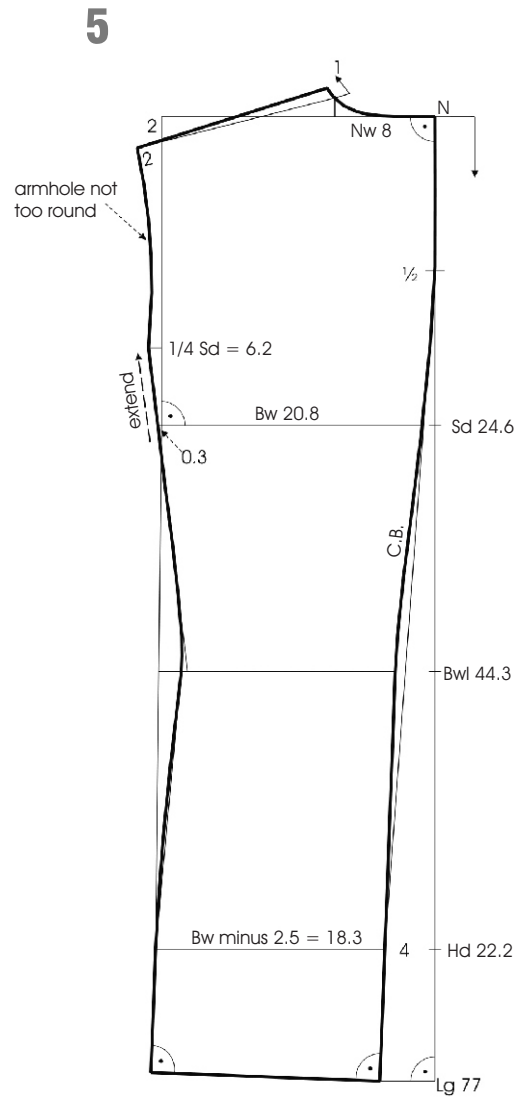
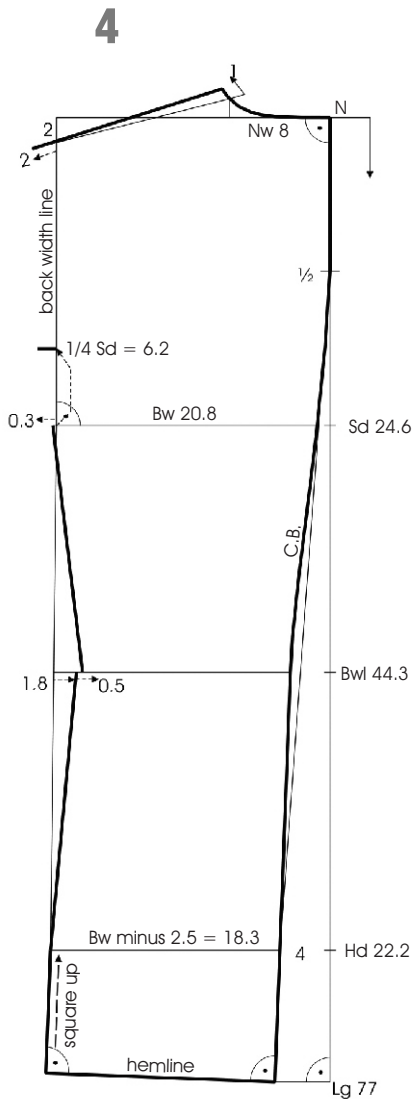
Do not take the abdomen width into account if the abdomen width is smaller than the chest width. In this case, use the same amount as for the chest width (Abw = Cw).

1 Draft the jacket pattern starting from the back to the front on a vertical baseline from the right to the left. Mark point N which is used as a starting point for measuring the lengths. This point corresponds to the nape of the neck. From the starting point N, measure the scye depth, the back waist length and the length downward on the vertical line. Measure the hip depth downward from the waistline. Square out to the left from all points and draw the shoulder line, the chest line, the waistline and the hem line. Divide the scye depth and mark the halfway point. Measure the neck width from the starting point N to the left and square up 1.5 cm.



2 On the hip line, measure 4 cm from the vertical baseline to the left and draw a guideline to the halfway point between the starting point N and the scye depth. Draw the centre back over this line to the hem and taper the centre back 0.8 cm at the waist. Draw the centre back slightly hollow and then in a curve over the 1/2-scye-depth point to the baseline. Draw the back neckline as shown in the illustration. Make sure that the neckline curve is not too shallow. On the chest line, measure the scye width from the centre back to the left and square up to the shoulder line (=back width line).

3 On the back width line, measure 2 cm from the shoulder line downwards and draw a guideline for the shoulder seam to the back neckline. Lengthen the neckline 1 cm. Draw the back hemline perpendicular to the tapered centre back. On the hip line, measure the back width minus 2.5 cm from the centre back to the left and draw a guideline to the intersection of the chest line and the back width line.

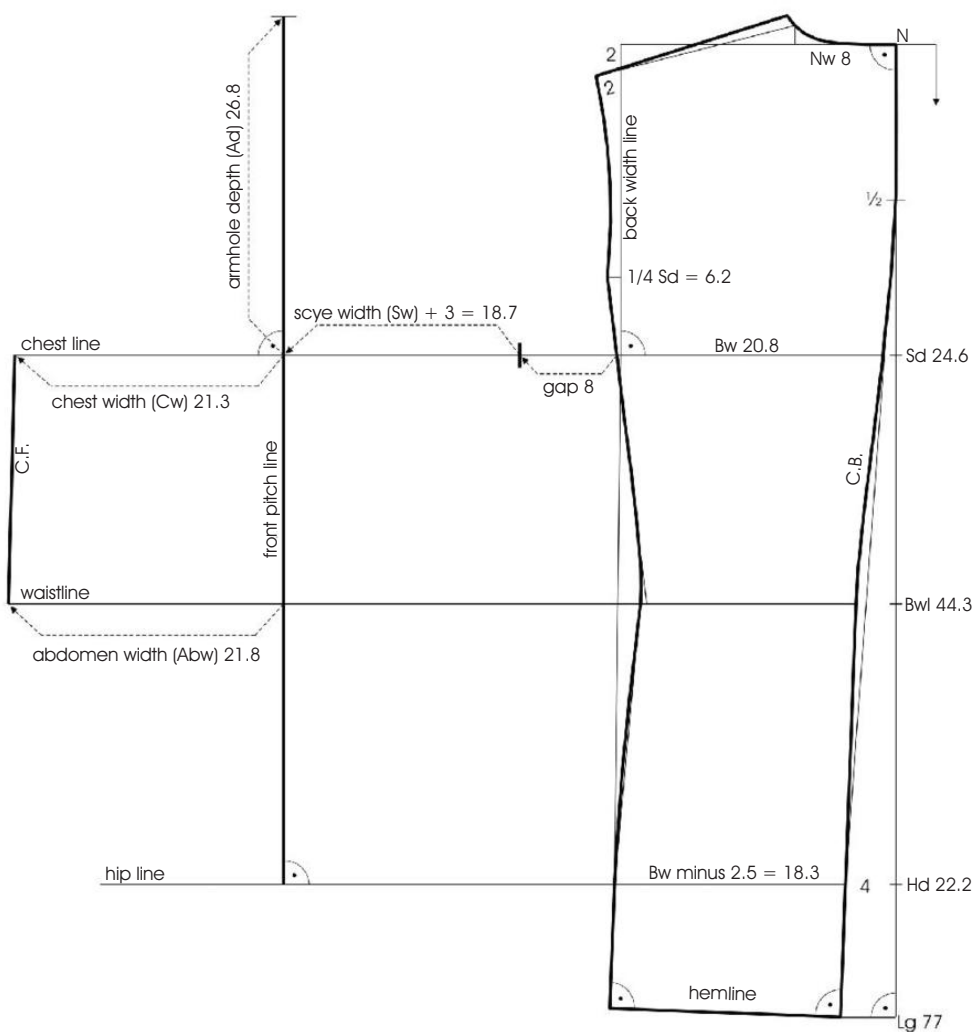


4 Lengthen the guideline for the shoulder seam 2 cm to the left and draw the shoulder seam to the raised neck point. Measure $\frac{1}{4}$ scye depth upwards along the back width line and square out to the left. Extend the back width 0.3 cm outward on the chest line. From the hem square up and draw the sideseam to the guideline. Taper the sideseam 1.8 cm at the waist and draw guidelines to the hip depth. Measure 0.5 cm at the waist and draw another guideline to the 0.3-cm point at the extended back width.

5 Draw the shaped sideseam as shown and extend the sideseam over the 0.3-cm point to the $\frac{1}{4}$ -scye-depth line. Draw the back armhole in a shallow curve for good freedom of movement.

Shoulder Slope

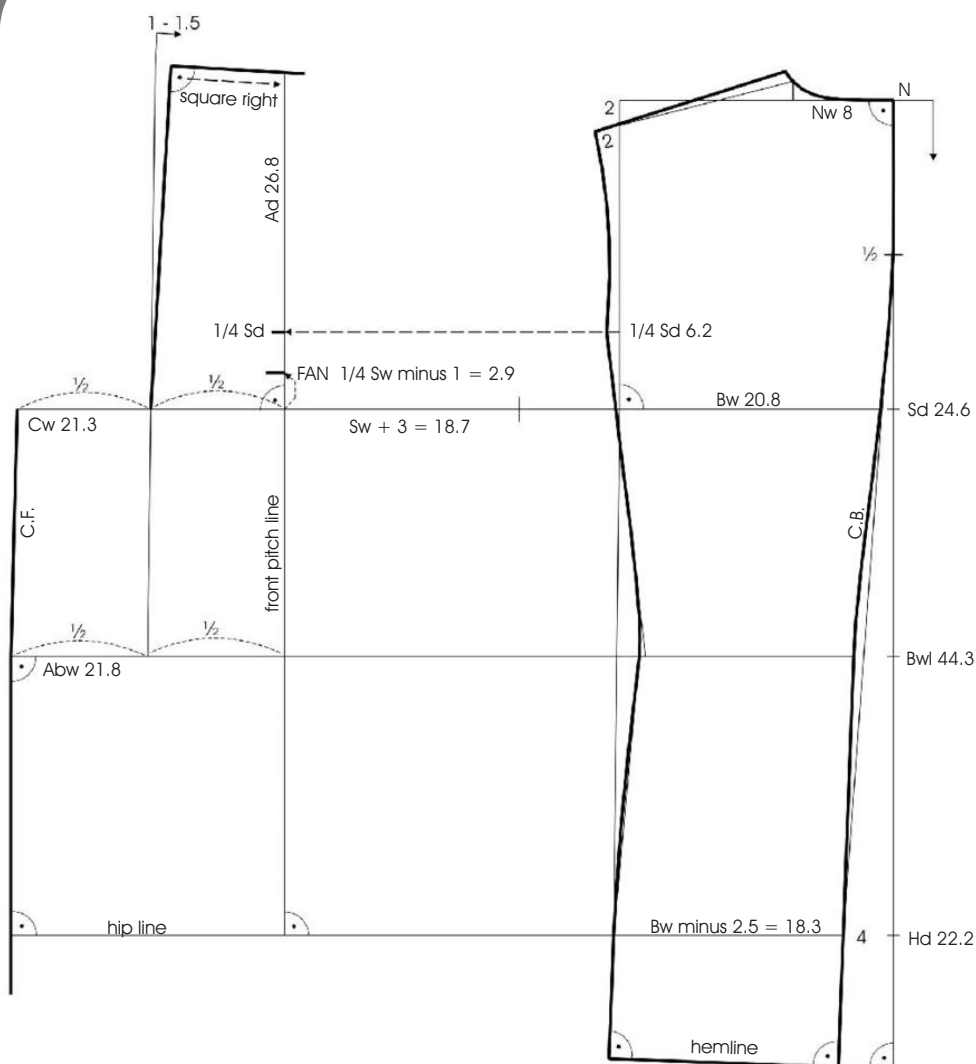
The slope of the shoulder seam corresponds to a finished suit jacket with a normal shoulder pad. Adjust the slope for a finish without shoulder pad.

**6**

6 Extend the hip line, the waistline, and the chest line to left. Mark a gap between the back and the side panel on the chest line. Measure the scye width plus 3 cm to the left. This corresponds to a 2-cm separation of the front and side panel and a 1-cm slant of the side panel. For the front pitch line, square down to the hip line and measure the armhole depth upwards. On the chest line, measure the chest width from the front pitch line to the left. On the waist line, measure the abdomen width to the left and connect both points with a line.



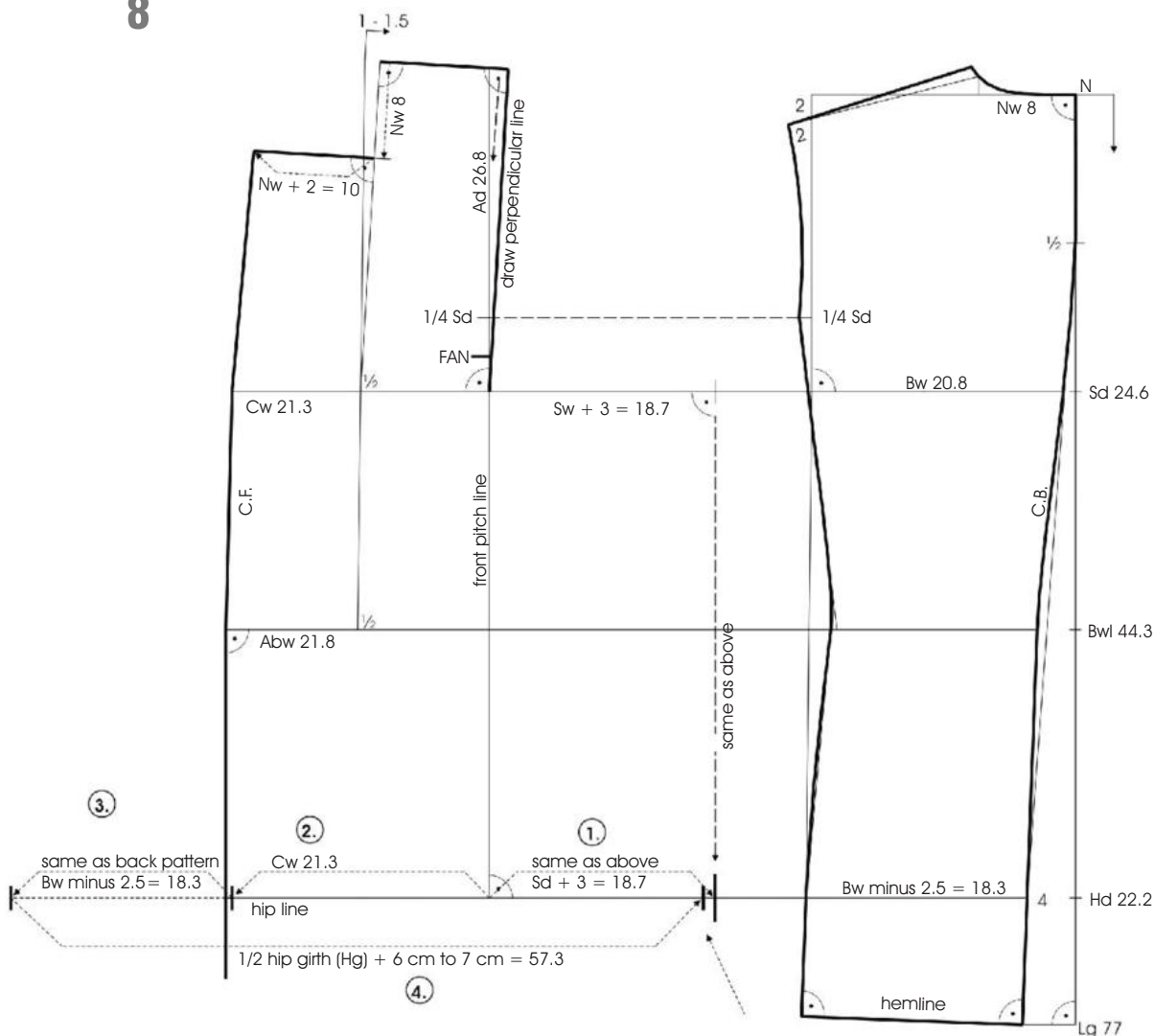
7



7 On the front pitch line, measure $\frac{1}{4}$ scye width minus 1 cm (= front armhole notch) and $\frac{1}{4}$ scye depth from the chest line upwards. Divide the chest width and the abdomen width in half and connect the halfway points with a line. Extend the line upwards and rotate it 1 – 1.5 cm to the right depending on the figure and the required front length.

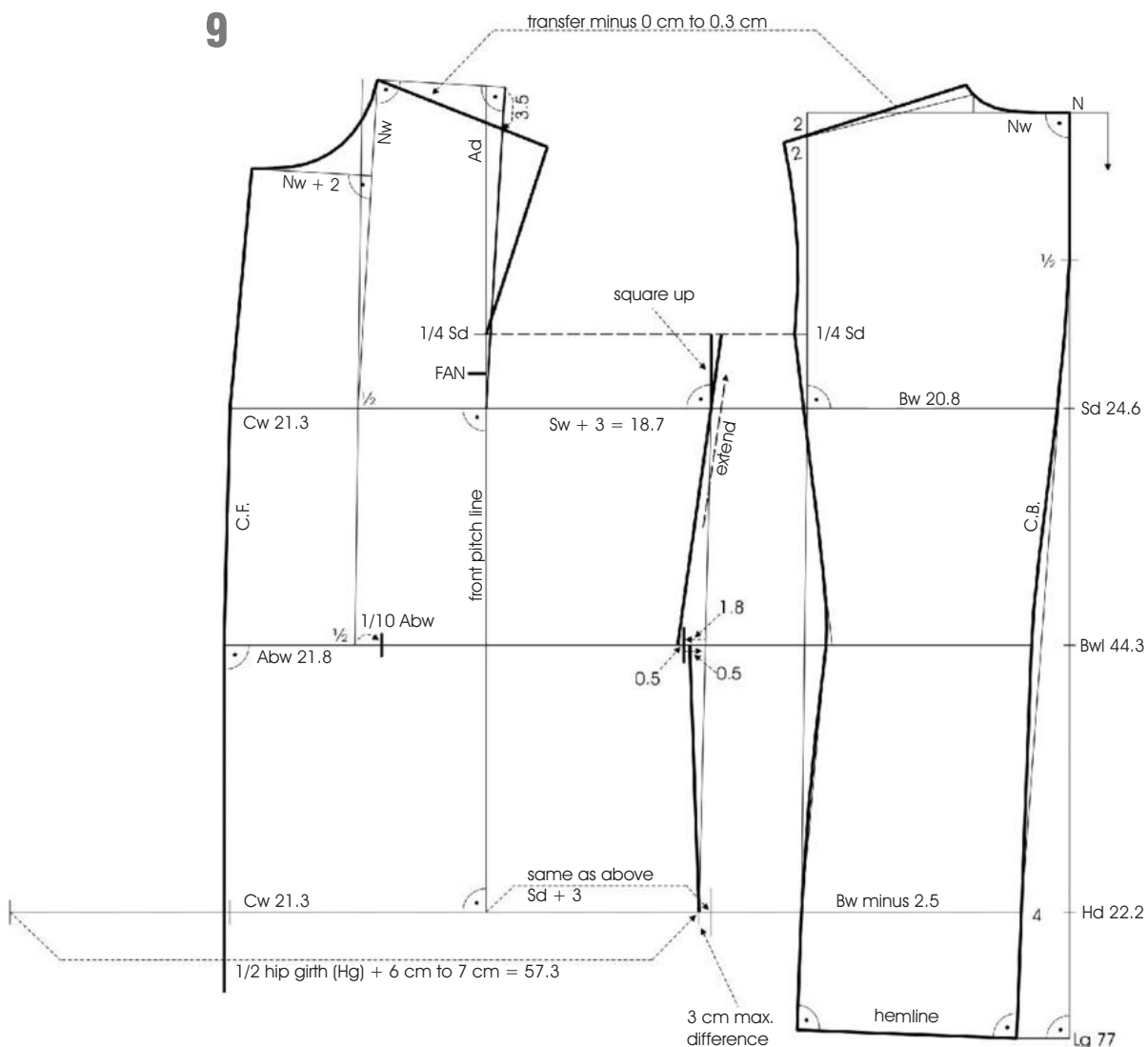


8



8 For the front length, draw a line from the armhole height perpendicular to the slanted line. Extend this line over the armhole height to the right and draw a line from the intersection of the front pitch line and the chest line perpendicular to the front length line. Measure the neck width downward along the slanted halfway line and square out to the front. Measure the neck width plus 2 cm and draw the centre front from this point to the chest width. Square down from the abdomen width for the centre front.

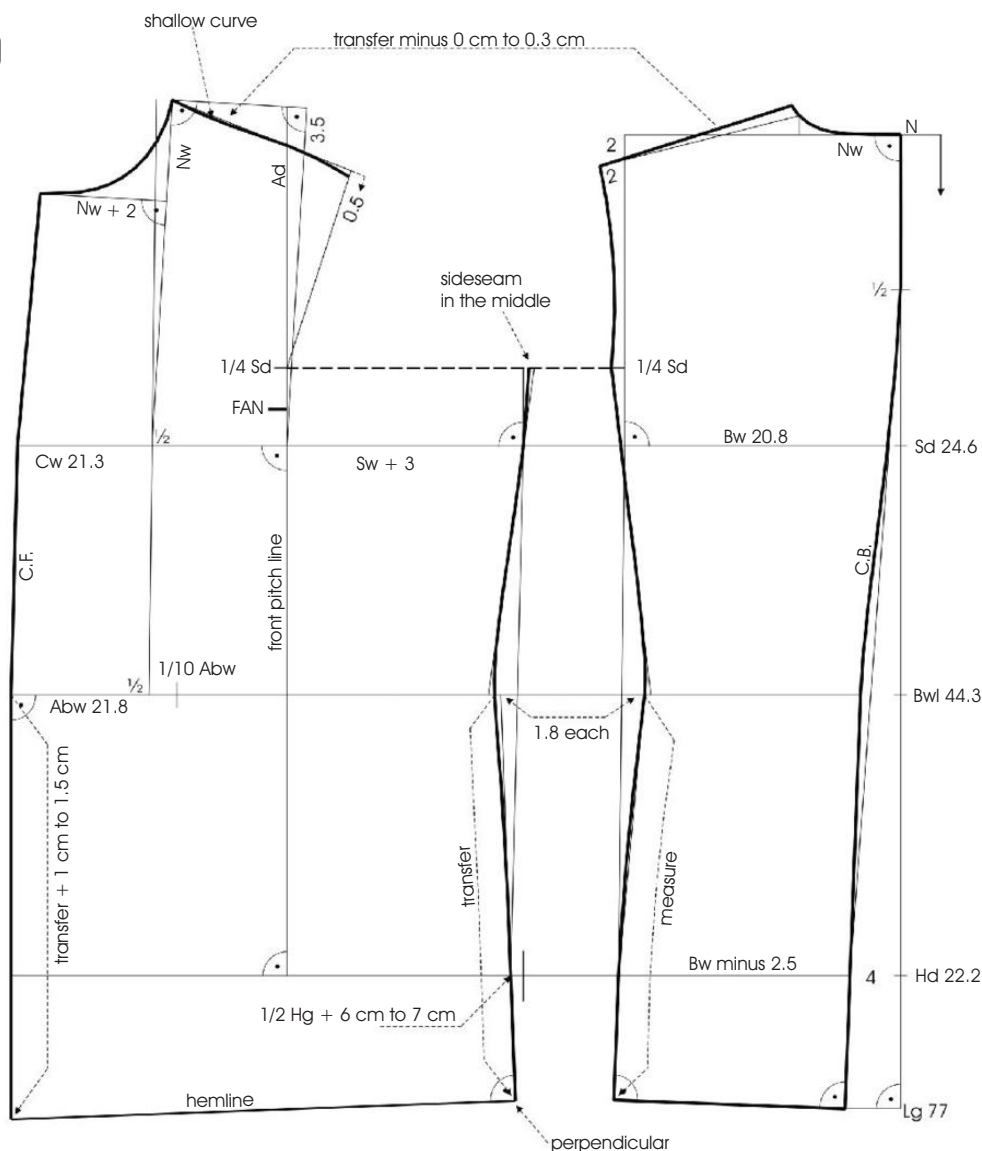
Hip measurement: On the hip line, measure the scye width plus 3 cm from the front pitch line to the right. Measure the chest width from the front pitch line to the left and then measure $1/2$ hip girth plus 6 cm to 7 cm from this point to the right. This measurement includes 2 cm separation of the front and side panel and 4 cm to 5 cm ease. The resulting intake should not exceed 3 cm. Any surplus has to be removed at the front side seam.



9 Draw the front neckline as shown in the illustration. Mark the shoulder slant with 3.5 cm. Draw a guideline from the neck point to the shoulder slant and transfer the back shoulder width minus 0.5 cm to 1 cm. Draw a guideline from the shoulder width to the $\frac{1}{4}$ -scye-depth point. Draw a guideline for the sideseam from the chest line to the marked point at the hip and draw the lower part of the sideseam as on the back pattern with 1.8 cm intake at the waist. Measure 0.5 cm to the left, draw a guideline upwards and extend it to $\frac{1}{4}$ -scye depth. Square upwards from the intersection with the chest line and draw this line also up to the $\frac{1}{4}$ -scye depth line. Draw another guideline 0.5 cm beside the front side seam to the hip line. Mark the dart middle line: Measure $\frac{1}{10}$ of the abdomen width from the $\frac{1}{2}$ -abdomen-width point to the right.



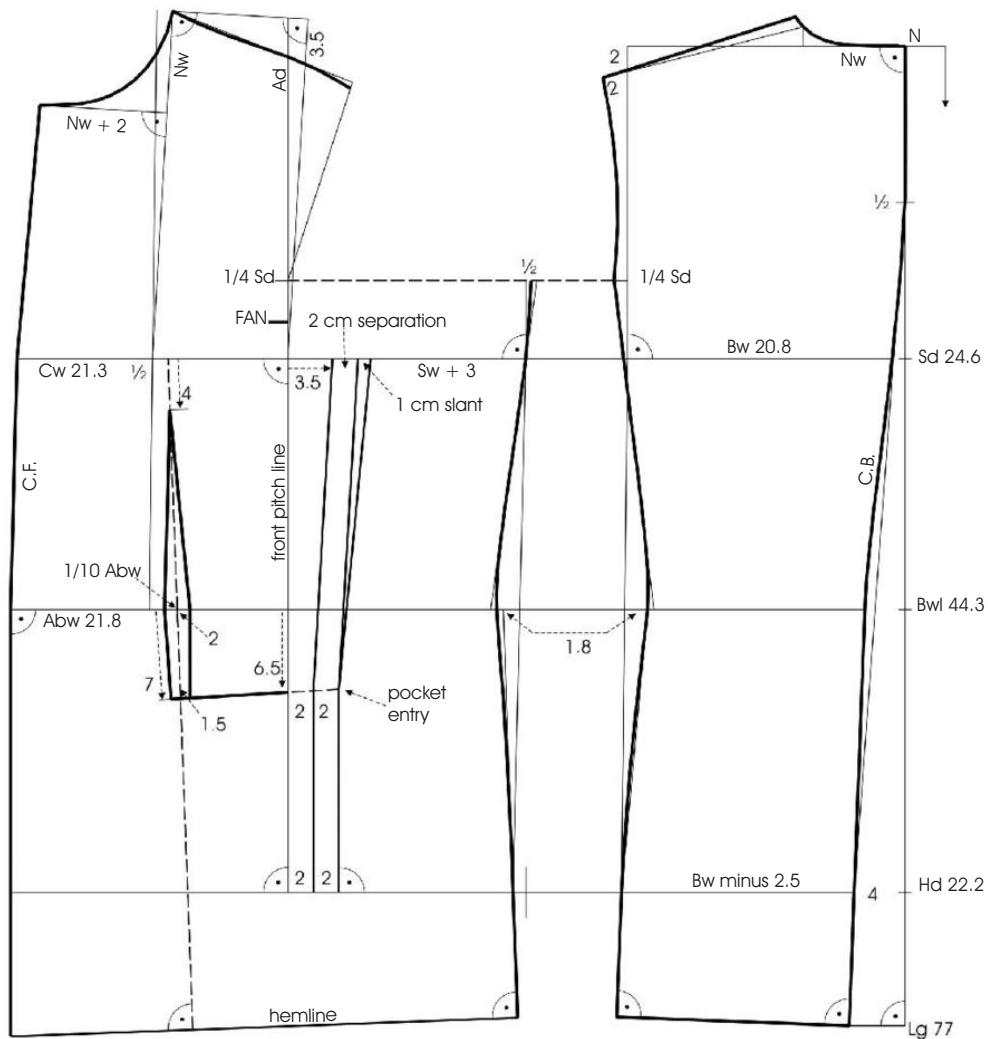
10



10 Draw the front shoulder seam as shown in the illustration and lower the seamline 0.5 cm at the armhole. Draw the sideseam over all guidelines and end the sideseam between the two guidelines at the $1/4$ -scye depth. Measure the back sideseam from the waist to the hem and transfer this measurement to the front sideseam. Mark the same length plus 1-1.5 cm at the centre front. Connect both points with a line for the front hemline. Make sure that the hemline is perpendicular to the sideseam. This can be adjusted slightly by changing the front length or the sideseam shape.



