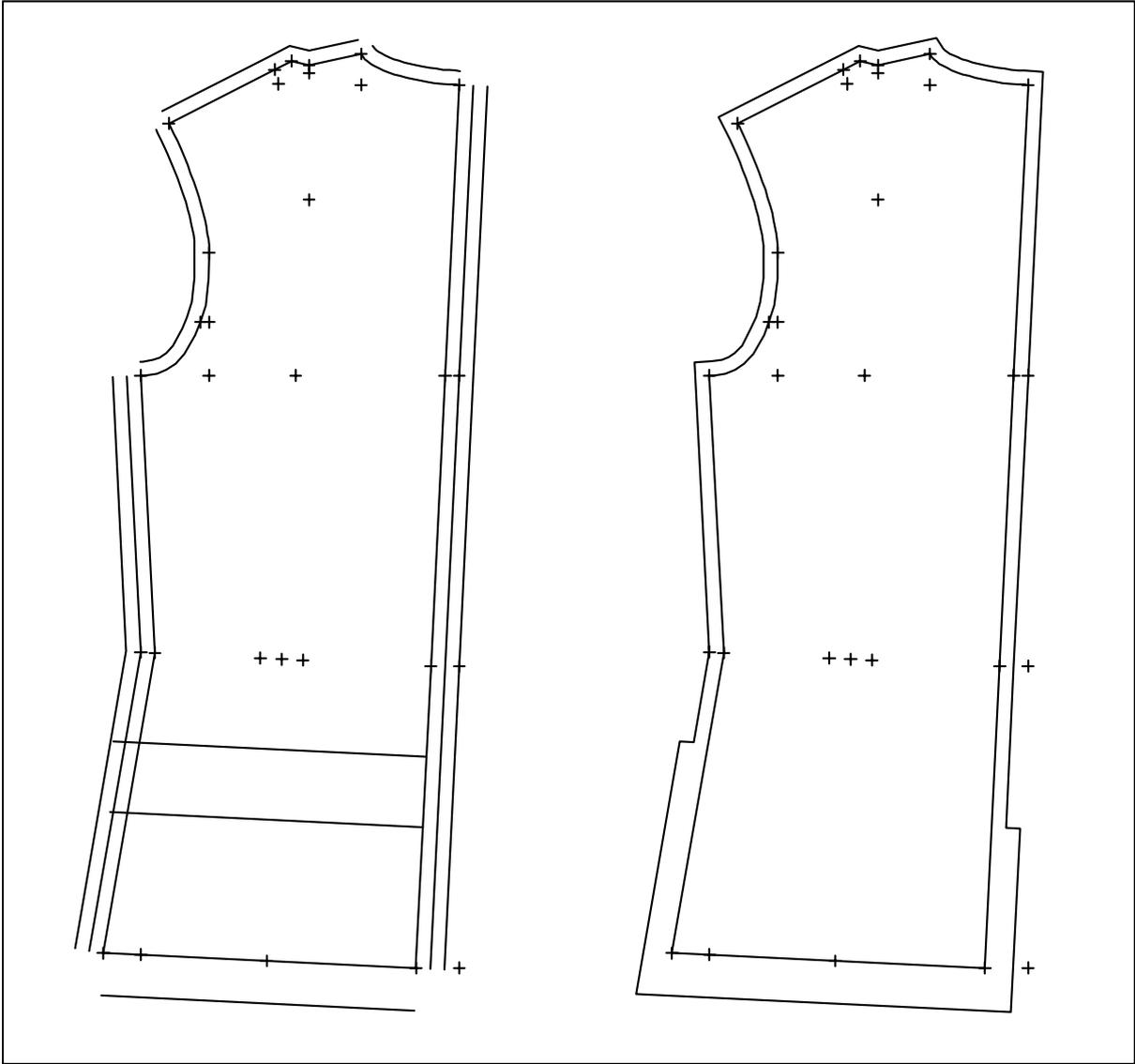


Chapter 4 “Create and alter perimeter”

Contents

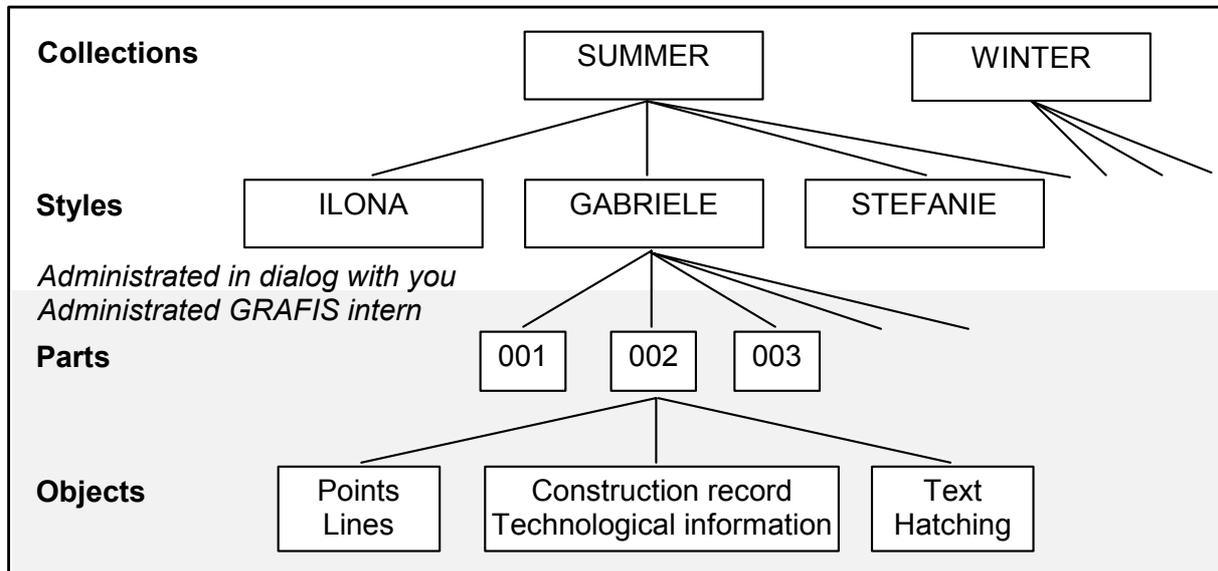
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First you will learn to open, save and delete styles as well as creating and deleting collections. The following sections deal with valuable information about the construction record and geometrical basics. Subject of the fourth to sixth section are deleting objects, construction of parallels and treatment of corners. Please use the exercises to learn all the new functions in this chapter. Follow the instructions in the text. By the end of this chapter you will be able to construct the depicted seam allowance and vent.



4.1 Work with collections and styles

The data structure



Picture 4-1

In GRAFIS construction data is organised according to collections, styles and parts (picture 4-1). The number of collections and styles is unlimited; nevertheless, styles which are no longer needed should be removed to disk or deleted.

It is important for your work to know which styles are saved under which collection. Create an overview list for yourself.



Each style can contain up to 250 parts which will be named by GRAFIS with a 3-digit number. The parts consist of objects, e.g. points, lines and texts.

The menu for work with collections is opened automatically after having selected the construction system or via *File | Open*.

Opening a style

In GRAFIS, there are two options to start work with a style from the start menu (picture 1-4):

1. Opening a new style

- ⇒ Select the drive and collection in which the new style is to be created. The selected collection is highlighted in colour and can also be found in the “Collection” dialogue box.
- ⇒ In case the required collection does not yet exist, enter the name for the new collection into the “Collection” dialogue box and press <ENTER> first.

- ⇒ Enter the name for the new style in the “Style” dialogue box.

Note: You can also click an existing style and change its name.

2. Opening an existing style

- ⇒ Select the drive and collection under which the style is saved. The selected collection is highlighted in colour and can also be found in the “Collection” dialogue box.
- ⇒ Double-click on the required style. Alternatively, you can select the required style and open it with <OK> or the <ENTER>-key.

