Chapter 3 „Screen work and pattern output"

**Contents**

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Zoom in (magnifying function), zoom out and moving the screen content is the subject of the first paragraph of this chapter, followed by the help functions in Grafis. Then, you will learn how to output the constructed pattern to a printer or plotter. The last section of this chapter deals with the extraction of pieces.

Please use the exercises at the end of the chapter to solidify your knowledge gained in this chapter.

After having successfully completed this chapter you are able to grade and output the basic blocks contained in Grafis and to stack the patterns.

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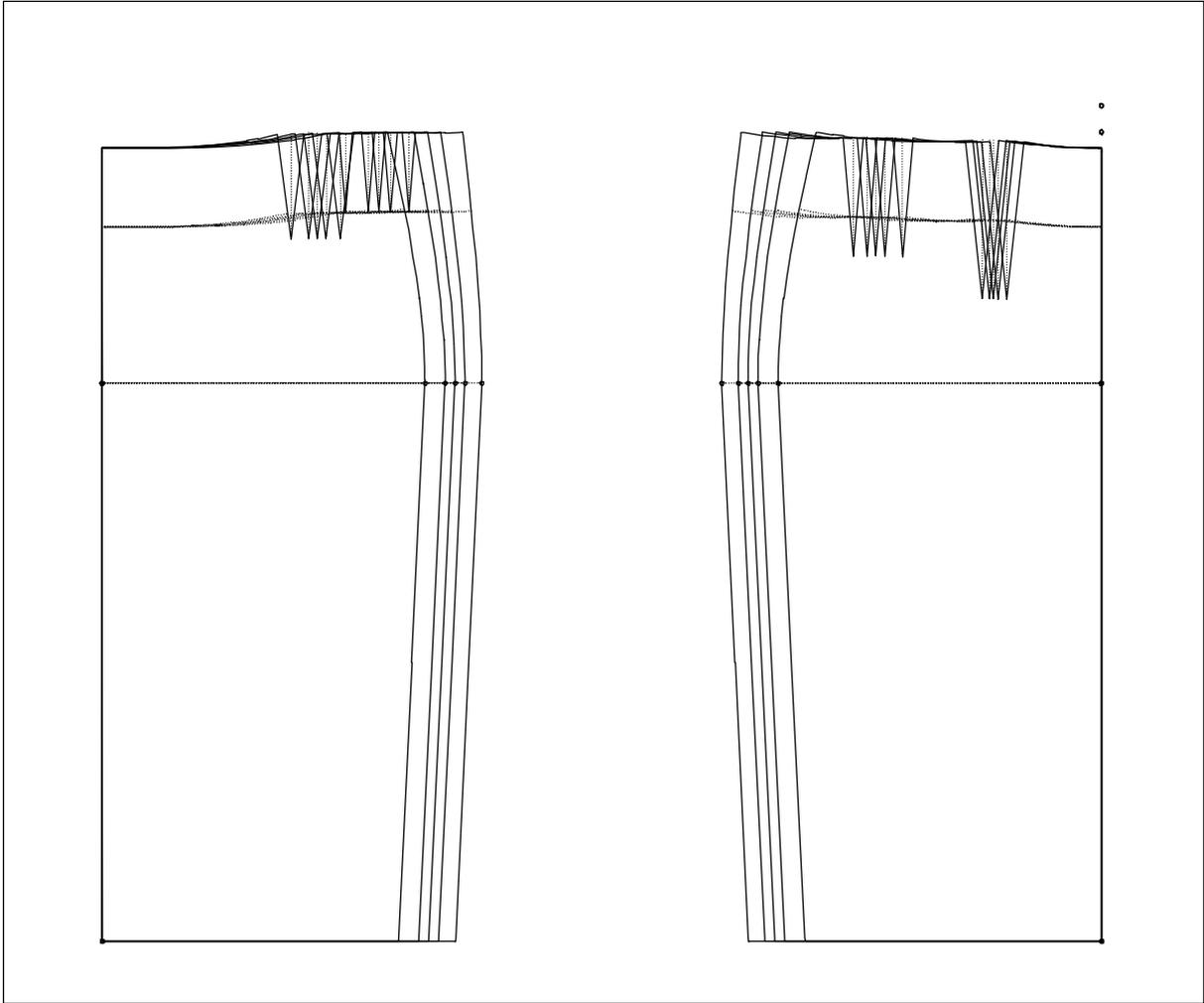
3.1 Alter the screen display

Overview

The patterns can be displayed on screen in scales from approx. 100:1 to 1:100. The setting is infinitely variable or can be controlled with certain values. The function keys F2, F3, F4, F6 and the arrow keys are used for screen adjustment. They have the following significance:

	Function
F2	Zoom in/zoom out screen contents
F3	Drag/turn parts towards one another (chapter 13 or 14)
F4	Refresh screen
F6	Centre screen contents

The construction is not influenced by the changes to the screen display.

Drag / Zoom

Patterns can be enlarged/reduced in stages or moved on the screen with the *Drag/Zoom* function in the *Edit* pull-down menu or from the toolbox. After having clicked *Drag/Zoom* a magnifying glass with the following functions appears:

enlarge   click left mouse button
reduce   click right mouse button
move   keep left mouse button pressed

Enlarging and reducing ensues with the magnifying glass as the centre. Click the relevant points or lines with ▣. Reduce with ▣ and move the mouse with pressed left mouse button.

Centre picture with <F6>

Pressing the <F6>-key automatically adjusts the scale and position of the whole construction to display all objects on the screen. The construction is centred on screen.

