BasePac 10

EMBROIDERY SOFTWARE



MANUAL AND WORKBOOK · LEARN TO DIGITIZE

BasePac 10 Manual

Learn the functions, understand the parameters, choose the right materials

ZSK Stickmaschinen GmbH · German and English in one volume

LEARN WITH VIDEO

This manual has a big brother.



Watch now

campus.zsk.de

At **campus.zsk.de** you learn BasePac step by step on video: every click marked, every menu close up, at your own pace and as often as you like.

Video courses

From the first lettering to your own logo: short lessons of about three minutes.

Parameter sheets

Every chapter of this manual has a detailed sheet with comparison pictures, typical mistakes, an exercise and a checklist.

Certificates

Complete courses and prove your knowledge.

> This manual sums up the essentials. All functions and parameters are covered in more depth on the ZSK Campus.

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GETTING STARTED

How to use this manual

Part 1 takes you step by step through the functions of BasePac: from the user interface through punching and lettering to export. Every page shows six steps with a close-up and the click position marked. **Part 2** explains the parameters and materials: what they mean, where to find them and which values to start with.

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THE VERSIONS

Base, Premium, Professional, Technology

BasePac 10 comes in four versions. They **build on each other**: every version contains everything from the one before and adds new tools. You buy only what you need, and you can extend at any time as your jobs grow.

Base

Edit · Personalize · Organize

You work with finished stitch files: names and monograms from 100 fonts, edit designs, insert machine commands, print and manage.

For embroiderers who stitch and personalize purchased designs.

Premium

Create · Punch · Auto-generate

You create your own designs from images or vector files: satin, fill areas, underlay, bean stitch, by hand or with the Auto-Digitizer.

Upgrade when you want to digitize logos yourself and stop buying them in.

Professional

Unlimited creativity

You design with effects: stencils, wavy stitch direction, macros with clean edges, interlocking areas, sequins on lines and fills.

Upgrade when your customers expect special looks and effects.

Technology

For technical embroidery

You work for ZSK technical embroidery machines: split running lines, advanced contour types, convert fills to running lines, read and export Schiffli data.

Upgrade when you process fibres, wires or Schiffli designs.

What is included?

	Base	Premium	Professional	Technology
Lettering, monograms, your own fonts	●	●	●	●
Edit stitch files, machine commands	●	●	●	●
Printing, statistics, design catalogue	●	●	●	●
Punch your own designs (satin, fill)	○	●	●	●
Auto-Digitizer: from image to design	○	●	●	●
Underlay, bean stitch, macros on lines	○	●	●	●
Vector import and drawing tools	○	●	●	●
Stencils, wavy stitch direction, interlocking	○	○	●	●
Sequins on lines and fills	○	○	●	●
Technical embroidery, Schiffli	○	○	○	●

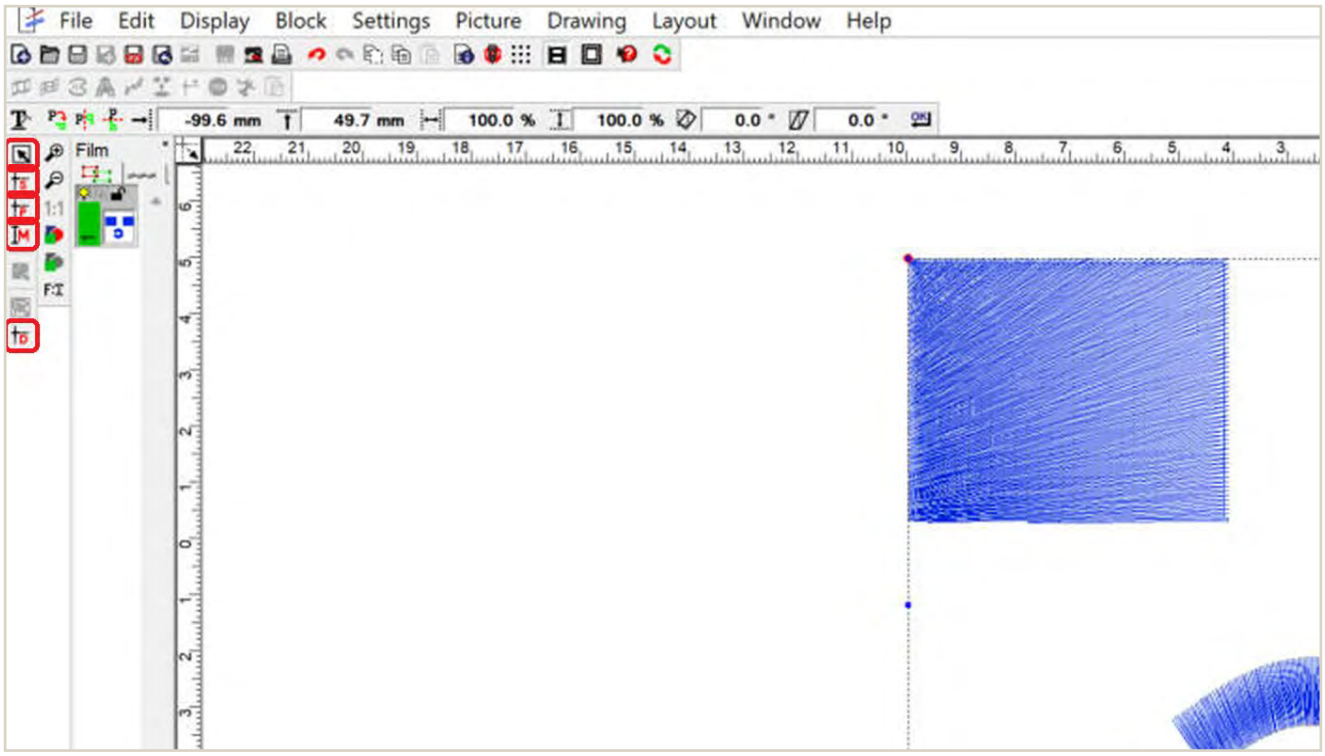
In this manual: the chapters on lettering, machine commands and tools apply to every version. The chapters on punching require at least Premium. Your version is shown in the title bar of BasePac. Advice on upgrading: software@zsk.de