Saving a style

To save a style select either *Save* or *save As..* from the *File* pull-down menu.

Save saves the style under its current name after a security question.

Save As... saves the style under a new name and/or in a different collection. The remaining steps are analogous to “Opening a new style”.

After saving, you can resume work with your style by clicking  or open a new style via *File | Close* and *File | Open*.

Closing a style

To end work with a style select the function *Close* from the *File* pull-down menu. With a security question you decide whether or not the style is to be saved. If the security question is answered “No” the changes to the style are not saved.

Creating a new collection

- ⇒ Select the drive on which the new collection is to be created and enter the name for the new collection into the “Collection” dialogue box.

Note: You can also select an existing collection and change its name.

Deleting styles and collections

The menu for work with collections and styles (Picture 1-4) also allows for deleting of collections and styles.

1. Delete style

- ⇒ Select the drive and collection containing the style to be deleted by clicking in the overview windows.
- ⇒ Select the style to be deleted and then click on “Delete style”.
- ⇒ A security question follows. After confirmation the style is deleted.

2. Delete collection

- ⇒ Select the drive containing the collection to be deleted by clicking in the overview window.
- ⇒ Select the collection to be deleted and then click on “Delete collection”.
- ⇒ After confirmation of the security question the complete collection with all its styles is deleted.

Note: If GRAFIS cannot delete the collection, there is still some data left in the respective directory (collection = directory/folder).

Regular data securing of your collections and styles to floppy disks, streamers or others is recommended. This is the only way of restoring your data in case of a defective harddisk for example.

Exercise

Start GRAFIS with the construction system „23-Werte Hohenstein Damen V“ and open the new style INES in the new collection SUMMER. Call the basic block “skirt after Hohenstein“. Save the style under the current name.

Open the new style KATHRIN in the collection SUMMER. Call the basic block “bodice after OPTIKON (ft)“. Save the style under the name KIRSTEN in the collection SUMMER.

Call the saved style KATHRIN from the collection SUMMER. This style contains no basic block as the last style was saved under the name KIRSTEN.

When opening a new style GRAFIS automatically creates an empty style !

Call the basic block “kimono“. Save the style as style URSULA under the new collection WINTER.

Now work out which style in which collection contains the called basic block.

Check that the following is present:

coll. SUMMER	style INES “skirt after Hohenstein”
coll. SUMMER	style KIRSTEN “bodice after OPTIKON“
coll. SUMMER	style KATHRIN empty
coll. WINTER	style URSULA “kimono”

Call the respective style and then reject it via *File | Close*.

Delete the style KATHRIN from the collection SUMMER. Delete the collection WINTER. Delete the collection SUMMER.

4.2 The construction record

Purpose of the construction record

GRAFIS saves the construction and modification steps during pattern development in the base size by imperceptibly writing a record. The operator has the option of calling the construction record with other measurement charts and thus, create a similar construction for these sizes. Incremental grading is omitted.

The construction record is similar to the notepad of an attentive student who notes down each of the teacher’s steps and can then recreate the construction with different measurements.

N*reset
N= 1
test run
000 000
grading
partorganis
call

Indication of record steps, test run

The number of recorded construction steps is constantly indicated in the basic menu in GRAFIS with two blocks of digits with three numbers each (see menu below *test run*). The right block indicates the number of construction steps recorded so far. The left group of numbers indicates the record step at which *test run* was last activated.

Test run starts the run through the construction record. It can also be run in a step-by-step mode. After having selected *test run* press the <S> key once. Pressing the space key in step-by-step mode will show the next construction step. Press <S> again to quit the step-by-step mode.

Reset the construction record

The construction record can be reset by N steps via *N*reset*. N is set to 1 by default. Therefore, clicking *N*reset* resets the record by 1 step. To reset a number of steps click on the line $N=1$ and enter the number of steps to be reset. The construction record is automatically reset although nothing has changed on screen, yet. The current state is shown after clicking *test run*.

As soon as you detect a mistake in your construction, reset the construction record back to the error and resume construction without the mistake. Please do not try to "patch up" your construction as following construction steps may be affected inadvertently. Correcting mistakes in time avoids errors during automatic construction (grading).



Analogous to knitting: Reset, even if it hurts!

Exercise

Call the basic block "skirt after Hohenstein", click on *N*reset* and activate *test run*. The screen is empty as calling a basic block already counts as a construction step. You can now call a different basic block. This is the quickest way to view various basic blocks.

Call two more basic blocks, resetting the record by one step each time. Activating *test run* is not necessary as a test run ensues automatically before starting a record function. All functions of the basic menu from *call* onwards are record functions. They are recorded internally in the system.

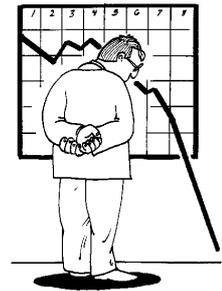
4.3 Geometrical basics

The co-ordinate system

The co-ordinate system is used for the description of point positions on a plain. In clothing construction the plain is comparable to the paper on which the pattern is designed.

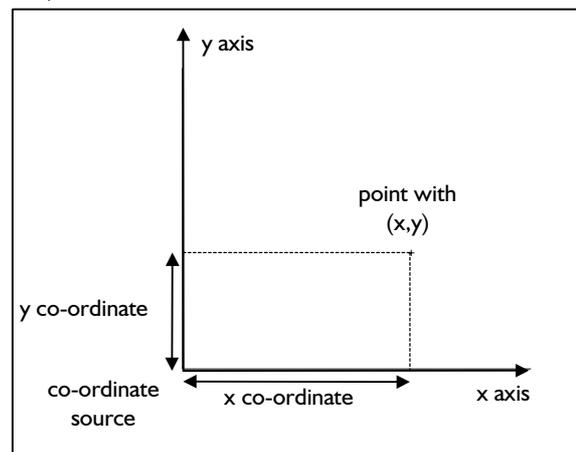
All points on the plain relate to an agreed source (a starting point). The x and y axis run through this point in a right angle towards one another. Unless otherwise stated, the x axis runs horizontally, the y axis vertically (picture 4-2).

An example for a different presentation in a co-ordinate system is the Dow Jones Index diagram. You know these diagrams from the stock market reports. In this case the x axis is a time axis and along the y axis the Dow Jones value is registered. A point in this co-ordinate system assigns a certain point in time with a certain Dow Jones value.



X and y co-ordinates of a point

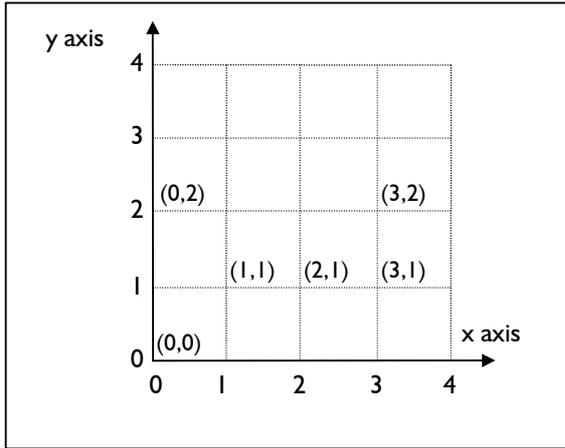
The position of a point is clearly defined by its distance to the x and y axis. The distance to the y axis is the x co-ordinate of the point, the distance to the x axis is the y co-ordinate of the point (see picture 4-2).