Zoom in with <F2>

Press <F2> to zoom into the screen contents. A small arrow appears on screen which you can move with the mouse. Move the cursor to the lower left corner of the area to be enlarged and click ▣. Move the mouse to see how a rectangle is opened. Extend the rectangle to the top right (picture 3-1) and click again ▣.

The rectangle content becomes the screen contents. Press the <F6> - key and your complete construction re-appears on screen.

Practise zooming in on various areas of your construction. Press <F6> after each zoom operation.
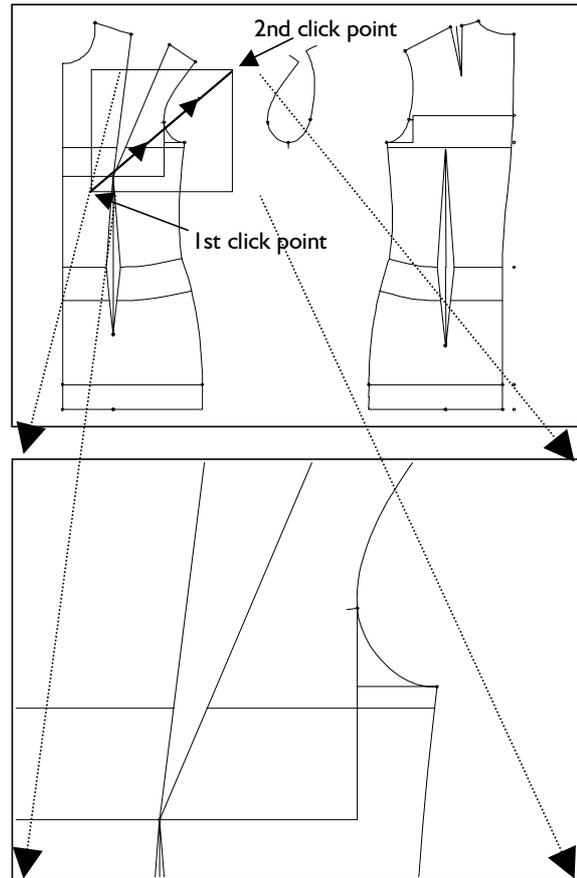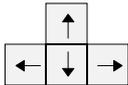

Picture 3-1
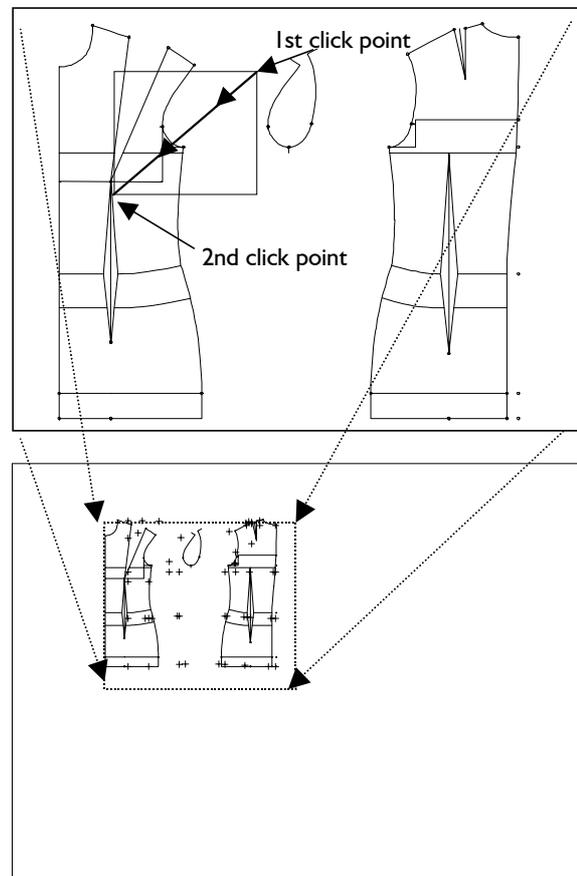
Picture 3-2

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Zoom out with <F2>

Press the <F2>-key to zoom out, also, click ◫ the upper right corner, extend the rectangle to the lower left and click ◫ (picture 3-2).

The complete screen content is reduced to fit the rectangle. With <F6> the screen is completely filled again, the construction is centred.

Practise zoom out on various areas of your basic block and centre the basic block again with <F6> each time.

Move with arrow keys

Use the keys to move the picture. The moving speed is increased by keeping the keys pressed down.

Reduce the construction and move the screen contents with the arrow keys.

Refresh screen with <F4>

The <F4>-key rebuilds the whole screen content. Identical objects lying on top of each other twice, four or six times cannot be seen on screen as they delete each other's image. Objects lying once, three or five times on top of each other can be seen. After pressing <F4> objects deleting each other's image are always displayed.

Please use this key from time to time as a means of control.