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ORIENTATION

BasePac in five minutes

BasePac works with **modes**. You choose them in the bar at the left edge. Depending on the mode, the bar at the top shows different tools.



Modes

1. **Select mode**
   Click a design, move it, change its size.
2. **Stitch mode**
   Edit single stitches, insert trims and stops.
3. **Punch mode**
   Create new objects: running stitch, satin, fill area.
4. **Text mode**
   Write and adjust lettering.
5. **Drawing mode**
   Draw guide lines and shapes.

> The gear icon in the top bar opens the parameters of the active object in almost every mode.

The most important keys

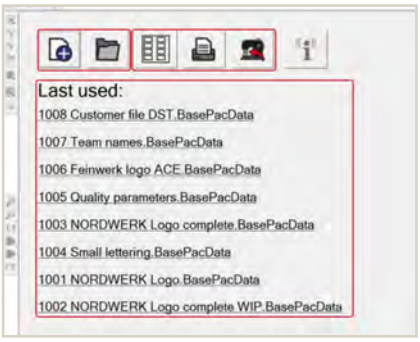
R	Running stitch
M	Centre-line satin
P	Pairwise satin
A	Fill area (outer contour)
H	Hole in an area
W	Stitch direction
X	Use a drawn line
Enter	Calculate the object
Backspace	Back into the last object
T	Trim
S	Stop
E	Block mark (before a needle change)
Ctrl + T	TrueView on and off
Ctrl + Y	Play the stitch sequence
Ctrl + Z	Undo

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 1

The user interface

Before you punch, take a tour. BasePac shows everything in **one window**: menu and tool bars at the top, the modes and the Film on the left, the worksheet in the centre and the status bar at the bottom. The upper tool bar always adapts to the active mode.



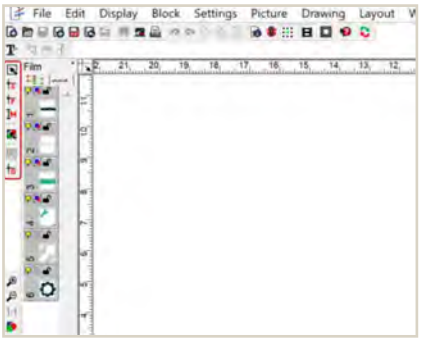
1 The start view

- New design and open design
- New template, print, embroider
- Below: your last used designs



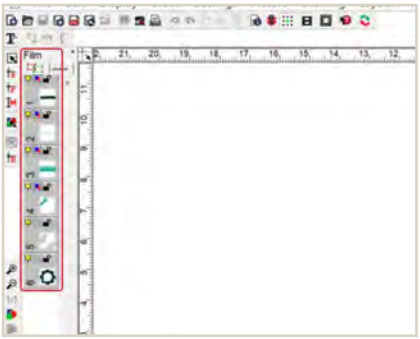
2 The workspace

- Top: menus and toolbars
- Centre: the worksheet with rulers in cm
- Bottom: the status bar



3 The working modes

- Module mode: select and move parts
- Edit mode: change single stitches
- Coordinate mode: digitize shapes
- Text mode: lettering



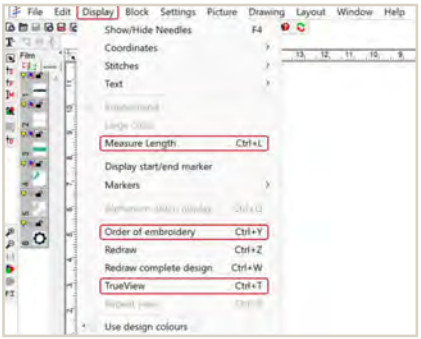
4 The film strip

- Every part of the design is one block
- Blocks are listed in sewing order
- Click a block to select that part