Picture 4-2

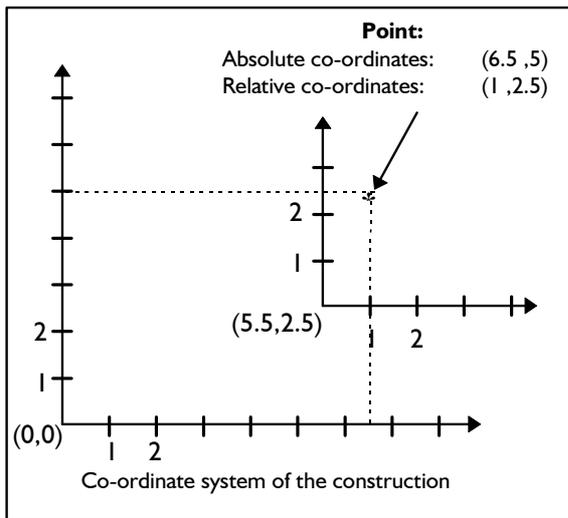
A minus in front of the x co-ordinate places the point to the left of the y axis. The y co-ordinate is negative if the point lies below the x axis. A point is clearly defined by stating (x,y) (picture 4-2).

Picture 4-3 shows a few points and their respective co-ordinates.



Picture 4-3

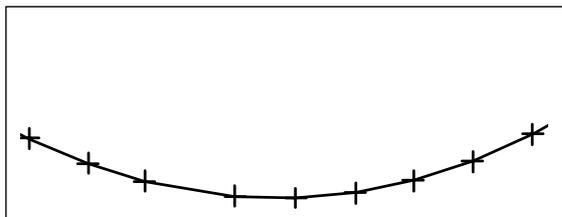
The position of a point can also be defined **relative** to another point in the construction. In picture 4-4 the new point of reference is point (5.5,2.5). The absolute co-ordinates of the point result from its relative co-ordinates and the co-ordinates of the point of reference.



Picture 4-4

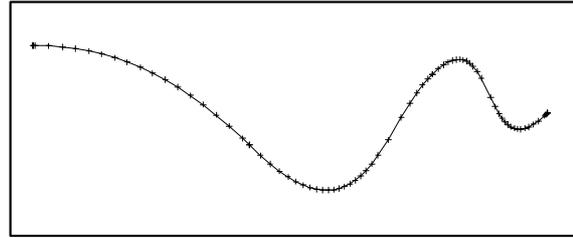
Polygon

All lines, circle arcs and curves are displayed as polygons in GRAFIS. A polygon consists of a number of points connected by straight lines (picture 4-5). As a



Picture 4-5

rule, the fulcrums of the polygon are not visible.

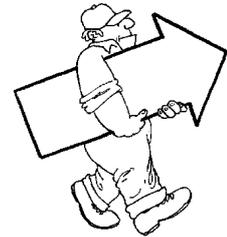


Picture 4-6

With the function *raster0* (section 5.3) they can be made visible as points if necessary. The fulcrums of a circle arc have the same distance between one another. The fulcrums of a curve are denser in the bends (picture 4-6).

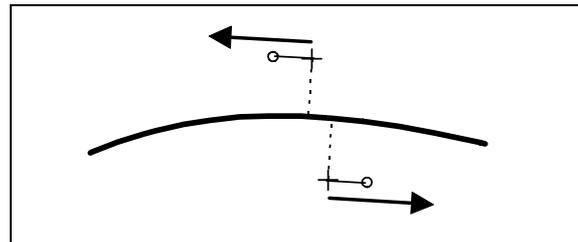
The right principle

For certain construction steps the beginning and end of a line have to be determined. The line receives a direction.



For this purpose the right principle was introduced.

GRAFIS supports the operator with the so-called “right principle cursor” which also contains the



Picture 4-7

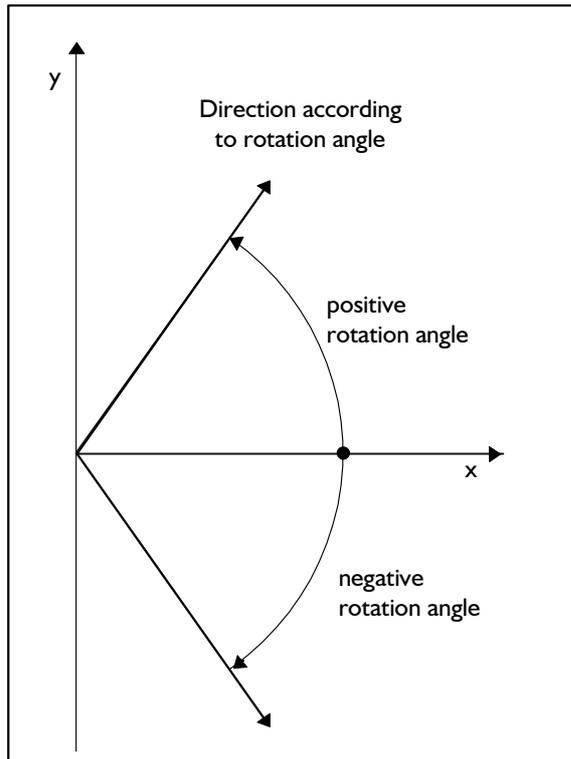
direction indicator (picture 4-7).

To illustrate the right principle imagine the line/curve to be clicked as the central reservation of a road. The required direction of travel is communicated to the system by clicking the line. (Relates to driving on the right side of the road, only.) The right principle and its application is explained in detail in the chapters 4.5 and 5.2.

Angle definition

Definition of angles are required for rotation transformations, determination of direction in certain curve points or construction of lines. The following rules apply (picture 4-8):

1. The definition of angles ensues from the positive x axis - if no other reference is present. This agreement is important for definition of points through their distance to the source and their direction.
2. A positive rotation angle creates anti-clockwise rotation, a negative angle results in clockwise rotation.



Picture 4-8

4.4 Deleting objects

The delete menu

The *delete* menu is activated via *Basic menu* | *delete*. Single objects (points, lines/curves, hatching, texts) can be deleted by clicking; several objects within a rectangle to be drawn up can be deleted in one operation.

Step-by-step guide

- ⇒ Activate the object type to be deleted under the required option (*single* or *rectangle*)
- ⇒ Click the objects or draw up rectangle

The option *single*

To delete individual objects the type of objects under *single*: is to be activated and the object to be deleted is to be clicked. This is the object nearest to the cursor, marked by a fine thread and coloration.

delete

single:
points
lines
hatchings
texts
rectangle:
points
lines
texts
all

reset

The option *rectangle*

To delete several objects in one operation first, the type of object is to be selected under *rectangle*: All objects of this type **completely** lying within a rectangle to be drawn up will be deleted. The rectangle is drawn up by clicking  the corner of the area to be deleted, moving the mouse and clicking  the opposite corner.



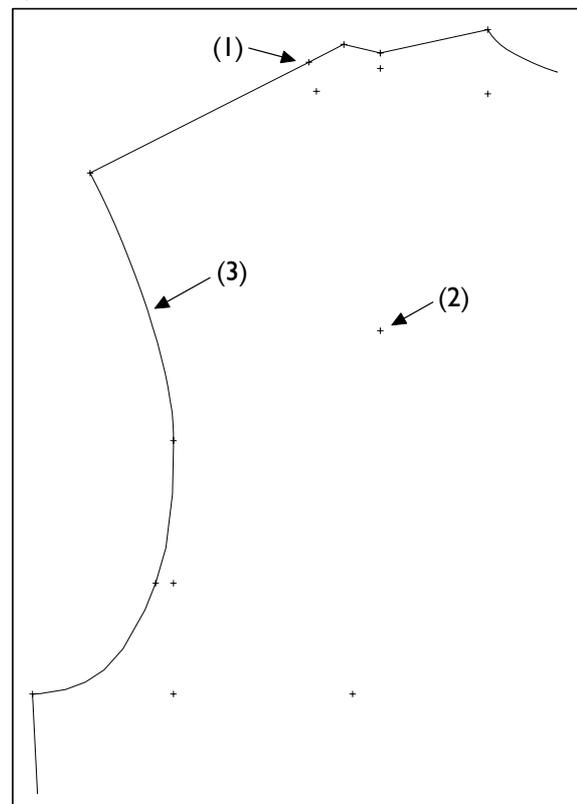
When deleting several objects the objects lying completely within the rectangle are deleted only !

With *reset* you can reset the last deletion step.