3.2 When help is needed

Overview

⇒ Constant help in the instructions window or the status line (picture 3-3)
⇒ Extensive help with the Grafis help function

Constant help

Constant help is given in the instructions window or the status line where the next steps required are explained. The instructions window is located in the top right corner of the working area. The status line makes up the lower border of the Grafis screen (see picture 3-3). Click *delete* ◫ in the basic menu. Read the instructions and close the *delete* menu with ◫.
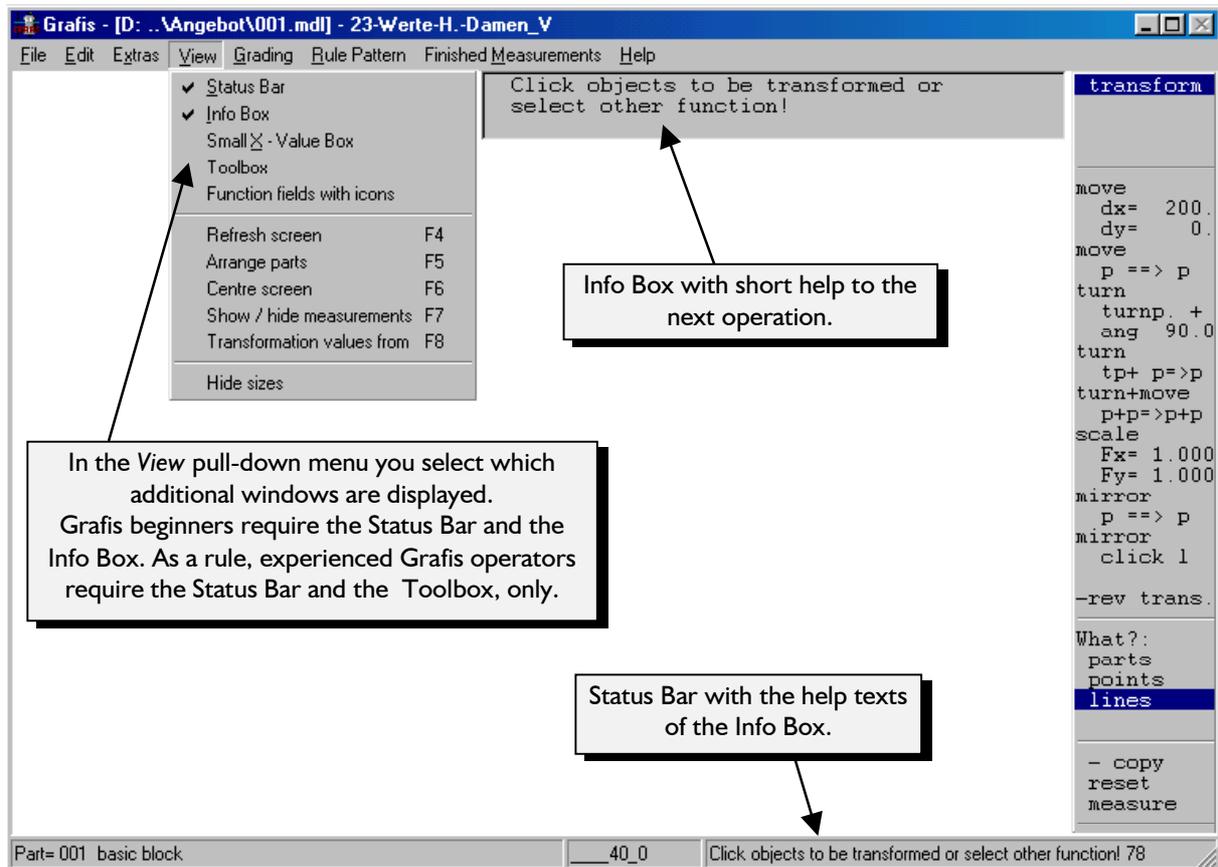
Picture 3-3

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The Grafis help function

Context related help can be found by pressing the <F1>-key or via the pull-down menu *Help | Context*

All contents of the help function can be obtained with *Help | Help topics*.

The following applies: As soon as the cursor changes to a hand you can obtain more information about the respective topic. Sensitive texts are generally underlined in green or dotted. Sensitive areas in picture are not highlighted specifically. Move the cursor over the relevant areas of the picture and click when the cursor changes to a hand.

Exercise:
Press the <F1>-key in the basic menu, move the cursor over the picture and click the sensitive picture areas. Read the information. To return to the overview page click the *Contents* card. Close the help function via *File | Exit* or by clicking the cross in the upper right corner of the help window.
Open the *delete* menu in Grafis by clicking on *delete* in the basic menu. Press <F1> and read the help information about the *delete* menu. Close the help window. Read also the help topics on *separate* and *parallel*.

3.3 Pattern output

3.3.1 Clipboard

Grafis supports the Windows clipboard for processing patterns in other Windows applications. The function *Copy (clipboard)* in the *Edit* pull-down menu copies the visible contents of the Grafis screen to the clipboard. The contents of the clipboard can be inserted into other Windows applications such as Word for Windows95, Paint or Excel to create further material about the style or teaching material for example.
Grade a basic block in 5 sizes, centre with <F6> and copy the graded nest to the clipboard via *Edit | Copy (clipboard)*. Now start a different Windows application (e.g. Paint) and insert the contents of the clipboard into this application. Process the graded nest by changing the line colour, fill in the shapes or add annotation for example.

3.3.2 Output to plotter/printer

Output of patterns to plotters (drawing devices) or printers ensues via the *Pattern output* menu. A special feature of the pattern output function in Grafis is the automatic wrap. It allows for quick output of full size patterns to small scale printers by dividing the pattern into partial pictures which can be joined subsequently.

The *Pattern output* menu is opened via the *File | Plot/ Print...* pull-down menu or from the toolbox.

Preparation of plot picture

⇒ Set up or change the plotter/printer (plotter type, paper format,...)
⇒ Click *formatposition centred* and press <F6> to get an overview
⇒ Adjust the following settings:
 • portrait or landscape
 • plot scale with *enlargement*
 • Activate the automatic wrap
 • Position the plot frame with *formatposition centred* and/or dragging
⇒ Position the frame text
⇒ Select +/- *frame*
⇒ Select +/- *formfeed*

Output of plot picture

⇒ Click *plot* (plot picture is generated internally)
⇒ if required: output of formfeed

Change plotter/printer

The selected output device is displayed under *plot device*. The extensions mean:
to LPT1 direct output to the parallel port LPT1
to File a file with control information for the output device is generated
(WIN) output to a device with Windows95/NT driver
(DOS) output to a device without Windows95/NT driver
Further information about set up or changing a plotter/ printer can be found in the Grafis help function. For the following exercises an A4 printer installed under Windows95/NT is sufficient.