5 Zoom tools and status bar

- Zoom in, zoom out, 1:1 and zoom factor
- Status bar: size in mm and stitch count
- Z shows the zoom, X and Y the position



6 Your checking tools

- Open the Display menu
- Order of embroidery, Measure Length, TrueView
- All have shortcuts

GOOD TO KNOW

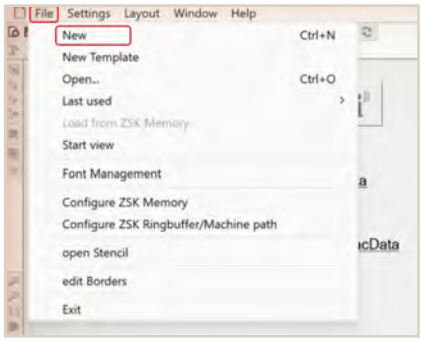
The status bar at the bottom explains the active tool and shows size, stitch count, zoom and mouse position. F1 opens the help.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 2

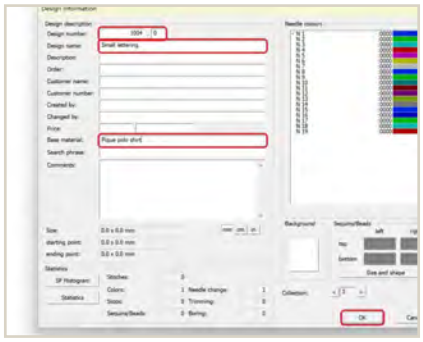
New design and design information

Every design starts with its **design information**: number, name, customer, fabric. What you enter here comes back later when you search, print and work at the machine. This is also where you define which thread colour sits on which needle.



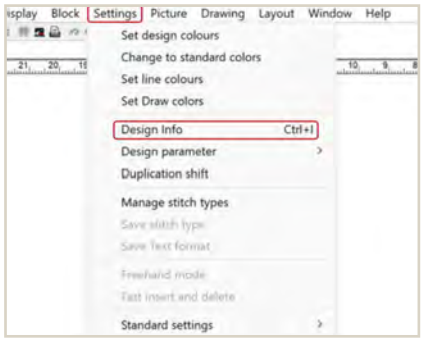
1 Start a new design

- Open the File menu
- Click New



2 Name the job and the fabric

- Design number: 1004
- Design name: Small lettering
- Base material: pique polo shirt
- Confirm with OK



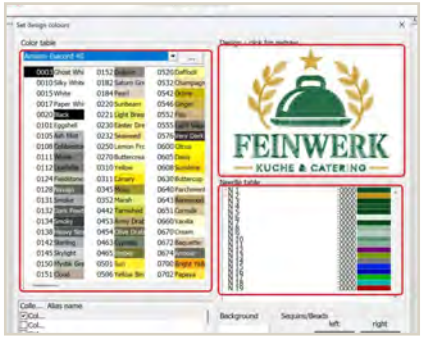
3 Open the design information

- Open the Settings menu
- Click Design Info
- Shortcut: Ctrl + I



4 Read the key figures

- Size: 110.5 x 98.9 mm
- 9,485 stitches, 3 colours
- 5 needle changes, 13 trims
- Click Statistics for more



5 Get to know the window

- Left: the colour table with thread numbers
- Right: the needles of your design
- Top right: a preview



6 Assign the green thread

- Click needle N 1 in the Needle table
- Scroll to the greens
- Double-click 5374 Forest Green

GOOD TO KNOW

Enter at least design number, name, customer and base material. Open the design information at any time with Ctrl + I, the thread colours via Settings, Set design colours.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 3

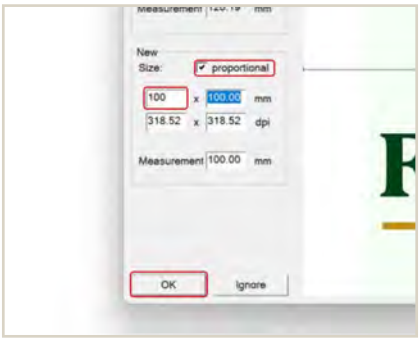
Load a template and digitize automatically

Most designs are made from a **template**: a picture or a vector file. You can punch over it by hand or let the **Auto-Digitizer ACE** find and fill the shapes. ACE delivers a result in seconds, which you then check and improve.



