Metric Pattern Cutting ▶▶▶▶
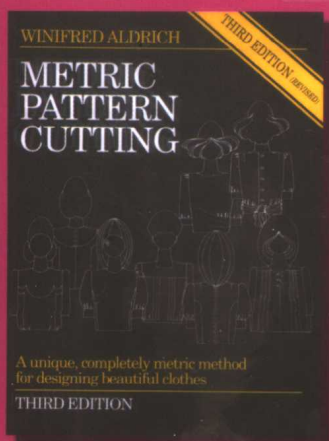# 3rd E

服装专业双语教材 1

原版风暴

Winifred Aldrich

[英] 威尼弗雷德·奥尔德里奇 著

刘 莉 译

英国经典
服装板型

内赠光盘，外教朗读，语音纯正

Metric Pattern Cutting 3rd E

- 内赠光盘，外教朗读，语音纯正
- 原版引进，原汁原味，与国际著名院校同步使用
- 方便双语教学及提高专业英语水准

英国经典服装板型

Metric Pattern Cutting, Third Edition

[英] 威尼弗雷德·奥尔德里奇 著

刘驰 译

中译文版已出版，可参照使用

高校，要力争在三年内开出5%至10%的双语课程……

要求高校使用优秀的、先进的教材，特别是在发展迅速、国际通用性和

可比性强的学科和专业直接使用高质量的原版教材……

——教育部《关于加强高等学校本科教学工作，
提高教学质量的若干意见》（教高[2001]4号）

Metric Pattern Cutting ▶▶▶▶

3rd E
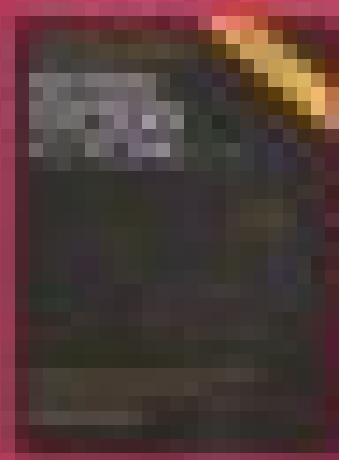
英国经典

服装板型

Metric Pattern Cutting

Third Edition

英国经典服装板型

Winifred　Aldrich

[英] 威尼弗雷德·奥尔德里奇　著

刘　莉　译

Blackwell
Science

中国纺织出版社
China Textile Press

图书在版编目(CIP)数据

凡购本书,如有缺页、倒页、脱页,由本社市场营销部调换

内 容 提 要

    本书主要介绍了时装设计师应该掌握的服装工艺知识和技能,内容包括成本意识、材料利用、样衣裁剪、粘合衬工艺原理、缝制工艺原理、熨烫工艺原理、服装整理和检验以及样衣间、服装设计室的运作,设计师和其他成员的交流技巧等等。全书图文并茂,文字简练,可读性、操作性强,可供广大时装设计师参考,也可作为服装专业师生的教学用书。

ACKNOWLEDGEMENTS / 致谢

CONTENTS

目 录

INTRODUCTION

Revised Edition 1994   This second major revision of the original book, written in 1975, remains true to its original concept. It offers a range of good basic blocks, an introduction to the basic principles of pattern cutting and gives a few examples of their application into garments. The principle aim was to give students confidence in their ability to develop a unique style of pattern cutting and to offer tutors a starting point from which they could extend their students' knowledge.

The new edition extends the range and use of blocks. These additions are concentrated in the new sections 'Close Fitting Body Shapes' and 'Easy Fitting Body Shapes'; they reflect the use of easy-care and affordable fabrics by the garment industry. The intelligent use of blocks is essential in flat pattern cutting, see 'The Basic Blocks' on page 17.

The section on 'Computer Grading' has been updated, and some ideas about computer aided design and pattern development are explored on page 6.

Pattern cutting is an exciting craft. It is simple if the basic principles are learnt thoroughly, and exciting if the student is sensitive to the subtle changes in shape which changes in fashion demand. There is no limit to the ideas that can be followed through into workable designs. Pattern cutting is a means of achieving a shape around the body so that although the body and therefore the body blocks remain constant, any student studying old magazines or costume books quickly becomes aware that the outline of clothes often changes dramatically in different periods of fashion.