Plot/Print
plot device HP LaserJet 5P an LPT1 (WIN)
change
enlargement 1.0000 adapt
plotformat: 297x210
p <=> l
automatic wrap < | > < | >
textpositn. < 4 >
formatpos. centred
plot - frame - formfeed - cut

The plot format

The measurements of the active format are displayed in millimetres under *plotformat*. Other plot formats of your output device can be selected via *plot device change*.

The plot frame on your screen corresponds with the printable area of your output device. The contents of the plot frame is printed. Press the <F6>-key to display the plot frame as well as the plot picture.

Selection of portrait or landscape

Clicking *p <=> l* toggles between portrait and landscape.

Selection of plot scale

The plot scale is adjusted by entering the scale factor in the *enlargement* line. The pattern will be reduced/enlarged for output according to this scale. The scale factors mean the following:

1.0　　scale 1:1
0.5　　scale 1:2
0.25　scale 1:4 etc.

Adjust to scale 1:2 by entering 0.5 into the field below *enlargement* (click, type, <ENTER>) and press the <F6>-key. You will notice that the plot frame now covers a greater are of the pattern. Repeat with other scales. Change also between portrait and landscape.

The **adapt** option adjusts the scale so that the whole screen content fits the plot frame. Use this option for scaled printouts and sketches, especially.

Position the plot frame

Position the plot frame by dragging (cursor on plot frame, press left mouse button and move mouse) or clicking the menu function *centred*. Practise both options. *Centred* positions the plot frame centrally onto the picture. Practise positioning the plot frame in conjunction with changes in scale and format.

Activating automatic wrap

The automatic wrap is useful for output of full size patterns to devices with small format, i.e. A4 printers. A raster is superimposed onto the pattern (pictures 3-4 and 3-5) and each field is output separately. The partial pictures can then be joined together frame by frame. The raster is set up or eliminated by clicking ">" or "<" below *automatic wrap*.

The number of fields in vertical and horizontal direction is given between the symbols ">" and "<".

Practise the automatic wrap in conjunction with adjustment of plot scale, portrait / landscape and positioning of the plot frame. Apply scale 1:1 also and press the <F6>-key from time to time.

Positioning the frame text

A standard annotation at the plot frame can be output with the picture for easy identification of the plot, especially on partial pictures when using automatic wrap. It contains collection and style name, part number and field co-ordinates (pic-
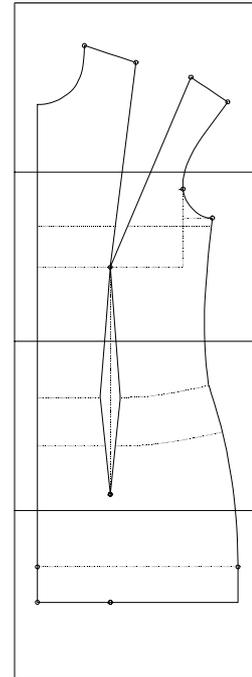
Picture 3-4
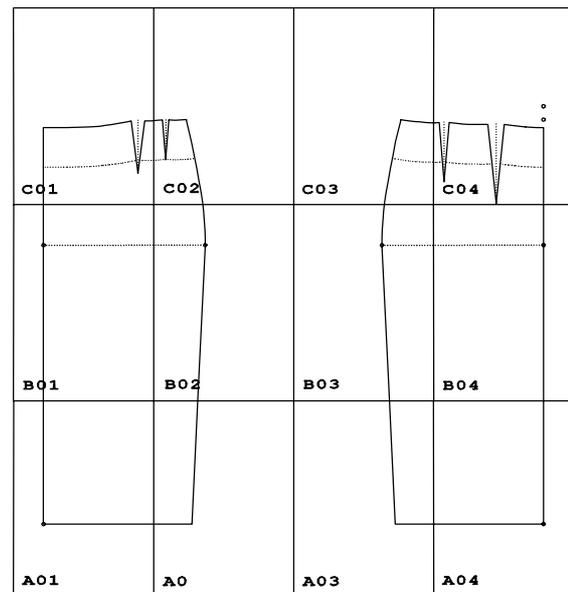
Picture 3-5

ture 3-5). The number below *textposition* defines the position of the annotation at the right, left, upper or lower corner of the plot frame. "0" means no frame text is output. The text position number can be changed by clicking "<" or ">". Position the text at the left plot frame.

Adjustment of +/-*frame*

Clicking +/-*frame* determines whether the picture is plotted with or without a frame.

    +*frame*   frame is plotted
    -*frame*   frame is not plotted.

When using the automatic wrap the setting +*frame* must be selected. The function *formfeed* relates to plotters with automatic paper feed only.

Output of plot picture

Click *plot* to send the control information to the output device (printer/plotter) directly connected to your PC for output of a picture or partial pictures. Naturally, the output device must be on-line.