1 Load the logo

- Start a new design: the picture dialog opens
- Keep Call ACE automatically ticked
- Select the logo and click open



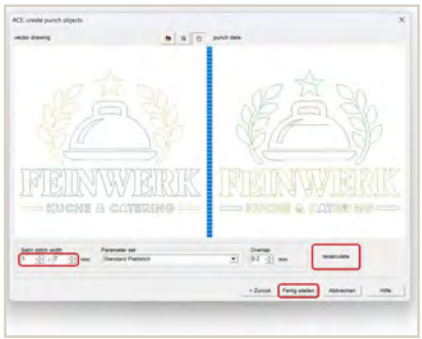
2 Set the real size

- New size: type 100 mm
- Keep proportional ticked
- Confirm with OK



3 Tune the picture settings

- Choose Clipart for flat logos
- Remove small areas: type 10
- Click recalculate, then Weiter (Next)



4 Create the stitches

- Satin stitch for widths from 1 to 7 mm
- Wider areas become fill stitch
- Recalculate, then Fertig stellen (Finish)



5 The design is on the worksheet

- More than 6,000 stitches, created automatically
- The Film on the left lists every part



6 Set the real size

- Drawing width: 85 mm
- Height follows proportionally
- Size of a DXF unit: 1.0 mm, then OK

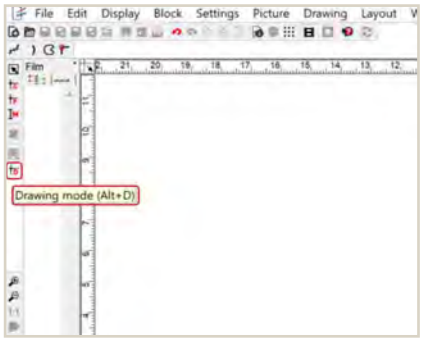
> **GOOD TO KNOW**
> A clean logo with flat colours gives the best automatic result. Load vector files via File, Import vector data. DXF opens directly.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 4

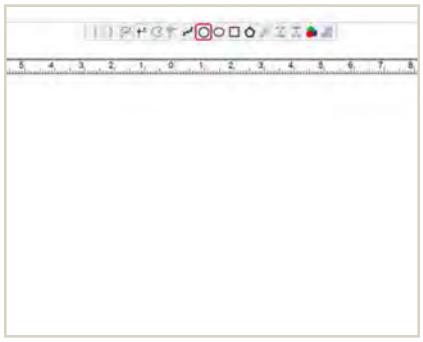
Drawing mode

Drawing mode creates **guide lines and shapes**: circles, rectangles, free curves. They are not stitched but serve as a template. The big advantage: when punching you can adopt a drawn line directly, without clicking it point by point.



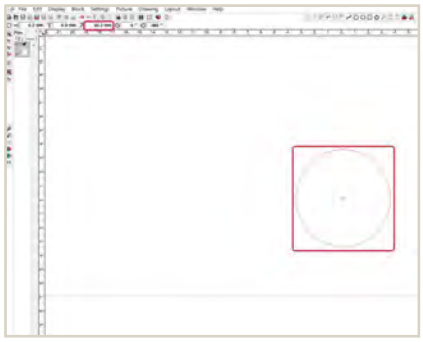
1 Switch to drawing mode

- Start a new design
- Click the drawing mode icon in the left bar
- Or press Alt + D



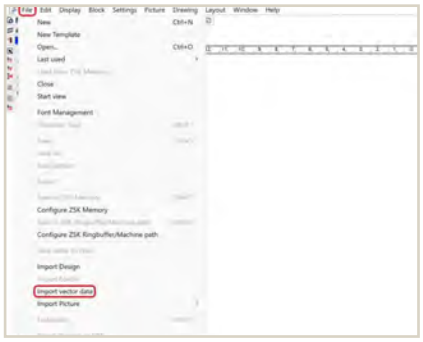
2 Pick the circle tool

- Look at the tool bar on top
- Click the circle



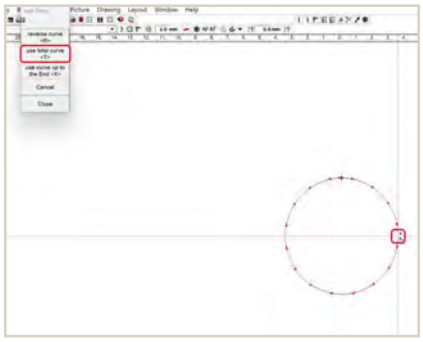
3 Draw the circle

- Click where the centre should be
- Hold the mouse button and drag outward
- Release at a radius of about 35 mm