Originally designs were made by draping fabric around a dress stand. Flat pattern cutting is now widely used by the dress trade because of its accuracy of sizing and the speed with which complicated designs can be constructed. However one must always be conscious that the body is a form.

This can be difficult when one has to relate flat pieces of paper to a design which is basically sculptural when completed. In addition the form will move, this must be exploited in the cut of the garment; a moving shape is more visually exciting than a still form. There are practical problems to be considered in allowing for this movement. The system of pattern

making used in this book is designed to help the student be more fully aware of designing round the figure rather than seeing it as a body that possesses only a front view.

Pattern cutting should be used in conjunction with a dress stand. This means that as the design evolves, proportion and line can be checked and corrected. Pattern cutting can achieve a shape quickly, but more complicated styles should be made up into a muslin or calico toile so that the result can be assessed on a form or moving figure.

This book is written for beginners, students who are starting practical pattern cutting as a part of a Fashion Degree or B/TEC courses or for City and Guilds Examinations, and for students in upper schools who are studying advanced dress subjects. Local Education Authorities are now developing recreational courses in design and pattern cutting. Many women who make clothes for themselves and their families find that trade patterns, however excellent, limit the scope of the creative dressmaker and have become very expensive. I hope this book will be useful to teachers and students on these courses. One chapter deals specifically with drafting the block for individual figures.
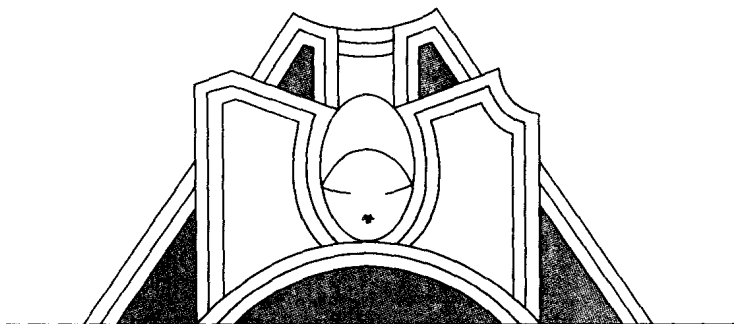
前　言

本书初稿完成于1975年，此次第二次（1994年）修订保持了原有的概念。本书提供了一系列基本原型，对纸样裁剪基本原理进行了介绍，并且列举了许多应用例子。主要的目的是给学生们建立起信心，以创造独特完美的纸样；给教师提供丰富详实的内容，从而可以完善学生的认知水平。

修订本增加了原型的种类和应用，增编部分着重在"合体式造型"和"松身式造型"章节，反映出服装工业对免烫面料和普通面料的应用。对原型的应用主要以平面裁剪为基础，见17页"基本原型"。

"计算机放码"部分内容已经更新，计算机辅助设计和纸样发展的相关内容在第6页。

纸样裁剪是项充满创造的技术。只要完全掌握它的基本原理，这项技术就会很简单。如果能敏锐地感受到流行时尚中造型的微妙变化，将会令人激动。纸样裁剪是一种塑造人体廓型的手段，尽管人体和原型保持不变，学生在翻阅旧杂志和旧服装书时，还是能够很快发现在不同的流行阶段，服装的造型具有戏剧性的变化。

最初，设计是在人体模型上进行立体裁剪来完成的。目前，平面裁剪则大量地应用于服装生产中，因为它放码精确而且速度快。使用平面裁剪可以进行复杂的设计，但是设计师必须时刻意识到人体是立体的。

直接将平面的纸样与完成的立体设计联系起来会有些困难，此外这个形态还会运动，必须在裁剪时考虑到这些情况。当然一个运动的形体比一个静止的形态更具有视觉刺激。考虑到运动功能需要解决一些实际问题，本书中的纸样制作体系可以帮助学生完全意识到，服装是包裹人体之外的设计，而不能只把它看成具有前观效果的形体。

纸样裁剪应该与立体模型联系起来，这意味着在进行设计时，可以检查并修改服装的比例和线条。纸样裁剪能够很快得到一个造型，但是复杂的设计应该制作坯布样衣，这样可以在立体模型上或运动的人体上进行效果评价