Output to file

If output to file is selected the control information is saved to one or more files (automatic wrap creates a number of files). You are requested to enter the file name. If you enter A:\KATHRIN2.HGL for example the control information is saved in the file KATHRIN2.HGL on the disk in drive A:. The following is possible with control information saved in this way:

1. The file(s) can be output on a different computer with an attached output device by copying the control file(s) to the port of the output device.
    Under Windows95/NT the file is be sent to the output device.
    The MS-DOS instruction to output the created file to an output device connected to LPT1: is for example:
        COPY A:\KATHRIN2.HGL LPT1:
2. The file(s) can be read into Word for Windows or CorelDraw for further processing given that the relevant graphics filter is installed. As opposed to the clipboard, with this option the scale remains the same.
3. The file(s) can be send to a different company via floppy disk or data transfer for plotting or creation of templates. This can ensue after adjustment to the company's output device.

Note: When using automatic wrap, i.e. output of various partial pictures, the extension (here: HGL) is automatically replaced by consecutive numbers.

Exercises

<u>1st Exercise</u>

Output the basic block "Grafis Rock 20" in size 40 in full scale to an A4-printer. Use +*frame* and frame text to be able to join the partial pictures frame by frame afterwards.
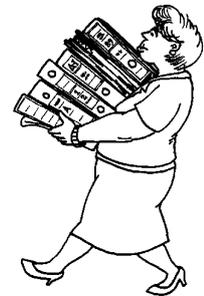
<u>2nd Exercise</u>

Output the following basic blocks onto A4 paper:

*   "Grafis Trouser 10 scale 1:2,
*   "Grafis Bodice 10" scale 1:3,
*   "Grafis Bodice 20" scale 1:5.

If you know how to use Word for Windows or CorelDraw, import the plot pictures into these systems via the clipboard for processing.

3.4 Stack

The stack menu

The *stack* menu is opened via the *Extras | stack* pull-down menu or from the toolbox. With the menu functions patterns can be stacked at the pattern surround or at a construction point or point of a line. The *outlay* function spreads all sizes next to one another in the order in which they are listed in the size table. The outlay is reset with repeated stacking or *test run*.

Step-by-step guide

Stack at pattern surround:

⇒ Select the *stack corner (le-down,...)* and click the piece
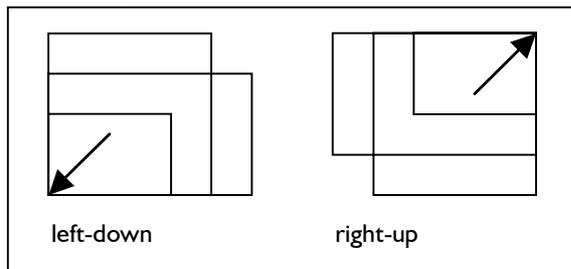
Stack at a construction point or point of a line:

⇒ Select *click p, click l or click pl* (below *stack p:*) and click the stack point in the construction
⇒ if required: determine direction point in the same way

| |
|---|
| stack at |
| boundary |
| le-down |
| ri-down |
| le-up |
| ri-up |
| stack point |
| click P |
| **click L** |
| click PL |
| |
| stack direc |
| click P |
| click L |
| click PL |
| outlay |
| measure |

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Stack at pattern surround

When stacking at the pattern surround Grafis imperceptibly calculates the surrounding rectangle of the piece. The surrounding rectangle, also called pattern surround for the basic block „Grafis Trouser 10" is shown in picture 3-7. The pattern surrounds in the different sizes are stacked at the corner selected in *stack at pattern surround* (see picture 3-6). The option *le-down* stacks at the lower left corner of the surrounding rectangle for example.

left-down   right-up

Picture 3-6

First, determine the *stack corner*. The active option is highlighted in red. Clicking ▣ selects a different option. After having clicked an object of the construction Grafis will stack the patterns at the selected corner.

Surrounding rectangle of the piece / pattern surround
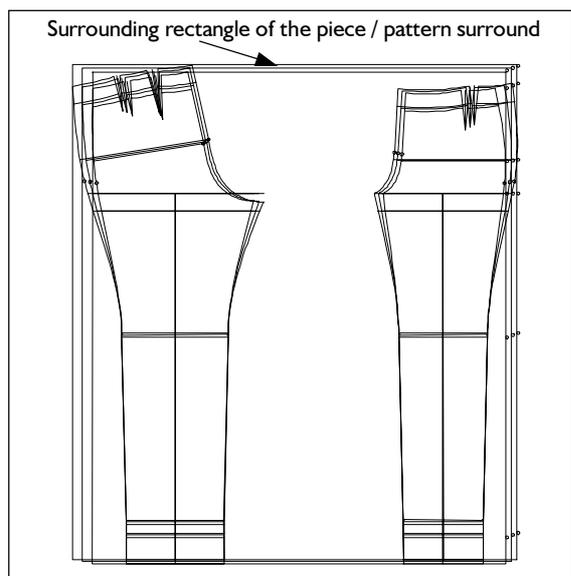
Picture 3-7

Stack at a construction point or point of a line

With the option *click p* you determine that the cursor can select points of the construction as stack points, only. With *click l* only lines and with *click pl* only line fulcrums can be clicked (for more information see Chapter 6).

First, the required selection option (click p, click l or click pl below stack p) is to be selected. Then click the desired stack point in the construction.