Please note that deleting is a construction step and will be performed automatically during *test run* or *grading*. Start both function from the basic menu. One or more deletion steps can also be reset by resetting the construction record.

Exercise on deleting single objects

Call the basic block "bodice after Hohenstein" and delete the point marked (1) in the back (picture 4-9).



Picture 4-9

call

delete

single: points activate

Click  the point to be deleted. A fine thread to the cursor indicates the nearest point.

If a different point is deleted, the thread cursor did not indicate the point to be deleted. If a different object is deleted, a different type of object was active. To correct click  *reset* and repeat deleting. Delete the point marked (2) in the same way. Delete the line marked (3).

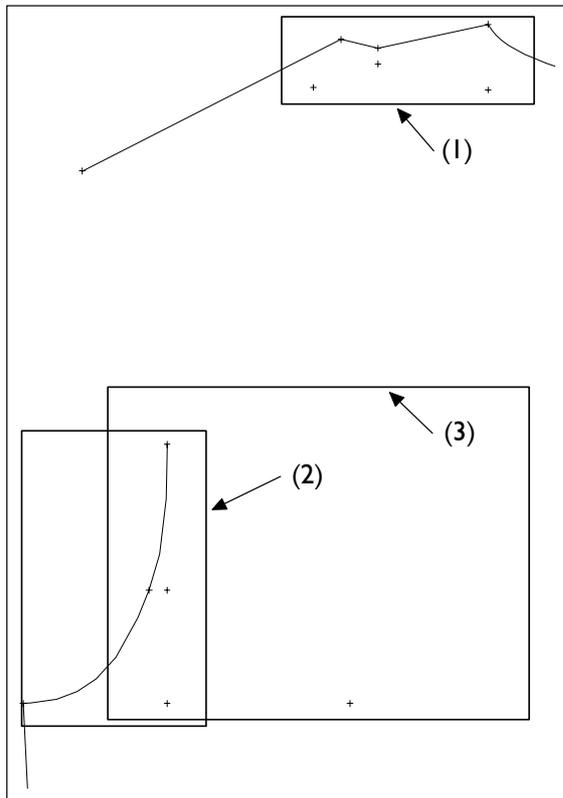
delete

rectangle: lines activate

Click the upper armhole curve (3) of the back. The upper armhole curve is deleted. If a different line is deleted, click  *reset* and repeat deleting.

Exercise on deleting several objects

Delete the points inside the rectangle (1) in the back (picture 4-10).



Picture 4-10

delete

rectangle: points activate

Click a corner of the area and move the mouse. A rectangle opens that you can draw up as shown. Click  and the points within the rectangle are deleted. If different points are deleted you opened the rectangle over a different area. To correct click *reset* and repeat the steps.

Delete all lines in rectangle (2).

delete

rectangle: lines activate

Draw up the rectangle as explained above. The complete armhole is deleted.

Delete all objects in rectangle (3).

delete

rectangle: all activate

Draw up the rectangle. All objects are deleted.

Exercise

1st Exercise

Call the basic block "skirt after Hohenstein" and delete

- all points in the skirt front
- reset
- all lines in the skirt back
- reset
- the complete ft (change between rectangle and single)
- reset each time
- the complete bk (change between rectangle and single).

Reset the construction record to 000 in the basic menu.

2nd Exercise

Call the basic block "bodice after Hohenstein" and delete the complete back. Centre the front with <F6> on the screen (picture 4-11).

call

delete

rectangle

all

3rd Exercise

As opposed to the 2nd exercise, now delete the whole front and centre the back on screen.

4th Exercise

Call the basic block "skirt after Hohenstein" and delete the skirt back (picture 4-12).

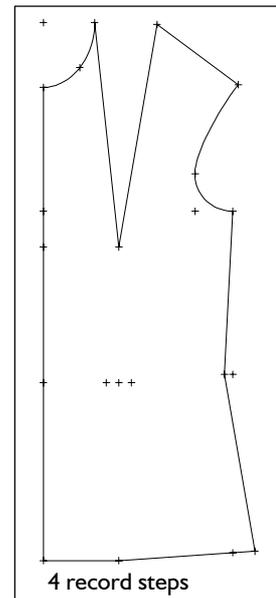
call

delete

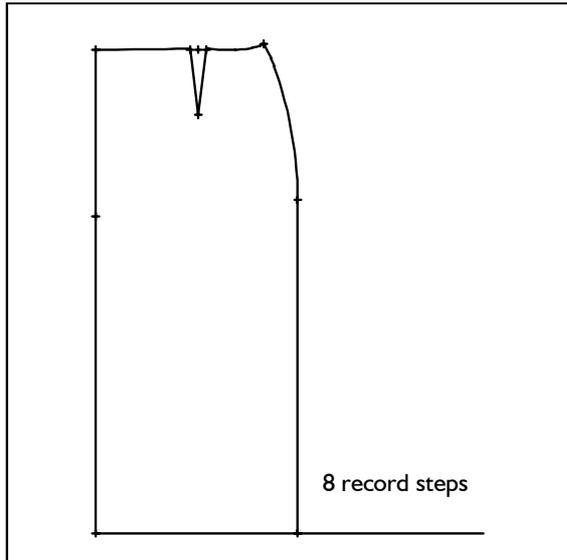
single

lines

points



Picture 4-11



Picture 4-12

5th Exercise

As opposed to the 4th exercise, now delete the skirt front.

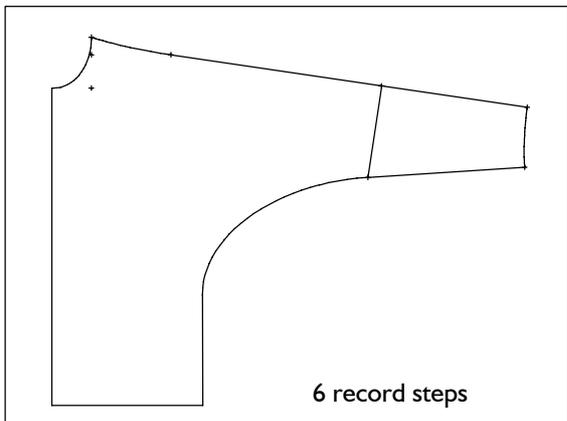
6th Exercise

Call the basic block “kimono” and delete a point on the centre front. The points are a point sequence. Clicking one of the points will delete all points of the centre front.

Delete the right hem point. The 3 points above are deleted as well.

Click on various points. Use the function reset also.

Delete the lines of the back (picture 4-13).



Picture 4-13

- call
- delete
- single points
- lines

4.5 Parallel

Application of parallels

Parallels are significant for the construction of

- overlap and button catch
- turn-ups on jackets, coats and trousers
- seam allowances neck 5 to 10mm
side seams 10 to 20mm
- hem 20 to 50 mm
- top collar additional length 3 to 6 mm
- pocket facing / lining
- and others.

The *parallel* menu

The construction of parallels ensues with the *parallel* menu which is opened from the basic menu.

Step-by-step guide

- ⇒ Select distance or enter special distance value in the line *d*=.....
- ⇒ Activate or deactivate *chain*
- ⇒ Select *+/-copy*
- ⇒ Click the line/curve to which a parallel is to be generated.

Determine distance value

If the required distance (in millimetres) is given in the menu with *d*: click the respective line. Otherwise a specific value has to be entered in *d*= by clicking, entry and <ENTER>. The point is the decimal sign. An entered distance value can be reactivated by clicking the line “^ ^ ^ ^ ^” below *d*=.....

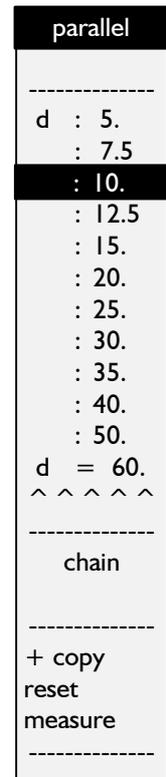
Significance of *chain* and *+/-copy*

If *chain* is active (highlighted in red) the parallel is generated not for the clicked line/curve, only but for all connected lines and curves. Clicking *chain* activates or deactivates this option.