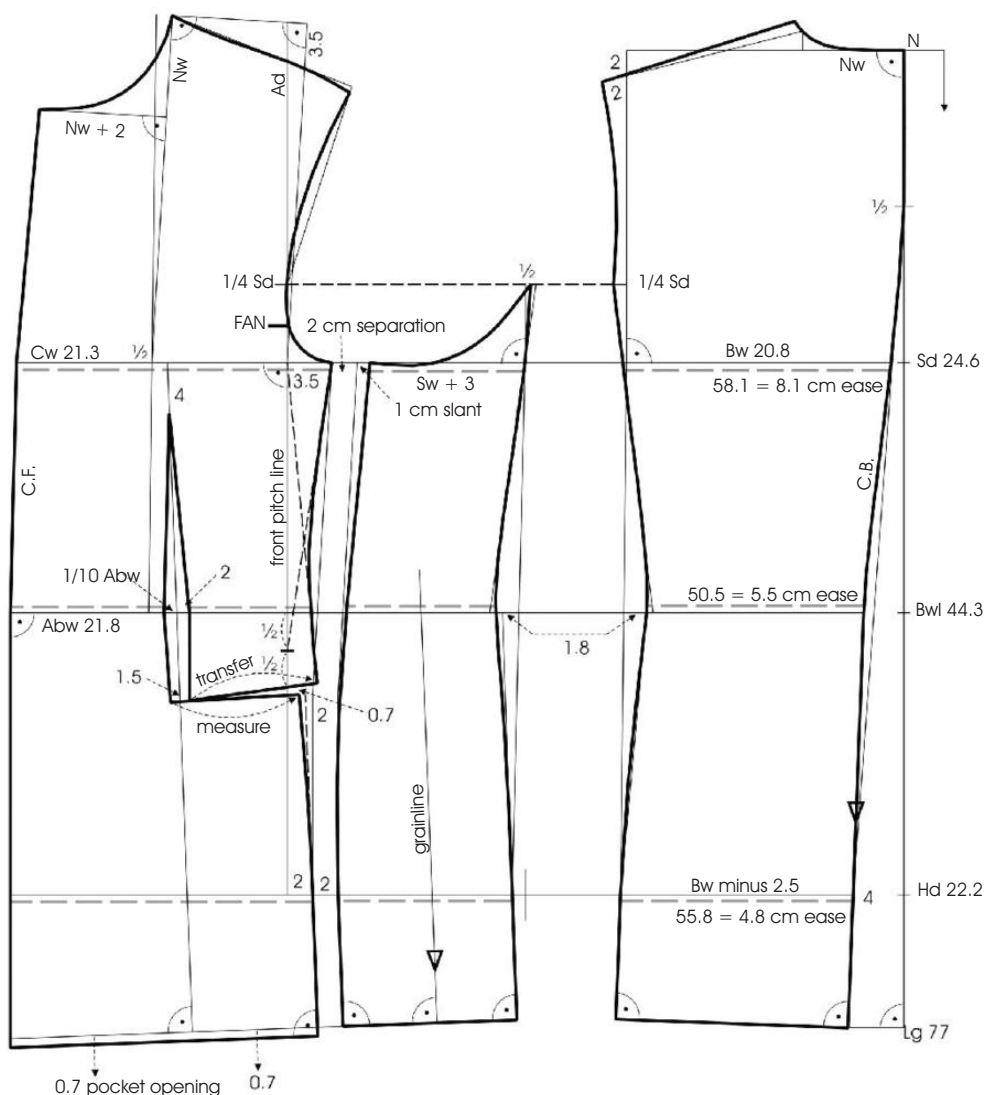
11



11 Draw the dart middle line from the 1/10-abdomen-width point perpendicular to the front hemline and extend it upwards. Measure 7 cm along the dart middle line and 6.5 cm along the front pitch line below the waist and mark the pocket entry. Draw the front waist dart with 1.5 cm intake at the pocket entry and 2 cm intake at the waist. Mark the dart end point 4 cm below the chest line. Draw a guideline for the front sideseam 2 cm parallel to the front pitch line between the hip line and the pocket entry. On the chest line, measure 3.5 cm from the front pitch line to the right and draw the guideline to this point. Draw another guideline for the side panel seam 2 cm parallel. Draw the slant of the side panel with 1 cm.



12



12 Measure 0.7 cm from the pocket entry upwards along the front pitch line for the pocket intake. Draw the pocket opening from this point to the right dart leg. Measure the pocket entry and lengthen the upper line to the right. Draw the front and side panel seams perpendicular to the hemline as shown in the illustration. Draw guidelines above the pocket entry as shown and draw the front seam according to the illustration. Draw the armhole on the front and side panel pattern. Mark the grainline along the lower part of the centre back and perpendicular to the hem on the side panel pattern. Check the ease included at the chest line, the waistline and the hip line and compare these measurements with the calculations in the measurement chart.

This results in the following:

1/2 chest girth = 58.1 cm = 0.3 cm more than the calculated chest girth in the measurement chart. This difference corresponds to 0.3 cm, which was added to the back pattern at the armhole.

1/2 waist girth = 50.5 cm = minus half of the waist girth 45 cm = 5.5 cm ease. This is sufficient for the fitted jacket.

1/2 hip girth = 55.8 cm = minus half of the hip girth 51 cm = 4.8 cm ease. This is sufficient.

CHECK THE SEAM TRANSITIONS

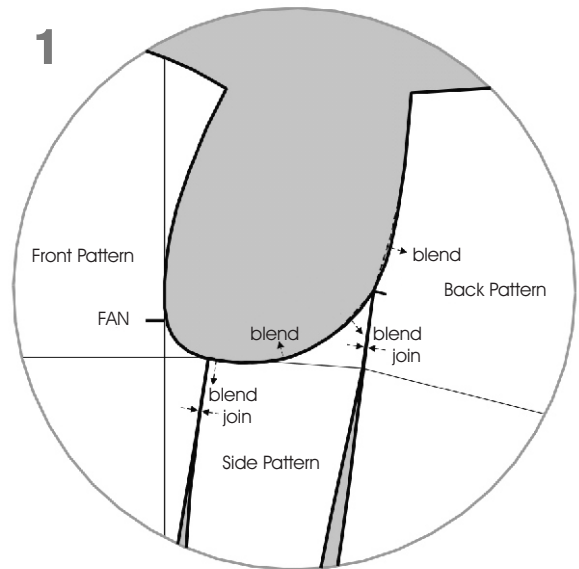


Check the Seam Transitions:

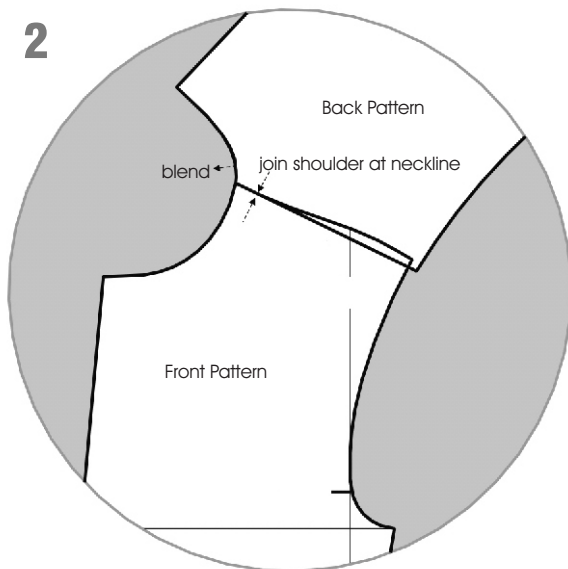
Cut out the pattern pieces, join them at the seams and check the seam transitions. Adjust and blend the seam transitions if necessary.

1 Armhole: Place the front, side and back patterns together at the upper part of the sideseam.

In the example, the armhole on the front side seam will be lowered and slightly blended at the side panel. Blend the back side seam.



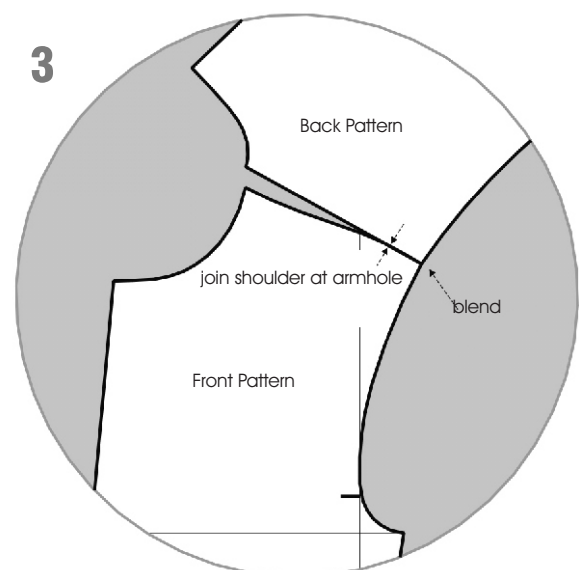
2



2 Shoulder at the neckline: Blend the back neckline for a better seam transition.

3 Shoulder at the armhole: The transition is correct and needs no adjustment.

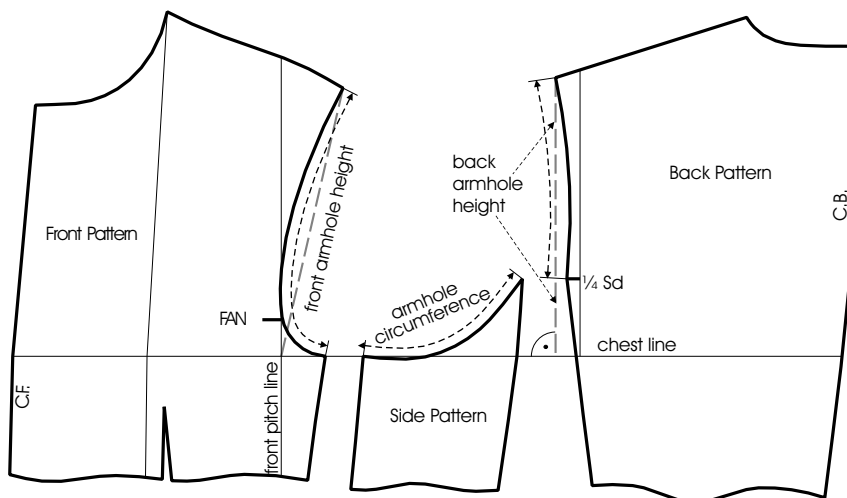
The front side seam and the side panel were drafted perpendicular to the hem and do not need to be checked.





Armhole Measurements

In addition to the sleeve measurements in the measurement chart (sleeve length and sleeve hem width) also measure the armhole circumference and the armhole height on the front and back pattern. Measure the front armhole height from the shoulder point to the intersection of the chest line and the front pitch line. Measure the back armhole height vertical from the shoulder point to the chest line. Add both measurements together for the calculation. Measure the armhole circumference with the edge of the tape measure along the front pattern, side pattern and back pattern armhole. Calculate the sleeve measurements for the sleeve cap height and the sleeve width from the armhole height and the armhole circumference.



Sleeve Cap Height

Divide the calculated armhole height by two and deduct a variable amount that is calculated with 1/10 of 1/2 of the armhole height plus 1.5 cm to 2.5 cm. The greater the amount, the shorter the sleeve cap height which can either result in a wider sleeve or less sleeve cap ease for industrial tailoring. Deduct less to achieve a more formal sleeve with a higher sleeve cap and a more correct sleeve fall.

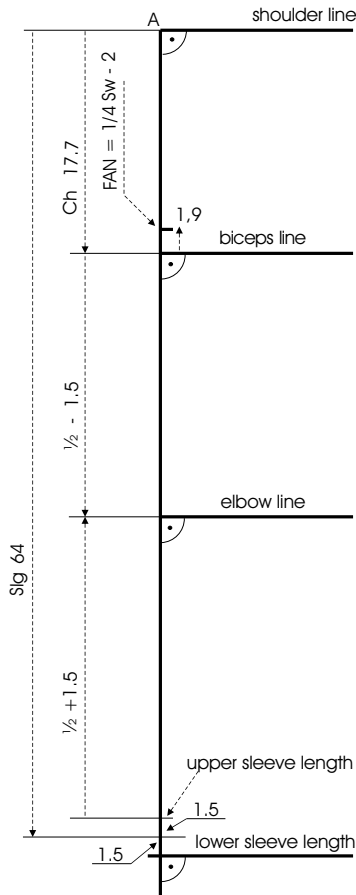
Sleeve Width

The sleeve width can be adjusted similar to the sleeve cap height. The larger the addition to half of the armhole circumference, the wider the sleeve and the larger the amount of sleeve cap ease. Less addition or no addition at all results in a narrower sleeve and less sleeve cap ease. Both measurements should always be varied in proportion to each other.

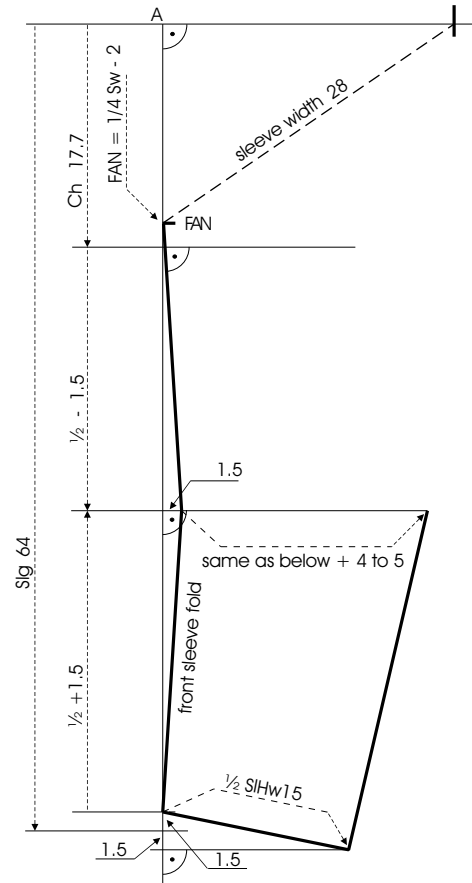
SLEEVE MEASUREMENTS		1/2	
Ah	Armhole height	43.8 cm	21.9
Ac	Armhole circumference	55.0 cm	27.5
<hr/>			
SIHw	Sleeve hem width	30.0 cm	15.0
Slg	Sleeve length	64.0 cm	
Ch	Cap height	17.7 cm	= 1/2 Ah minus (1/10 of 1/2 Ah + 1.5 cm to 2.5 cm)
Slw	Sleeve width	28.0 cm	= 1/2 Ac + 0 cm to 1 cm



1



2

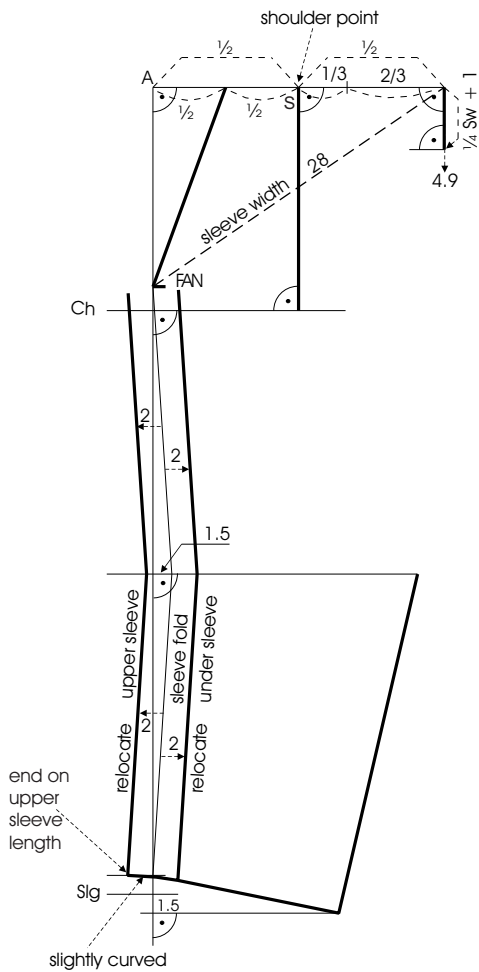


1 Draw the sleeve pattern on a vertical baseline. From the starting point (A), measure the sleeve cap height and the sleeve length downward. From the sleeve length, measure 1.5 cm up and down for the front and back sleeve length. Determine the position of the elbow line as shown in the illustration. Square out to the right from all points. For the front armhole notch measure $\frac{1}{4}$ scye width minus 2 cm from the cap height upward (you will find the scye width measurement in the measurement chart of the basic suit jacket block).

2 Taper the front sleeve 1.5 cm at the elbow line and draw the front sleeve fold. Measure and mark $\frac{1}{2}$ hem width diagonally from the front to the back sleeve length. Measure the same distance plus 4 cm to 5 cm on the elbow line from the sleeve fold to the right. Draw the back sleeve fold from this point to the hem. Measure the sleeve width from the front sleeve notch diagonally to the original line.

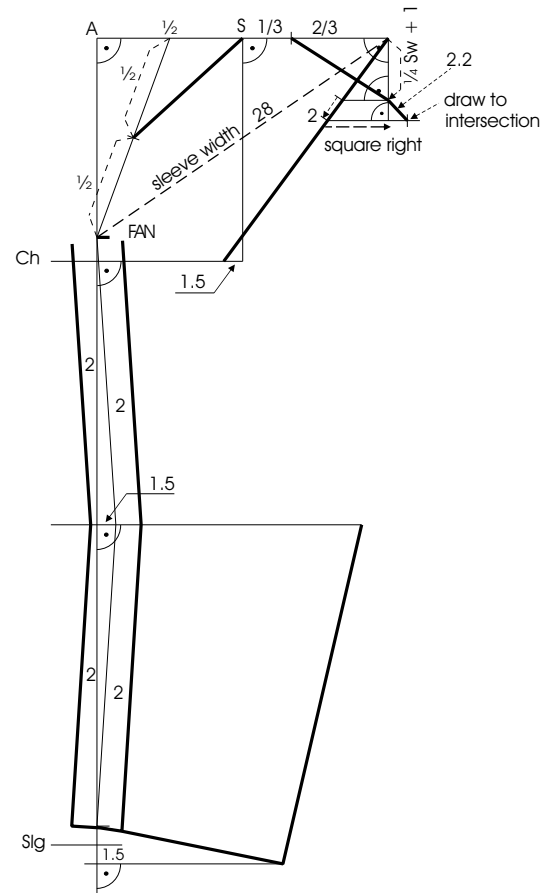


3



3 Square down from the intersection of the sleeve width and the sleeve height and measure $\frac{1}{4}$ scye width plus 1 cm. Square out to the left from this point. Divide the horizontal sleeve height line according to the illustration and draw the guidelines for the sleeve cap. Mark the shoulder point at $\frac{1}{2}$ of the sleeve height line. Mark the halfway point on the front half of the sleeve height line and mark the first third of the back part of the sleeve height line. For the front sleeve seam measure 2 cm from the front sleeve fold to the outside and inside. Draw the seams parallel to the fold line. At the hem, square out to the left and right from the front sleeve fold and mark the length at the upper sleeve and under sleeve. Draw the sleeve hem slightly curved to the sleeve seam.

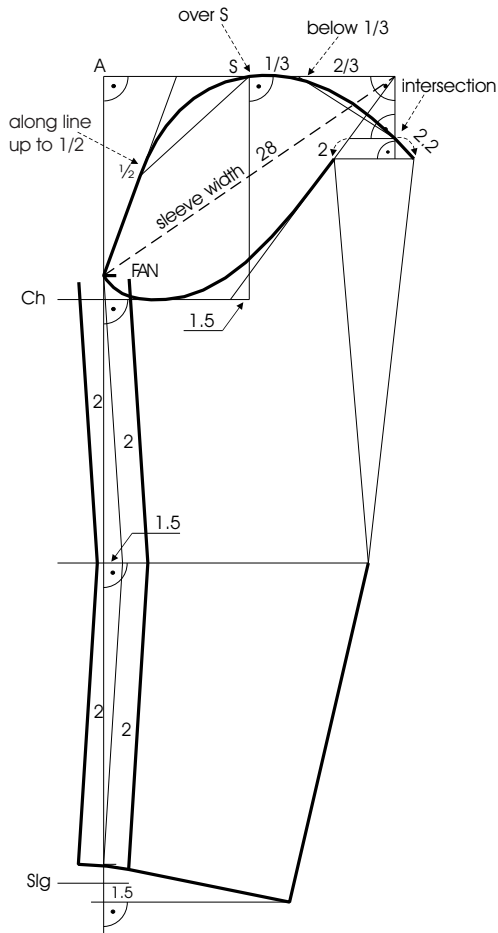
4



4 Mark the halfway point on the slanted front guideline and draw another guideline from the halfway point to the shoulder point (S). Draw another guideline from the marked third to the $\frac{1}{4}$ -scye-width-plus-1-cm point. Draw a slanted guideline for the lower sleeve curve and measure 2 cm along the guideline for the lower sleeve curve and square out to the right. Measure 2.2 cm from the $\frac{1}{4}$ -scye-width-plus-1-cm point down to the horizontal line.

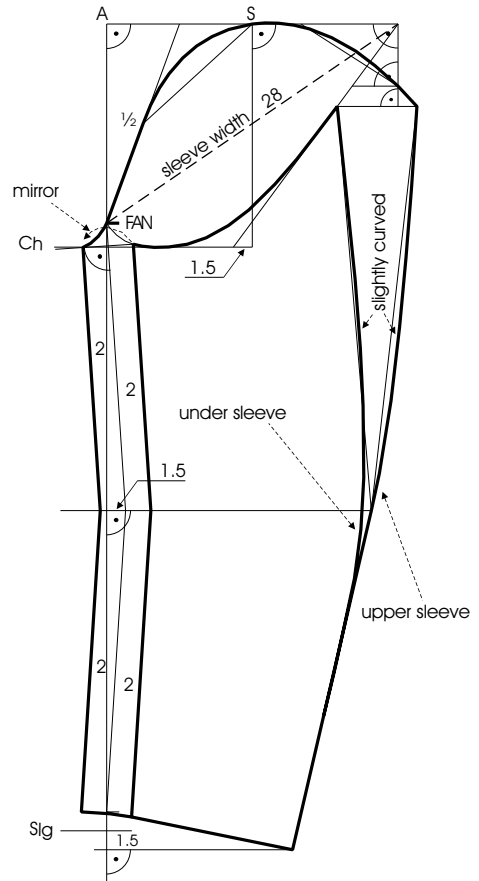


5



5 Draw guidelines for the upper sleeve seam from the elbow line to the sleeve cap. Draw the sleeve cap line and the lower sleeve line as shown in the illustration.

6



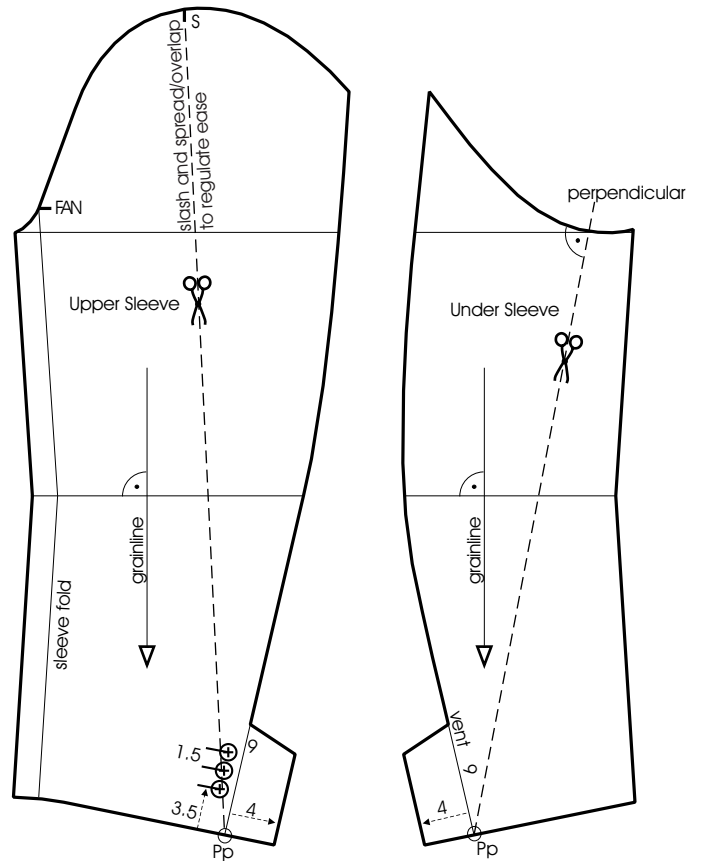
6 Copy the lower sleeve line, mirror it and transfer it outward to the front sleeve seam. Draw the upper sleeve seams slightly curved as shown. Trace a copy of the under sleeve and check the seam transitions.



BASIC TWO-PIECE SLEEVE BLOCK

Design Pattern

Verify the sleeve cap ease. It should amount to 5 - 8 % for industrial manufacturing and 7 - 10 % for bespoke tailoring. Cut through the sleeve pattern from the sleeve cap to the hem and adjust the sleeve cap ease by overlapping or spreading the sleeve pieces. Mark the sleeve vent 9 cm long for the three buttons. Add the sleeve vent facing and the underlap. Mark the button positions as shown. Mark the grainlines perpendicular to the elbow

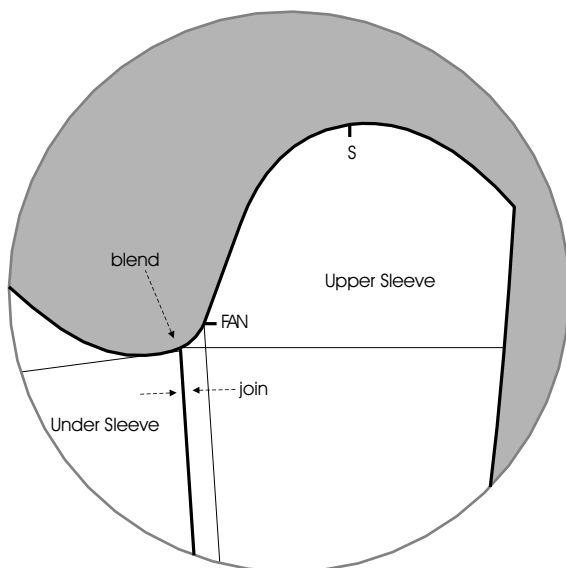


CHECK SEAM TRANSITIONS

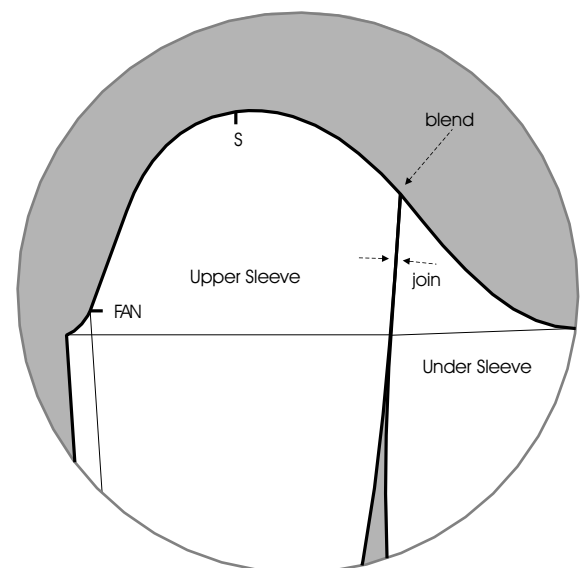
Check the Seam Transitions:

Cut out the pattern pieces, join them at the seams and check the seam transitions. Adjust and blend the seam transitions if necessary.

1 Front Sleeve Seam



2 Upper Sleeve Seam





Fashion professional sometimes claim that the patternmaking system M. Mueller & Son is too complicated. However, the relative technical and mathematical approach to pattern construction makes the patternmaking system M. Mueller & Son so flexible and offers a variety of modifications compared to other pattern systems. The pattern can be adapted to a variety of proportions and postures. Figure proportions can be determined from the measurement chart.

As a rule: the indicated variables should be adapted only to some extent. Otherwise, the pattern might go out of proportion. Major changes due to the client's figure of the customer should be made later at the basic block.

MEASUREMENT CHART SIZE 50

BODY MEASUREMENTS

		1/2	1/4	1/8	
Bh	Body height	177.0 cm	88.5	44.3	22.2
Cg	Chest girth	100.0 cm	50.0	25.0	12.5
Wg	Waist girth	90.0 cm	45.0	22.5	
Hg	Hip girth	102.0 cm	51.0		
Slg	Sleeve length	64.0 cm			

AUXILIARY MEASUREMENTS

CALCULATION

Nw	Neck width	8.0 cm	= 1/10 of 1/2 chest girth (Cg) + 3 cm
Sd	Scye depth	25.0 cm	= 1/8 chest girth (Cg) + 12 cm to 12.5 cm
Bwl	Back waist length	46.0 cm	= 1/4 body height (Bh)
Hd	Hip depth	22.2 cm	= 1/8 body height (Bh) from waist
Lg	Length	77.0 cm	= 1/2 body height (Bh) minus 11 cm to 13 cm
Ad	Armhole depth	26.8 cm	= Sd + 2 cm to 2.5 cm
Bw	Back width	20.8 cm	= 2/10 Cg + 0.5 cm to 1 cm (up to 100 Cg) = 1/10 Cg + 10.5 cm to 11 cm (more than 100 Cg)
Sw	Scye width	15.7 cm	= 1/8 Cg + 2.5 cm to 3.5 cm
Cw	Chest width	21.3 cm	= 2/10 Cg + 1 cm to 1.5 cm
Total width		57.8 cm	
		minus 50.0 cm	= 1/2 chest girth (Cg)
		= 7.8 cm	= ease at 1/2 chest

Abw Abdomen width **21.8 cm** = 1/4 waist girth (Wg) minus 0.5 cm to 1 cm

Do not take the abdomen width into account if the abdomen width is smaller than the chest width. In this case, use the same amount as for the chest width (Abw = Cw).

Scye Depth Ease

More ease at the scye depth results in a lower chest line and a lower armhole. Keep the armhole small and high for a slim fitting style to be able to lift the arms up without pulling the jacket up (freedom of movement). Add more ease and receive a lower armhole for a wider more casual jacket and to accommodate a wider shirt sleeve.

Length Deduction

For the jacket length, deduct more or less from 1/2 body height depending on the current trend or as preferred.

Armhole Depth Ease

Adjust the ease at the front armhole depending on the client's figure. The amount can be increased for more front length for an upright figure or full chest. Decrease the amount to reduce the front length for a hunching forward posture.

Wearing Ease

The amount of wearing ease to the chest girth can be varied for a wider or narrower jacket. All values should be changed proportional.



Shoulder Slope

Increased the amount for sloping shoulders or reduced the amount for straight / high shoulders or to adapt to higher shoulder pads.

Shoulder Width

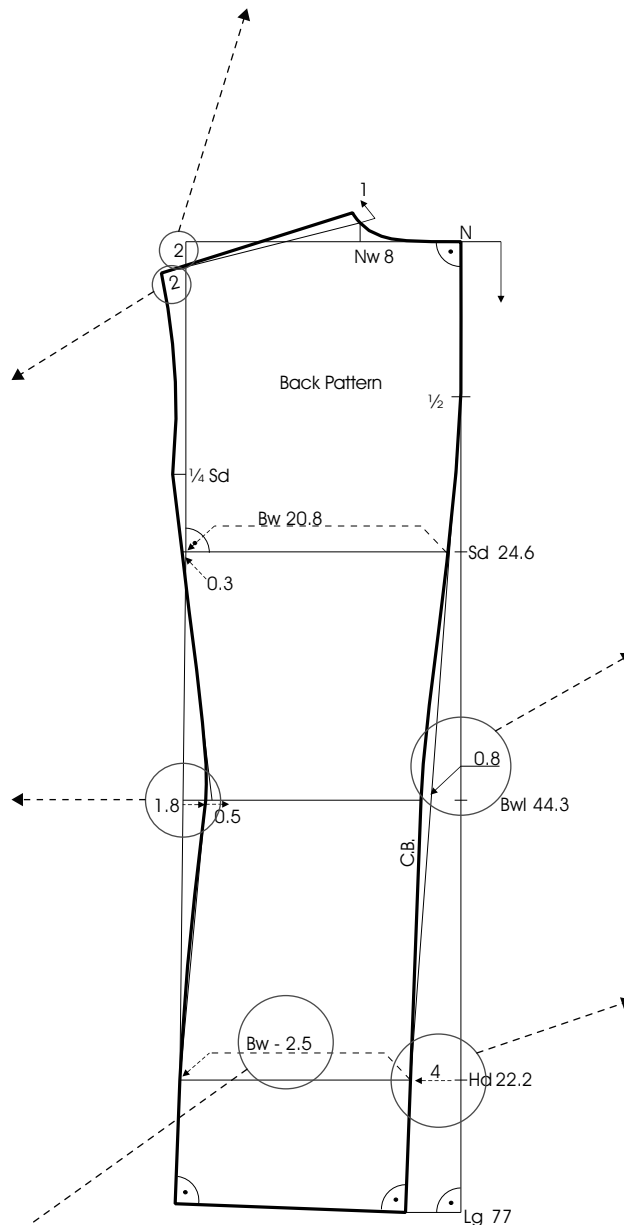
Change the shoulder width wider or narrower. Major changes should be done by changing the back width ease.