Then, a direction point can be determined, additionally. The patterns remain stacked at the stack point. They are rotated about the stack point so that the direction from stack point to direction point is identical in all sizes (Picture 3-8).

stack point   direction point
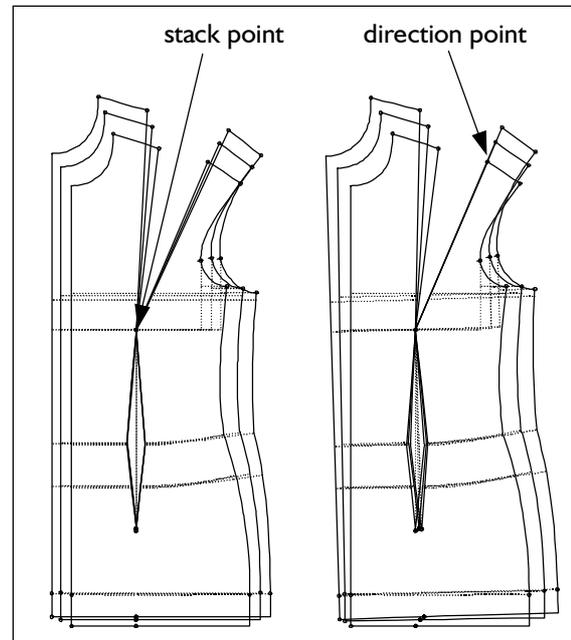
Picture 3-8

Exercise

Grade the basic block „Grafis Bodice 10" in the sizes 36, 38, 40, 42, 44, 46 und 48. Stack the patterns at the pattern surround and then, at the bust point. Align the piece at the right bust dart line. Then, stack it at the shoulder /armhole corner and align it in relation to the sleeve pitch.

3.5 Extracting pieces

Style development with Grafis ensues in three stages:

• Call and adjust the basic block
• Develop a draft with all required design elements
• Derive the production patterns such as front, back, waistband, facings, lining etc.

The parts from these developmental stages are connected so that alterations to the basic block are applied to the draft pattern und thus, to the production patterns.

This section initially deals with the extraction of pieces. More detailed explanation on part organisation and hereditary automatic can be found in Chapter 14.

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Step-by-step guide

⇒ *Basic menu --> partorganis* or *Extras | Part Organisation....*
⇒ Create new parts with *open*
⇒ Enter/Edit the name of the selected part with *text* or after double-click on the part name
⇒ Click to activate the part into which objects (points, lines) are to be inserted. The active part is highlighted in colour.
⇒ Show part(s) from which lines and objects are to be inserted into the active part and remove all other parts.
⇒ Quit the part organisation dialogue with the right mouse button.
⇒ *Basic menu --> insert*
⇒ Select the type of object to be inserted by activating *points, lines* or *parts* below *select object*:
⇒ Click objects in the inactive parts displayed in white. The inserted objects appear in a different colour (red) and, after having pressed <F5> removed from the donor part.
⇒ Click on *without tr.* inserts the objects into the active part. Only then, will the inserted objects appear in the yellow colour of the active part and can be modified.
⇒ Press ⬚ to return to the basic menu.

partorganis
open
insert
duplicate
dupl. to
delete
remove
reduce
hide
all
call
all
ancestors
successor
prod.piec
text
-text box
-techn.par.
print

Open and label parts

Call the style „Bodice with vertical panel seams" from Chapter 2.5 and click on *part organisation* in the menu on the right. The dialogue shown in Picture 3-9 opens. In the left window you can find the list of all parts of the style. Initially, only part 001 with the temporary name „NN" is available. By clicking on **open** in the menu on the right you can create further parts in this list. The active part is highlighted and a preview of the part appears in centre of the window.

Double-click on the first part and enter the name „Basic block". Label the second part „Pattern development" in the same way. To label the other parts use a function from the menu on the right. First, select part 003 and then, click on **text** and enter the texts one after the other according to Picture 3-9. As opposed to editing with double-click, the line of text for the next part opens automatically after pressing <ENTER>. Abort text entry with <ESC>. Parts can be deleted or removed from this list with the functions *delete* and *remove*. *Delete* means that all record steps are reset, *remove* means the part is removed from the list.

The part list also contains other important information. The character „*" in front of the part number indicates that this part is a mother part. A **mother part** has successor parts that are affected by alterations to the mother part. Further information can be found in Chapter 14.

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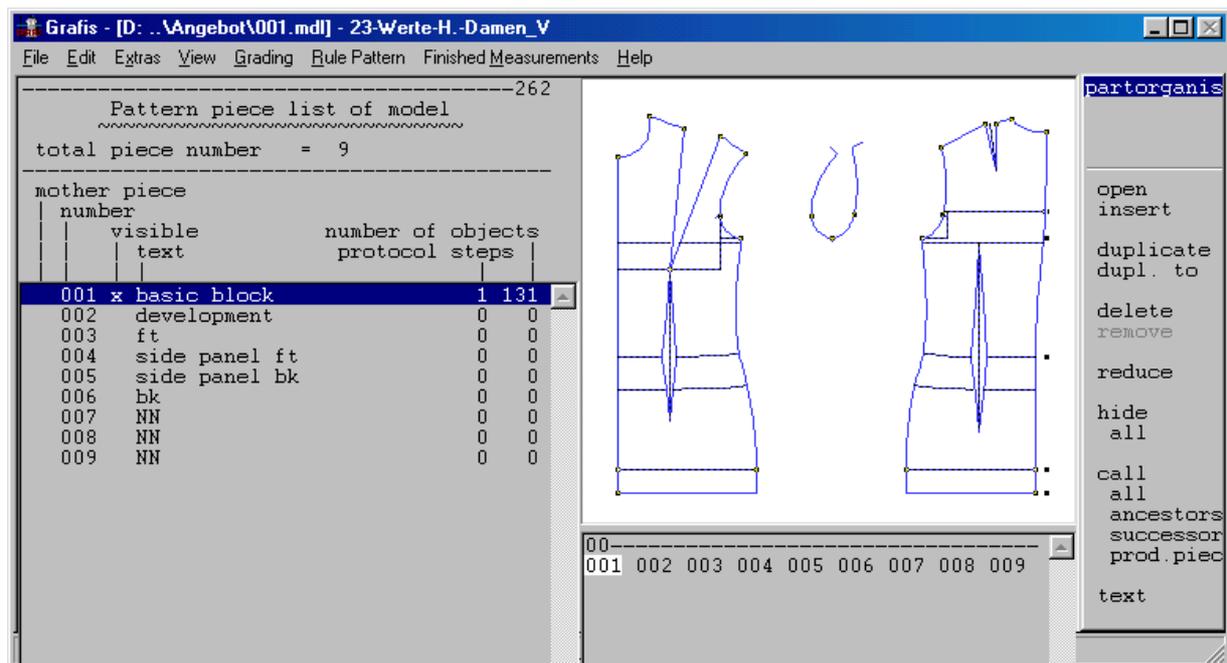
An „x" in the „*visible*" column indicates that the respective part is visible. You can click directly into this column to make parts visible or not visible. The active part which is highlighted is always visible. You can **set all parts to not visible** by clicking on **hide all**. You can **make all parts visible** by clicking **call all**. Removed parts are no longer visible on screen but have not been deleted.