The switch *+/-copy* determines whether the original line remains existent (*+copy*) or not existent (*-copy*). Toggle by clicking the line.

Direction for parallel generation

Clicking decides on which side of a line/curve the parallel is generated. The parallel is generated in the direction from which the line/curve is clicked. Therefore, click **next to** the line and not on the line!



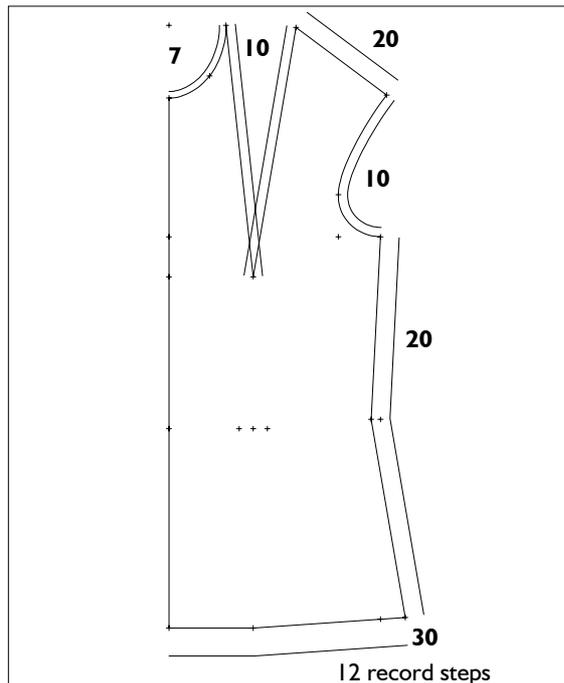
Attention! If identical objects are lying on top of each other 2, 4 or 6,... times they cannot be seen on screen as they delete their respective image. If they lie on top of each other 3, 5,... times they are visible. When practising the parallel function for the first time this is a common mistake. After <F4> even objects deleting each other's image are displayed. If you cannot see a new parallel straight away, press <F4>. Make sure that points or lines are never placed on top of one another by using reset or delete.

With *measure* functions for measuring distances, lengths and directions for example can be called. These functions are explained in chapter 9.

Exercise on creating parallels to single lines

Call the basic block "bodice after Hohenstein with normal dart" and construct seam allowances on the front (Picture 4-14) by creating parallels

- to the neck with distance 7mm,
- to the shoulder with distance 20mm,
- to the dart lines with distance 10mm,
- to the armhole, distance 10mm,
- to the side seam, distance 20mm and
- to the hem, distance 30mm.



Picture 4-14

```
parallel
+copy
chain      deactivate
d=7        click, type, <ENTER>
```

Click close to the neck noting the side for the generation of the parallel.

```
d : 20.    activate
           click shoulder
d : 10.    activate
           click first dart line, second dart
           line and armhole
d : 20.    activate
           click side seam
d : 30.    activate
           click hem
```

The transitions between the lines of the seam allowance is discussed in the next section.

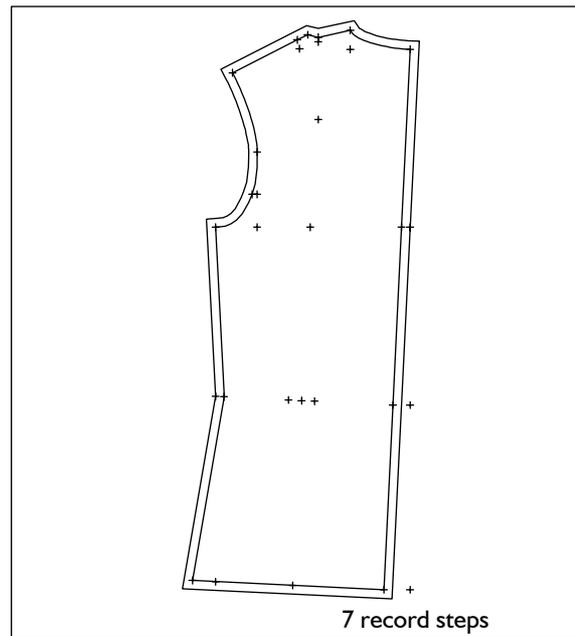
Exercise on creating parallels with chain

Reset the construction record to 001 and start test run.

```
N=        click and enter the number of
           record steps to be reset (see
           also section 4.2)
```

test run

Construct a parallel to the complete perimeter of the back (bk) with distance 10mm (Picture 4-15).



Picture 4-15

```
call
parallel
+copy
chain      activate
d : 10.    activate
```

Move the cursor close to a line of the perimeter in the bk. First click inside the perimeter. The parallel is generated inside the piece.

```
reset
```

Click near the perimeter outside the piece. The new perimeter is generated around the piece with a distance of 10mm.

Construct a parallel to the complete perimeter with a distance of 15mm.

-copy
chain keep active
d : 15. activate

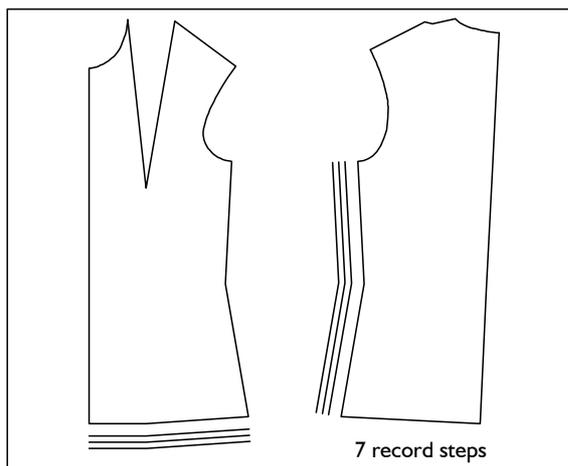
Move the cursor close to the perimeter on the outside and click . The perimeter is now moved outwards by 15mm. Click near the new perimeter inside and the original perimeter is restored. Quit the menu with .

Exercises

1st Exercise

Call the basic block "bodice after Hohenstein" and create (picture 4-16)

- parallels to the hem in the front, distance 20, 30, 40mm,
- parallels to the side seam in the back, distance 20, 30, 40mm.



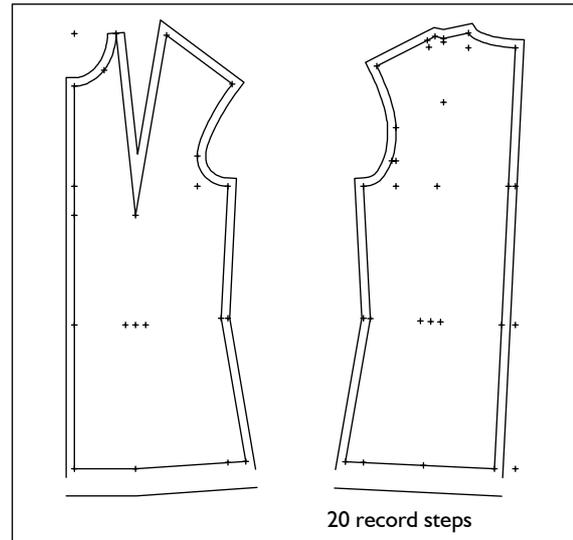
Picture 4-16

call
parallel
+copy
d : 20.
d : 30.
d : 40. for the hem
 analogous for the side seam

Grade in sizes 38, 40, 42 and 44 without proportion class.

2nd Exercise

Call the basic block "bodice after Hohenstein" and create a seam allowance of 12.5mm all the way round, then the hem to 40mm in total (Picture 4-17).