Taper the Sideseam

The amount of intake can be reduced. More intake is difficult to the shape of the seam.

Back Width Deduction

The calculation affects the position of the back panel seam at the hip (deduct more for a smaller back panel and less for a wider back panel)



Taper the Centre Back

The amount of intake can be reduced but should only be slightly increased.

Slant of the Centre Back

The slant of the centre back can be reduced for a straighter back seam but should not be increased.



Shoulder Slope

The basic suit jacket pattern is designed for a normal shoulder pad. Adapt the shoulder slope for a jacket without shoulder pads.

Front Shoulder Slope

Increased the amount for sloping shoulders or reduced the amount for straight / high shoulders or to adapt to higher shoulder pads. Compare to changes on back pattern.

Keeping Width

Transfer the back shoulder width to the front shoulder and deduct a certain amount to adjust the width in the back shoulder. The back shoulder should be longer for rounder or stronger shoulder blades (more deduction). It also depends on the material how much extra width can be worked into the seam without puckering.

Front Pattern Slant

Increase the amount for an upright figure. More slant results in a longer front.

Distance to Chest Line

The distance between dart and chest line can be varied and adapted to the position of the chest pocket.

Dart Intake

The dart intake can be as shown in the illustration or it can be equal at the waist and pocket (both 1.5 cm or less).

Front Length

The amount can be varied to either reduce the front length for a forward hunching posture or for a perpendicular hemline.

Wearing Ease at the Hip

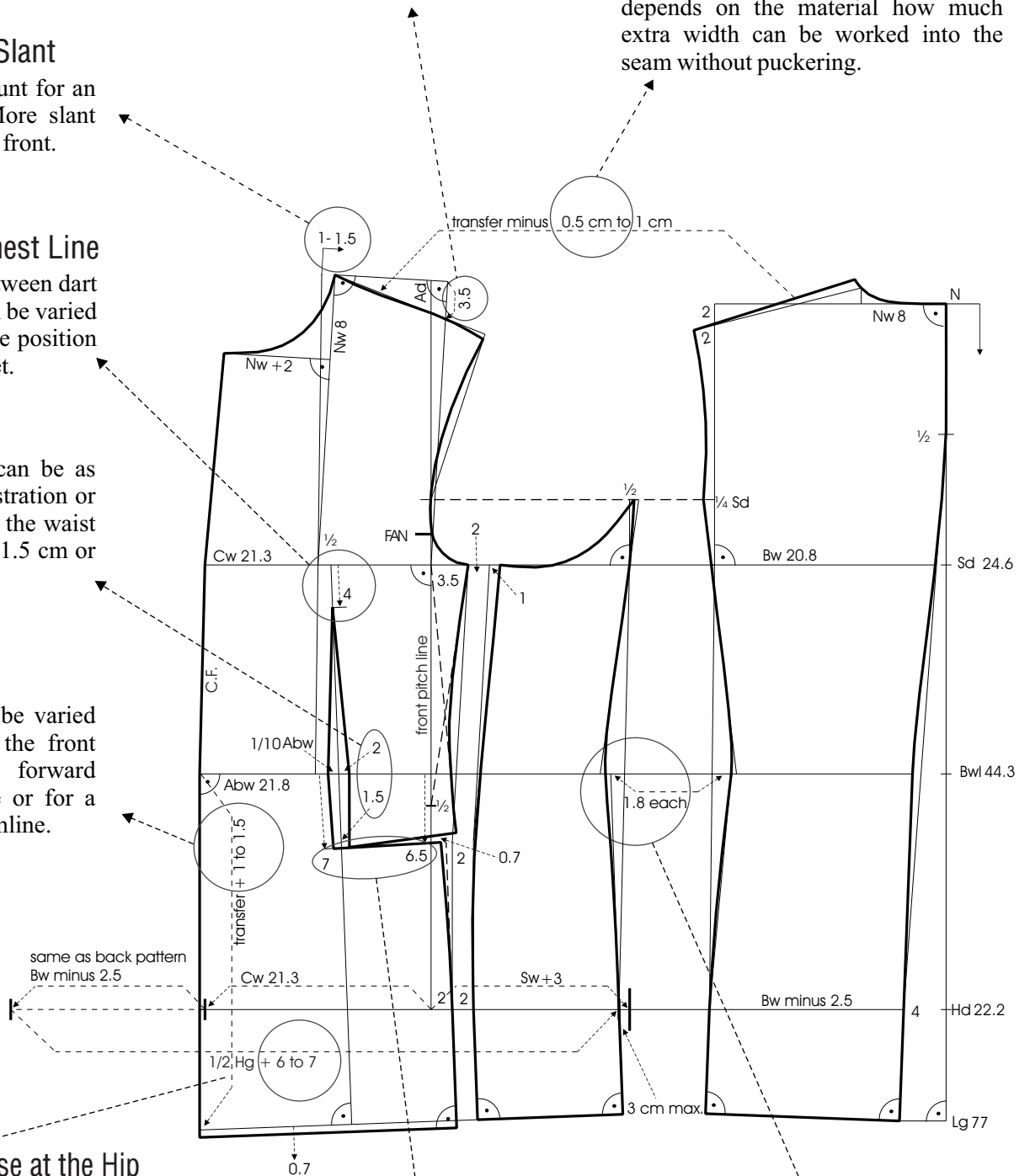
The amount of ease at the hip can be varied for a wider or narrower fit. The intake at the back side panel can be adjusted by changing the ease amount.

Pocket Position

The pocket position can be changed according to the jacket length and the pocket style. Lower the pocket entry to hide it under a patch pocket.

Taper the Sideseam

The amount of intake can be reduced the same as on the back pattern.





SLEEVE MEASUREMENTS		1/2	
Ah	Armhole height	43.8 cm	21.9
Ac	Armhole circumference	55.0 cm	27.5
<hr/>			
SIhw	Sleeve hem width	30.0 cm	15.0
Slg	Sleeve length	64.0 cm	
Ch	Cap height	17.7 cm	= 1/2 Ah minus (1/10 of 1/2 Ah + 1.5 cm to 2.5 cm)
Slw	Sleeve width	28.0 cm	= 1/2 Ac + 0 cm to 1 cm

Deduction for Cap Height

This variable affects the sleeve cap height. The greater the amount, the shorter the sleeve cap height. Deduct less for a higher sleeve cap.

Addition to 1/2 Sleeve Width

This variable affects the sleeve width and the sleeve cap ease. Depends on tailoring and material. A deduction is also possible to achieve a narrow sleeve or for industrial manufacturing.

Lower Sleeve Curve Slant

The slant of the guideline depends on the forward position. A more slanted lower sleeve curve results in a better freedom of movement but too much width can cause wrinkles.

Taper the Front Sleeve Fold

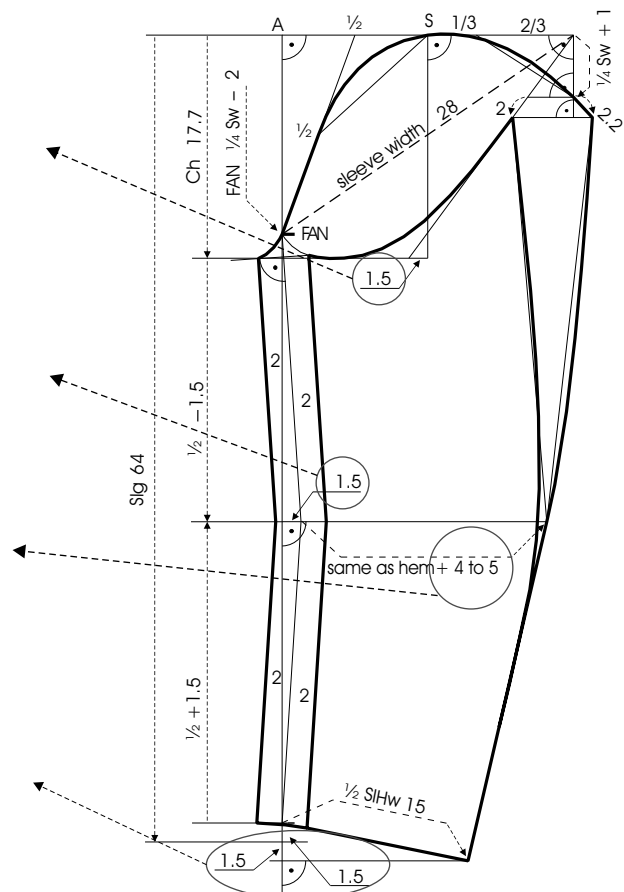
The intake at the sleeve fold can vary but might cause wrinkles if too big.

Elbow Width

The addition determines the width at the elbow as well as the shape of the upper sleeve seam.

Sleeve Hem Slant

Measure this amount up and down from the sleeve length. The slant can be varied but the seam transition has to be checked again.





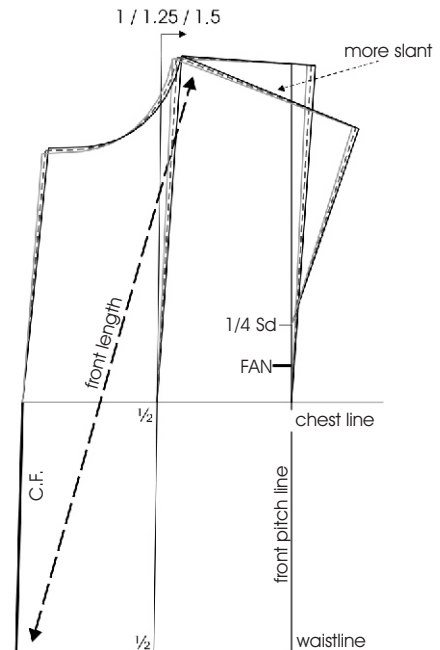
The pattern drafting system M. Mueller & Son offers many opportunities to adapt the pattern to the customer's posture already during the construction by adjusting variable amounts. Two of these variables are described here.

Front Length

The front length can be varied by changing the addition to the armhole height and by the slant of the halfway chest-width/abdomen-width line.

Lengthen the front for an upright posture by changing the slant of the halfway line. The front length increases from the waist to the neck point. The position of the shoulder seam moves to the side which corresponds to this figure.

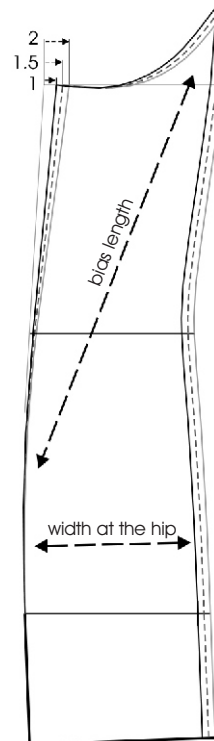
On the contrary, reduce the slant for a straighter and shorter front if the customer is more hunched forward. The slant can be reduced to 0.5 cm.



Side Panel Slant

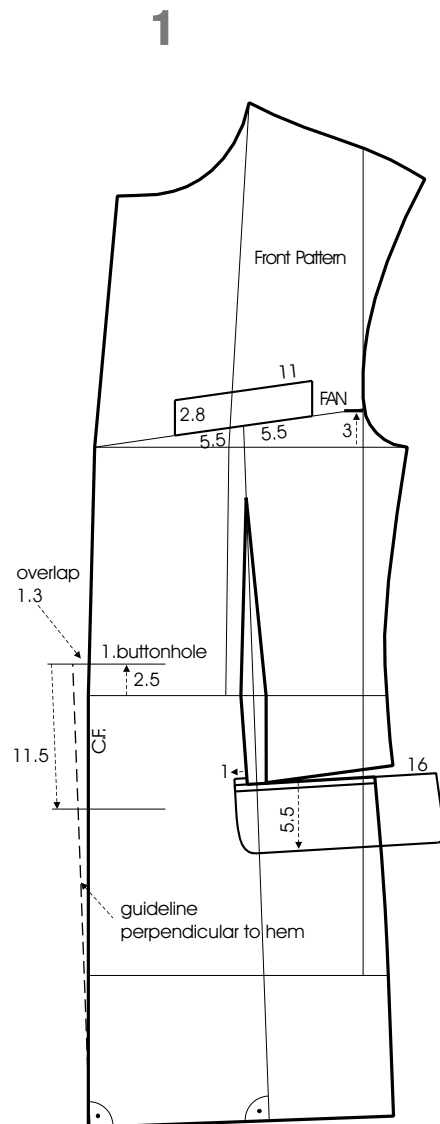
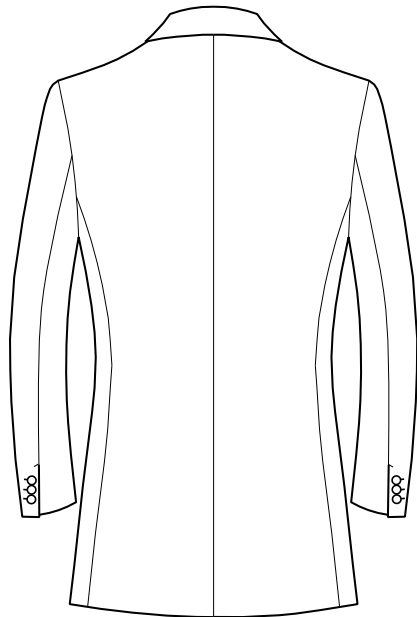
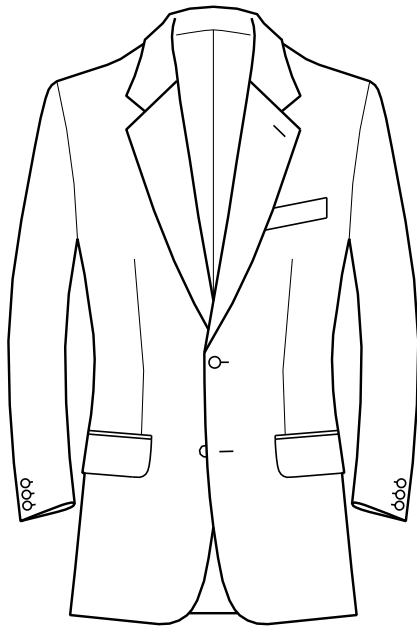
Increase the slant of the side panel for a customer with a protruding figure. The diagonal length is longer which prevents diagonal creases under the armhole.

The amount of 1 cm to 2 cm for the slant is added to the scye width measurement (from the back side seam to the front pitch line, e.g. scye width plus 3 cm = 2 cm separation + 1 cm slant). The bottom part becomes wider with more ease at the hip.





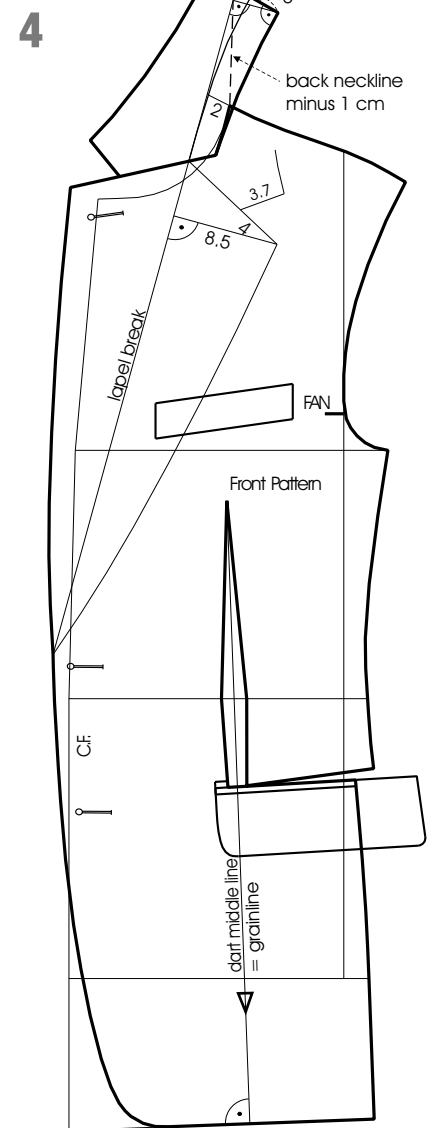
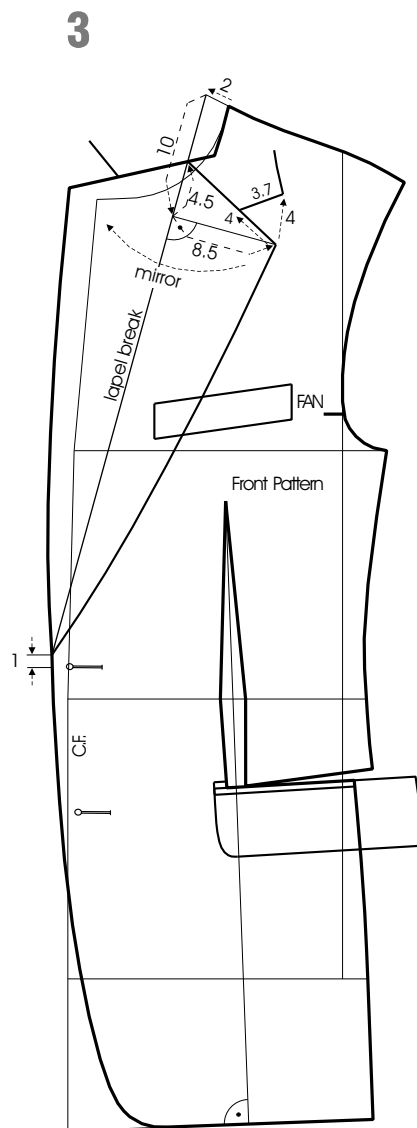
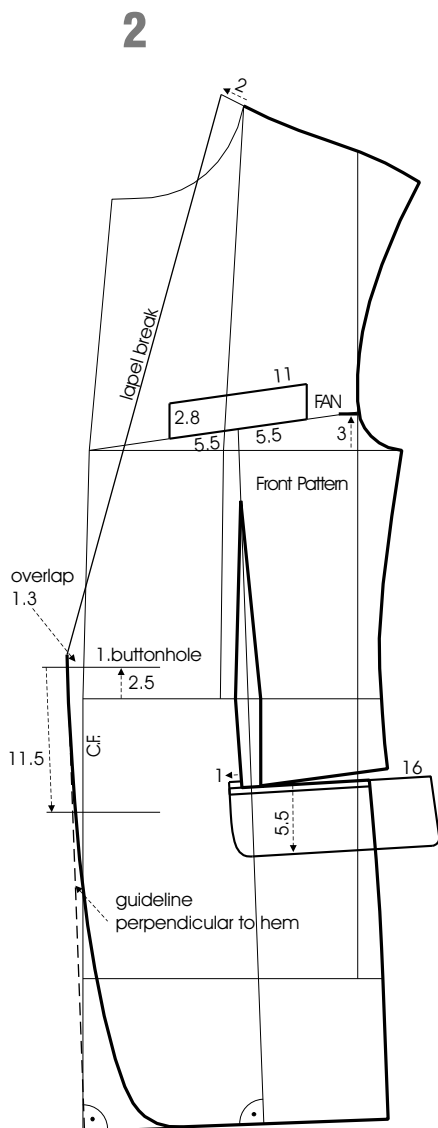
FRONT VARIATIONS: SINGLE-BREASTED JACKET WITH 2 BUTTONS



1 Mark the welt pocket on the pocket entry, ending 1 cm beside the waist dart. Draw the pocket flap 5.5 cm wide and 16 cm long. Adjust the pocket measurements depending on the jacket size, e.g. pocket length 17 cm for size 54. Shape the front corner of the pocket flap later according to the shape of the round front edge. Draw the chest pocket 11 cm long, 2.8 cm wide and with a 3 cm slant. Mark the chest pocket centred over the chest dart. Draw the chest pocket longer for larger sizes. Mark the closing button 2.5 cm above the waistline at the centre front. Add 1.3 cm overlap parallel to the centre front at the closing button and draw the guideline for the front edge perpendicular to the

hem line. The perpendicular guideline must not meet the centre front at the hem, only the angle and the width of the overlap are important. **It is only possible to draw the overlap perpendicular to the hemline if the abdomen width is not larger than the chest width plus 1 cm.** Mark the lower buttonhole 11.5 cm below the closing button.

2 Draw the cut-away front as shown in the illustration and mark the lower buttonhole 1.3 cm away from the front edge. Mark the lapel break 1 cm above the upper button and 2 cm away from the neck point at the front shoulder.



3 On the lapel break, measure 10 cm downward and square out to the right. Measure 8.5 cm for the lapel width. Mark the gorge seam 4.5 cm above the lapel width and draw the seamline as shown in the illustration. Measure 4 cm for the lapel corner and 3.7 cm for the collar edge. The collar tip is 4 cm away from the lapel. Draw the lapel shape and the collar corner onto the front pattern and mirror the seamlines over the lapel break to the outside. Extend the mirrored gorge seam to the neckline.

4 Measure the back neckline. Extend the lapel break upwards and measure the length of the back neckline minus 1 cm from the shoulder point to the extended lapel break. Square out to the right from this point. Measure 1 cm to 1.5 cm for the collar roll and then 2.5 cm for the collar

stand to the right. The collar roll amount of 1 cm to 1.5 cm determines the roundness of the collar and therefore the length of the outer collar edge. A wider collar needs more length and therefore more roundness. Also a collar on a high lapel needs to be rounder. Less length and roundness is required for a collar on a low lapel. Measure 1.2 cm collar roll for this single-breasted jacket with two buttons.

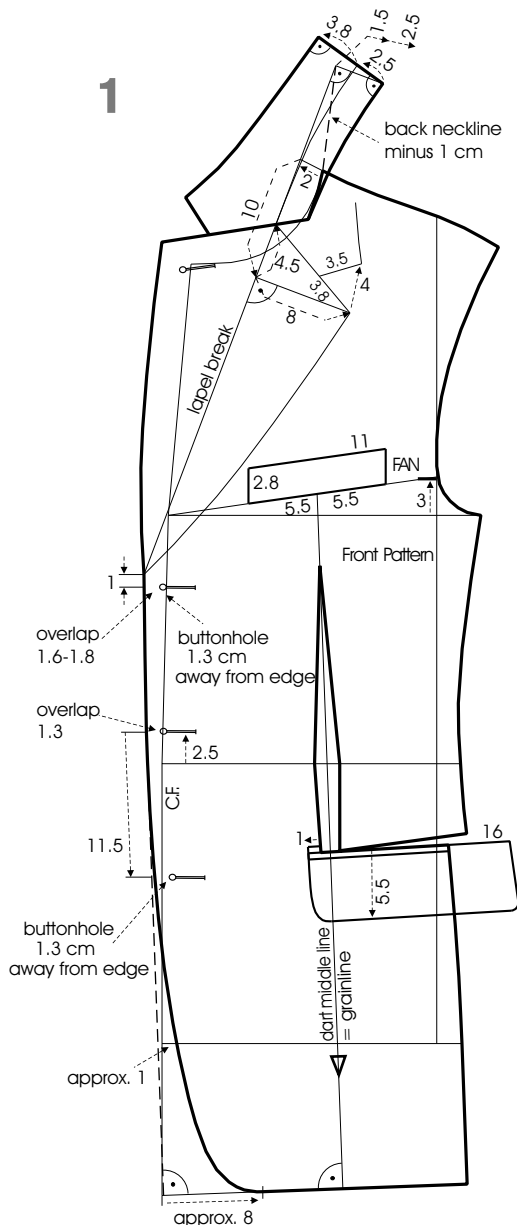
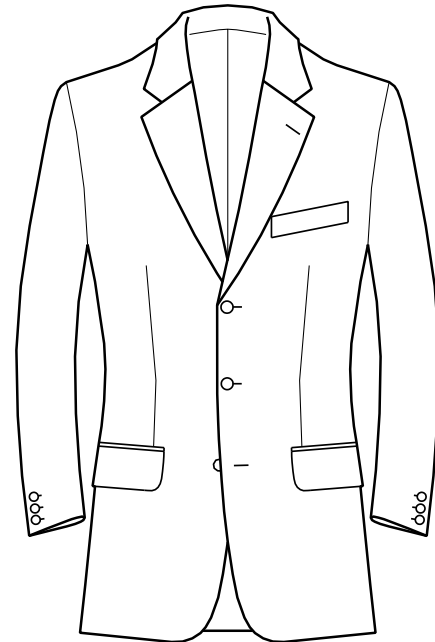
Draw the collar line from this point to the neckline. Draw the centre back of the collar perpendicular to the collar line. Draw the collar stand 2.5 cm wide and the collar back 3.8 cm wide. Finish the collar shape as shown in the illustration.

Verify the seam length of the collar. The collar line should be about 1 cm shorter than the neckline since the collar will be stretched during the seam shaping process.



FRONT VARIATIONS: SINGLE-BREASTED JACKET WITH 3 BUTTONS

1 Mark the position of the closing button 2.5 cm above the waist line. Mark the upper and lower button 11.5 cm above and below the closing button. Add 1.3 cm overlap at the closing button. Draw a guideline from the overlap perpendicular to the hem. The angled line does not necessarily have to meet the centre front at the hem as long as the abdomen width is not more than 1 cm larger as the chest width. Draw the cut-away front edge according to the illustration. The overlap should not exceed 1.6 – 1.8 cm at the upper buttonhole. Mark the buttonholes 1.3 cm away from the front edge.

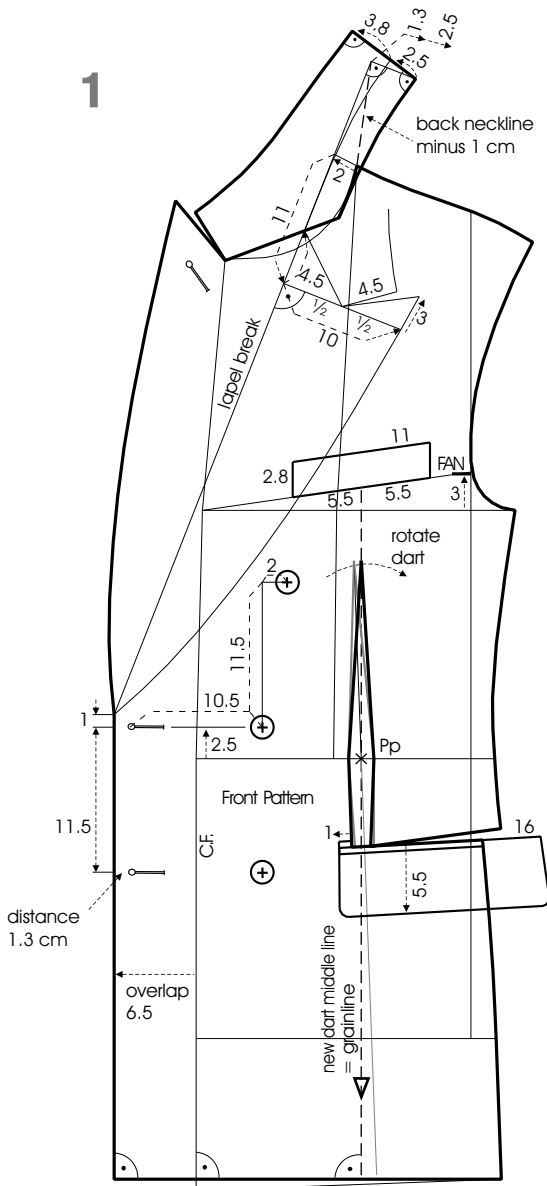
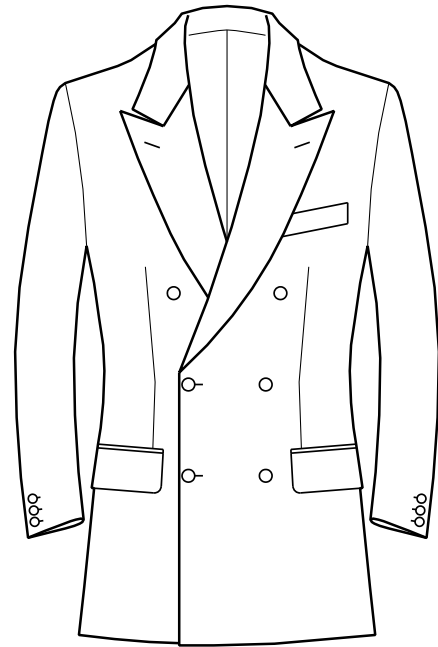


Draw the lapel 8 cm wide as shown in the illustration. Measure the back neckline. Extend the lapel break upwards and measure the length of the back neckline from the shoulder point to the extended lapel break. Square out to the right from this point. Measure 1.5 cm for the collar roll (slightly rounder for a higher lapel) and then 2.5 cm for the collar stand to the right. Draw the collar line from this point to the neckline. Draw the centre back of the collar perpendicular to the collar line. Draw the collar stand 2.5 cm wide and the collar back 3.8 cm wide. Finish the collar shape as shown in the illustration. Verify the seam length of the collar. The collar line should be about 1 cm shorter than the neckline since the collar will be stretched during the seam shaping process.

Draw the Frankfurt pocket and the welt pocket as shown in the illustration. Mark the grainline along the dart middle line on the front pattern.



1 Draw the front hemline from the sideseam perpendicular to the centre front for the double-breasted jacket. This adjustment is necessary to prevent the underlap from showing. Rotate the waist dart over the pivot point (Pp) at the waist so that the dart middle line is perpendicular to the new hemline and parallel to the centre front. Draw the pocket 16 cm long and straighten the pocket position depending on the material. Slightly round the front pocket corner as shown in the illustration.



Draw the chest pocket centred over the new waist dart with 3 cm slant. Draw the welt for the chest pocket 11 cm long and 2.8 cm wide. Mark the position of the closing button pair 2.5 cm above the waist line. Mark the lower button pair 11.5 cm below the closing button. Add 1.3 cm overlap at the closing button. Add 6.5 cm overlap parallel to the lower part of the centre front. Mark the buttonholes 1.3 cm away from the front edge. Mirror the buttonhole position over the centre front to the inside and mark the button position 10.5 cm away from the centre front. Measure 11.5 cm upwards and 2 cm to the right for the upper button. Measure 2 cm from the neck point to the left and draw the lapel break to the front edge, ending 1 cm above the closing button.

Draw the pointed lapel 10 cm wide as shown in the illustration. Measure the back neckline. Extend the lapel break upwards and measure the length of the back neckline from the shoulder point to the extended lapel break. Square out to the right from this point. Measure 1.3 cm for the collar roll and then 2.5 cm for the collar stand to the right. Draw the collar line from this point to the neckline. Draw the centre back of the collar perpendicular to the collar line. Draw the collar stand 2.5 cm wide and the collar back 3.8 cm wide. Finish the collar shape as shown in the illustration. Verify the seam length of the collar. The collar line should be about 1 cm shorter than the neckline since the collar will be stretched during the seam shaping process.