本书是为初学者和开始进行纸样裁剪实践的学生编写的，可以作为时尚课程或B/TEC课程的一部分，也可用于行业考试。

本书也适用正在学习高级服装课程的学生。教育界正在开发一种服装设计和纸样裁剪的娱乐性课程。许多妇女为自己和她们的家庭做衣服，她们可以买到合适的纸样，但这样会限制她们的创造力，而且这些纸样非常昂贵。我希望本书对从事服装结构设计的老师和学生能有所帮助。其中有一章是专门讲述如何绘制个体原型的。

DESIGN
服装设计

The basic rules of pattern cutting are based on sound principles, a student must learn these thoroughly so that when the rules are broken, it is a creative decision allied to sound reasoning. This concept of design has been responsible for the most exciting changes in shape and cut during this century. Vionnet and Chanel sensitive to social and aesthetic influences 'discovered the body' after it had been enclosed in structures for a century. Although their interpretations differed, they were the innovators of the soft easy fitting clothes we wear today.

Marrying basic design to fashion is always a difficult process. It can be overwhelmed by gimmicks and bizarre effects that are a part of fashion. These are necessary; they inject wit, pleasure and excitement. Life would be immeasurably duller if fashion did not include this stimulation. However, the following basic points should be considered in translating high fashion into clothes for the mass market or individual designs.

Colour and texture . . . these are the most dominant features in a fashion trend. Each season a colour theme emerges, occasionally spontaneously, often imposed by designers or entrepreneurs of the fashion world. The texture, handle and surface qualities of fabrics play a great part in achieving the total effect of the moment. Changing textile designs and scales of pattern increase the complexities and challenges of dress design.

Shape . . . the basic shape of each fashion period can change suddenly or evolve slowly. Good pattern cutting is a vital factor. Once a shape has been determined there are the problems of developing the shape to flatter the widely differing types of figure. A line can be emphasised or played down yet still retain the fashion shape.

The different combinations of shape made by separate garments worn together have to be considered. An example of this was the 'layered look'; here it was vital that each layer complemented or exaggerated the basic design.

Great subtlety of cut and fit are required when very simple clothes which fit the body are fashionable. A slight figure fault can destroy the hang of the garment. Fashions that depend on a perfect figure often have a very short life. Easy fitting shapes can fit a wider range of figure types and can be made in a smaller range of sizes (e.g. small, medium, large). These garments are usually designed for young street fashion or for sportswear. However, easy fitting shapes can be difficult to cut, there is a small but crucial division between designs being original or shapeless. Good dress design works with the figure and achieves a lasting quality.

Line . . . interpretation of line and cut is the most important part of a designer's work. Once a fashion shape is accepted the variations in cut to achieve it are infinite. The designer must use her skill to produce a range that will make the latest fashions available to the majority of women whatever their figure. Basic concepts of proportion and balance of line are as applicable to designing dresses as designing chairs or tea cups!

The most limiting factors in designing for mass production are price and the mass market. Clothes have to have 'hanger appeal'; that is people will be tempted to try them on or buy them for their look alone. Often dresses that look sensational on a moving body look limp and featureless on a clothes rail.

There are two types of successful trade designs; the first group are employed by 'production led' manufacturers, these designers can develop current fashion shapes and produce designs which recognise fabric economy and which are practical in production. The second group are employed by 'design led' manufacturers, they can produce original ideas that have instant market appeal, they work with method study departments to resolve production problems.

Garments designed for an individual client give a designer more freedom. The cost factor becomes less important, this allows the original idea to be carried through. Interesting fabrics which are difficult to handle can be used, their surface qualities emphasised by decorative techniques. Designing for individual clients allows the personality of the wearer to be fused with the original idea. A demand is developing in the music and media markets where strong visual images have become a dominant sales factor.

The changing social attitudes of many women have changed their attitudes to fashion, they buy clothes to satisfy themselves and they demand a continuously developing market; they are not prepared to be restricted to a dictated line for a season or by an outdated image of femininity. They are now demanding choice, some manufacturers have begun to recognise this and are offering a response.

Design and Pattern Development by Computer
计算机服装设计和纸样设计

Computer Programs and the Designer
计算机程序和设计师

The word 'designer' only makes sense in the environment in which it is being used. The area a designer may cover can range from the prediction or generation of the next season's range to pattern cutting and responsibility for the finished sample, checked in all sizes, cost lay plans, completed costings and manufacturing specifications. A designer in a large company may specialise in a particular area and be part of a team while in a very small company a designer may have to perform all the above tasks.