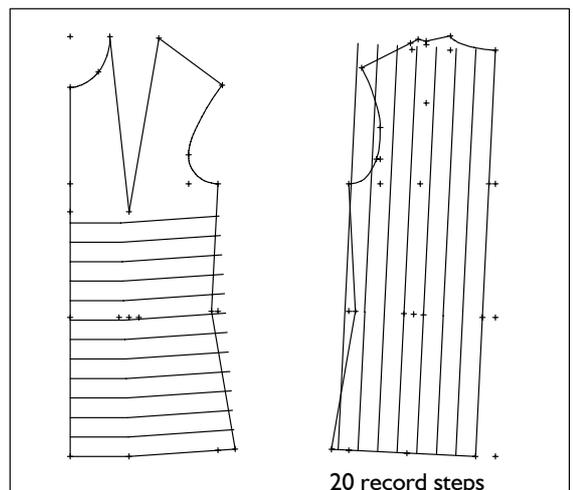
Picture 4-17

call
parallel
+copy
chain activate
d = 12.5 create distance
-copy
chain deactivate
d = 27.5 parallel to hem

3rd Exercise

Call the basic block "bodice after Hohenstein" and generate (Picture 4-18)

- parallels to the hem in the front up to the bust point, distance 30mm
- parallels to the centre back up to the side seam, distance 30mm.

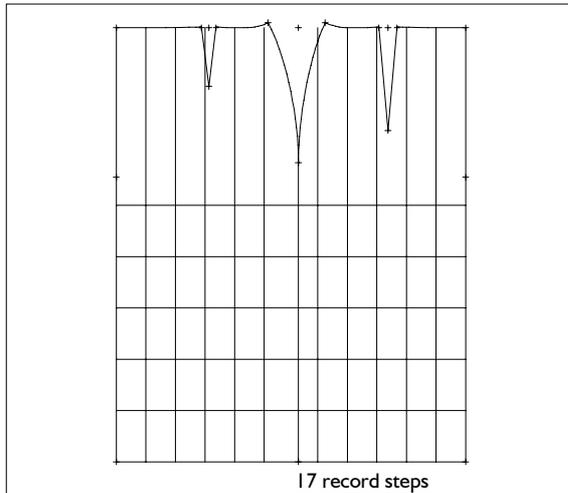


Picture 4-18

call
parallel
+copy
d : 30.

5th Exercise

Call the basic block “skirt after Hohenstein” and generate the parallels shown with a distance of 40mm (Picture 4-19).

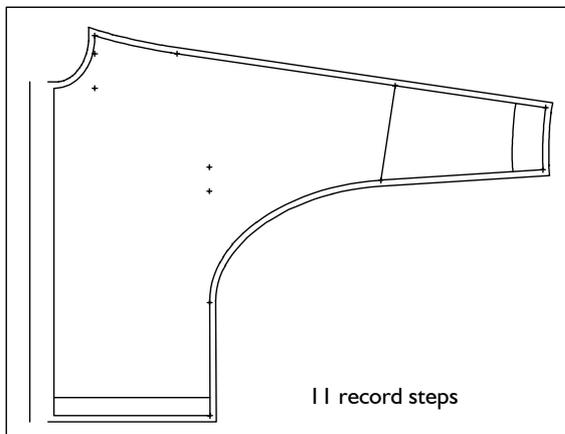


Picture 4-19

6th Exercise

Call the basic block “kimono” and generate the parallels shown (picture 4-20)

- sleeve turn-up 50mm
- ornamental seam hip 30mm
- seam allowance 10mm
- overlap centre front 40mm.



Picture 4-20

7th Exercise

Call a basic block of your choice and generate parallels. Use the option of entering your own specific values in the line $d=...$, also. Toggle *chain* on and off.

4.6 Corners

The corners menu

The construction of corners ensues with the *corners* menu which can be called from the basic menu.

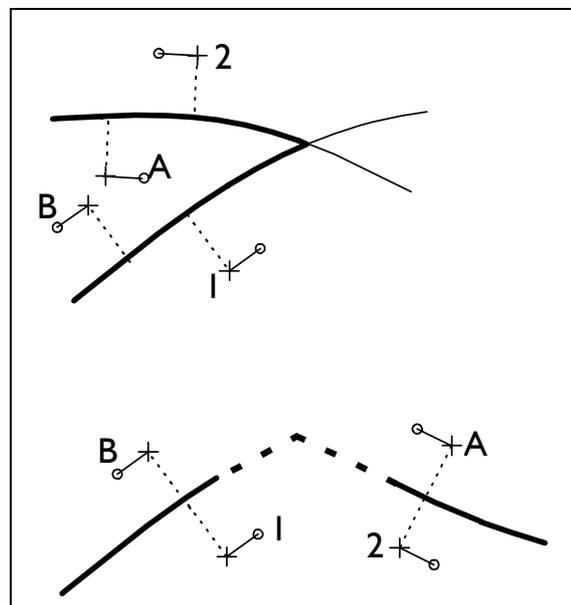
Step-by-step guide

- ⇒ Select the type of corner and enter the necessary values
- ⇒ Click two lines, following the right principle

Initial options

A corner is built of two lines/curves which do not need to intersect but may have more than one intersection. Before each corner construction the objects involved are lengthened (internally) by 500mm at beginning and end. Thus, corners outside the objects can be constructed (picture 4-21 lower example). If GRAFIS detects more than one corner on curves they are indicated and the one required has to be clicked.

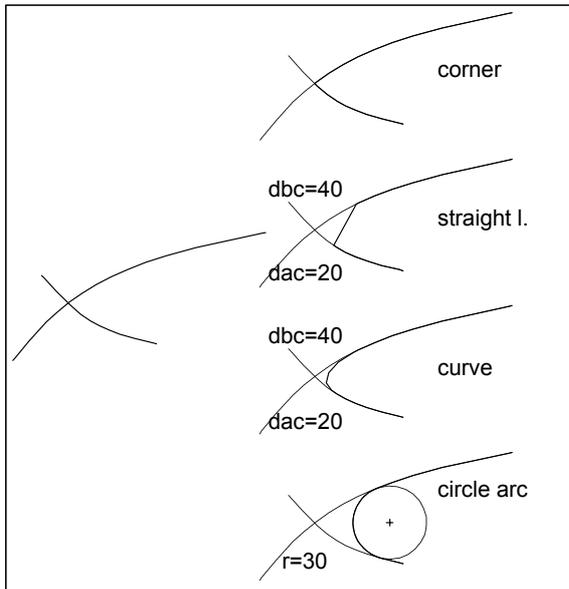
corners	
-----	corner
	straight l.
	dbc= 10. dac= 10.
	curve
	dbc= 10. dac= 10.
	circle arc
r : 10.	
	: 20.
	: 30.
	: 40.
	: 50.
	: 60.
	: 80.
	r= 15.
-----	reset
-----	measure



Picture 4-21

Types of corners and their parameters

In GRAFIS you can choose between four different types of corners (see picture 4-22).



Picture 4-22

The option *corner* creates a corner directly from the intersection of the two objects.

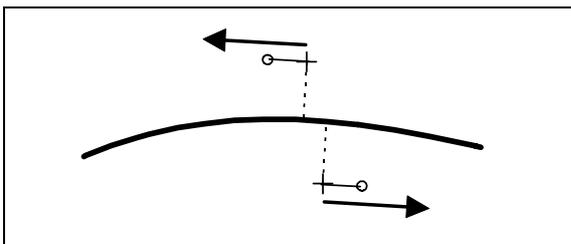
With *straight line* the corner is bridged by a straight line. The parameters *dbc* (distance before corner) and *dac* (distance after corner) have to be determined. The given distances are measured from the intersection along the objects and a straight line is constructed in between.

The corner type *curve* also requires the parameters *dbc* and *dac*. Instead of a straight line a curve is constructed to bridge the corner.

Circle arc constructs a circle into the corner with the radius given. The radius can be selected from preset values or entered into the line $r = \dots$. If no circle arc can be constructed for the defined corner GRAFIS refuses the construction.

The right principle

For the construction of corners the **right principle** must be followed when clicking the objects (picture 4-23).



Picture 4-23

With this principle not only the objects are determined when clicking the line/curve but a direction in

which the object is to be used for the instructed construction.