MEASUREMENT CHART SIZE 25

BODY MEASUREMENTS

			1/2	1/4	1/8
Bh	Body height	171.0 cm	85.5	42.8	21.4
Cg	Chest girth	100.0 cm	50.0	25.0	12.5
Wg	Waist girth	96.0 cm	48.0	24.0	
Hg	Hip girth	104.0 cm	52.0		
Slg	Sleeve length	62.0 cm			

AUXILIARY MEASUREMENTS

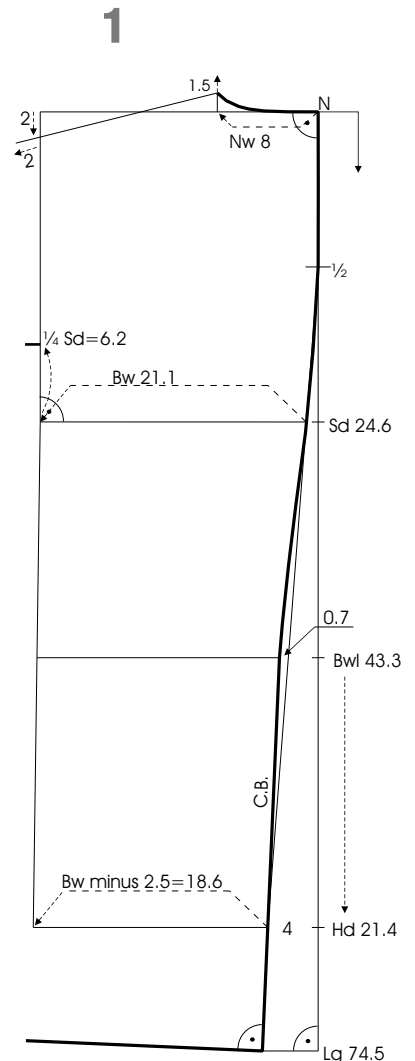
CALCULATION

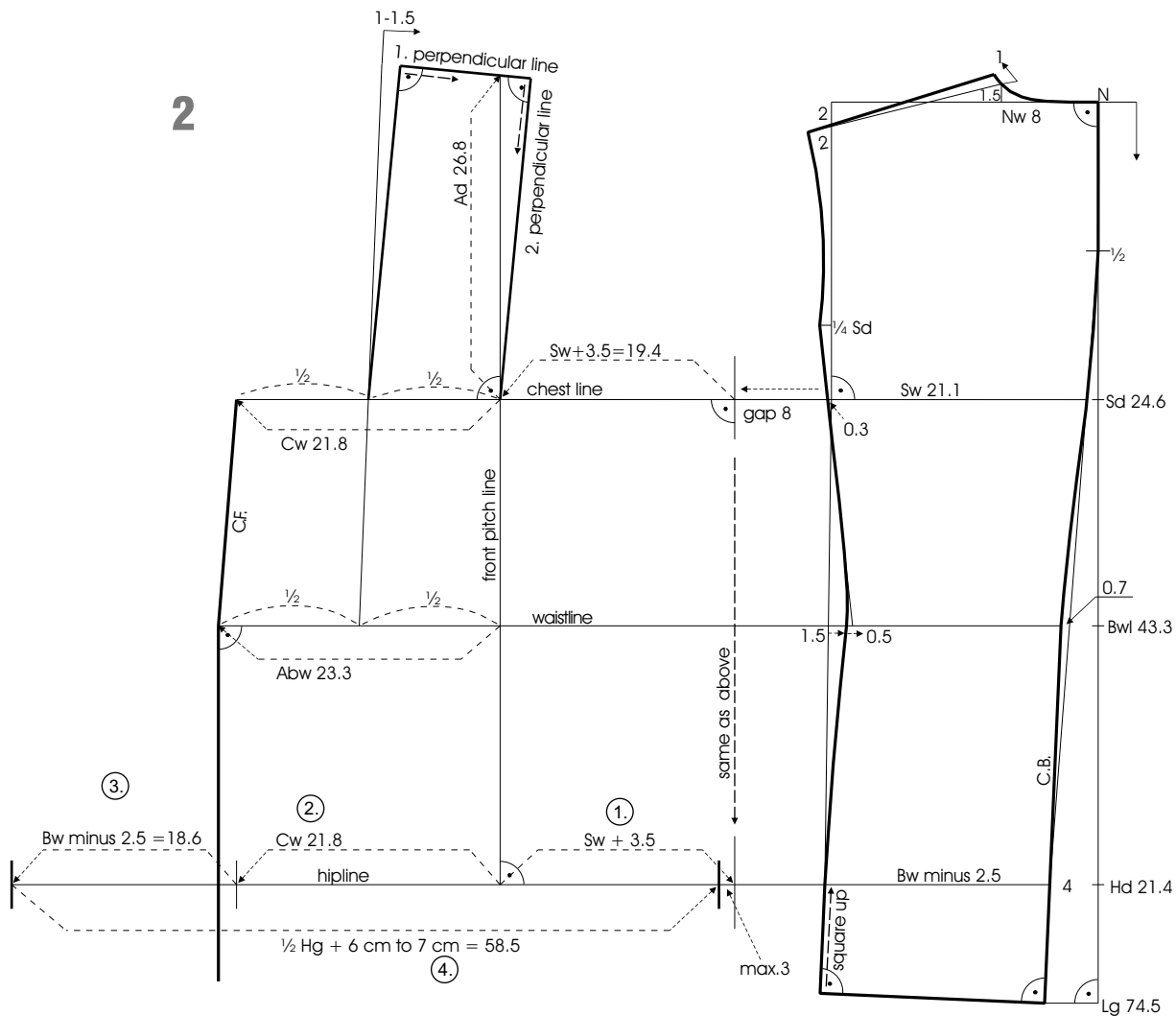
Nw	Neck width	8.0 cm	= 1/10 of 1/2 chest girth (Cg) + 3 cm
Sd	Scye depth	24.6 cm	= 1/8 chest girth (Cg) + 12 cm to 12.5 cm
Bwl	Back waist length	43.3 cm	= 1/4 body height (Bh) + 0.5 cm
Hd	Hip depth	21.4 cm	= 1/8 body height (Bh) from waist
Lg	Length	74.5 cm	= 1/2 body height (Bh) minus 11 cm to 12 cm
Ad	Armhole depth	26.8 cm	= Sd + 2 cm to 2.5 cm
<hr/>			
Bw	Back width	21.1 cm	= 2/10 Cg + 1 cm to 1.5 cm (up to 100 Cg) = 1/10 Cg + 11 cm to 11.5 cm (more than 100 Cg)
Sw	Scye width	15.9 cm	= 1/8 Cg + 3 cm to 4 cm
Cw	Chest width	21.8 cm	= 2/10 Cg + 1.5 cm to 2 cm
<hr/>			
Total width		58.8 cm	
	minus 50.0 cm		= 1/2 chest girth (Cg)
	= 8.8 cm		= ease at 1/2 chest
<hr/>			
Abw	Abdomen width	23.3 cm	= 1/4 waist girth (Wg) minus 0.5 cm to 1 cm

1 Starting at the neck point (N), measure the scye depth, the back waist length and the finished length downward on a vertical line. Measure the hip depth downward from the waist. Square out to the left from all points. Divide the scye depth in half and mark the midpoint. Taper the centre back 4 cm at the hip and draw a guideline to the 1/2-scye-depth point. Taper the centre back 0.7 cm at the waist. Draw the centre back. Measure the neck width from the neck point (N) to the left and square up 1.5 cm. Draw the back neckline perpendicular to the centre back and lengthen the neckline 1 cm. Do not draw the neckline too flat. On the chest line, measure the back width to the left and square up from this point. Mark the shoulder slope with 2 cm. Draw a guideline to the neckline and measure 2 cm from the back width to the left for the shoulder width. Draw the shoulder seam. Transfer the measurement of the back width minus 2.5 cm to the hipline and draw a guideline to the back width on the chest line.

Belly Dart Construction for a Stocky Figure

The measurement chart shows a stocky figure with a protruding belly. A waist circumference that is only 0-6 cm smaller than bust circumference (8-12 cm is normal) is the indicator for a stocky figure (standard sizes 23-32) and requires the construction of a belly dart for a straight centre front.



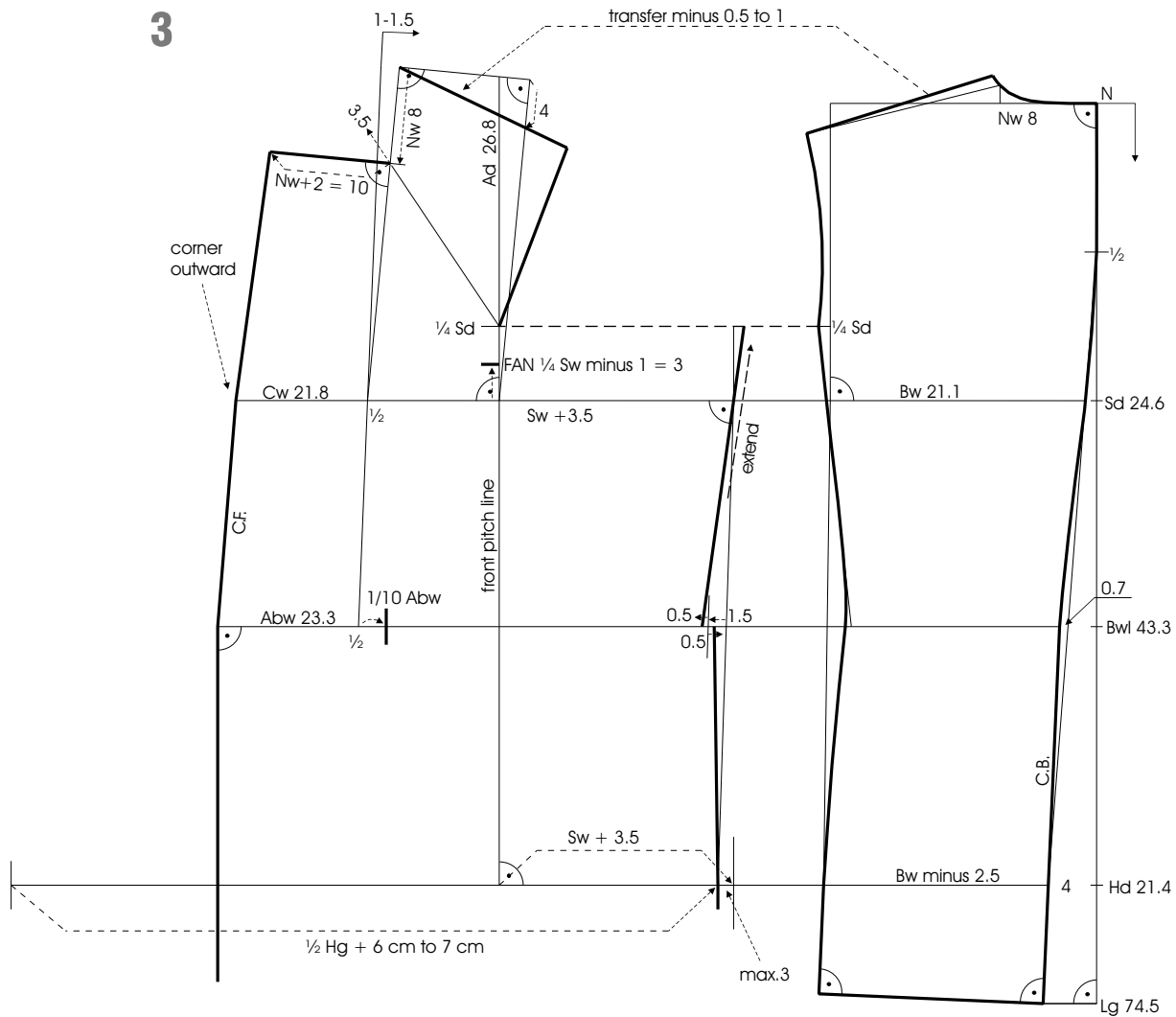


2 At the scye depth, measure 0.3 cm for the overlap to the left. Draw the back hemline perpendicular to the centre back. Mark 1.5 cm intake at the waist at the back sideseam and draw a guideline to the hipline. Measure 0.5 cm from the waist intake to the right and draw another guideline to the 0.3-cm point. Extend this guideline upwards to the 1/4-scye-depth line. Draw the back armhole in a flat curve for good freedom of movement. Extend the chest line, the waistline, and the hip line to the left for the front and side pattern. Leave some space between the back pattern and the side pattern. Then measure the scye width plus 3.5 cm to the left. This corresponds to a 2-cm separation of the front and side pattern and a 1.5-cm slant of the side pattern. Square up and down for the front pitch line. From the chest line, measure the armhole depth upward along the front pitch line. On the chest line, measure the chest width from the front pitch line to the left. On the waistline, measure the abdomen width from the front pitch line to the left. Divide both distances by two, connect the midpoints with a line and

extend this line upward. Depending on the posture of the client and the corresponding front waist length, measure around 1 cm to 1.5 cm from the extended line to the right. From the armhole depth, draw a perpendicular line to the slanted guideline. Extend this perpendicular line over the armhole height to the right and draw a line from the intersection of the front pitch line and the chest line now perpendicular to the guideline that runs over the armhole depth. Connect the chest width and the abdomen width with a line. Square down from the waistline. Hip measurement: On the hipline, measure the scye width plus 3.5 cm from the front pitch line to the right. Then measure the chest width from the front pitch line to the left. Then measure the back hip width (back width minus 2.5 cm) to the left. From this point measure $\frac{1}{2}$ hip circumference plus 6 cm to 7 cm to the right. This measurement includes a 2-cm separation of front and side piece as well as 4 cm to 5 cm ease. The difference should be no more than 3 cm. An amount exceeding 3 cm must be removed at the front side seam.

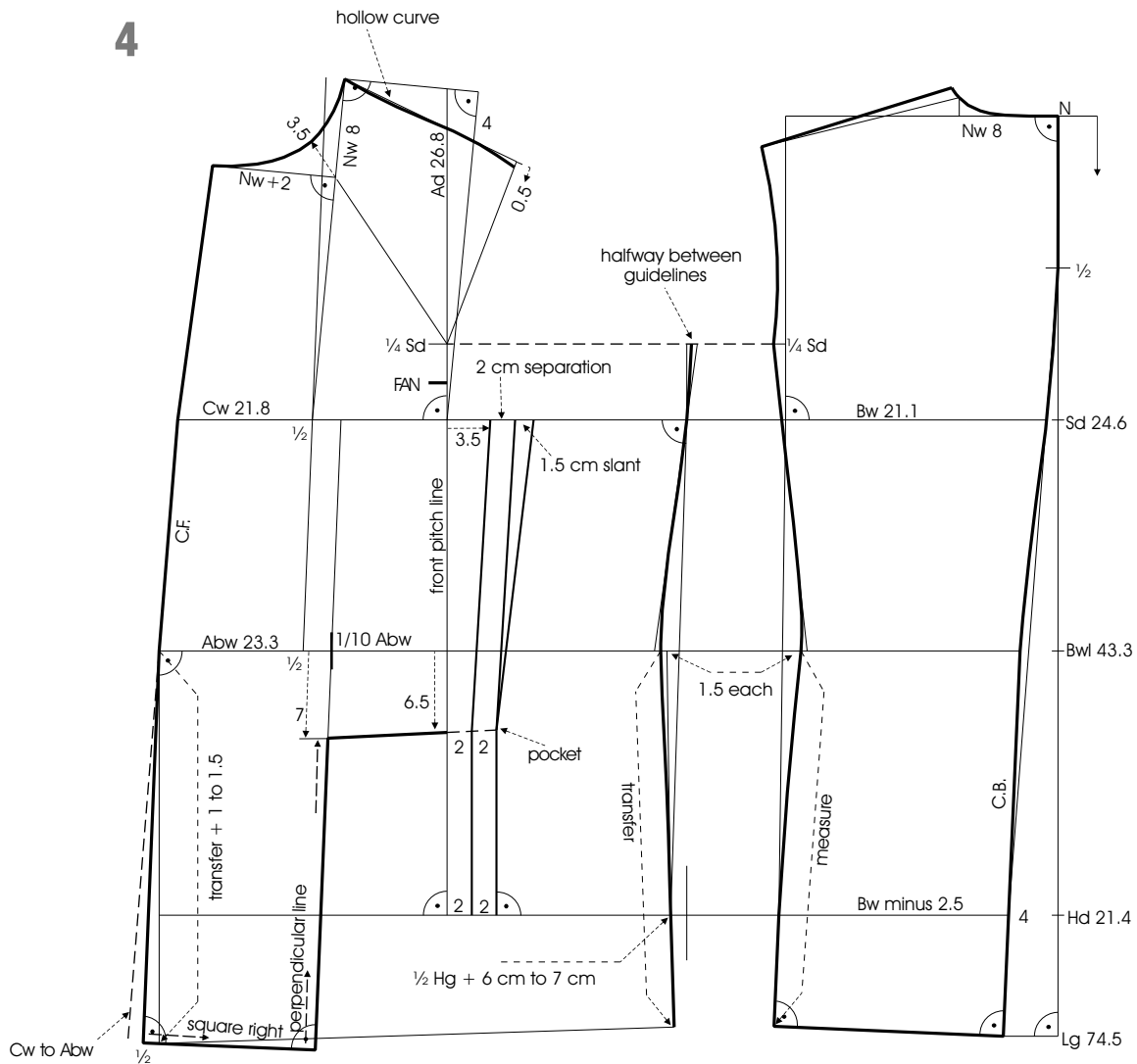


BASIC SUIT JACKET BLOCK FOR A STOCKY FIGURE



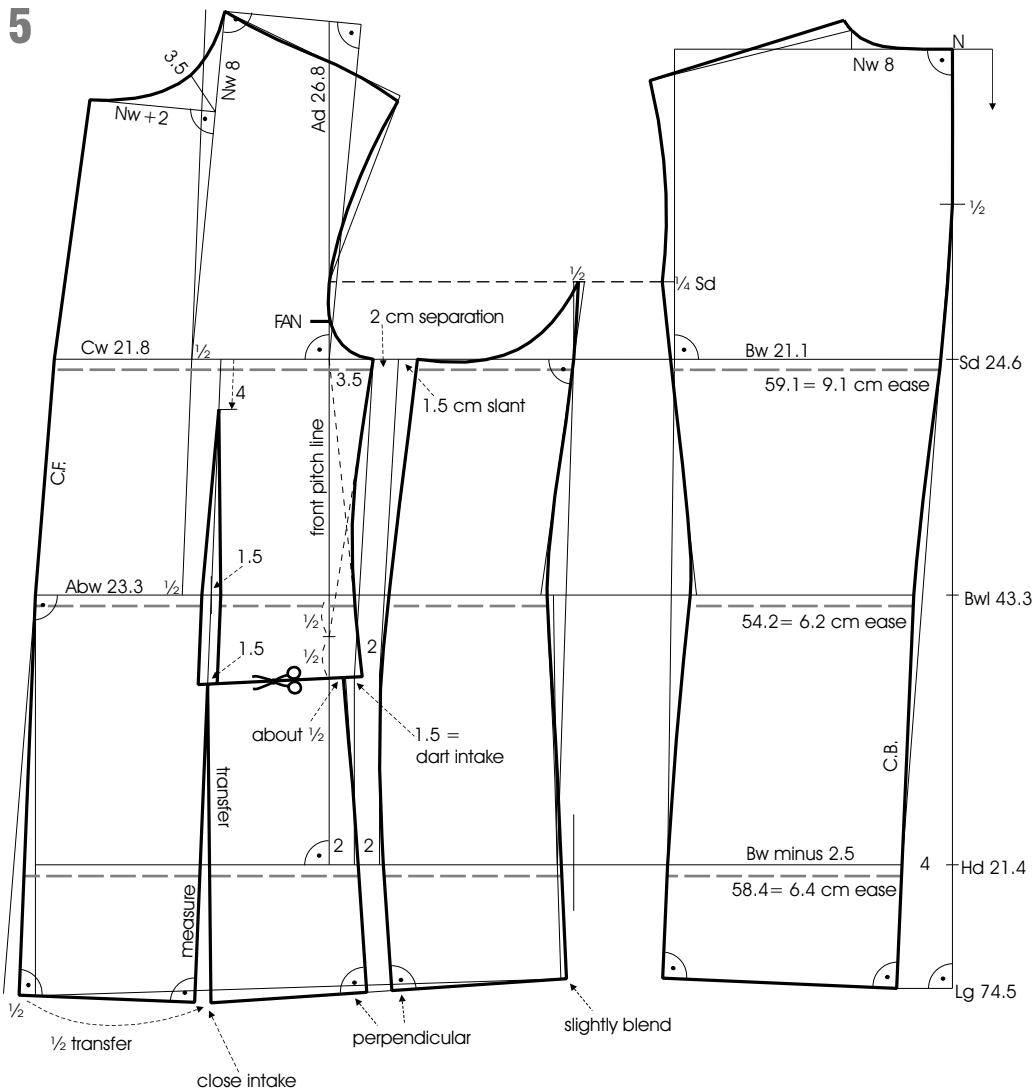
3 From the chest line, measure $\frac{1}{4}$ scye width minus 1 cm upward along the front pitch line and mark the armhole notch. Also transfer the $\frac{1}{4}$ -scye-depth line to the front armhole. From the neckline corner measure the neck width downward for the front neckline. From this point measure the neck width plus 2 cm to the left. Connect the front neckline point and the chest width with a line for the centre front. Measure 4 cm for the front shoulder slope.

Connect the neckline corner and the shoulder slope with a guideline and transfer the back shoulder width minus 0.5 cm to 1 cm to the front. Draw a guideline from the shoulder to the $\frac{1}{4}$ -scye-depth line. Mark 1.5 cm intake at the waist for the side panel seam. Measure 0.5 cm to the left and right from the waist intake and draw the guidelines as shown. Extend the upper guideline to $\frac{1}{4}$ -scye-depth line. Mark the front dart: Measure $\frac{1}{10}$ abdomen width from the midpoint of the abdomen width to the right.



4 Draw the front neckline as shown in the illustration. Shift the front shoulder seam 0.5 cm to the front at the armhole and draw the front shoulder seam. Draw the back sideseam as shown over all guidelines and points and end the seamline halfway between the extended guidelines. Measure the back sideseam from the waist to the hemline and transfer this amount to the side panel seam. Extend the auxiliary centre front from the waist downward to the same length plus 1 cm to 1.5 cm. Draw the temporary hemline from here to the side panel seam. Lengthen the centre front in the direction from the chest width to the abdomen width downward to the hemline. Draw the new centre front on

half the distance between the vertical line and the auxiliary centre front. Square out from the new centre front over the front length to the right. Draw a line from the dart midpoint (1/10 Abw) perpendicular to the front hemline. This line is the new middle line of the front dart. Extend the dart middle line upwards. Mark the pocket 7 cm below the midpoint of the abdomen width and 6.5 cm below the waist at the front pitch line. Draw guidelines for the front sideseam 2 cm beside the front pitch line and 2 cm apart. The front sideseam ends 3.5 cm beside the front pitch line at the armhole. Draw another guideline 1.5 cm to the right for the slant of the side panel pattern.



5 Mark the front dart with 1.5 cm dart intake between the pocket line and the waistline. The front dart ends 4 cm below the chest line. Transfer the distance between the new centre front and the auxiliary centre front as intake for the belly dart. Measure the dart leg length and extend the right dart leg accordingly. Complete the front hemline as shown in the illustration. Adjust the back side panel seam, setting it perpendicular to the hemline. Draw the front sideseam slightly curved from the pocket perpendicular to the hemline. Add 1.5 cm to the front sideseam above the pocket entry to make up for the dart intake at the waist. There is no intake at the pocket entry needed for the construction with belly dart. The pocket entry opens later when the belly dart is closed. Mark the pocket entry as cutting line. Draw another guideline for the upper front and draw the upper front sideseam as shown. Draw the front side panel seam along the slanted line and perpendicular to the hemline. Plot the armhole on the front and side pattern according to the illustration. Draw the side panel armhole as a flat curve for maximum freedom of movement. Verify the amount of ease included at the chest, waist and hipline. Cut out all pattern pieces. Compare all seam lengths and blend the transitions at jointed seamlines.

Verify the Finished Circumference Measurements:

1/2 finished chest circumference = 59.1 cm = 0.3 cm more than the calculated measurement. The difference of 0.3 cm corresponds to the addition at the back armhole.

1/2 finished waist circumference = 54.2 cm = minus half of the waist girth of 48 cm corresponds to 6.2 cm wearing ease at the waist. This amount is sufficient for a suit jacket.

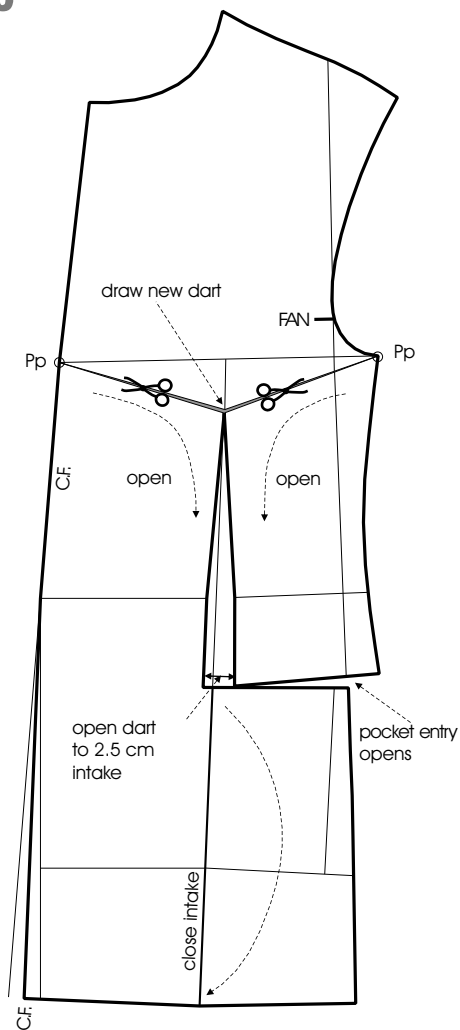
1/2 finished hip circumference = 58.4 cm = minus half of the hip girth of 52 cm corresponds to 6.4 cm wearing ease. This is slightly more than for a normal suit jacket but acceptable due to the measurements.

Sleeve:

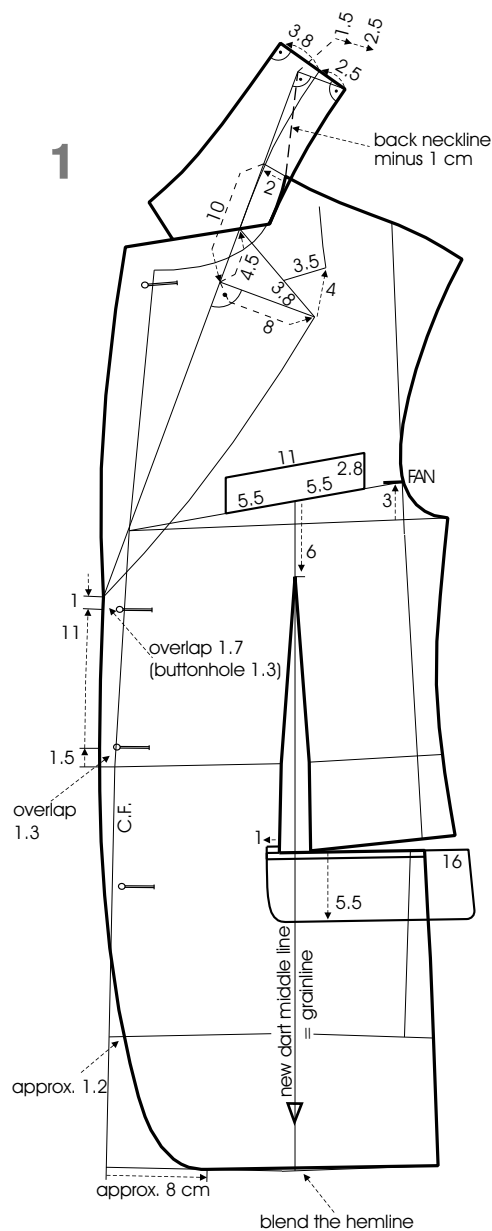
The basic two-piece sleeve pattern is constructed as already explained for the suit jacket for normal sizes and therefore not shown here.



6



1



Completion Front Pattern

6 Cut through the front pattern piece along the pocket line and close the dart intake at the hemline. This will create the opening at the pocket line. Blend the hemline. To work out the chest area or to adapt the front to a strong chest cut from the dart to the centre front and to the armhole and spread the front dart to 2.5 cm. Draw the new waist dart.

Design Pattern

1 Mark the position of the closing button 1.5 cm above the waistline. Mark the other buttons 11 cm above and below the closing button. Add 1.3 cm overlap at the closing button and 1.6 cm to 1.8 cm overlap at the upper button. Draw the front edge as shown in the illustration. Adjust the front edge if the overlap gets too wide at the upper button. Mark the buttonholes 1.3 cm away from the front edge. Blend the hemline.

Extend the shoulder seam 2 cm to the left for the lapel construction. Mark the lapel break and draw the lapel 8 cm wide according to the illustration. Measure the back neckline for the construction of the felt under collar. Extend the lapel break line upward. Measure the determined back neckline minus 1 cm from the front neckline corner to the lapel break. Square out to the right from this point and measure 1.5 cm for the collar roll

and 2.5 cm for the collar stand. Draw the collar seam to the neckline. Draw the centre back perpendicular to the collar seamline. Plot the collar roll and the collar shape as shown in the picture. The collar seam should be approximately 1 cm shorter than the neckline, since the collar will become longer when steam-pressed into shape. Mark the chest pocket and the Frankfurt pocket as shown. Mark the grainline along the dart middle line.