Quit part organisation with a right mouse click. The selected part is then available for editing. If the respective part is a mother part, a warning message appears.

During construction the active part is always displayed in yellow. In the basic menu all visible parts can be activated by clicking. It is not necessary to open the partorganis menu to activate a part!

Now select part 003 „Front", set an „x" for visible for part 001 „Basic block" and quit part organisation with ⬚. You are back in the basic menu. The basic block is visible but displayed in white.

### Insert objects/ extract objects from another part

The following <u>important rules</u> apply when inserting objects:

1. To insert an object the part <u>into which</u> the objects are to be inserted must be active.
2. The part <u>from which</u> objects are to be extracted must be visible on screen but inactive.
3. Objects can only be inserted from parts with a lower part number into parts with a higher part number.

Open the insert menu by clicking onto *insert* in the menu on the right. Activate the object type *lines* by clicking. Now click the lines required for finishing the front pattern (Picture 3-10). The clicked lines appear red or purple and are positioned to the side of the donor part after pressing <F5>.

*The <F5> key arranges all visible parts of a style in a rectangle.*

insert
select object: points
lines
parts

reset
  single
  all

obj.transf. & deposit: move p==>p turn+move p+p=>p+p
without tr.
reset
measure
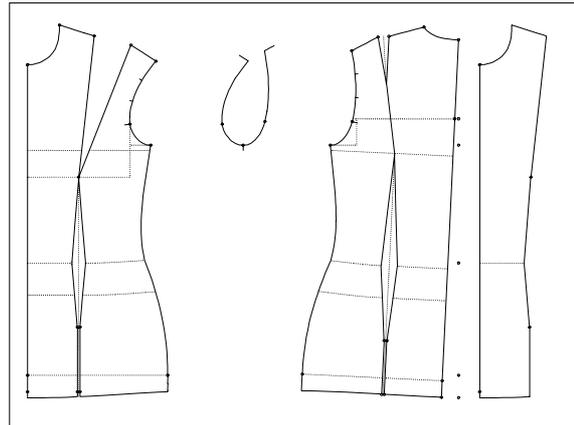
Picture 3-10

Then, swap to the object type „points" by clicking on points and insert also the bust point and any other points required. The selected objects are inserted after clicking *without tr.* in the „object transformation and deposit" section. Quit the insert menu with ⬚.

Continue with parts 003 to 006 in the same way (Picture 3-11). Activate the next part in the part list, make the front 003 not visible, keep part 001 visible and so on.
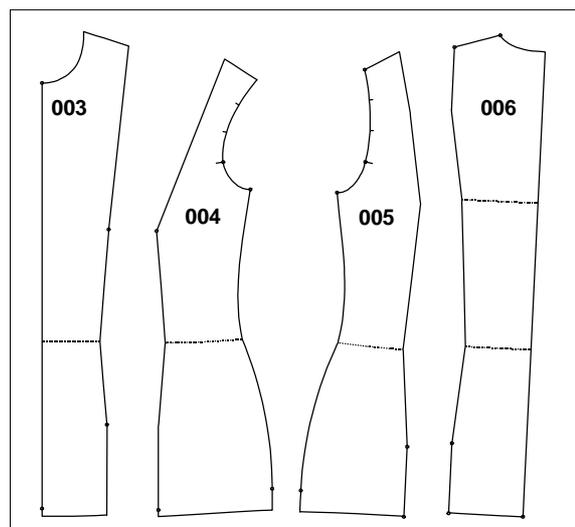
Picture 3-11

In the basic menu the following applies:
- *clicking an inactive part* ➔ *activates this part*
- *dragging an inactive part* ➔ *removes this part to the background memory.*

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3.6 Drag, rotate, flip parts

With the functions of the *drag/rotate* menu parts can be dragged, rotated or flipped to one another. This menu appears after pressing the function key <F3>.

The part to be moved is to be clicked. A drag cursor in form of a crosshair with circle appears offering the following functions:

Drag

Click inside the circle and drag with the left mouse button pressed down.

Rotate

Click outside the circle and rotate with the left mouse button pressed down.

Flip (mirror)

Click the symmetry axis about which the part is to be flipped (mirrored).