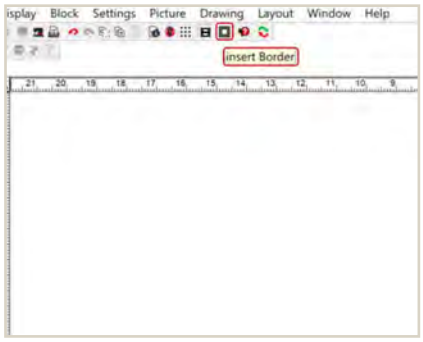
4 Open Import vector data

- Start a new design
- Open the File menu
- Click Import vector data



5 Let the circle be your line

- Press X
- Click the circle: arrows show the direction
- Click use total curve



6 Open the border library

- Look at the top tool bar
- Click insert Border

GOOD TO KNOW

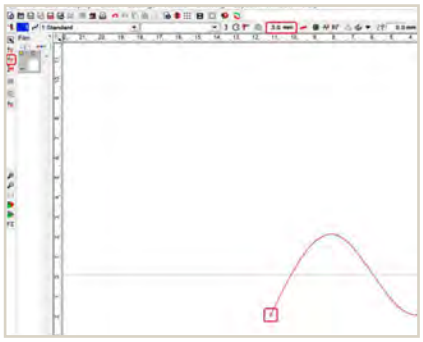
In punch mode you adopt a drawn line with the key X: click the line, use total curve, Enter. This lets you use the same shape several times, for example for placement line and satin edge.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 5

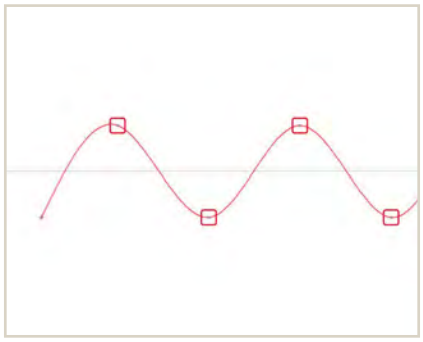
Punching: the basic workflow with the running stitch

Every object is made in the same **three steps**: tie in by hand, choose the punch program with a key and enter the shape, calculate with Enter. The running stitch (key R) is the fastest way to learn this workflow.



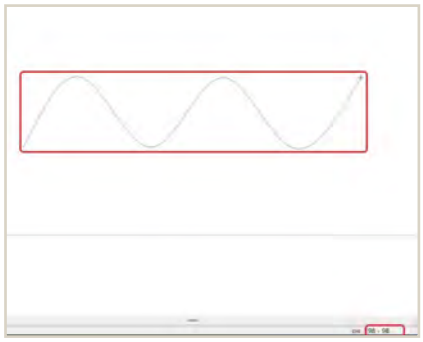
1 Start the line with R

- Click the punch mode icon
- Click where the line starts
- Press R for running stitch



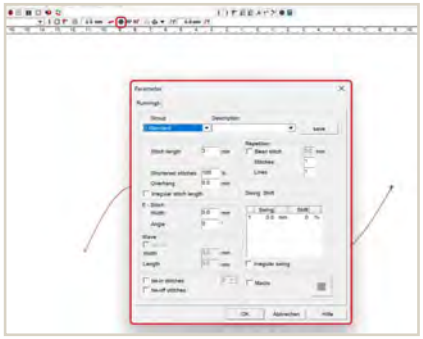
2 Click along the shape

- Click point by point
- BasePac draws a smooth curve through your clicks
- The red line is your reference line



3 Press Enter

- Enter calculates the stitches
- 98 stitches along the wave
- BasePac returns to manual stitches



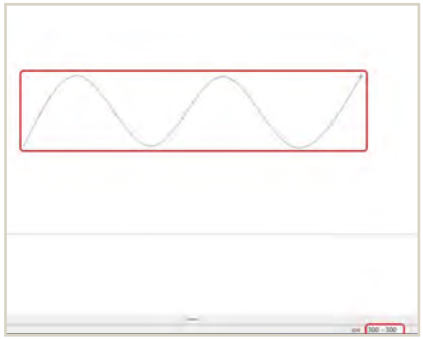
4 Go back into the object

- Press Backspace
- The reference line turns red again
- Click the gear icon



5 Make it a bean stitch

- Tick Bean stitch
- Stitches: type 3
- Tick tie-in and tie-off stitches
- Confirm with OK



6 Press Enter again

- BasePac recalculates the line
- 300 stitches instead of 98
- Same shape, three times the thread

GOOD TO KNOW

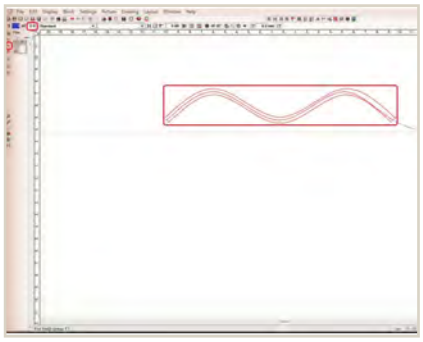
You set the tie-in and tie-off stitches at the start and end of a seam by hand. They should be between 0.5 and 0.7 mm long. Read the length of every stitch in the stitch display.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 6

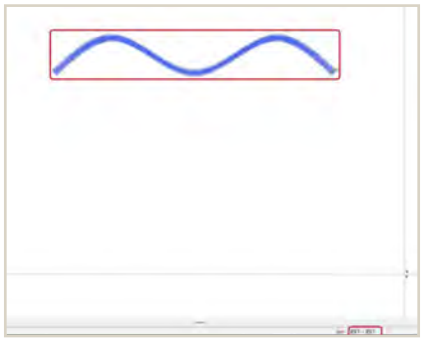
Satin stitch: centre line and pairwise

There are two ways to make a satin stitch. With the **centre line** (key M) you enter the middle and BasePac places the edges at a fixed distance. With **pairwise input** (key P) you click both edges yourself, so the width can change.