MEASUREMENT CHART SIZE 51

BODY MEASUREMENTS		1/2	1/4	1/8	
Bh	Body height	170.0 cm	85.0	42.5	21.3
Cg	Chest girth	102.0 cm	51.0	25.5	12.8
Wg	Waist girth	106.0 cm	53.0	26.5	
Hg	Hip girth	112.0 cm	56.0		
Slg	Sleeve length	60.0 cm			

AUXILIARY MEASUREMENTS		CALCULATION	
Nw	Neck width	8.1 cm	= 1/10 of 1/2 chest girth (Cg) + 3 cm
Sd	Scye depth	25.1 cm	= 1/8 chest girth (Cg) + 12 cm to 12.5 cm
Bwl	Back waist length	43.5 cm	= 1/4 body height (Bh) + 1 cm
Hd	Hip depth	21.3 cm	= 1/8 body height (Bh) from waist
Lg	Length	74.0 cm	= 1/2 body height (Bh) minus 10 cm to 12 cm
Ad	Armhole depth	27.9 cm	= Sd + 2.5 cm to 3 cm

Bw	Back width	21.4 cm	= 1/10 Cg + 11 cm to 11.5 cm (more than 100 Cg) = 2/10 Cg + 1 cm to 1.5 cm (up to 100 Cg)
Sw	Scye width	16.3 cm	= 1/8 Cg + 3 cm to 4 cm
Cw	Chest width	22.6 cm	= 2/10 Cg + 2 cm to 3 cm

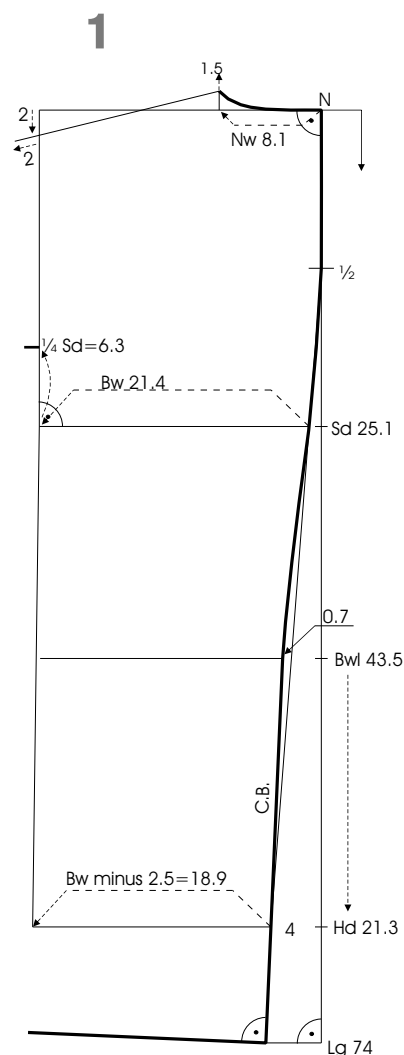
Total width	60.3 cm	
	minus 51.0 cm	= 1/2 chest girth (Cg)
	= 9.3 cm	= ease at 1/2 chest

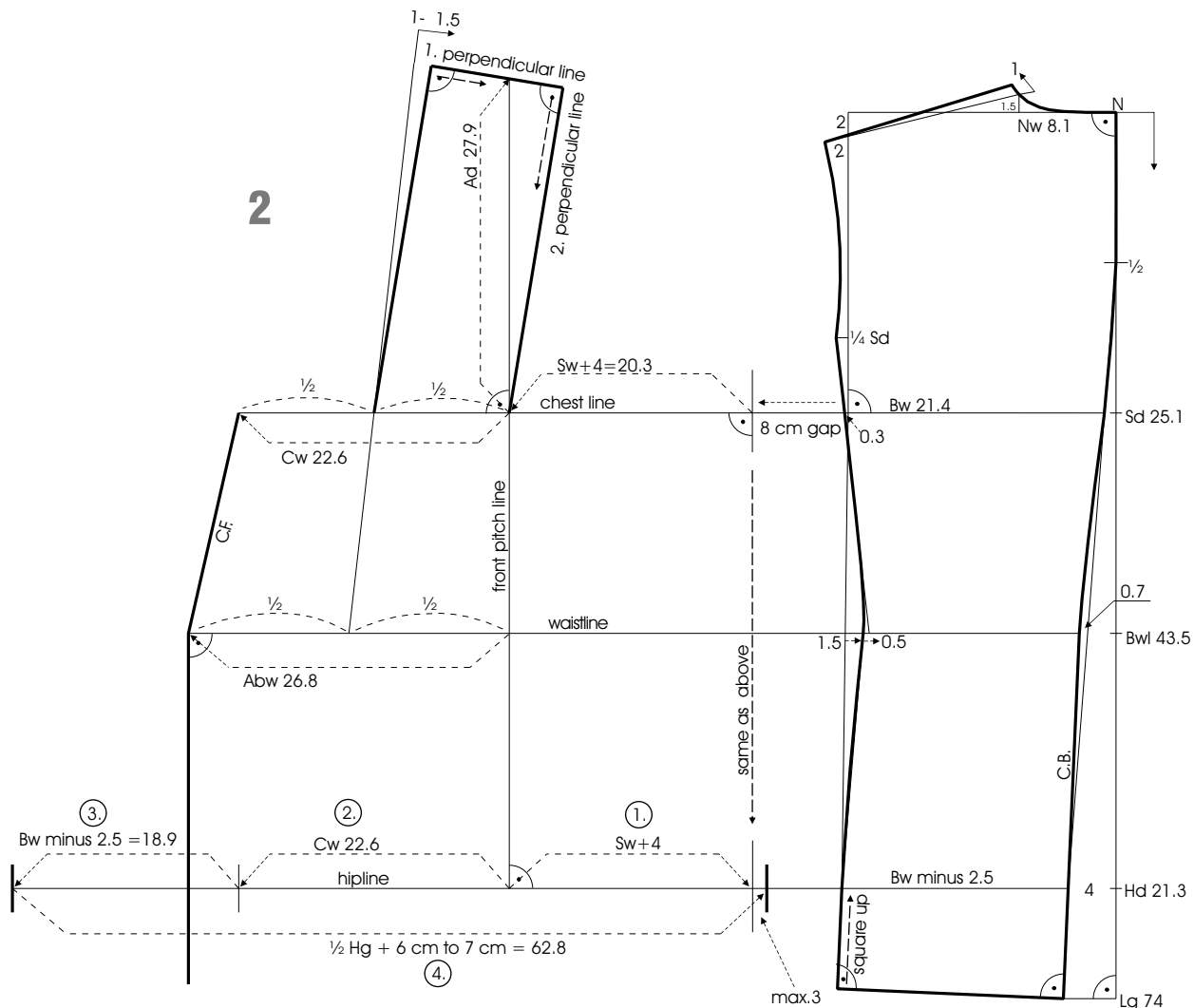
Abw	Abdomen width	26.8 cm	= 1/4 waist girth (Wg) + 0 cm to 0.5 cm
------------	---------------	----------------	---

1 Starting at the neck point (N), measure the scye depth, the back waist length and the finished length downward on a vertical line. Measure the hip depth downward from the waist. Square out to the left from all points. Divide the scye depth in half and mark the midpoint. Taper the centre back 4 cm at the hip and draw a guideline to the 1/2-scye-depth point. Taper the centre back 0.7 cm at the waist. Draw the centre back. Measure the neck width from the neck point (N) to the left and square up 1.5 cm. Draw the back neckline perpendicular to the centre back. Do not draw the neckline too flat. On the chest line, measure the back width to the left and square up from this point. Mark the shoulder slope with 2 cm. Draw a guideline to the neckline and measure 2 cm from the back width to the left for the shoulder width. Draw the shoulder seam. Transfer the measurement of the back width minus 2.5 cm to the hipline and draw a guideline to the back width on the chest line. Draw the back hemline perpendicular to the centre back.

Belly Dart Construction for a Belly Figure

The measurement chart shows a figure with a strong protruding belly. A belly figure shows a waist circumference that is larger than the chest circumference (standard sizes 49-65), also requiring the construction of a belly dart for a straight centre front. The extra width below the belly at the hem is taken out with a dart at the pocket.





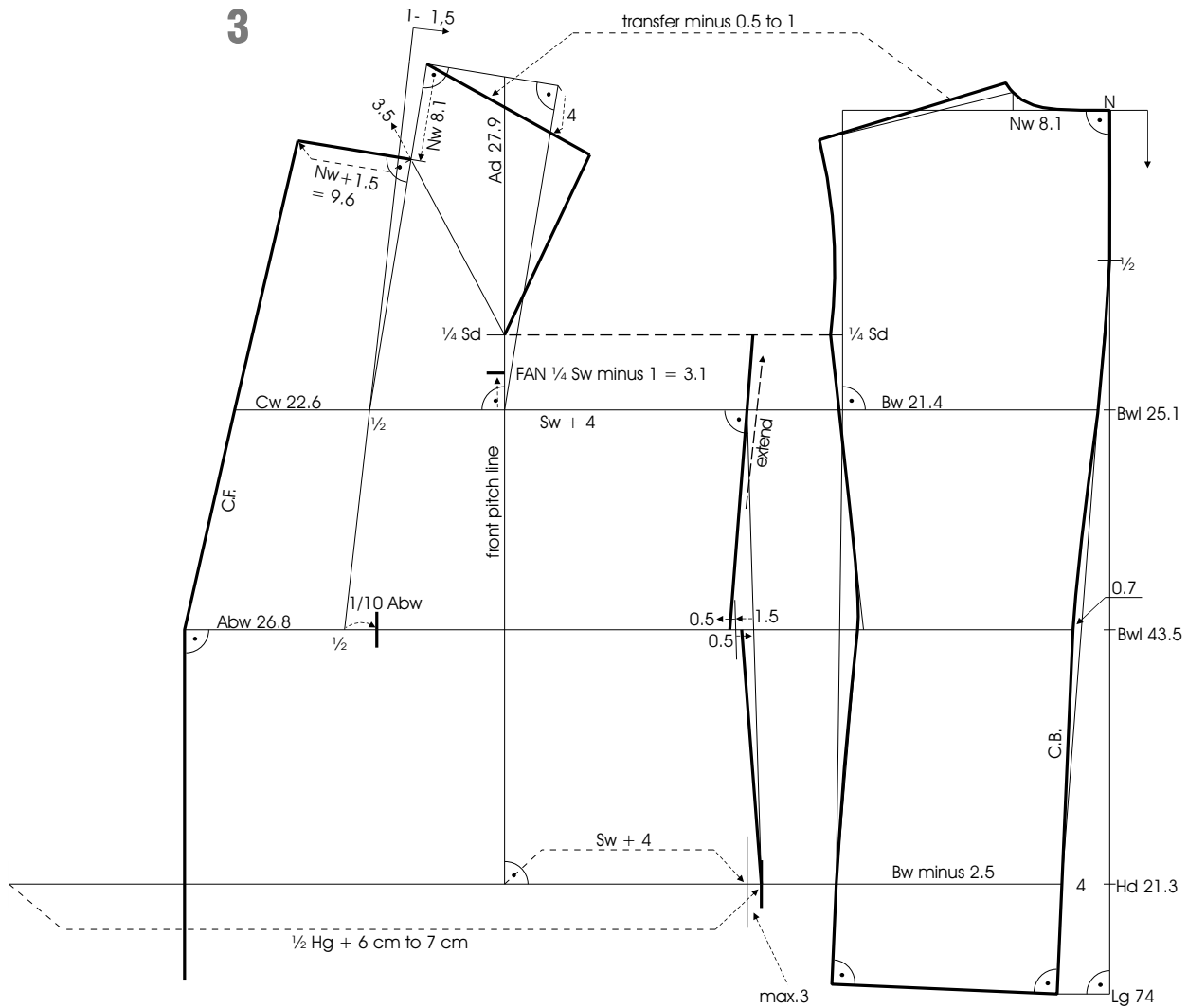
2 Lengthen the back neckline 1 cm and draw the back shoulder seam to the raised neck point. At the scye depth, measure 0.3 cm for the overlap to the left. Mark 1.5 cm intake at the waist at the back sideseam and draw a guideline to the hipline. Measure 0.5 cm from the waist intake to the right and draw another guideline to the 0.3-cm point. Extend this guideline upwards to the 1/4-scye-depth line. Draw the back armhole in a flat curve for good freedom of movement. Extend the chest line, the waistline, and the hip line to the left for the front and side pattern. Leave some space between the back pattern and the side pattern. Then measure the scye width plus 4 cm to the left. This corresponds to a 2-cm separation of the front and side pattern and a 2-cm slant of the side pattern. Square up and down for the front pitch line. From the chest line, measure the armhole depth upward along the front pitch line. On the chest line, measure the chest width from the front pitch line to the left. On the waistline, measure the abdomen width from the front pitch line to the left. Divide both distances by two, connect the midpoints with a line and extend this line

upward. Depending on the posture of the client and the corresponding front waist length, measure around 1 cm to 1.5 cm from the extended line to the right. From the armhole depth, draw a perpendicular line to the slanted guideline. Extend this perpendicular line over the armhole height to the right and draw a line from the intersection of the front pitch line and the chest line now perpendicular to the guideline that runs over the armhole depth. Connect the chest width and the abdomen width with a line. Square down from the waistline.

Hip measurement: On the hipline, measure the scye width plus 4 cm from the front pitch line to the right. Then measure the chest width from the front pitch line to the left. Then measure the back hip width (back width minus 2.5 cm) to the left. From this point measure 1/2 hip circumference plus 6 cm to 7 cm to the right. This measurement includes a 2-cm separation of front and side piece as well as 4 cm to 5 cm ease. The difference should be no more than 3 cm. An amount exceeding 3 cm must be removed at the front side seam.

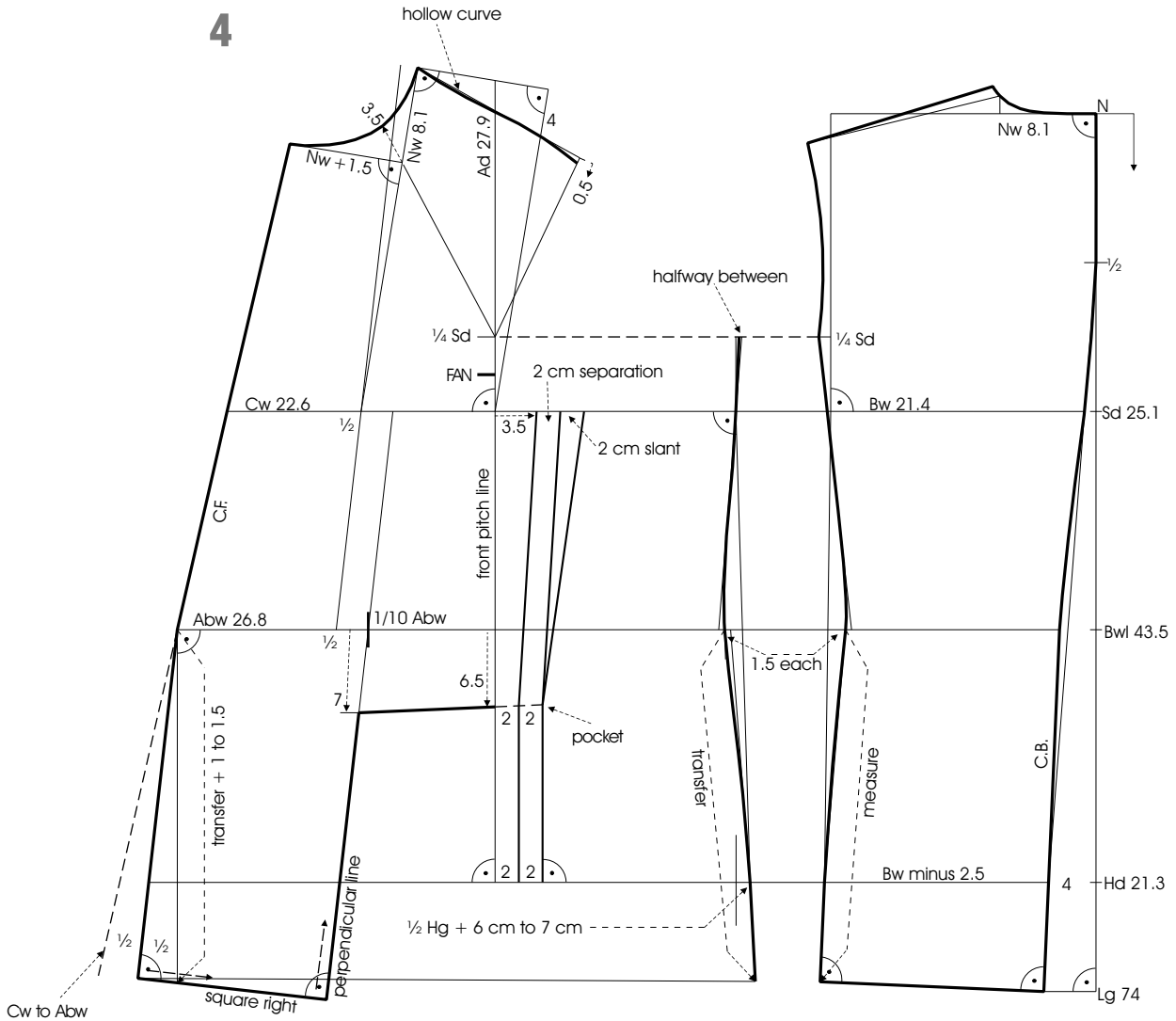


BASIC SUIT JACKET BLOCK FOR A BELLY FIGURE



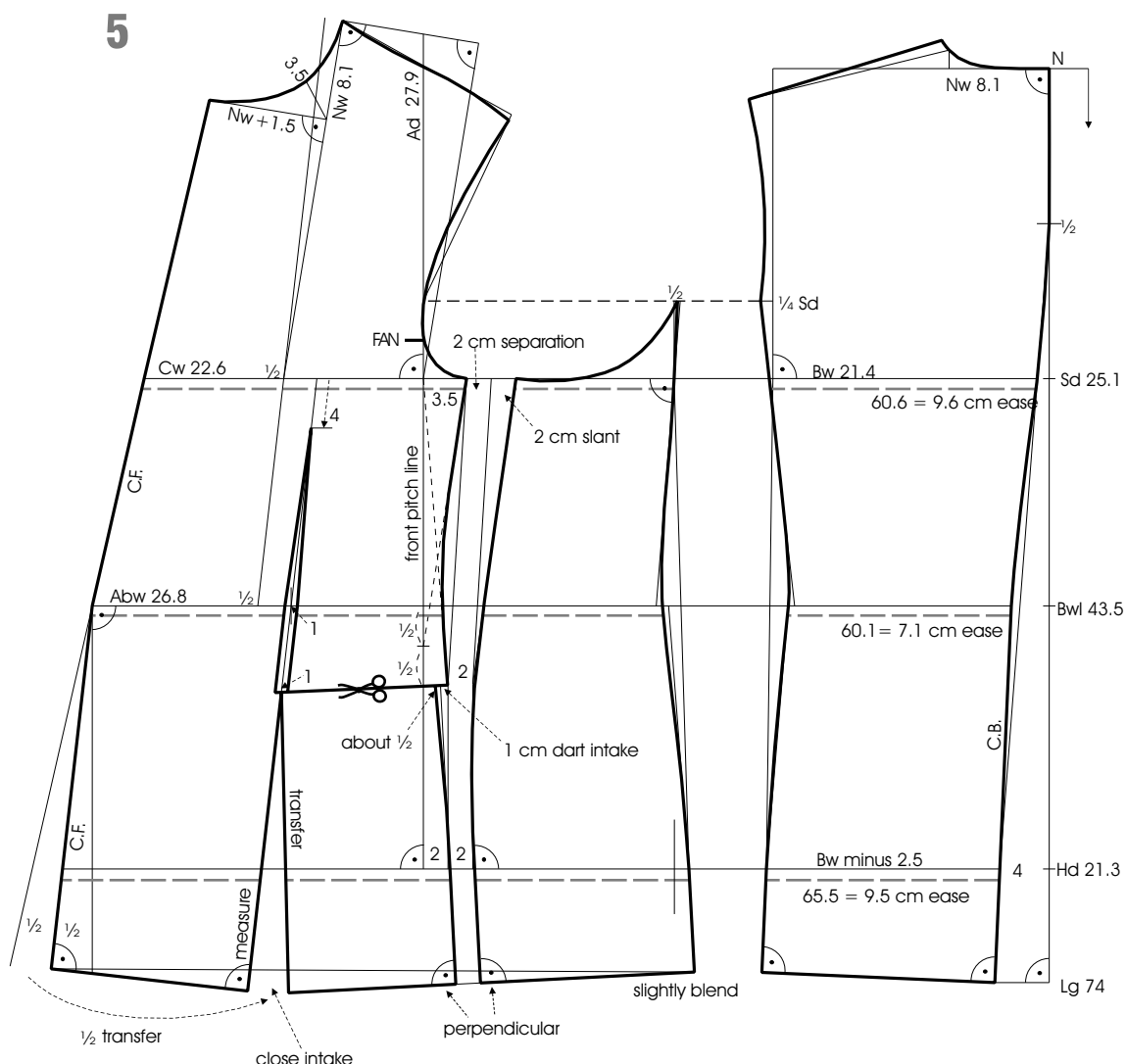
3 From the chest line, measure $\frac{1}{4}$ scye width minus 1 cm upward along the front pitch line and mark the armhole notch. Also transfer the $\frac{1}{4}$ -scye-depth line to the front armhole. From the neckline corner measure the neck width downward for the front neckline. From this point measure the neck width plus 1.5 cm to the left. Connect the front neckline point and the chest width with a line for the centre front. Measure 4 cm for the front shoulder slope.

Connect the neckline corner and the shoulder slope with a guideline and transfer the back shoulder width minus 0.5 cm to 1 cm to the front. Draw a guideline from the shoulder to the $\frac{1}{4}$ -scye-depth line. Mark 1.5 cm intake at the waist for the side panel seam. Measure 0.5 cm to the left and right from the waist intake and draw the guidelines as shown. Extend the upper guideline to $\frac{1}{4}$ -scye-depth line. Mark the front dart: Measure $\frac{1}{10}$ abdomen width from the midpoint of the abdomen width to the right.



4 Draw the front neckline as shown in the illustration. Shift the front shoulder seam 0.5 cm to the front at the armhole and draw the front shoulder seam. Draw the back sideseam as shown over all guidelines and points and end the seamline halfway between the extended guidelines. Measure the back sideseam from the waist to the hemline and transfer this amount to the side panel seam. Extend the auxiliary centre front from the waist downward to the same length plus 1 cm to 1.5 cm. Draw the temporary hemline from here to the side panel seam. Lengthen the centre front in the direction from the chest width to the abdomen width downward to the hemline. Draw the new centre front on

half the distance between the vertical line and the auxiliary centre front. Square out from the new centre front over the front length to the right. Draw a line from the dart midpoint ($1/10\ Abw$) perpendicular to the front hemline. This line is the new middle line of the front dart. Extend the dart middle line upwards. Mark the pocket 7 cm below the midpoint of the abdomen width and 6.5 cm below the waist at the front pitch line. Draw guidelines for the front sideseam 2 cm beside the front pitch line and 2 cm apart. The front sideseam ends 3.5 cm beside the front pitch line at the armhole. Draw another guideline 2 cm to the right for the slant of the side panel pattern.



5 Mark the front dart with 1 cm dart intake between the pocket line and the waistline. The front dart ends 4 cm below the chest line. Transfer the distance between the new centre front and the auxiliary centre front as intake for the belly dart. Measure the dart leg length and extend the right dart leg accordingly. Complete the front hemline as shown in the illustration. Adjust the back side panel seam, setting it perpendicular to the hemline. Draw the front sideseam slightly curved from the pocket perpendicular to the hemline. Add 1 cm to the front sideseam above the pocket entry to make up for the dart intake at the waist. There is no intake at the pocket entry needed for the construction with belly dart. The pocket entry opens later when the belly dart is closed. Mark the pocket entry as cutting line. Draw another guideline for the upper front and draw the upper front sideseam as shown. Draw the front side panel seam along the slanted line and perpendicular to the hemline. Plot the armhole on the front and side pattern according to the illustration. Draw the side panel armhole as a flat curve for maximum freedom of movement. Verify the amount of ease included at the chest, waist and hipline. Cut out all pattern pieces. Compare all seam lengths and blend the transitions at jointed seamlines.

Verify the Finished Circumference Measurements:

1/2 finished chest circumference = 60.6 cm = 0.3 cm more than the calculated measurement. The difference of 0.3 cm corresponds to the addition at the back armhole.

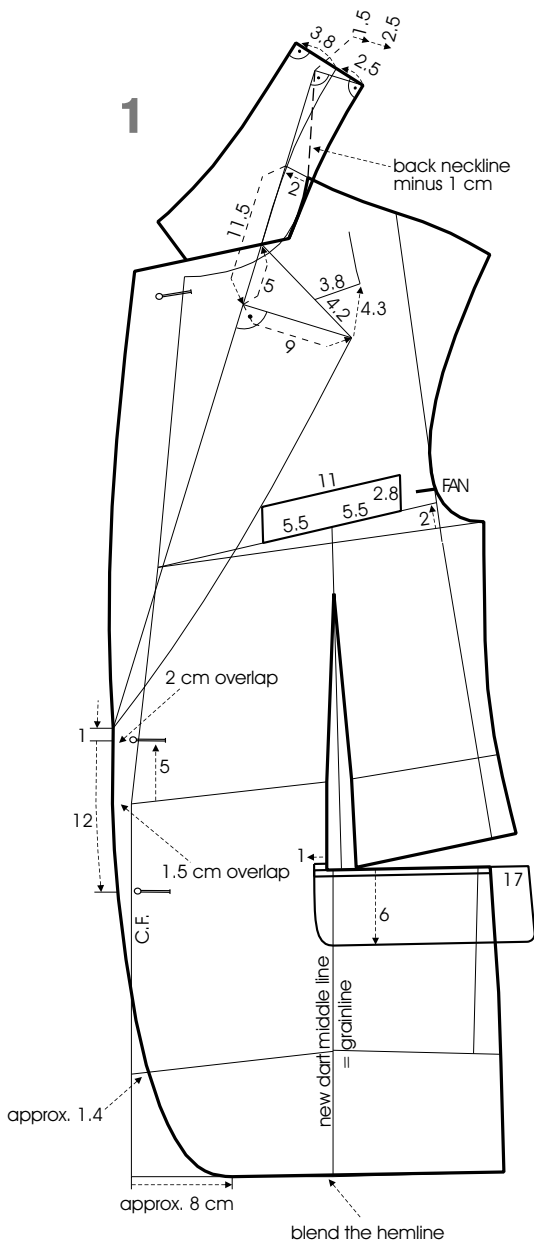
1/2 finished waist circumference = 60.1 cm = minus half of the waist girth of 53 cm corresponds to 7.1 cm wearing ease at the waist. This amount is sufficient for a suit jacket.

1/2 finished hip circumference = 65.5 cm = minus half of the hip girth of 56 cm corresponds to 9.5 cm wearing ease. This amount is sufficient for a belly figure.



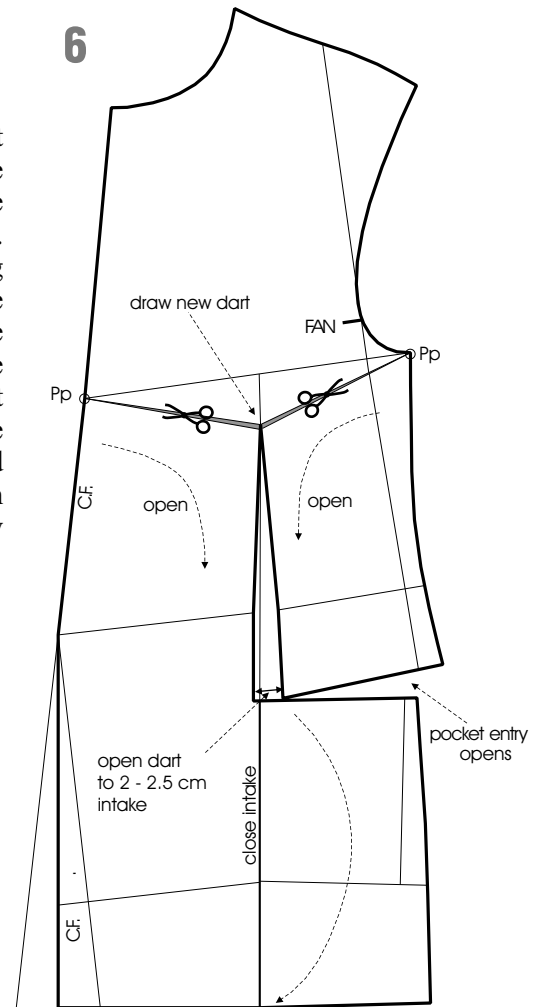
Sleeve:

The basic two-piece sleeve pattern is constructed as already explained for the suit jacket for normal sizes and therefore not shown here.



Completion Front Pattern

6 Cut through the front pattern piece along the pocket line and close the dart intake at the hemline. This will create the opening at the pocket line. Blend the hemline. To work out the chest area or to adapt the front to a strong chest cut from the dart to the centre front and to the armhole and spread the front dart to 2 cm to 2.5 cm. Draw the new waist dart.



Design Pattern

1 Mark the position of the closing button 5 cm above the waistline. Mark the lower button 12 cm below the closing button. Add 1.5 cm overlap at the waist and 2 cm overlap at the closing button. The difference should be not more than 0.8 cm. Draw the front edge as shown in the illustration. Adjust the front edge if the overlap gets too wide at the upper button. Mark the button-holes 1.5 cm away from the front edge. Blend the hemline. Extend the shoulder seam 2 cm to the left for the lapel construction. Mark the lapel break and draw the lapel 9 cm wide according to the illustration. Measure the back neckline for the construction of the felt

under collar. Extend the lapel break line upward. Measure the determined back neckline minus 1 cm from the front neckline corner to the lapel break. Square out to the right from this point and measure 1.5 cm for the collar roll and 2.5 cm for the collar stand. Draw the collar seam to the neckline. Draw the centre back perpendicular to the collar seamline. Plot the collar roll and the collar shape as shown in the picture. The collar seam should be approximately 1 cm shorter than the neckline, since the collar will become longer when steam-pressed into shape. Mark the chest pocket and The Frankfurt pocket as shown. Mark the grainline along the dart middle line.



For drafting menswear pattern, we usually measure over the clothing. The client should wear a narrow shirt or a close-fitting T-shirt and trousers. To show the exact position of the waist measuring tape independent of the position of the trousers waistband, the measuring is shown here on a bare model.

Measure the main body measurements (Bh, Cg, Wg, Hg and Slg) as usual and draft the basic suit jacket block according to these measurements. The finished pattern pieces are then adjusted for the respective figure deviations. Balance measurements show the extend of a figure deviation and give a measured amount in addition to the estimated value. All balance measurements are taken from the nape of the neck for consistent results.

Back Waist Length

1 Place the waist tape measure around the natural waist (above the hipbone).

- Position at the front: over the fullest part of the belly.
- Position at the back: in the narrowest part of the waist.
- Make sure that the waist tape measure runs horizontally.
- Tools: Use a plumbline to measure the distance from the lower edge of the waist tape measure to the floor. Check the horizontal position of the tape waist measure by measuring the distance to the floor at both sides as well as at the centre front and centre back. Adjust the position of the waist tape measure if necessary.

Measure the back waist length from the nape of the neck to the lower edge of the waist tape measure. The result is the measured back waist length. Compare this measurement with the calculated back waist length. The difference has to be taken into account for the front length.

Measure the back waist length from the nape of the neck to the lower edge of the waist tape measure. The result is the measured back waist length. Compare this measurement with the calculated back waist length. The difference has to be taken into account for the front length.