The introduction of computer aided design into a company appears to have the effect of increasing the division between the generation of styles and pattern cutting. Pattern cutting is seen increasingly as a technical rather than a design process. Some very innovative designers are reluctant to relinquish the art of pattern cutting, they see design as a holistic process with pattern cutting and modelling skills embedded in the development of the design.

When a company adopts new technology, a division often occurs because different types of software programs handle graphic data in different ways.

RASTER BASED PROGRAMS / 关于光栅的程序
The drawings are manipulated by using screen pixels (the smallest element on a computer screen). These programs are useful for idea generation, illustration, marketing and many forms of textile design.

VECTOR BASED PROGRAMS / 基于矢量的程序
The data is registered and manipulated in the form of mathematical co-ordinates. This makes them useful for pattern cutting, grading, lay-planning and some textile and graphic operations which require mathematical precision.

Some commitment has to be made by a designer to work with computer programs, the time factor often dictates that skill competence has to be limited to one type of program. Therefore a choice of direction has to be made.

The developers of software programs and computer equipment are trying to re-create the environment of the designer. A new drawing table has been created that allows a designer to work directly onto a screen with a cordless pen that is integrated into the table surface. Although it does not provide the 'sense' of drawing with pen and paper, it will attract designers who feel alienated from the current design technology that separates the drawing action on a tablet from its realisation onto a screen.

drawing on a low resolution system – jagged lines
在低分辨率系统的效果：不光滑的条纹

drawing on a high resolution system – smoother lines
在高分辨率系统的效果：较光滑的线条

Style Generation on the Computer
计算机款式设计

Until quite recently designers were alienated from working on paint systems, the software programs that create drawings by using screen pixels. This was because they produced lines with jagged edges which labelled the drawing as a 'computer drawing'. Only a few years ago managers in clothing companies were describing paint systems as 'designers' toys'.

Software programs that work in very high resolution are now available. They produce high quality line output and acceptable photographic images. Today, fashion retailers demand a fast response; the advantages of modifying drawings and printing them with variations of colour and pattern are therefore obvious. Photographs of garments can be 'rendered' with different fabrics to give realistic images of garments that do not exist! Textile designs for garment samples can be printed directly onto fabric from images on the computer screen. The large and medium size companies that supply the multiple retailers now see paint systems as an essential element of the early selection stages of the design process.

New developments in virtual reality are attempting to create moving models and electronic fashion shows, it may be that these new 'designers' toys' will become part of mainstream marketing techniques. The drive for novelty in fashion is insatiable.

Costs of computers, their associated scanners and printers are reducing at an astonishing rate. The use of colour in the general business world has driven commercial interest into developing low cost graphics and colour output. New developments, for example low cost direct printing onto fabric, fashion and textile images retrievable from compact discs, will attract designers working to tight deadlines. A new generation of designers is emerging from the colleges. Many of them feel comfortable with the technology, they will undoubtedly increase the momentum of its application.

DOCUMENTATION ／ 文件管理
Students entering their first design position are often astonished at the amount of documentation that is required from the designer. Organisation is central to the designer's work; rigorous notation of design styles, fabrics, trimmings and specifications are required. Illustrated database programs are now available, these allow the designer to store, file and retrieve fabrics, trimmings, garment styles, their costings and associated manufacturing data.

A photograph of a white garment.
一件白色衣服的照片

Computer rendering with spotted fabric.
计算机着色成点的面料

Pattern Development on the Computer

计算机纸样设计的发展

SPECIFICATION DRAWINGS / 图形说明
Designers who delegate the pattern development of a style to a pattern cutter have to develop a concise means of communication. The technique of precise technical drawing, in correct proportions and measurements, can be aided by the use of a computer.

**MEANS OF PATTERN DEVELOPMENT /
纸样设计的方法**
Before discussing the merits of computer pattern cutting, it is necessary to be clear about the methods used by a designer to create patterns.
1. Modelling the garments on the dress stand.
2. Direct measurements (usually simple shapes i.e. circular skirts).
3. Construction of patterns by instructions (usually basic styles in menswear).
4. Copy of an existing pattern.
5. Adaptation of a previous pattern.
6. Adaptation of blocks.