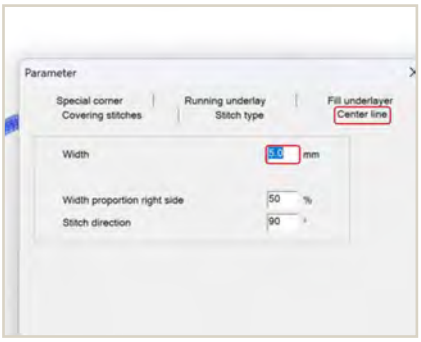
1 Centre line: press M

- Punch mode: click the start point
- Press M
- Click along the middle of the band



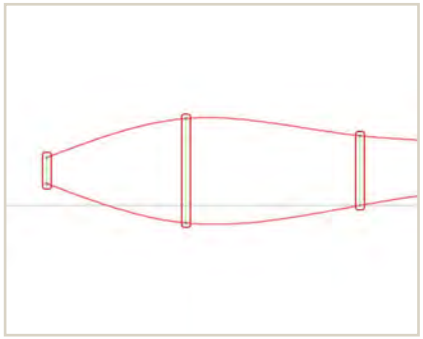
2 Press Enter: an even satin

- 851 stitches
- The same width from start to end
- Perfect for borders and stems



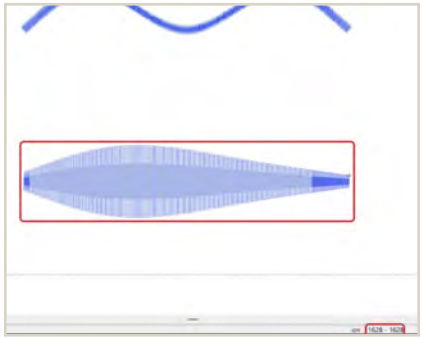
3 Where the width is set

- Backspace, then the gear icon
- Open the tab Center line
- Width 5.0 mm, stitch direction 90 degrees



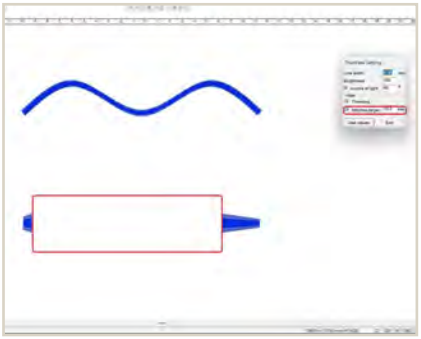
4 Pairwise: press P

- Trim, then click the start on one edge
- Press P and click the opposite edge
- Go on in pairs: one edge, other edge



5 Press Enter: a changing width

- 1628 stitches
- The satin follows both edges
- Ideal for leaves, petals and letters



6 TrueView shows the problem

- Module mode, Ctrl + T
- The middle of the leaf is missing
- TrueView hides stitches longer than 15 mm

GOOD TO KNOW

For letters that you punch by hand, the program "structured" (key Y) is a good choice. With a picture or vector template you trace the outer contours quickly.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 7

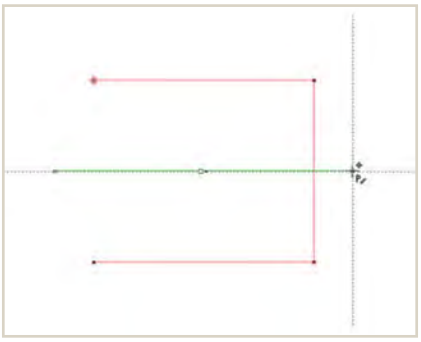
Fill areas

Large areas are made with the **outer contour** (key A). You click the outline, set the stitch direction with W, and BasePac fills the area with short, offset stitches: the fill stitch, also called tatami. With H you cut holes into the area.



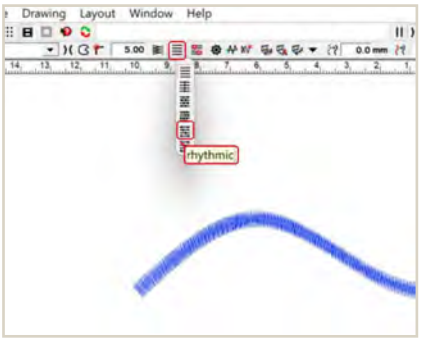
1 Start the area with A

- Punch mode: click the start point
- Press A for outer contour
- The tool bar shows the fill settings