Front Length

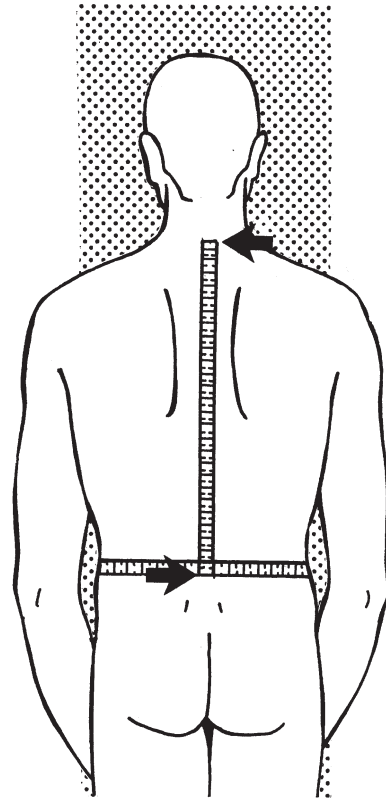
2 Place the tape waist again on the nape of the neck. Measure along the neck towards the shoulder and over to the front. Then measure straight down to the lower edge of the waist tape measure. This measurement, plus the difference between measured and calculated back waist length, is the measured front length.

• Example 1: The measured back waist length is 2 cm shorter than the calculated Bwl. Add 2 cm to the measured front length in this case.

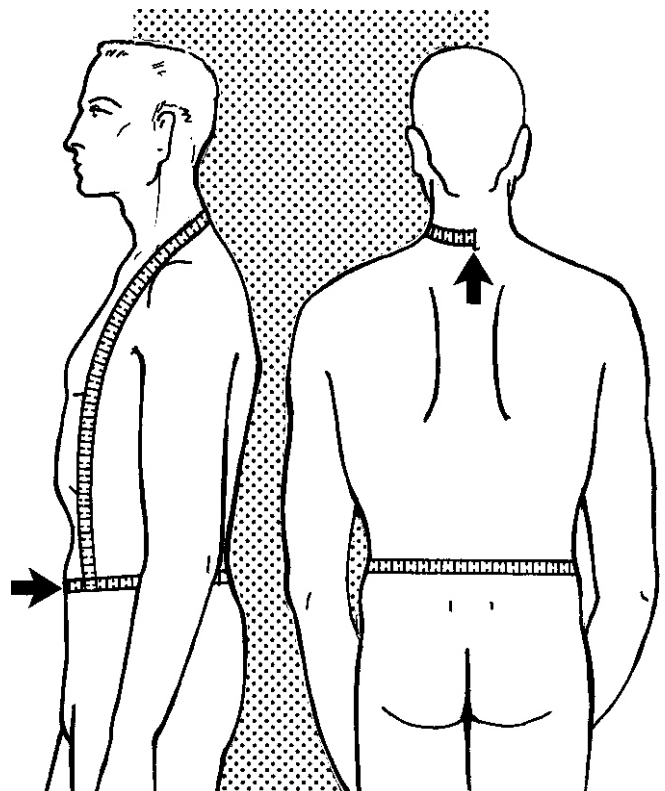
• Example 2: The measured back waist length is 2 cm longer than the calculated Bwl. Deduct 2 cm from the measured front length in this case.

• Use the new front length for the pattern construction. To avoid measuring mistakes, measure from the waist along the neck and back down to the waist for the double front length. Then divide this amount by two to receive an accurate measurement.

1 Back Waist Length



2 Front Length





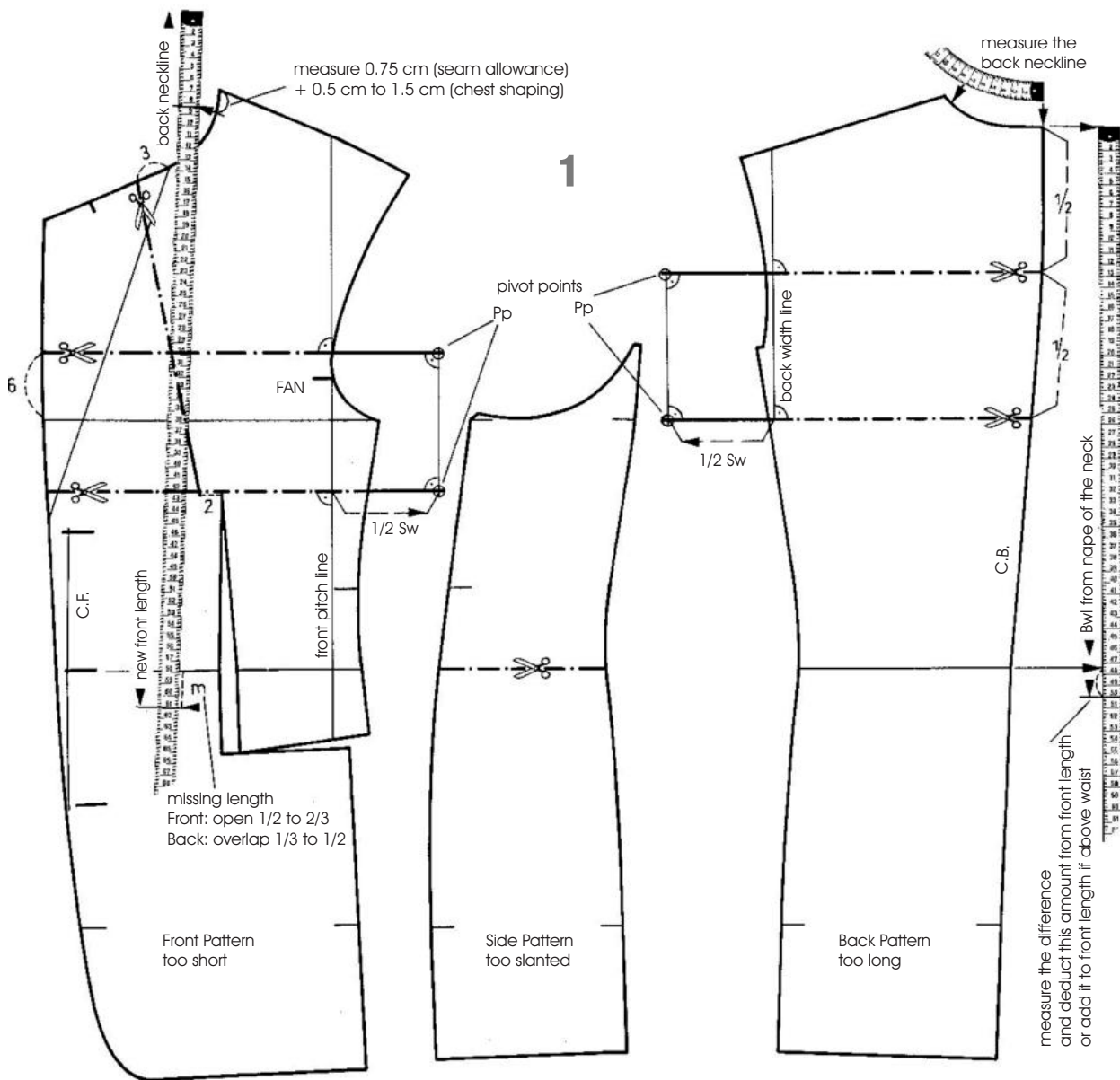
First draft the basic suit jacket pattern according to the client's measurements for this extreme posture. Then adjust the pattern according to the balance measurements. Due to the protruding chest and the backwards leaning posture, the pattern needs more front length and less length over the back.

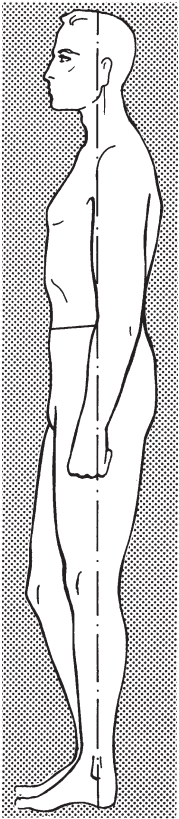
Cutting Lines

1 Mark the cutting lines on the front, side and back pattern as shown in the illustration. Mark the pivot points (Pp). Check the balance measurements. First measure the back waist length of the client and then add or deduct the difference to the calculated back waist length to the measured front length.

Use this new front length to check the difference to the back length on the pattern. Measure along the back neckline and then measure the remaining length on the front pattern. Measure the distance to the waist. This is the deficit, i.e. the front length is too short and the back is too long. Divide the difference: Lengthen the

front around 1/2 to 2/3 of this amount and shorten the back around 1/3 to 1/2 of the difference. The side panel should be less slanted for an upright posture to avoid diagonal creases under the arm. Beside taking and calculating the balance measurements, estimating the posture by eye is equally important.



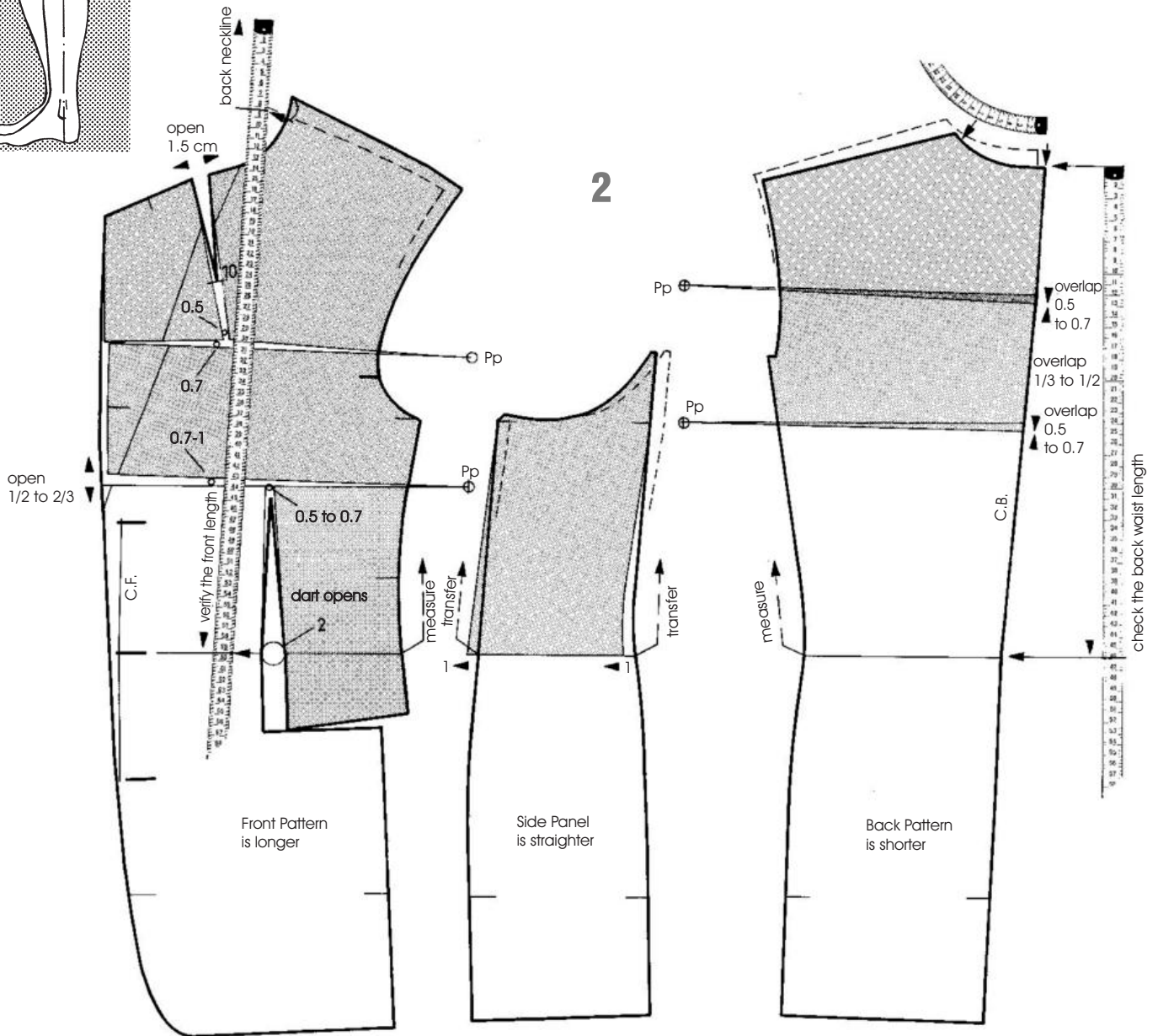


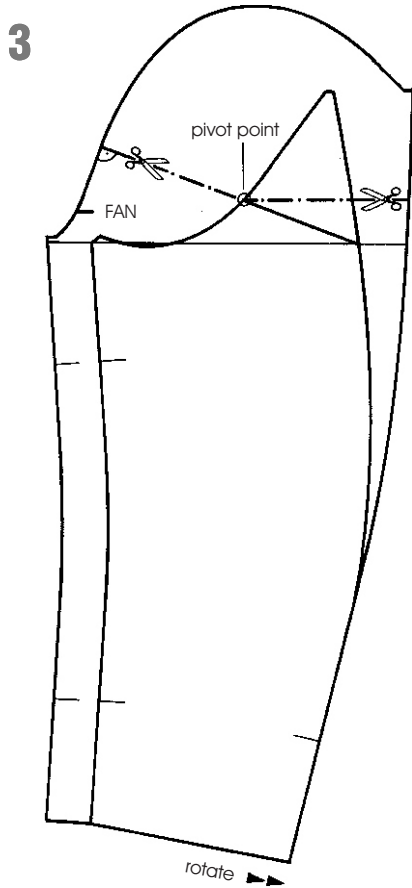
Pattern Adjustment

2 Slash and spread the front pattern at the cutting lines for more front length. Open the front pattern at the centre front and over the chest for more front length. Also add a lapel dart for the full chest

shape. Rotate the pieces over the pivot points. Check the front length and blend the seamlines. Draw the new dart. Slash and overlap the back pattern to shorten the back waist length.

Check the new back waist length and blend the seamlines. Shift the upper part of the side panel forward and blend the seamlines. The dashed lines show the original pattern before the adjustments.





Cutting Lines Sleeve

3 The sleeve pattern has to be rotated to adapt to the upright posture. The upper sleeve seam is too long. Mark the cutting lines at the sleeve cap and the upper sleeve seam as shown in the illustration.

Adjustment Sleeve

4 Cut through the sleeve pattern from the sleeve cap to the pivot point and from the upper sleeve seam to the pivot point. Hold the upper part of the sleeve and rotate the lower pieces backwards as shown.

The upper sleeve seam shortens. Blend the seamlines. The dashed lines show the original pattern.

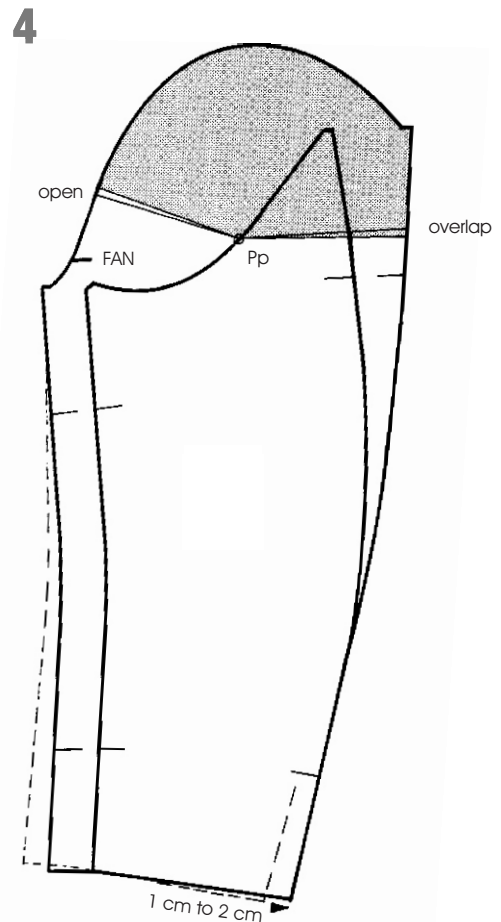
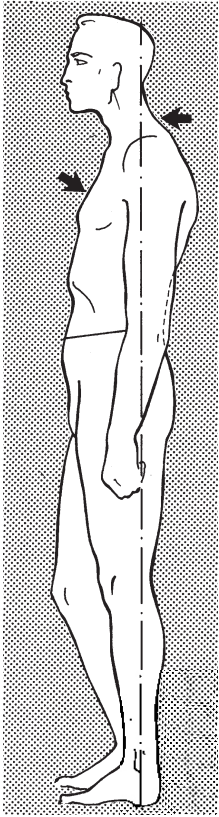




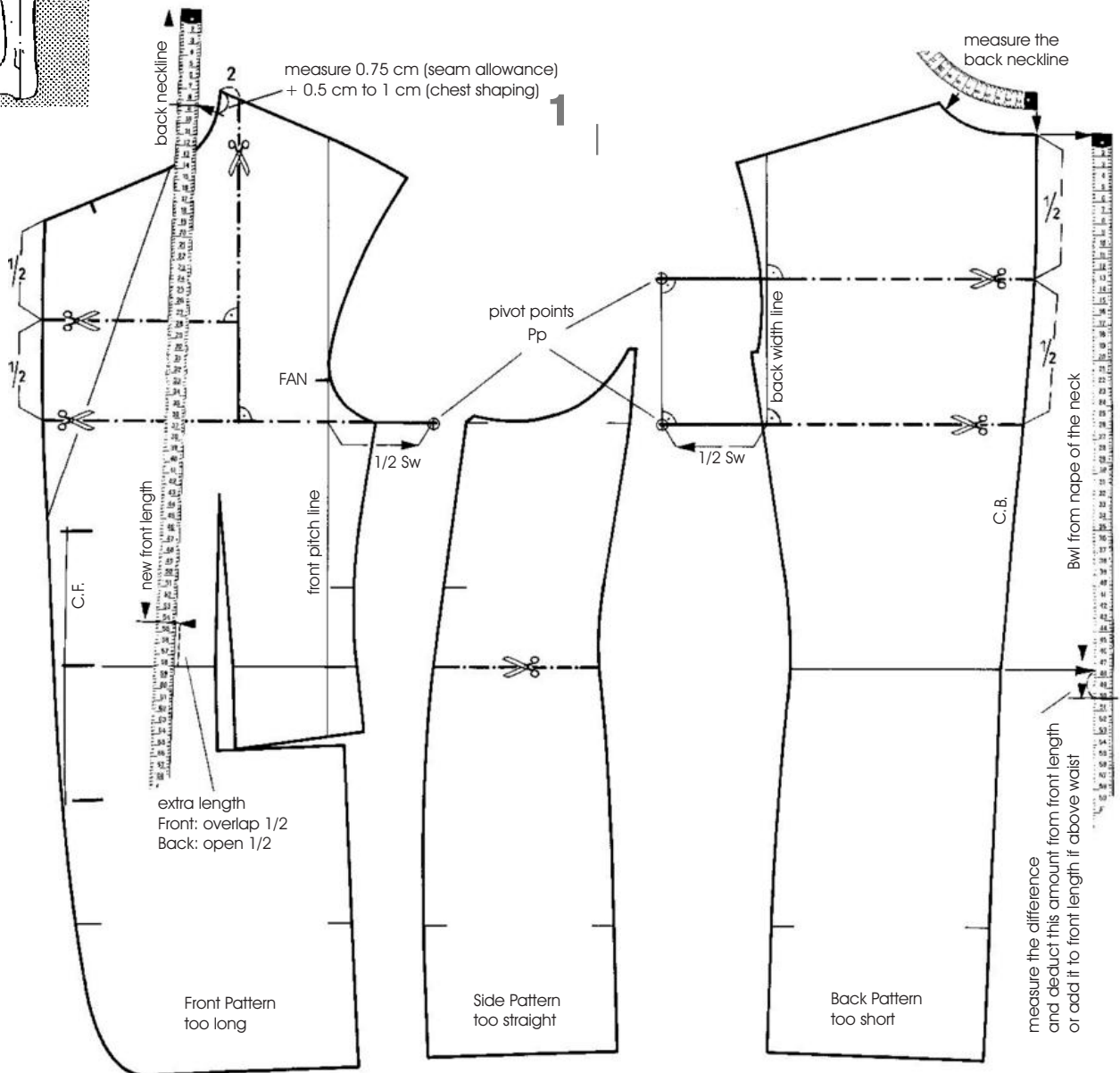
FIGURE DEVIATIONS - ROUND BACK & FORWARD SLOUCHING



First, draft the basic suit jacket pattern according to the client's measurements for this extreme posture. Then adjust the pattern according to the balance measurements. Due to the round back and the sunken chest, the pattern needs more length over the back and shoulder area and less length at the front.

Cutting Lines

1 Mark the cutting lines on the front, side and back pattern as shown in the illustration. Mark the pivot points (Pp). Check the balance measurements. First measure the back waist length of the client and then add or deduct the difference to the calculated back waist length to the measured front length. Use this new front length to check the difference to the front length on the pattern. Measure along the back neckline and then measure the remaining length on the front pattern. Measure the distance to the waist. This is the extra length that is not needed, i.e. the front length is too long and the back is too short. Divide the difference: Shorten the front around 1/2 of this amount and lengthen the back around 1/2 of the difference. The side panel should be more slanted for a round back to avoid diagonal creases under the arm. Beside taking and calculating the balance measurements, estimating the posture by eye is equally important.



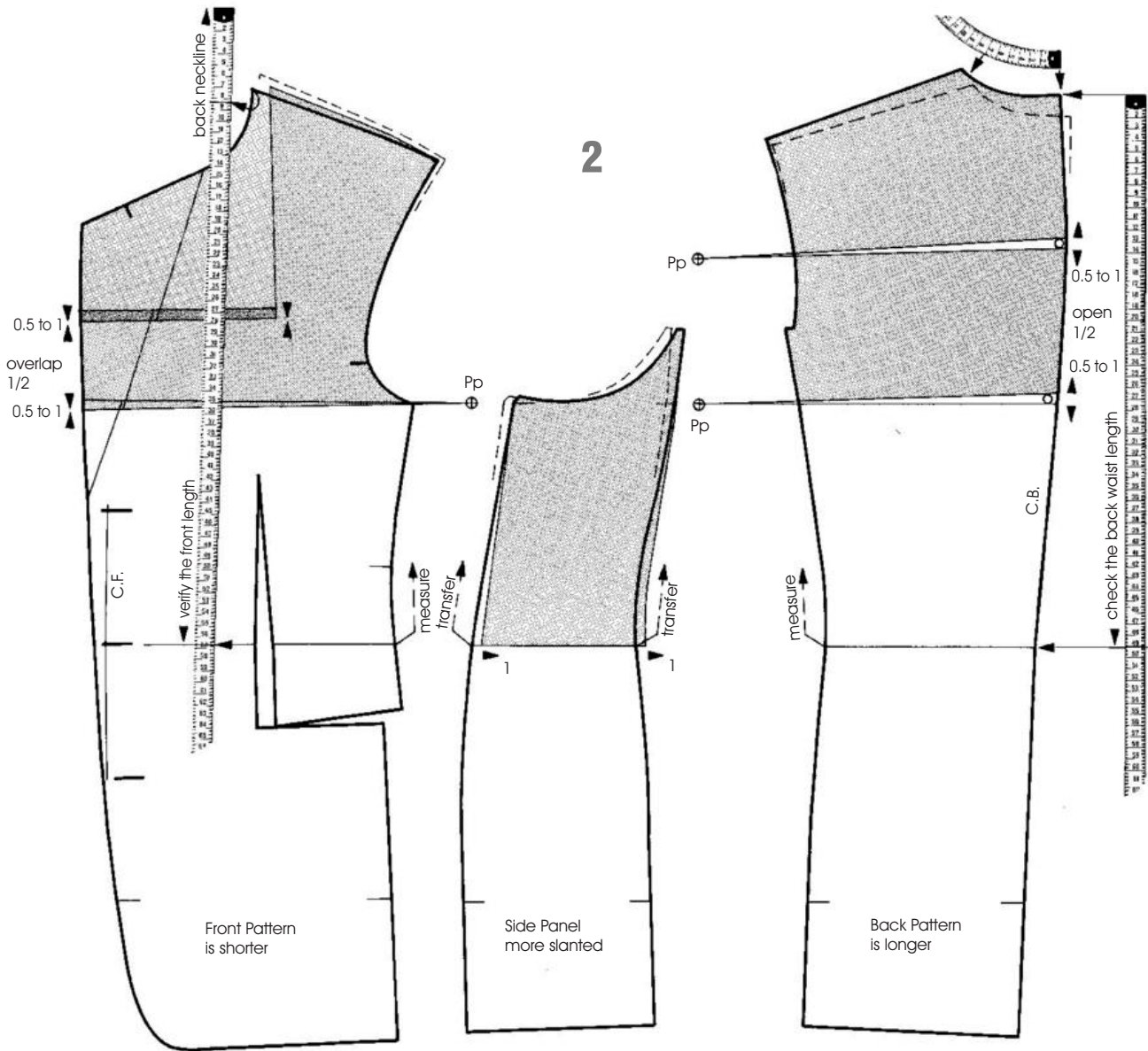


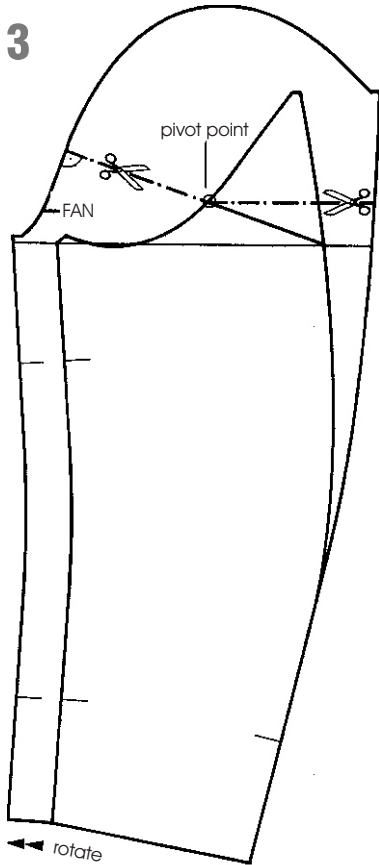
Pattern Adjustment

2 Slash and overlap the front pattern at the cutting line for less front length. Rotate the pieces over the pivot points. Check the front length and blend the lapel and the front edge. Slash and open the back

pattern for more length over the back and shoulder area. Check the new back waist length and blend the centre back and check that the centre back is not too round. Blend the armhole and the sideseam. Shift the upper part of the side panel

backwards and blend the seamlines. Measure the back sideseam and the front sideseam and transfer these length to the side panel. The dashed lines show the original pattern before the adjustments.



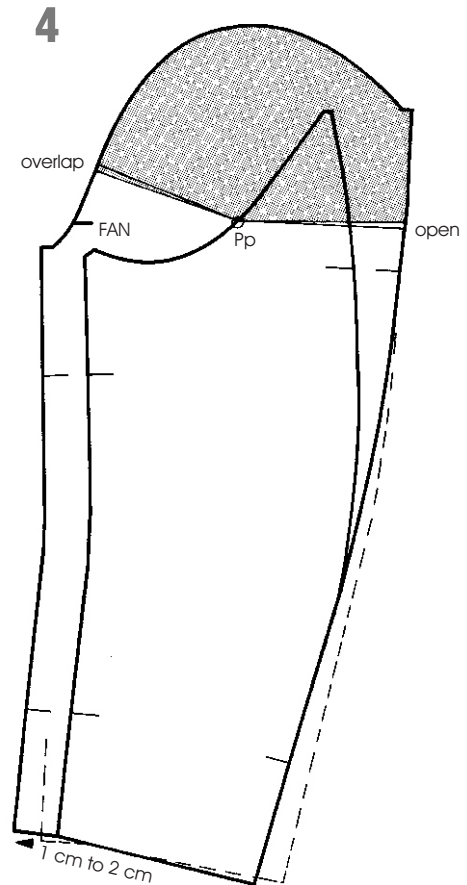


Cutting Lines Sleeve

3 The sleeve pattern has to be rotated to adapt to a round back posture. The upper sleeve seam is too short. Mark the cutting lines at the sleeve cap and the upper sleeve seam as shown in the illustration.

Adjustment Sleeve

4 Cut through the sleeve pattern from the sleeve cap to the pivot point and from the upper sleeve seam to the pivot point. Hold the upper part of the sleeve and rotate the lower pieces forward as shown. Blend the seamlines. The dashed lines show the original pattern.





This figure deviation is not noticeable in the measurement chart. The measurements are all normal and balanced but the side view shows a similar silhouette as a belly figure. This posture can also be detected and measured by holding a plumb line onto the shoulder area of the client. A normal posture shows about 4 cm to 6 cm distance between the plumb line and the waist. This distance increases for a swayback to about 7 cm to 9 cm. Adjust the standard suit jacket pattern by rotating the front, side and back pattern as shown in detail below.

Pattern Adjustment

1 Trace the front, side and back pattern and mark the pivot points (Pp) as shown in the illustration. Rotate the back pattern over the pivot points 1 cm to the front and draw the new seamlines using the pattern as a drawing template. Draw the back hemline perpendicular to the centre back. Proceed the same way for the

side panel. Rotate the front panel in two steps. First, rotate the sideseam and draw the new sideseam and hemline. Then move the front edge parallel forward and draw the new lapel and lapel break to the neckline as shown. If more front length is needed, open the front pattern at the waist for a protruding abdomen.