Patterns made from blocks or block adaptations are an advantage in mass production of garments because it is a means of quality control of sizing standards. Communication between the design team and the technical production staff is also simplified.

All the pattern cutting techniques listed are not exclusive to one style, different techniques may be employed in different sections of the garment, i.e. a draped front on an otherwise basic shape. Although the work in this book concentrates on the adaptation of basic blocks, the above methods must not be seen in isolation. Many designers use a mixture of techniques to achieve the final pattern.

PATTERN GENERATION SYSTEMS / 纸样设计系统
Drafting patterns on the computer is known as PGS, Pattern Generation Systems. This, I would argue, is an exaggeration. Most of the systems excel at pattern modification or the development of basic styles from blocks or previous patterns. Accurate adaptations from specification drawings can be made of the type of design illustrated. Basic seam and pocket positions can be marked, pattern pieces can be traced off and modified. The value of these systems for companies producing standard types of design, for example career wear, is often underestimated. However, the generation of innovative fashion design of complex cut or fabric drape can be achieved far better by manual methods, where the 3D form of the shape can be modified during the pattern development process.

The computer does not have to be completely dismissed from any area of pattern cutting, it can be used as a part of all the methods of pattern development listed earlier in this section.
1. Garments, or sections of garments, modelled on the dress stand can be digitised into the computer around the edge of the calico pattern piece. The image on the computer can then be modified to create an
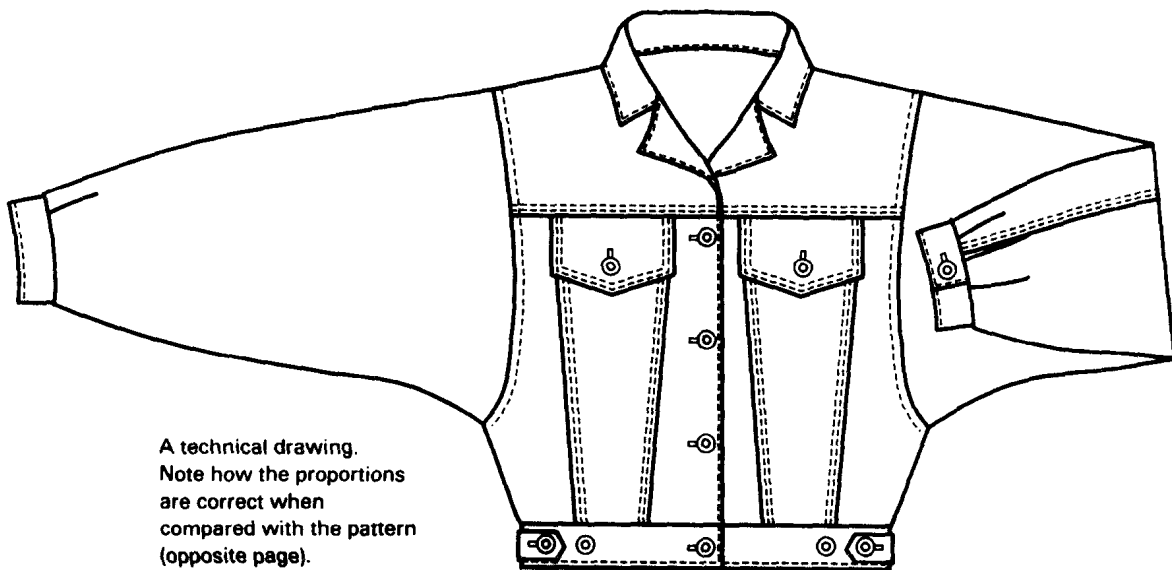
A technical drawing.
Note how the proportions
are correct when
compared with the pattern
(opposite page).

款式图:对比其纸样(下页),观察其比例关系

accurate pattern. Seam allowances can then be added. This method can also be used for manually cut patterns.

2. Very accurate patterns, based on simple shapes, can be constructed on a computer using mathematical co-ordinates.

3. Some of the more advanced software offers the designer the means to program the computer with instructions for drafting a particular style. This method can create patterns to individual sets of measurements, thus creating bespoke patterns for individual sizing. This feature of programming by computer also allows the designer to input instructions for set procedures, for example the automatic creation of facing, interlining and lining patterns.