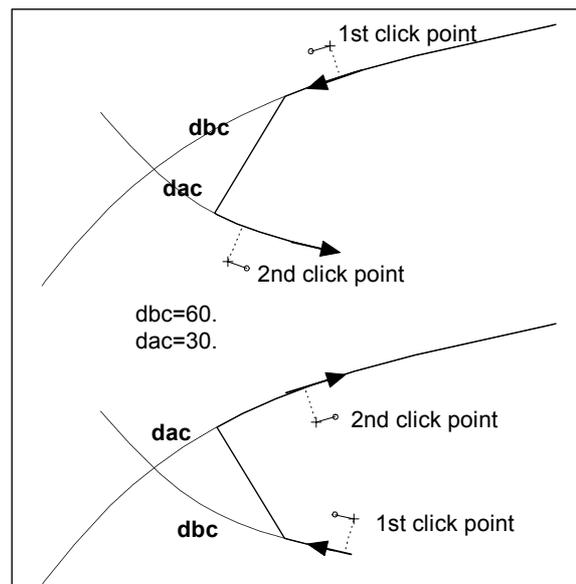
The first object is to be clicked so that you are driving towards the requested corner, the second click must be driving away from the corner (see picture 4-21, combinations A-B or 1-2).

The right principle is very powerful. GRAFIS supports the operator with the so called "right principle cursor" which also has the direction indicator (pictures 4-21 and 4-23).



For illustration of the right principle imagine the line/curve to be clicked as the central reservation of the motorway. The construction of corners resembles driving onto a motorway junction. You are driving along the first line towards the junction and then turn onto the second motorway. The direction of travel is determined by clicking the lines, following the right principle. The stretches of motorway you are driving remain existent, the others are deleted (see also picture 4-21). (This image relates to driving on the right side of the road, only.)

For the corner types *straight line* and *curve* the distance *dbc* (distance before corner) is measured along the first line and *dac* (distance after corner) along the second line respectively (picture 4-24).

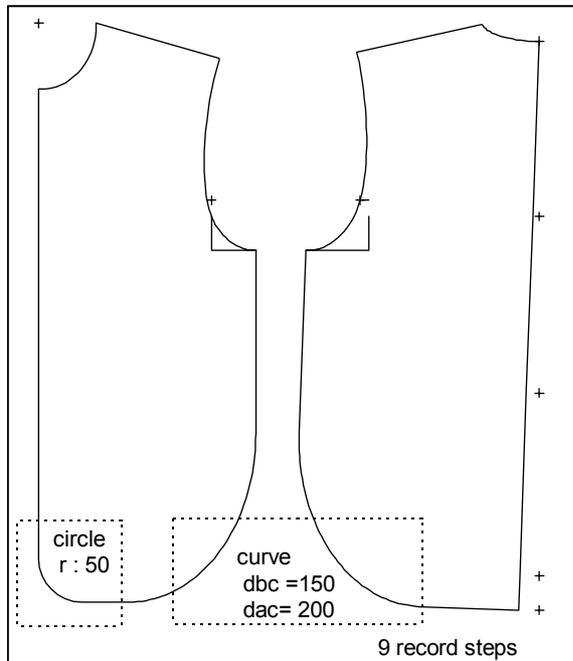


Picture 4-24

Exercise

(suggested by Helga Brückner)

Call the basic block 010 "shirt dress", create a round corner with radius 50mm at the centre front and shape the corners side seam / hem with a curve (see picture 4-25).



Picture 4-25

*call**corners**curve**dbc = 150**dac = 200*

click hem and side seams

*circle arc**r : 50*

click centre front and hem

Construct a seam allowance of 15mm for the front and back. The seam allowance for the back can be generated with *chain*, for the front individual parallels of 15mm are to be constructed (see Picture 4-26).

*parallel**chain*

activate

d: 15

click perimeter of the back outside

*parallel**chain*

deactivate

d: 15

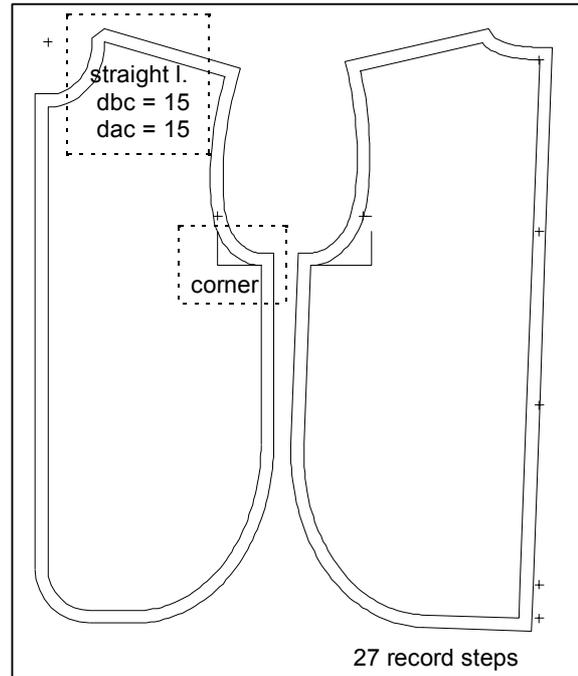
click perimeter of the front individually

*corners**corner*

close the corners at armhole and CF/neck

*straight l.**dbc = 15**dac = 15*

close the corner shoulder/neck



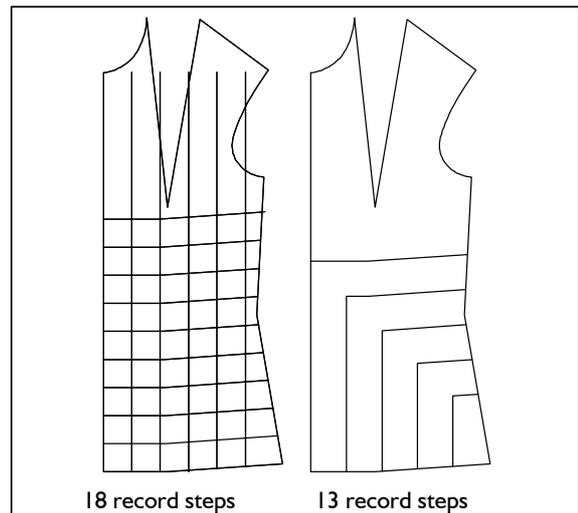
Picture 4-26

4.7 Exercises

Please work through all the exercises so that you will be able to master these important functions.

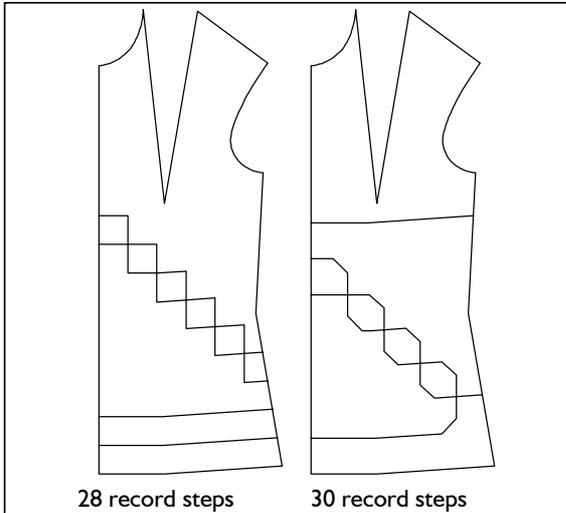
1st Exercise

Call the basic block 001 and generate parallels with a distance of 40mm (left) and create the pattern displayed on the right with *corners*.