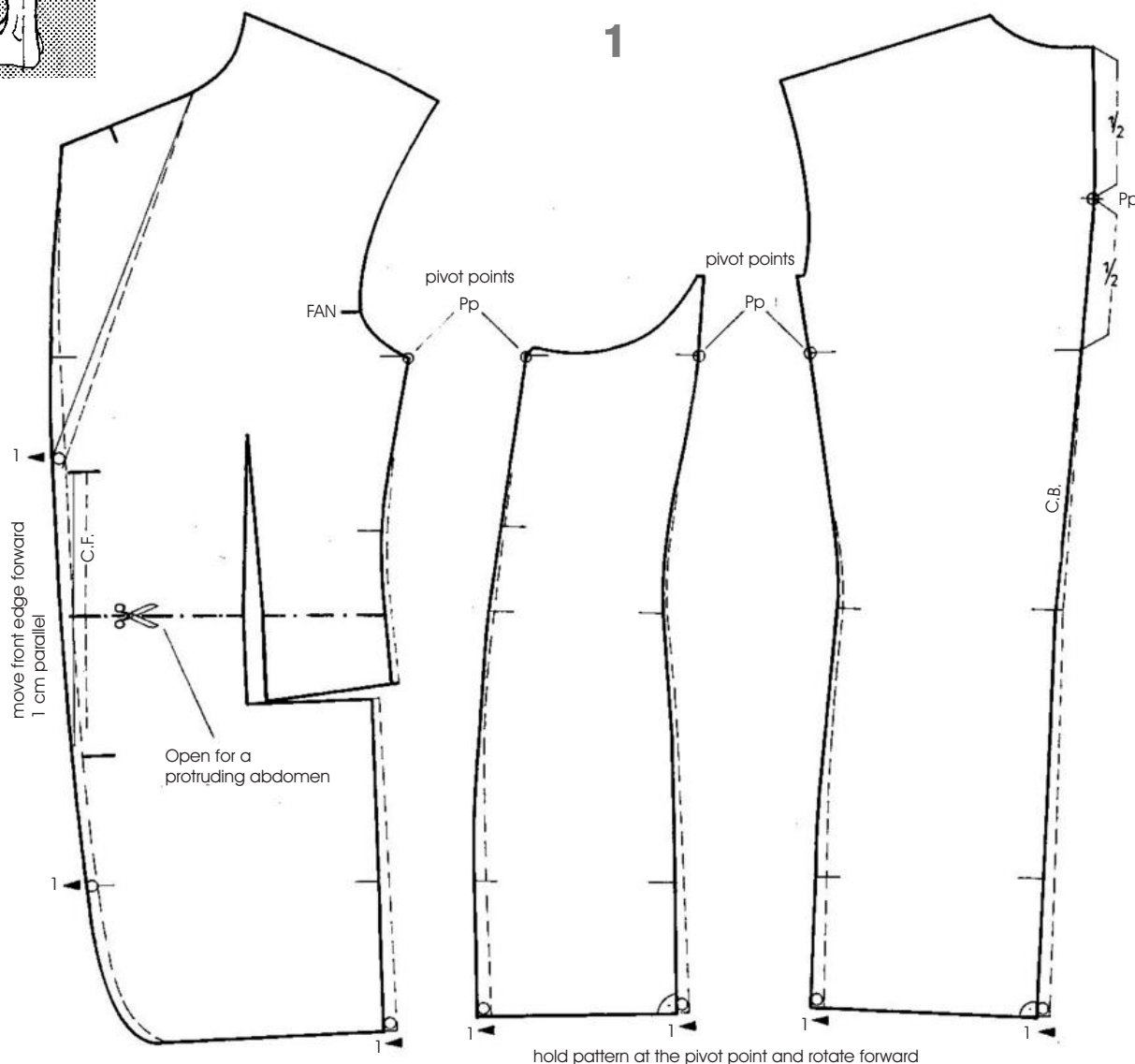
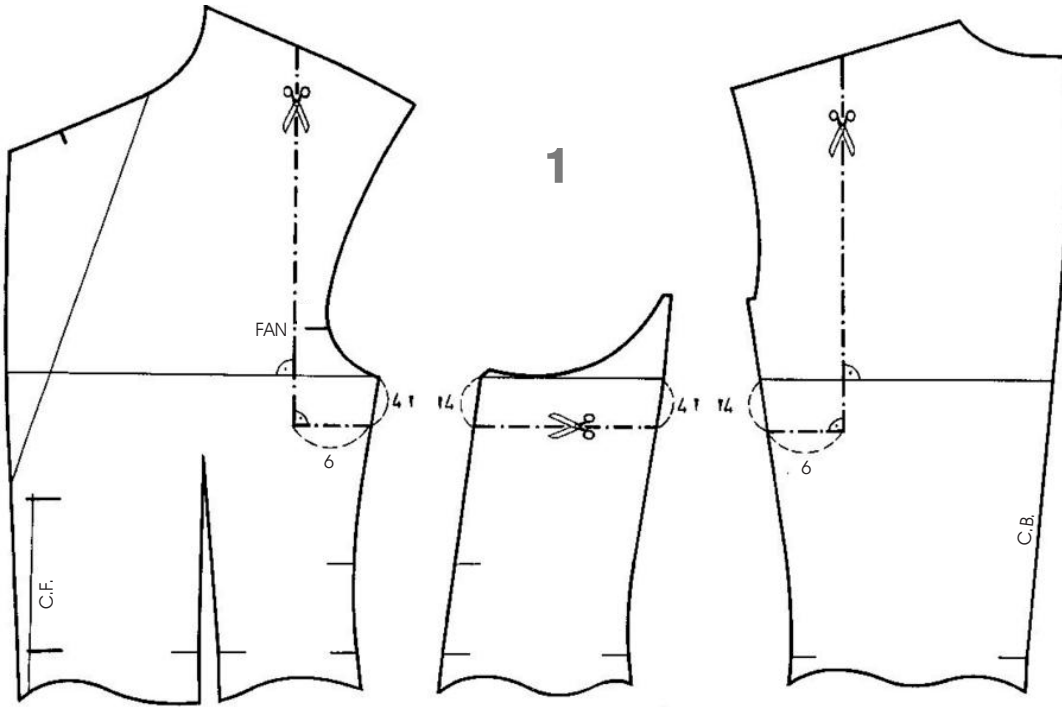
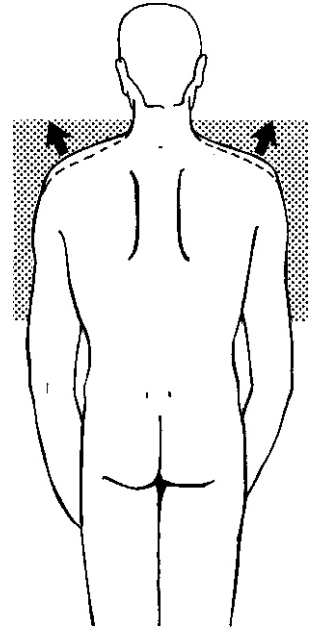




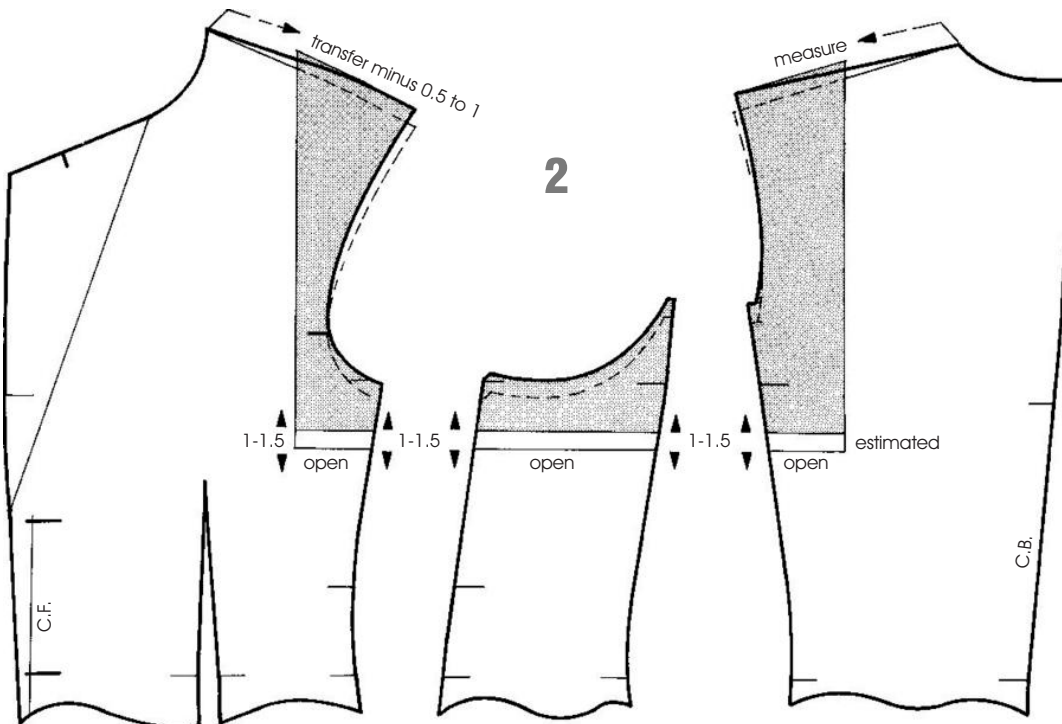
FIGURE DEVIATIONS - HIGH SHOULDERS (ONE-SIDED OR BOTH)

Straight or high shoulders require less slant of the shoulder seam. The armhole must be adjusted as well to keep the original shape and size. Use only a thin shoulder pad to minimize the height at the shoulders.



Cutting Lines

1 Draft the basic jacket block according to the client's measurements. Separate the shoulder and armhole area on the front, side and back pattern as shown in the illustration.



Adjustment

2 Move the separated armhole pieces upwards according to the shoulder measurement. Estimate the necessary opening depending on the shoulder angle. Blend the sideseams. Measure the back shoulder width and transfer minus keeping width to the front shoulder. Adjust the shoulder length at the armhole.

FIGURE DEVIATIONS: SLOPING SHOULDERS



Sloping shoulders require more slant of the shoulder seam. The armhole must be adjusted to keep the original shape and size. Adapt the pattern to the thickness of the shoulder pad. Use thick shoulder pads to disguise the appearance of sloping shoulders.

Adjustment

1 Separate the armhole pieces as already shown for the straight shoulder adjustment. Overlap the separated pattern pieces according to the shoulder measurement. Estimate the necessary amount depending on the shoulder angle. Blend the sideseams. Measure the back shoulder width and transfer minus keeping width to the front shoulder. Adjust the shoulder length at the armhole.

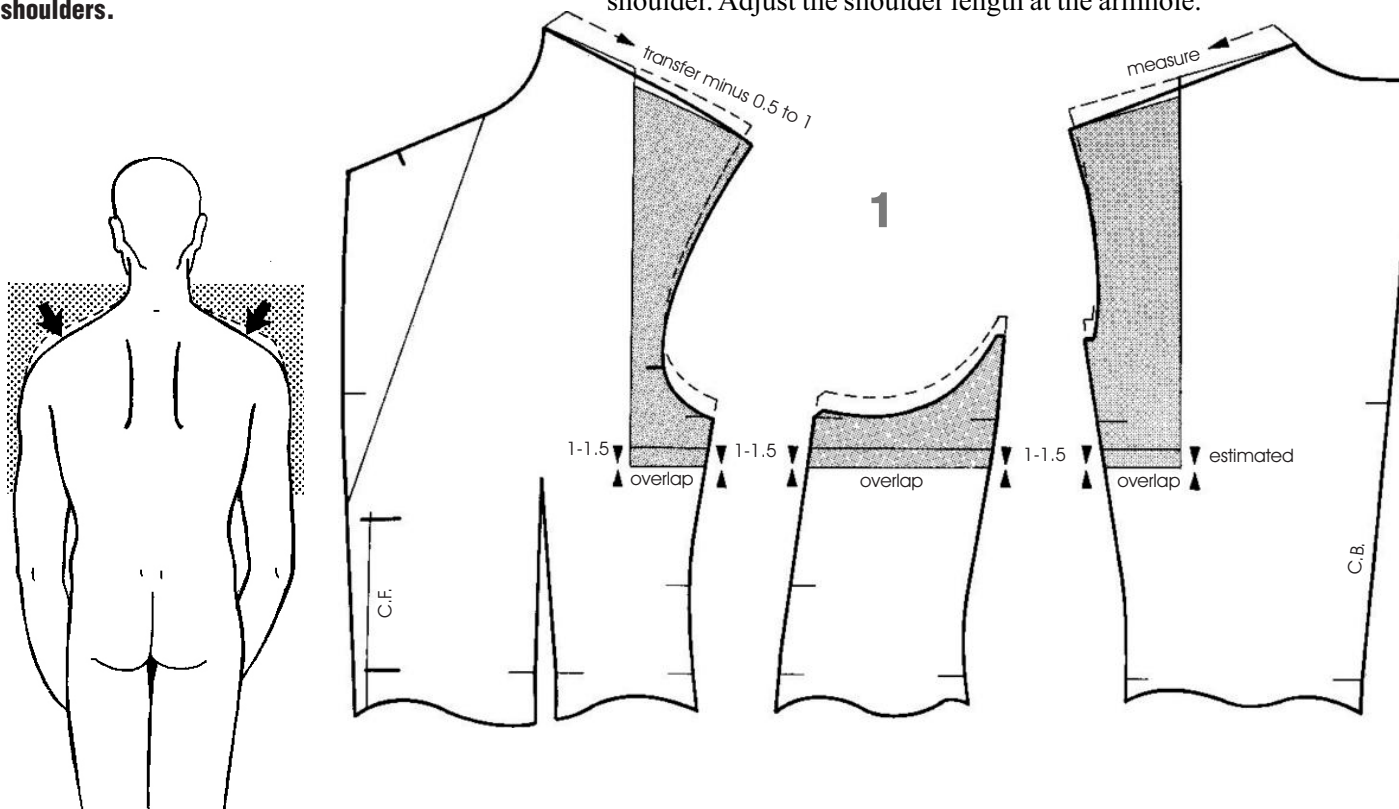
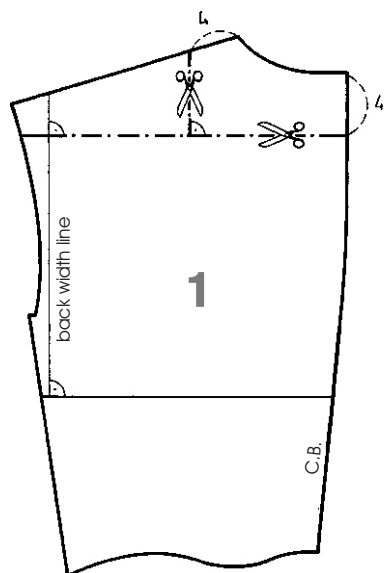


FIGURE DEVIATIONS: STRONG, ROUNDED NECK



A short, strong neck and a pronounced musculature required a longer high back length. Adjust the standard pattern as shown.



Cutting Lines

1 Mark a horizontal cutting line 4 cm below the neckline at the centre back. Mark a vertical cutting line 4 cm away from the neckline at the shoulder.

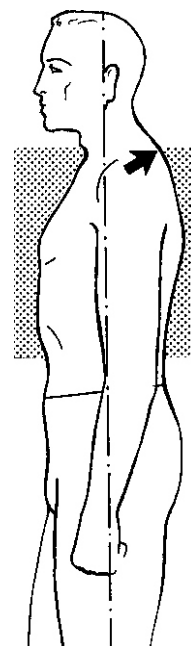
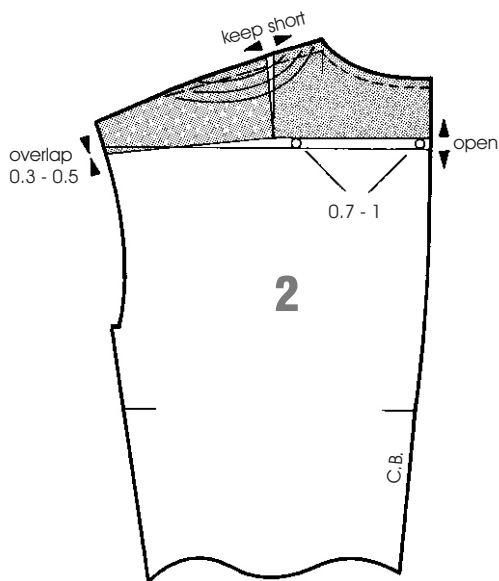




FIGURE DEVIATIONS: STRONG, ROUNDED NECK



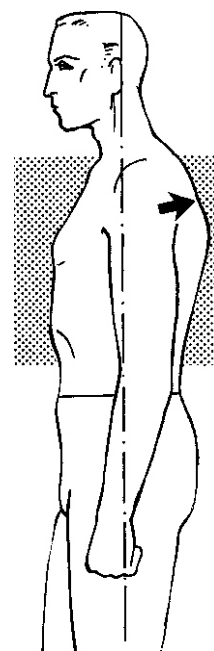
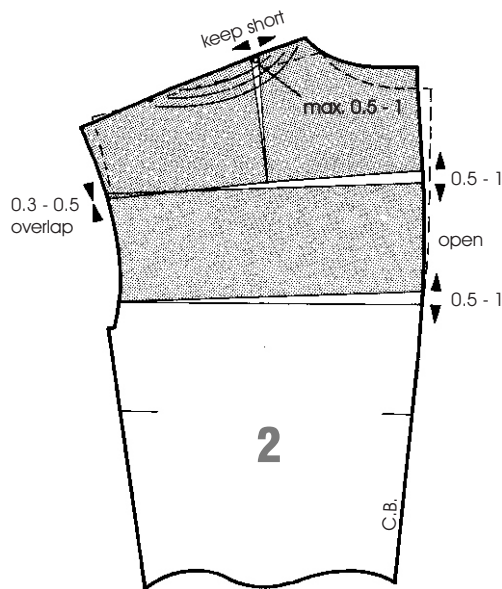
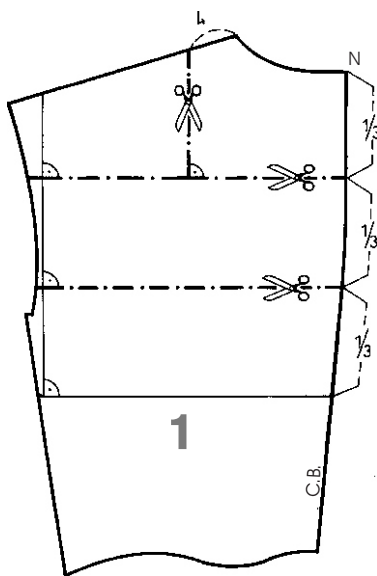
Adjustment

2 Cut through the back pattern from the centre back to the armhole and from the shoulder to the horizontal cutting line. Open the centre back 0.7 cm to 1 cm parallel to the vertical cutting line and overlap the armhole 0.3 cm to 0.5 cm. The cutting line at the shoulder opens. Keep the extra length in the shoulder short. Steam press the extra length to shorten it before sewing the shoulder seam. Blend the seamlines.



FIGURE DEVIATIONS - ROUNDED BACK

Open the basic suit jacket pattern over the back to accommodate rounded back due to a spinal deformity. The pattern needs more length over the back.



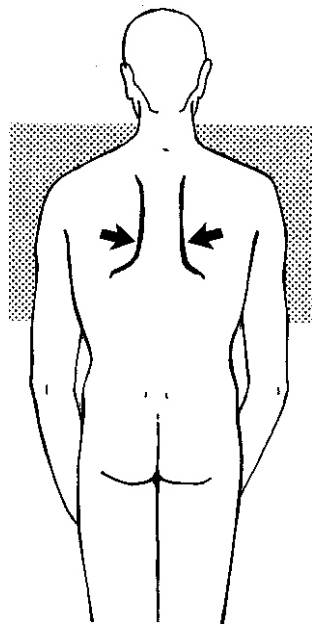
Cutting Lines

1 Mark the cutting lines on the back pattern. Divide the scye depth between the neck point N and the chest line in thirds and draw two horizontal cutting lines. Mark a vertical cutting line from the shoulder to the horizontal cutting line.

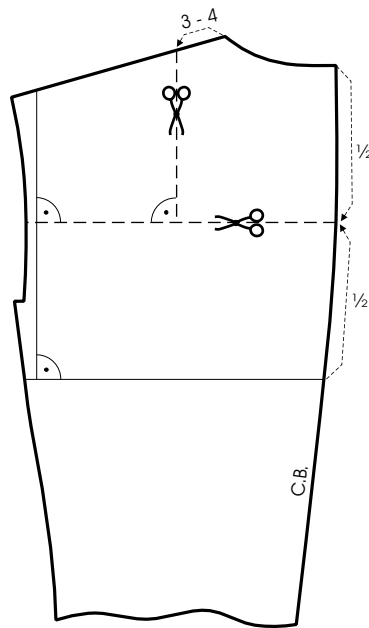
Adjustment

2 Cut through the back pattern twice from the centre back to the armhole and from the shoulder to the horizontal cutting line. Open the centre back 0.5 cm to 1 cm at the horizontal cutting line. Overlap the upper line 0.3 cm to 0.5 cm at the armhole to keep the armhole short and close to the body. The cutting line at the shoulder opens.

Keep the extra length in the shoulder short. Steam press the extra length to shorten and shape the shoulder area. Blend the seamlines. The dashed lines show the original pattern. The adjusted pattern shows a rounded shape and increased back length.



1

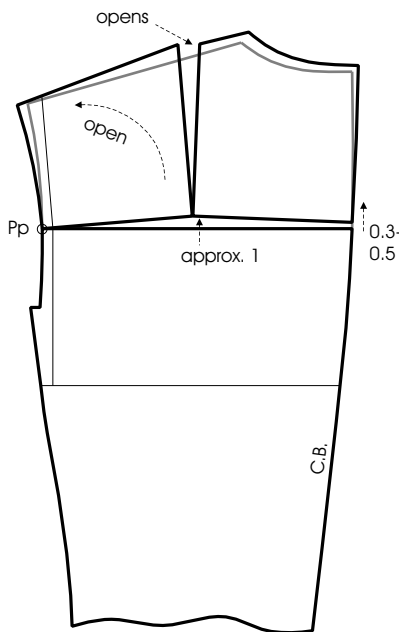


Strong shoulder blades also require more length over the back but also over the shoulder blades. This adjustment makes a shoulder dart necessary that can be sewn or shaped.

Cutting Lines

1 Mark the cutting lines on the back pattern. Divide the scye depth between the neck point N and the chest line in half and draw a horizontal cutting line. Mark a vertical cutting line from the shoulder to the horizontal cutting line.

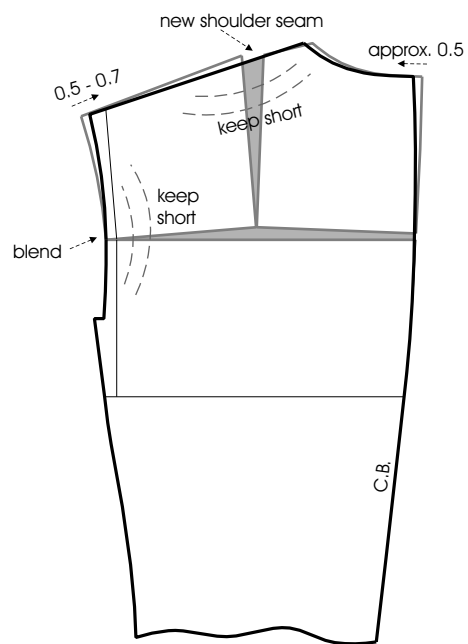
2



Adjustment

2 Cut through the back pattern from the centre back to the armhole and from the shoulder to the horizontal cutting line. Keep the pattern pieces together at the pivot point at the armhole and open the back 0.3 cm to 0.5 cm at the centre back and 1 cm at the shoulder area. The shoulder dart opens. This dart could be sewn or preferably removed as shown in the next illustration.

3



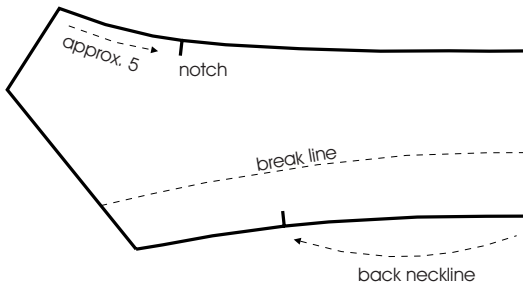
Removing the Dart

3 Trim the shoulder 0.5 cm to 0.7 cm at the armhole and blend the armhole from the pivot point to the new shoulder width. take away 0.5 cm at the centre back neckline. Move the neckline 0.5 cm to the left and draw the new neckline using the pattern as a drawing template. The remaining keeping width in the back shoulder depends on the material. Keep the extra length in the shoulder short. Steam press the extra length to shorten and shape the shoulder area.



The upper collar is developed from the basic collar pattern and cut into shape, eliminating the steam shaping process. The under collar is cut out of pliable felt and gets its shape when sewing the collar pieces together, because of the different seam lengths. Trace a copy of the basic collar pattern for the under collar. Measure and compare the collar seam and the neckline and adjust the collar length parallel to the centre back if necessary.

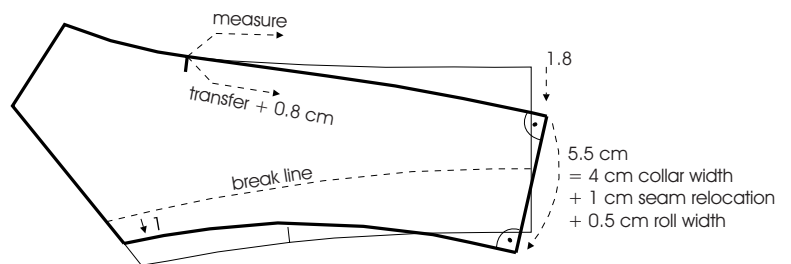
1



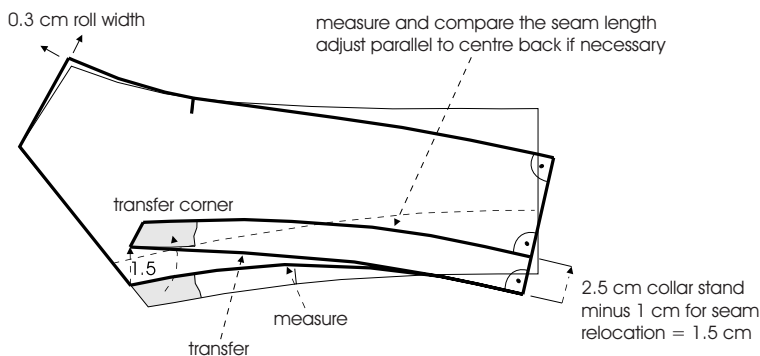
1 Mark the notches at the shoulder point and at the upper collar edge as shown in the illustration.

2 Rotate the upper collar edge 1.8 cm downward at the centre back. Measure the collar length plus 0.8 cm and draw the new collar edge. The addition of 0.8 cm is the amount that the under collar has to be stretched when sewing the collar pieces together. Square down from this line for the new centre back line. Mark the new centre back 5.5 cm wide. This corresponds to 4 cm collar width, 1 cm for relocating the collar stand to the inside and 0.5 cm roll width. Draw the seamline to 1 cm below the break line as shown.

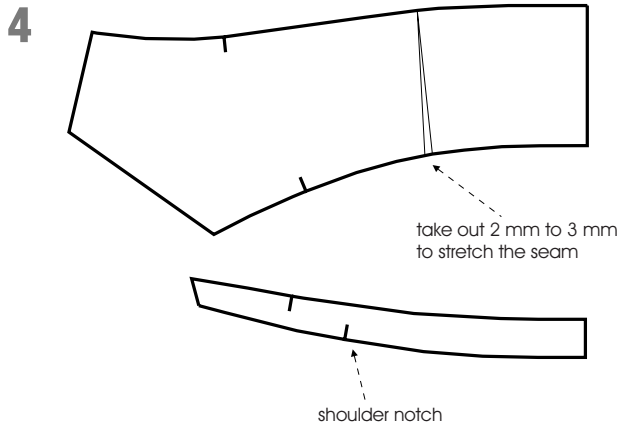
2



3

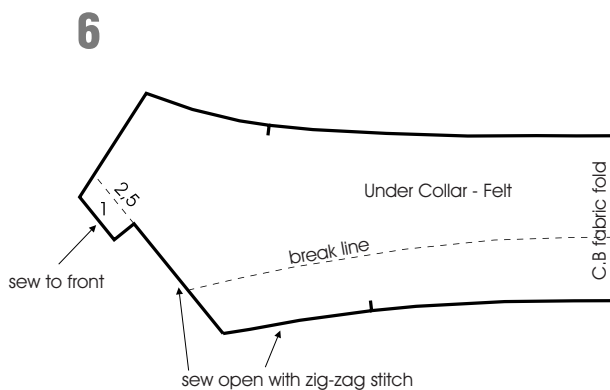
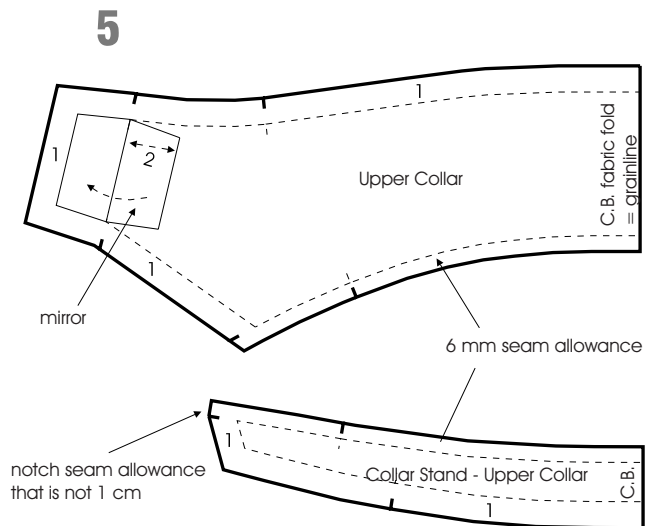


3 Add 0.3 cm roll width to the collar tip. Draw the collar stand onto the collar pattern. Mark the collar stand 1.5 cm wide at the centre back (1 cm relocated to the inside). Measure the collar seam and draw the collar stand the same length. Trace a copy of the front corner (marked in grey) and transfer the shape to the new collar stand.



4 Copy the pattern pieces and take out 2 mm to 3 mm at the collar seam so that the seam has to be stretched later. For a high-quality finish with folded collar corner, the shape of the corner is mirrored to the outside. It is also possible to sew and turn the corner as you can often see for industrial manufacturing, but then the collar corner is not as flat.

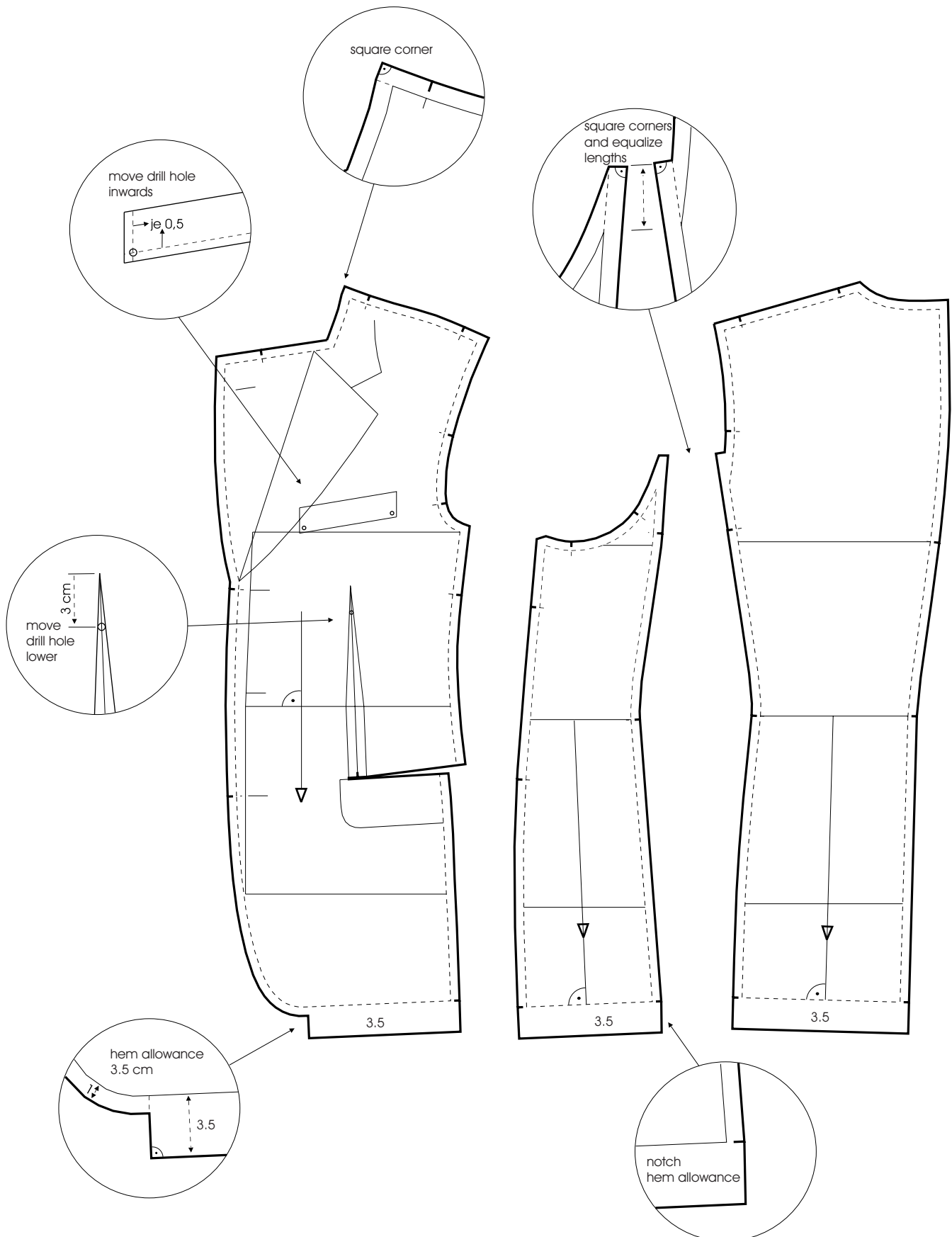
5 Mark 2 cm for the collar corner fold and mirror it over the collar edge to the outside. Add 1 cm seam allowance at the collar edge. Add 6 mm seam allowance at the collar seam. Mark seam allowances that are not 1 cm with a notch. Mark the collar back as fabric fold.