4. and 5. Copying and adapting previous patterns, is perhaps, the most common use by most companies of pattern cutting programs. Computers are extremely efficient at storing and modifying data, irrespective of whether it is words or drawings.

6. Computer systems can store all a company's blocks, and then adapt them to create new patterns. This would appear to be the same process that is undertaken when a designer makes a pattern manually, but it is not. Most computer programs dictate to a designer certain methods of procedure, these may inhibit or distort the individuality of a designer's 'cut'.

Recent developments in the technology allow a designer to use the digitiser as a work table. The designer works in the same manner as manual pattern cutting but the lines are recorded electronically.

This means that after initial innovative work, there can be a rapid integration into the more mechanical but effective option of the program.
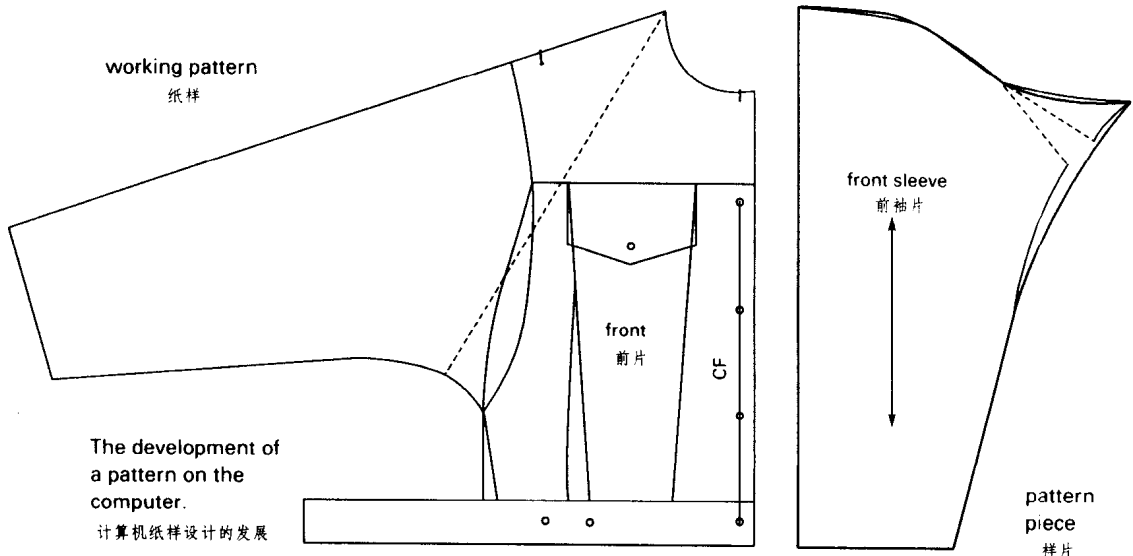
3D SOFTWARE PROGRAMS ／3D 用程序
Research by a number of companies and research establishments into the provision of a designer acceptable 3D pattern cutting system has been continuing for at least a decade. The problems are infinite and only limited success has been achieved. Interesting work is being done into providing the designer with an instant review of the constructed pattern piece on a 3D model. If this is achieved, it could reduce the number of toiles and first samples made in the design room.

Many practising designers develop a mental store of pattern cutting knowledge through the practical experience of working with shapes and fabrics. They can mentally transform 2D shapes into 3D images, and are therefore able to use some 2D computer programs with great skill.

EDUCATION ／ 教育
It is very important that students on fashion and clothing courses should have knowledge of computer pattern cutting systems and the practical experience of using them. However, they do not replace the valuable basic pattern cutting experience of working with the actual reality of the 3D form. This is only achieved by using the model stand and manually constructed paper patterns.

working pattern
纸样

The development of a pattern on the computer.
计算机纸样设计的发展

front
前片

CF

front sleeve
前袖片

pattern piece
样片

ALIQUOT PARTS

常用数据附录

If a calculator is not available for working out fractional parts, the following table can be used. The table covers most of the popular sizes. (Figures in columns marked with an asterisk are calculated to one decimal place.)