Additional functions

The following additional functions are also available:

scale

Adjust the display scale by clicking

1 : 0.2	for 5 times enlargement
1 : 1	for scale 1:1 (original size)
1 : 3	for 1/3 scale
1 : 5	for 1/5 scale
1 : 10	for 1/10 scale

The line "is =" shows the current scale.

NB: The function keys <F2>, <F4> and <F6> are still active.

drag/turn
scale
1 : 0,2
1 : 1
1 : 3
1 : 5
1 : 10
is=
1 : 3.3
direction:
- 90 +
- 45 +
- 15 +
- 5 +
- 1 +
nil
is=322.5
set to p

direction

Rotating the drag cursor in degrees by clicking "+" or "-" next to the required angle. The line "is =" shows the current angle.

nil

Reset the rotation of the part to nil.

set to p

The part is moved with the drag cursor to the required click point.

Dragging is terminated with ⬒. Moving the drag cursor on the part to be moved is possible after ⬒, only.

The <F8> function key switches between „parts in original (construction) position" and „parts on position after drag with <F3> or outlay with <F5>.
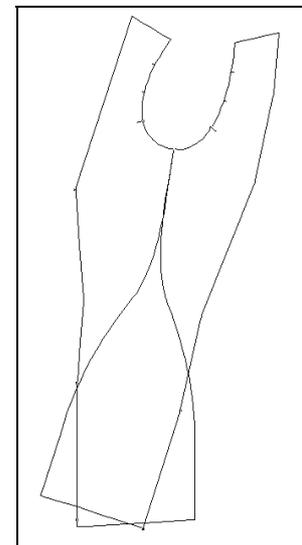
Exercise

Place parts 004 and 005 from the exercise in section 3.5 together at the armhole/ side seam corner and rotate one of the parts so that you can check the continuation of the armhole (Picture 3-12).

Move, rotate and flip other parts also. Quit the *drag/ rotate* menu with ⬒.

Press also the <F8> key. The parts have now been returned to their original position. Pressing <F8> again shows the parts as previously positioned.
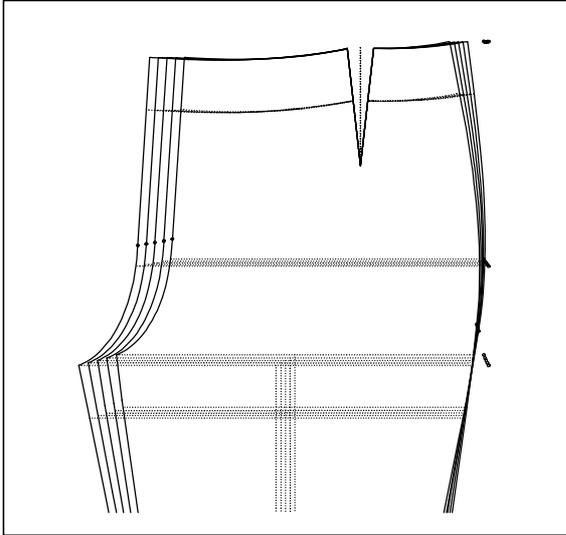

Picture 3-12

With <F5> all parts are arranged in a rectangle. Now press <F8> again.

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3.7 Exercises

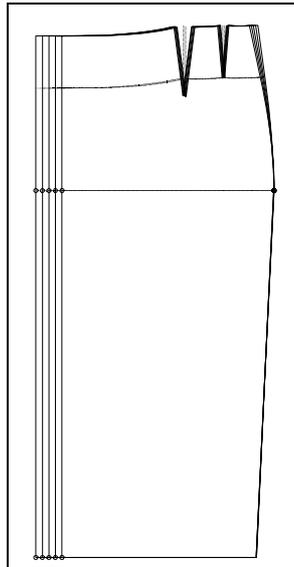<u>1st Exercise</u>

Grade the basic block „Grafis Trouser 10" in the sizes 38 to 46 and stack the pattern at the crotch point of the trouser front. Print the shown front crotch line full size onto A4.
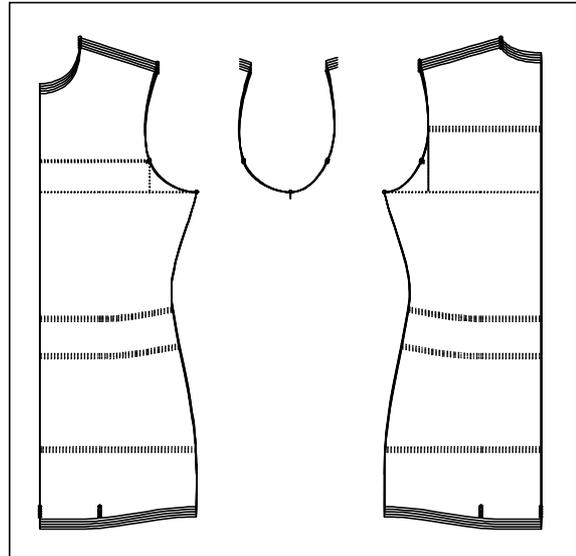
<u>2nd Exercise</u>
Grade the basic block „Grafis Skirt 20" in the sizes 38 to 46 and stack at the hip point of the skirt front. Output the pattern onto A4 in reduced scale.

<u>3rd Exercise</u>
Grade the basic block „Grafis Bodice 20" in the sizes 38 to 46 and stack at the side seam / armhole corner point. Print the pattern in 1:4 scale onto A4 paper.

The basic block „Grafis Bodice 20" is prepared for finished measurement construction. Only the vertical measurements are taken from the measurement charts. The horizontal measurements are adjusted interactively according to finished measurement tables. Further information on size-dependent adjustment of interactive constructions can be found in Chapter 13.