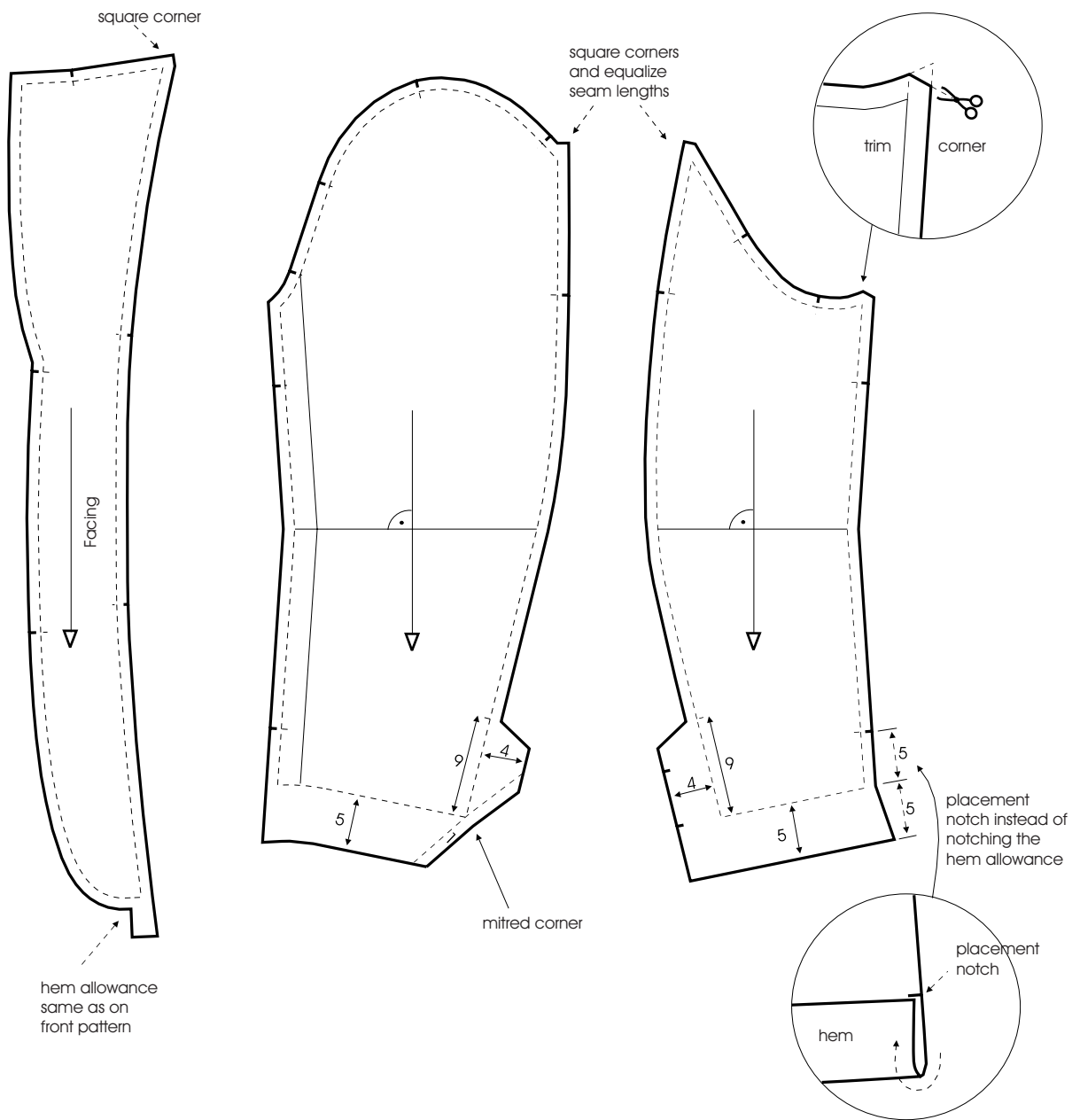


6 Add 1 cm seam allowance at the first 2.5 cm of the gorge seam so that the under collar can be attached to the front panel. The remaining gorge seam, the neckline and the upper collar edge is sewn open with a zig-zag stitch onto the front and back and the upper collar.



All previous pattern constructions are without seam allowances. Seam allowances must be added to the pattern for industrial manufacturing and the widths depend on company specifics and materials (e.g. hem tapes, etc.). Extra allowances in addition to the seam allowance can be added for fitting adjustments for bespoke tailoring.





Adding seam allowances with the help of an Apparel CAD software is quick, easy and efficient. Add 1 cm seam allowance, 3.5 cm hem allowance and 5 cm sleeve hem allowance. Mark notches on all seam allowances that are not 1 cm wide. Mark placement notches at hem allowances (7 cm at the hem and 10 cm at the sleeve hem) instead of notching the width of the allowance. Mirror the hem allowance upwards to determine the necessary width of the hem allowance when folded up. Square the corners and equalize the seam lengths, e.g. at the back panel seam and the upper sleeve seam.

Trim the pointed seam allowance at the side panel and the under sleeve seam.

The sleeve vent and the mitred corner can be easily constructed with a CAD software. Mark drill holes at pocket positions and dart end points for industrial manufacturing. Move the drill holes inside the pocket position or the dart to prevent the markings from showing on the finished garment. The widths of the seam allowances and hem allowances as well as the placement of notches and drill holes are company specific and can vary.



JACKET PATTERN WITH SEAM ALLOWANCES

Many tailors still draft the basic patterns with seam allowance included in the calculations which has been proven successful for made-to-measure tailoring studios and bespoke tailors.

Extra allowances for fitting adjustments are added to the seam allowances on one side of the seam and the cutting edges are marked with basting stitches. The other side can be placed on the markings and then sewn with 0.75 cm seam allowance which corresponds to the width of the foot of the sewing machine.

Whether a pattern contains seam allowances or not, is easy to recognise at the angled corners at the back panel seam and the upper sleeve seam.

MEASUREMENT CHART SIZE 54

BODY MEASUREMENTS

		1/2	1/4	1/8	1/16	
Bh	Body height	182.0 cm	91.0	45.5	22.8	11.4
Cg	Chest girth	108.0 cm	54.0	27.0	13.5	
Wg	Waist girth	98.0 cm	49.0	24.5		
Hg	Hip girth	110.0 cm	55.0	27.5		
Slg	Sleeve length	66.0 cm				

AUXILIARY MEASUREMENTS

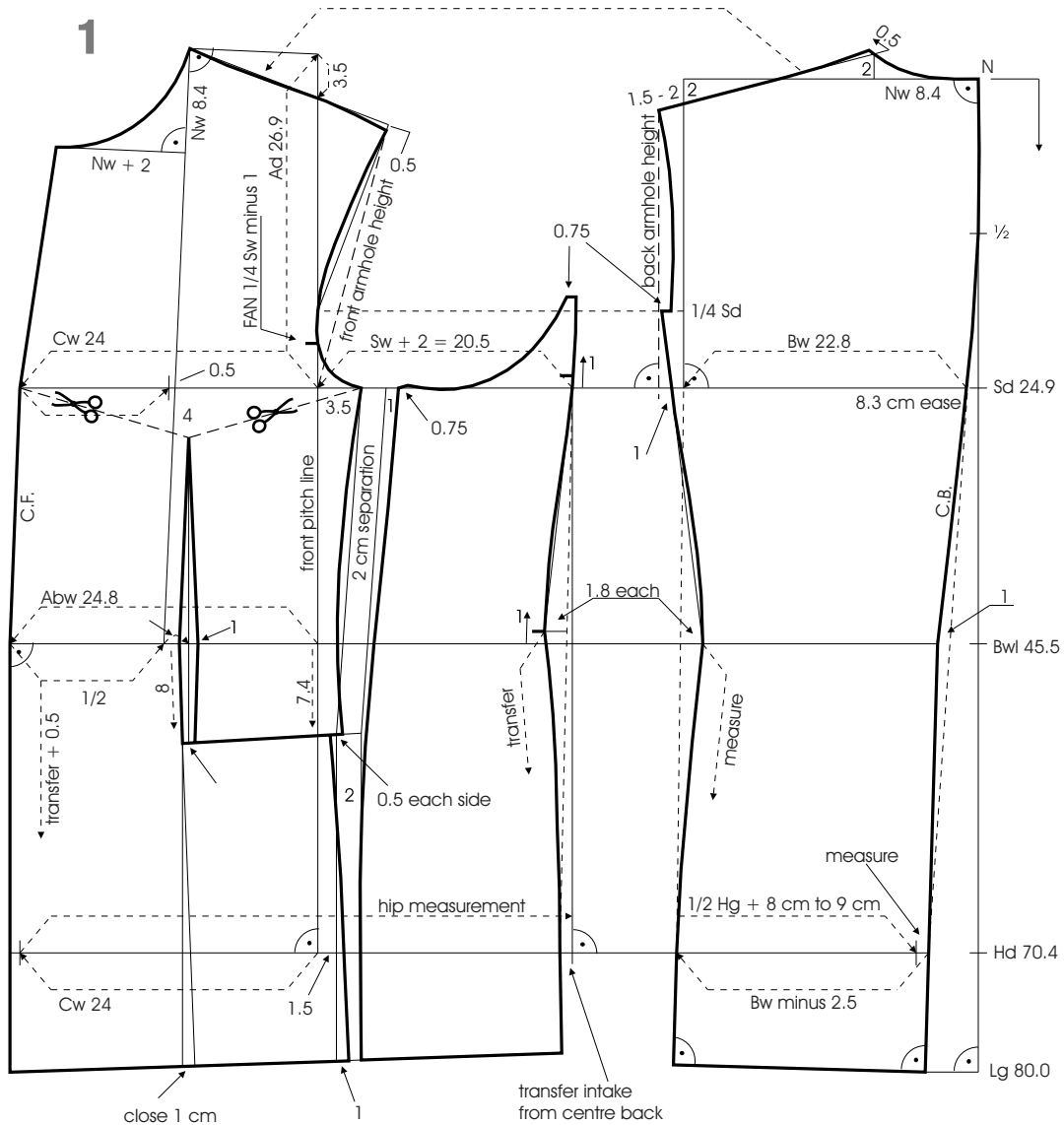
CALCULATION

Nw	Neck width	8.4 cm	= 1/10 of 1/2 chest girth (Cg) + 3 cm
Sd	Scye depth	24.9 cm	= 1/8 chest girth (Cg) + 1/16 body height (Bh)
Bwl	Back waist length	45.5 cm	= 1/4 body height (Bh)
Hd	Hip depth	70.4 cm	= back waist length (Bwl) + scye depth (Sd)
Lg	Length	80.0 cm	= 1/2 body height (Bh) minus 11 cm
Ad	Armhole depth	26.9 cm	= Sd + 2 cm
Bw	Back width	22.8 cm	= 1/10 Cg + 11.5 cm to 12.5 cm (more than 100 Cg) = 2/10 Cg + 1.5 cm to 2.5 cm (up to 100 Cg)
Sw	Scye width	18.5 cm	= 1/8 Cg + 4.5 cm to 5.5 cm
Cw	Chest width	24.0 cm	= 2/10 Cg + 1.5 cm to 2.5 cm

Total width	65.3 cm	
	minus 57.0 cm	= 1/2 chest girth (Cg) + 3 cm seam allowance
	= 8.3 cm	= ease at 1/2 chest

Abw	Abdomen width	24.8 cm	= 1/4 waist girth (Wg) minus 0.5 cm to 1 cm
------------	---------------	----------------	---

Do not take the abdomen width into account if the abdomen width is smaller than the chest width. In this case, use the same amount as for the chest width (Abw = Cw).



Front, Side and Back Pattern

1 Starting at the neck point (N), measure the scye depth, the back waist length, the hip depth and the finished length downward on a vertical line. Square out to the left from all points. Divide the scye depth in half and mark the midpoint. Taper the centre back 4 cm at the hip and draw a guideline to the $\frac{1}{2}$ -scye-depth point. Taper the centre back 1 cm at the waist. Draw the centre back. Measure the neck width from the neck point (N) to the left and square up 2 cm. Draw the back neckline perpendicular to the centre back and lengthen the neckline 0.5 cm.

On the chest line, measure the back width to the left and square up from this point. Mark the shoulder slope with 2 cm. Draw a guideline to the neckline and measure 1.5 cm to 2 cm from the back width to the left for the shoulder width. Draw the shoulder seam. Transfer the measurement of the back width minus 2.5 cm to the hipline and draw a guideline to the back width on the chest line. At the scye depth, measure 1 cm for the overlap to the left. Draw the back hemline perpendicular to the centre back.

Mark 1.8 cm intake at the waist at the back sideseam and draw a guideline to the $\frac{1}{4}$ -scye-depth line. Measure 0.75 cm for the seam allowance to the right and draw the back armhole. Leave some space between the back pattern and the side pattern. Then measure the scye width plus 2 cm (separation of the front and side pattern) to the left. The amount of 1 cm for the slant of the side panel is already included in the calculation for the scye width. Square up and down for the front pitch line. From the chest line, measure the armhole depth upward along the front pitch line. Measure $\frac{1}{4}$ scye width minus 1 cm upward along the front pitch line and mark the armhole notch. Also transfer the $\frac{1}{4}$ -scye-depth line to the front armhole.

On the chest line, measure the chest width from the front pitch line to the left. On the waistline, measure the abdomen width from the front pitch line to the left. Divide both distances by two, connect the midpoints with a line. Extend this line upward and draw a guideline from the armhole depth perpendicular to the halfway line.



From the armhole depth, measure 3.5 cm downward for the front shoulder slope. Connect the neckline corner and the shoulder slope with a guideline and transfer the back shoulder width minus 0.5 cm to 1 cm to the front.

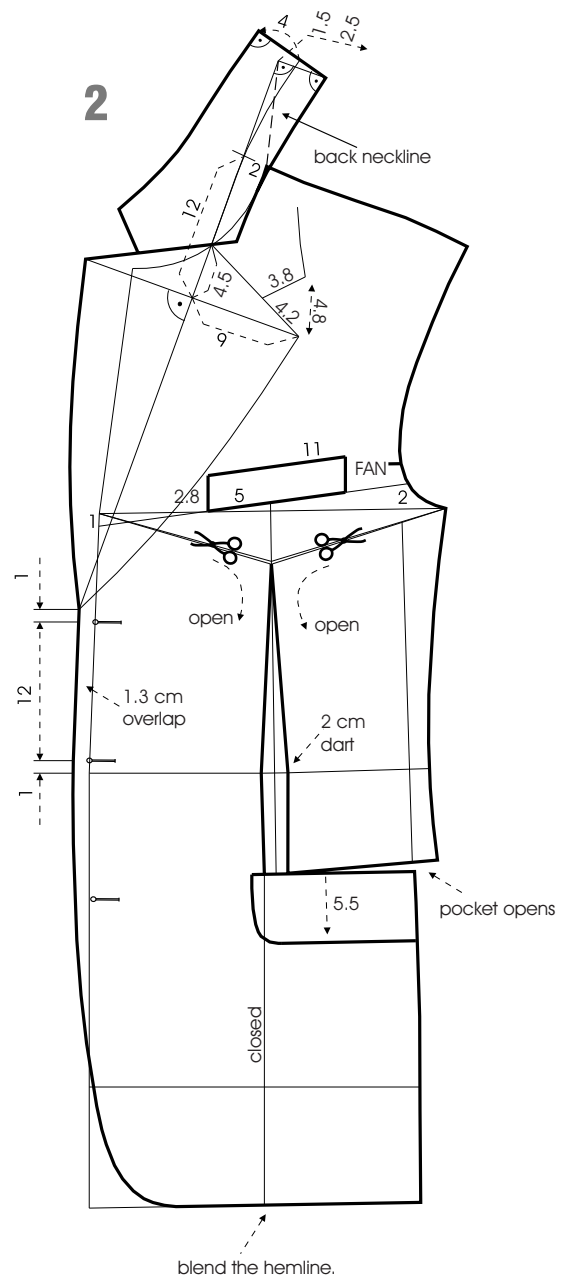
From the neckline corner measure the neck width downward for the front neckline. From this point measure the neck width plus 2 cm to the left. Connect the front neckline point, the chest width and the abdomen width with a line for the centre front and square down from the waistline.

Hip measurement: On the hipline, measure the chest width from the front pitch line to the left. From this point, measure $\frac{1}{2}$ of the hip circumference plus 8 cm to 9 cm to the right. This measurement includes 2 cm separation of the front and the side panel, 3 cm seam allowance for four seams as well as 3 cm to 4 cm ease. Measure the difference and remove this amount at the side panel seam. Draw a guideline from this point to the chest line and taper the side panel the same amount at the waist as the back pattern. Raise the waist line 1 cm at the side panel seam. Measure the back panel seam below the waist and draw the side panel seam the same length. Transfer this length plus 0.5 cm to the centre front below the waist. Draw the hemline.

Mark the front dart: Measure $\frac{1}{10}$ abdomen width from the midpoint of the abdomen width to the right. Mark the dart middle line parallel to the centre front. Draw the pocket slightly slanted onto the front according to the illustration. Mark 1.5 cm dart intake at the waist and 1 cm dart intake at the pocket entry. The dart ends 4 cm below the chest line. Mark 1 cm closing amount at the hem. Draw a guideline parallel to the front pitch line from the hem to the pocket. The front sideseam ends 3.5 cm beside the front pitch line at the armhole. Draw the guideline for the 2-cm separation and draw another guideline 1 cm to the right for the slant of the side panel. Draw the front sideseam and add the dart intake to the upper sideseam as shown. Draw the front side panel seam along the slanted line and perpendicular to the hemline. Plot the armhole on the front and side pattern according to the illustration. Verify the amount of ease included at the chest, waist and hipline. Cut out all pattern pieces. Compare all seam lengths and blend the transitions at jointed seamlines.

Completion Front Pattern and Design Pattern

2 Cut through the front pattern piece along the pocket line and close the intake at the hemline. This will create the opening at the pocket line. Blend the hemline. To work out the chest area, cut from the dart to the centre front and to the armhole and spread the front dart to 2 cm. Draw the new waist dart. Mark the position of the closing button 1 cm above the waistline. Mark the other buttons 12 cm above and below the closing button. Add 1.3 cm overlap and draw the front edge as shown in the illustration. Extend the shoulder seam 2 cm to the left for the lapel construction. Mark the lapel break and draw the lapel 9 cm wide



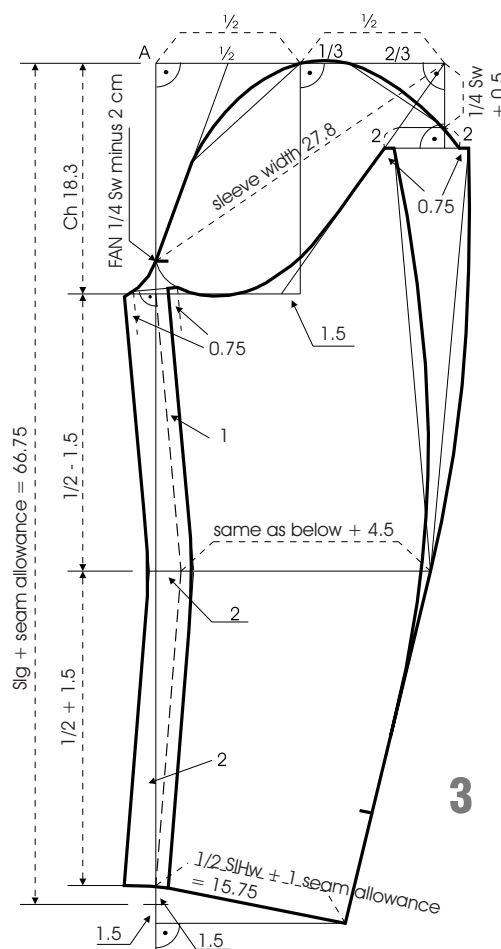
according to the illustration. Measure the back neckline for the construction of the felt under collar. Extend the lapel break line upward. Measure the determined back neckline minus 1 cm from the front neckline corner to the lapel break. Square out to the right from this point and measure 1.5 cm for the collar roll and 2.5 cm for the collar stand. Draw the collar seam to the neckline. Draw the centre back perpendicular to the collar seamline. Plot the collar roll and the collar shape as shown in the picture. The collar seam should be approximately 1 cm shorter than the neckline, since the collar will become longer when steam-pressed into shape. Mark the chest pocket and the Frankfurt pocket as shown. Mark the grainline along the dart middle line.



SLEEVE MEASUREMENTS			1/2
Ah	Armhole height	44.0 cm	22.0
Ac	Armhole circumference	53.5 cm	26.8 (measure the edges without seam allowance)
<hr/>			
SIHw	Sleeve hem width	30.0 cm	15.0 + 0.75 seam allowance = 15.75
Slg	Sleeve length	66.0 cm	+ 0.75 cm seam allowance = 66.75
Ch	Cap height	18.3 cm	= 1/2 Ah minus (1/10 of 1/2 Ah + 1.5 cm)
Slw	Sleeve width	27.8 cm	= 1/2 Ac + 1 cm to 1.5 cm

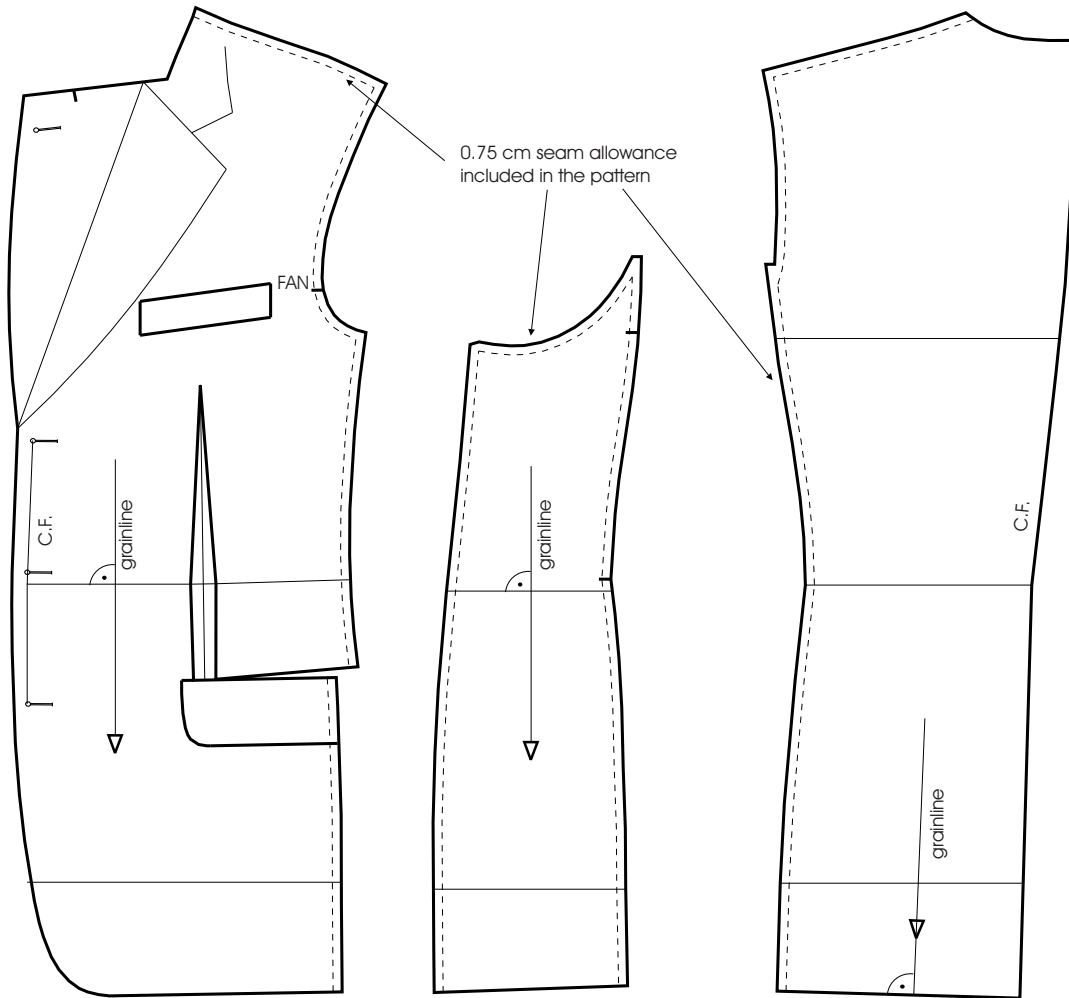
Sleeve

3 Measure the armhole circumference without seam allowances. Measure the front and back armhole height as shown in the illustration. Calculate the sleeve measurements according to the measurement chart. Draw the sleeve pattern on a vertical baseline. From the starting point (A), measure the sleeve cap height and the sleeve length downward. From the sleeve length, measure 1.5 cm up and down for the front and back sleeve length. Determine the position of the elbow line as shown in the illustration. Square out to the right from all points. For the front armhole notch measure $\frac{1}{4}$ scye width minus 2 cm from the cap height upward. Taper the front sleeve 2 cm at the elbow line and draw the front sleeve fold. Measure and mark $\frac{1}{2}$ hem width diagonally from the front to the back sleeve length. Measure the same distance plus 4 cm to 5 cm on the elbow line from the sleeve fold to the right. Draw the back sleeve fold from this point to the hem. Measure the sleeve width from the front sleeve notch diagonally to the original line. Square down from the intersection of the sleeve width and the sleeve height and measure $\frac{1}{4}$ scye width plus 0.5 cm. Square out to the left from this point. Draw the sleeve cap line and the lower sleeve curve as shown in the illustration. For the front sleeve seam measure 2.5 cm from the front sleeve fold to the outside and 1 cm to the inside. Draw the seams parallel to the fold line. At the hem, square out to the left and right from the front sleeve fold and mark the length at the upper sleeve and under sleeve. Add the seam allowance to $\frac{1}{2}$ sleeve hem width and draw the sleeve hem slightly curved to the sleeve seam. Draw the upper sleeve seam with 0.75 cm seam allowance as shown in the illustration.

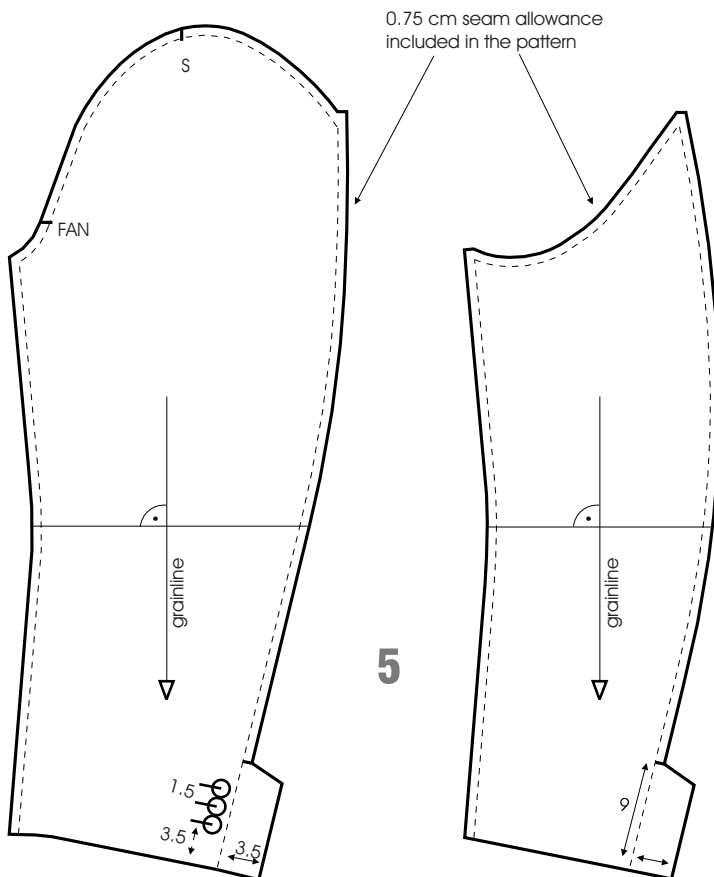




JACKET PATTERN WITH SEAM ALLOWANCES



4



5

Seam Allowances

4+5 The pattern includes 0.75 cm seam allowance at the front and back sideseam, at the shoulder seam, at the armhole, at the sleeve cap, at the front and back sleeve seam and at the upper sleeve seam. The centre back, the neckline, the front edge, the waist dart, the hem and the sleeve hem are without seam allowance. Add seam allowance and extra allowance for fittings. Mark the grainlines for plain fabrics perpendicular to the waistline and perpendicular to the elbow line. Mark the grainline on the back pattern, perpendicular to the hem or parallel to the lower part of the centre back.

Abbreviations

A	Starting point	Hd	Hip depth
Abw	Abdomen width	Hg	Hip girth
Ac	Armhole circumference	Hw	Hem width
Ad	Armhole depth	Is	Inseam length
Ah	Armhole height	Kh	Knee height
Ang	Ankle girth	Kng	Knee girth
BAN	Back armhole notch	Lg	Length
Bcw	Back crotch width	m	measure
Bh	Body height	N	Neck point
Br	Body rise	Ng	Neck girth
Btw	Back trouser width	Nw	Neck width
Bw	Back width	Pp	Pivot point
Bwl	Back waist length	Sd	Scye depth
C.B.	Centre back	Sl	Side length
C.F.	Centre front	Slg	Sleeve length
Cag	Calf girth	SIHw	Sleeve hem width
Cg	Chest girth	Slw	Sleeve width
Ch	Cap height	Sw	Scye width
Cw	Chest width	Tbtw	Total back trouser width
FAN	Front armhole notch	tr	transfer
Fcw	Front crotch width	Wbg	Waistband girth
Ftw	Front trouser width	Wg	Waist girth
Haw	Hand width		