NECK SIZE / 颈围 (cm)

	*$\frac{1}{8}$	*$\frac{1}{5}$
34	4.3	6.8
35	4.4	7
36	4.5	7.2
37	4.6	7.4
38	4.8	7.6
39.2	4.9	7.8
40.4	5.1	8.1
41.6	5.2	8.3
42.8	5.4	8.6
44	5.5	8.8
45.2	5.7	9

CONSTRUCTING A CIRCLE / 圆的做法
Some patterns use circles as a base for their construction. The following calculations can be made to obtain the radius required to construct a circle.

The circumference of a circle is the measurement around a circle.
The radius is a line from the centre of the circle to the outer edge.
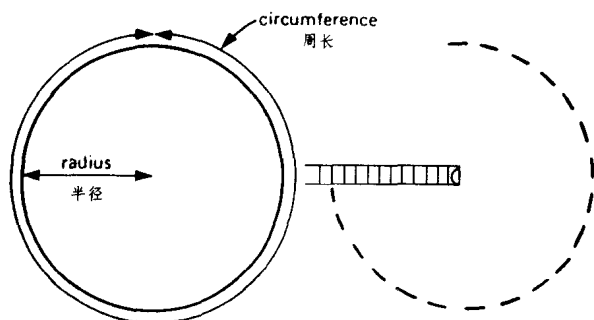To construct a circle the radius must be known.
Radius = circumference divided by 6.28.

Working example   Waistline measurement is 68cm, a circle is required whose circumference is 68cm.
Radius = 68 ÷ 6.28 = 10.8
Construct a circle, radius 10.8cm, its circumference will be 68cm.

BUST, WAIST AND HIP / 胸围、腰围和臀围 (cm)

	*$\frac{1}{16}$	*$\frac{1}{12}$	*$\frac{1}{6}$	*$\frac{1}{4}$	*$\frac{1}{2}$
60	3.8	5	10	15	30
61	3.8	5.1	10.2	15.25	30.5
62	3.9	5.2	10.3	15.5	31
63	3.9	5.3	10.5	15.75	31.5
64	4	5.3	10.7	16	32
65	4.1	5.4	10.8	16.25	32.5
66	4.1	5.5	11	16.5	33
67	4.2	5.6	11.2	16.75	33.5
68	4.3	5.7	11.3	17	34
69	4.3	5.8	11.5	17.25	34.5
70	4.4	5.8	11.7	17.5	35
71	4.4	5.9	11.8	17.75	35.5
72	4.5	6	12	18	36
73	4.6	6.1	12.2	18.25	36.5
74	4.6	6.2	12.3	18.5	37
75	4.7	6.3	12.5	18.75	37.5
76	4.8	6.3	12.7	19	38
77	4.8	6.4	12.8	19.25	38.5
78	4.9	6.5	13	19.5	39
79	4.9	6.6	13.2	19.75	39.5
80	5	6.7	13.3	20	40
81	5.1	6.8	13.5	20.25	40.5
82	5.1	6.8	13.7	20.5	41
83	5.2	6.9	13.8	20.75	41.5
84	5.3	7	14	21	42
85	5.3	7.1	14.2	21.25	42.5
86	5.4	7.2	14.3	21.5	43
87	5.4	7.3	14.5	21.75	43.5
88	5.5	7.3	14.7	22	44
89	5.6	7.4	14.8	22.25	44.5
90	5.6	7.5	15	22.5	45
91	5.7	7.6	15.2	22.75	45.5
92	5.8	7.7	15.3	23	46
93	5.8	7.8	15.5	23.25	46.5
94	5.9	7.8	15.7	23.5	47
95	5.9	7.9	15.8	23.75	47.5
96	6	8	16	24	48
97	6.1	8.1	16.2	24.25	48.5
98	6.1	8.2	16.3	24.5	49
99	6.2	8.3	16.5	24.75	49.5
100	6.3	8.3	16.7	25	50
101	6.3	8.4	16.8	25.25	50.5
102	6.4	8.5	17	25.5	51
103	6.4	8.6	17.2	25.75	51.5
104	6.5	8.7	17.3	26	52
105	6.6	8.8	17.5	26.25	52.5
106	6.6	8.8	17.7	26.5	53
107	6.7	8.9	17.8	26.75	53.5
108	6.8	9	18	27	54
109	6.8	9.1	18.2	27.25	54.5
110	6.9	9.2	18.3	27.5	55
111	6.9	9.3	18.5	27.75	55.5
112	7	9.3	18.7	28	56