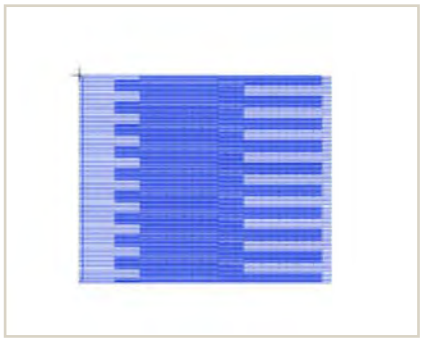
2 Enter contour and direction

- Click the outline, double-click for corners
- Press W and set two points
- The green line is the stitch direction



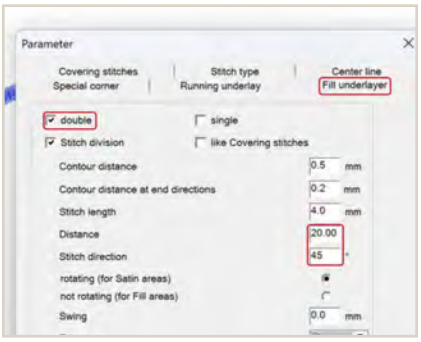
3 Choose a stitch division

- Click the division icon
- Six types open below it
- Click rhythmic



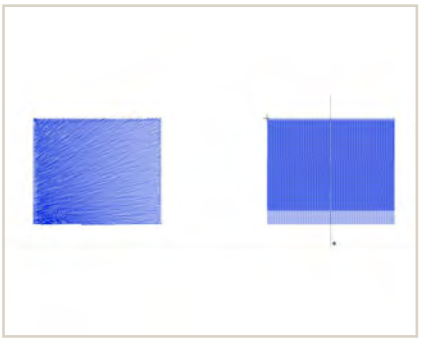
4 Press Enter

- BasePac fills the area
- Short stitches in offset rows



5 Add a fill underlay

- Open the tab Fill underlayer
- Tick double
- Distance 20.00 and direction 45 degrees stay



6 Compare stitch directions

- Left: two direction lines
- Right: one vertical direction

GOOD TO KNOW

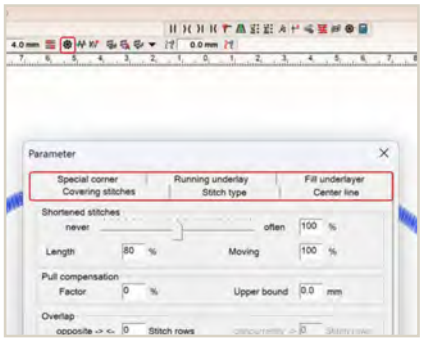
The contour may have any shape, but it must not cross itself. Place the points of the stitch direction just outside the contour to keep things clear.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 8

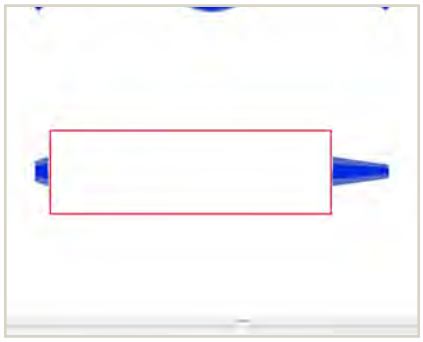
Changing parameters and stitch type afterwards

A punched object stays editable. **Backspace** takes you back into the object, the **gear icon** opens its parameters, and with **Enter** BasePac recalculates. You can even convert the input type without punching again.



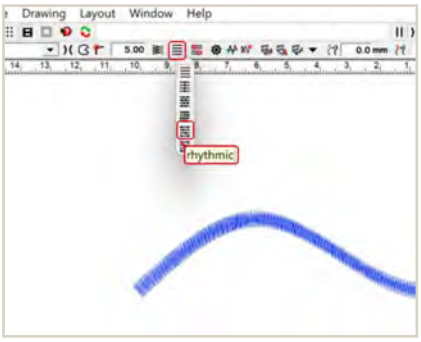
1 Open the parameters

- Punch mode: Backspace opens the object
- Click the gear icon
- Six tabs hold all settings



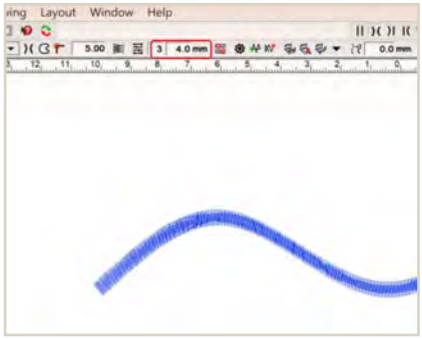
2 The problem: satin too wide

- The leaf is about 40 mm wide
- TrueView hides the long stitches
- They would hang loose on the fabric