*call**parallel**+copy**d : 40.**corners**corner*

2nd Exercise

Use the parallel generation from the 1st exercise and construct the left pattern with *corner* and the pattern on the right with *straight l.*



for the left image:

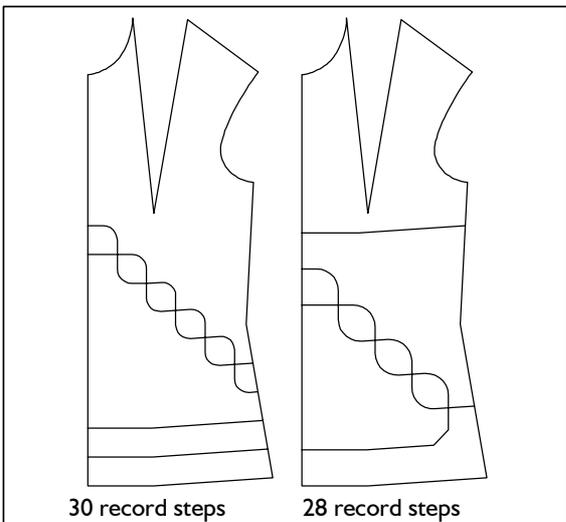
call
parallel
corners
corner
*N*reset*
test run

for the right image:

call
parallel
corners
straight l.

3rd Exercise

Use the parallel generation from the 1st exercise and construct the image on the left with *curve* and the right image with *circle arc (r: 30)*.



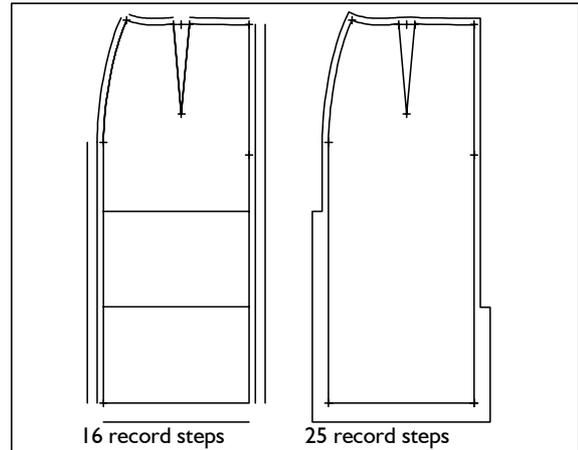
4th Exercise

Call the basic block 017, delete the skirt front and create the parallels displayed in the skirt back with the following values:

- Seam allowance 10mm
- vent height side seam 300mm
- vent height centre back 150mm
- vent width 30mm
- hem 40mm

Close the corners and grade the skirt with seam allowance in various sizes.

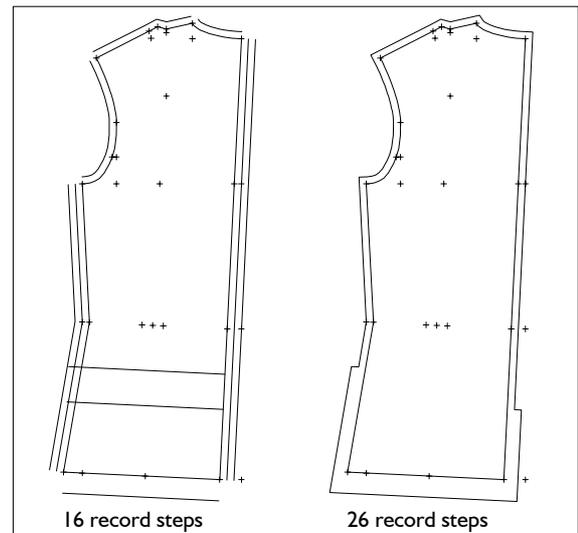
Use also the zoom function for the construction of the seam allowances on the vents.



call
parallel
corners
corner
grading

5th Exercise

Call the basic block 001 "bodice after Hohenstein", delete the front and generate parallels in the back.



- seam allowance 10mm
- hem 35mm
- vent width side seam, centre back 30mm

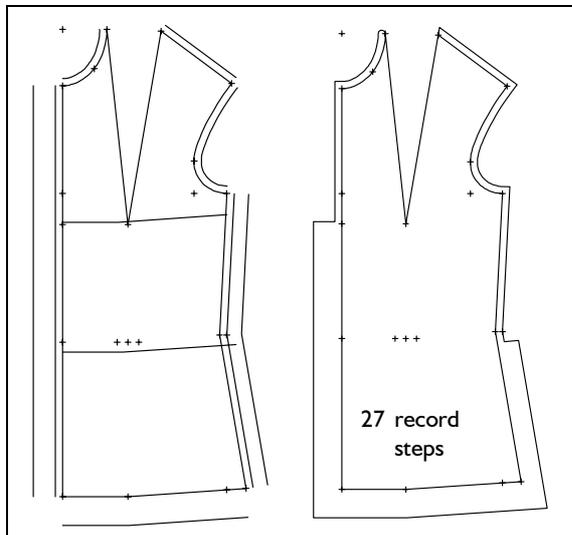
- vent height side seam 150mm
 - vent height centre back 100mm.
- Grade the bodice with seam allowance in various sizes.

6th Exercise

Call the basic block 001 "bodice after Hohenstein", delete the back and generate the following parallels:

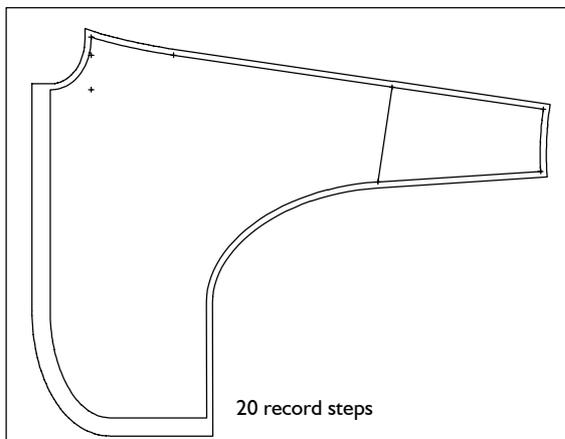
- 10mm to CF, neck, shoulder, armhole, side seam,
- 40mm to hem and CF (overlap)
- 30mm for vent width at side seam,
- 380mm to hem for overlap at CF and
- 200mm to hem for vent at side seam.

Create the right image with *corners*. Construct the corner between neck and left dart line with *circle arc* $r=5$.



7th Exercise

Call the basic block "kimono", delete the back and construct a cut away front with 180mm at CF and 120mm at the hem. Construct a seam allowance of 10mm and an overlap and hem of 20mm.

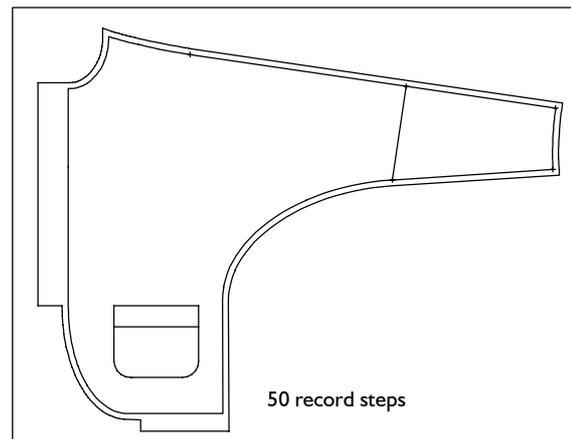


- call*
- delete*
- corners*
- curve* with $dbc=180$. and $dac=120$.
- parallel*
- $d=10$.
- chain* activate
- +copy* click perimeter
- $d=20$.
- copy* click CF and hem
- corners*

8th Exercise

Call the basic block "kimono", delete the back and construct a cut away front with 180mm at CF and 120mm at the hem. Create an overlap of 50mm to the CF and a seam allowance of 10mm to the cut away and 20mm at the hem. Close the allowance as shown.

Construct the patch pocket shown with *parallel* and *corners*. The measurements are 120/140mm. The position is 40mm from the side seam and 60mm from the hem.



9th Exercise

Call the basic block 035 "straight skirt" and create an overlap of 45mm to the CF for a button stand and a cut away front from CF (200mm) to the hem (150mm). Construct the depicted seam allowance of 10mm.