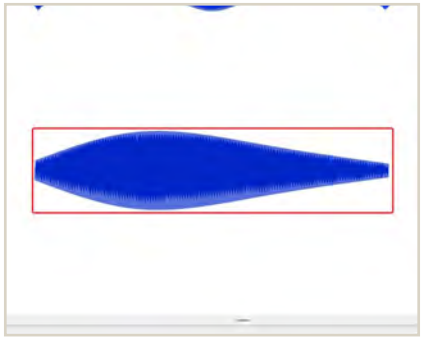
3 Choose a stitch division

- Click the division icon
- Six types open below it
- Click rhythmic



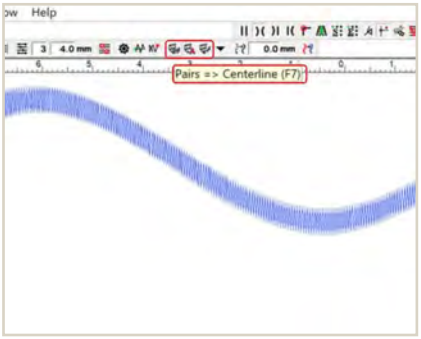
4 Rhythm and stitch length

- Back in the object, two new fields appear
- Rhythm 3
- Stitch length 4.0 mm



5 Check again in TrueView

- Module mode, Ctrl + T
- The leaf is completely covered
- No stitch is longer than 4 mm



6 Convert the input type

- In the object, look right of the gear
- Pairs to Centerline: F7
- Pairs to Structured: F8, to running: F9

GOOD TO KNOW

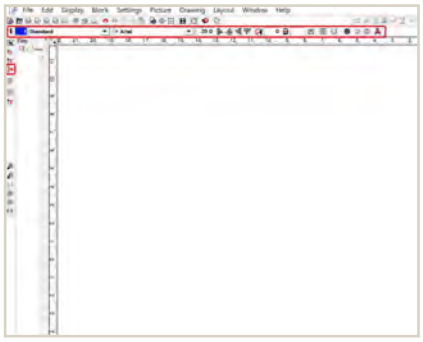
Forgot the parameters? No problem: Backspace, gear icon, change, OK, Enter. It is best to set the parameters right after punching. All values are explained in the parameter part of this manual.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 9

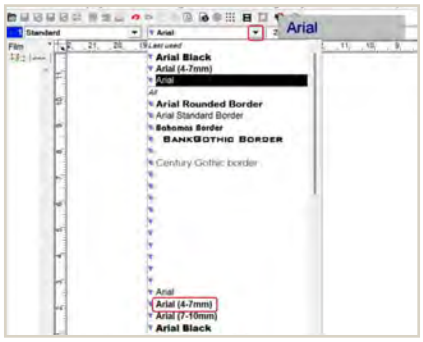
Text mode: lettering and monograms

Text mode is the monogram function of BasePac. About **100 fonts** are pre-installed and already digitized: you only type the text and adjust the parameters. This works in every version, including Base.



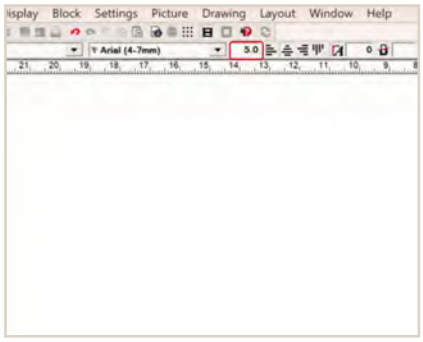
1 Switch to text mode

- Click the text mode icon on the left
- The lettering toolbar appears at the top



2 Pick a font made for small sizes

- Open the font list
- Choose Arial (4-7mm)



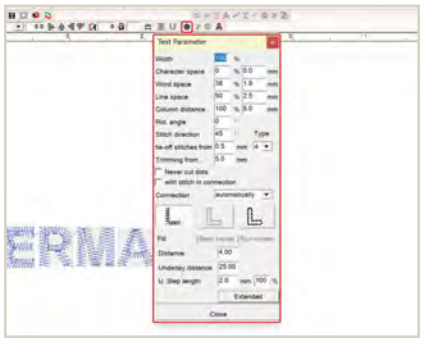
3 Set the letter height

- Click the height field
- Type 5
- Press Enter



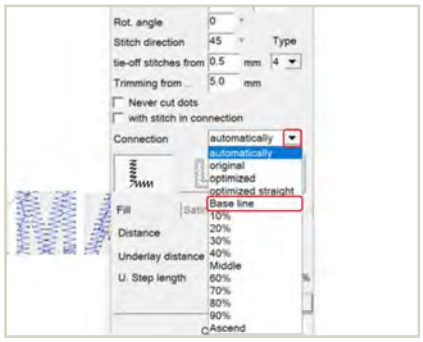
4 Type your text

- Click on the worksheet
- Type QUALITY MADE IN GERMANY
- BasePac calculates the stitches at once



5 Open the Text Parameter

- Press Ctrl + A to select all letters
- Click the gear icon in the toolbar



6 Tidy the connections

- Open the Connection list
- Choose Base line

GOOD TO KNOW

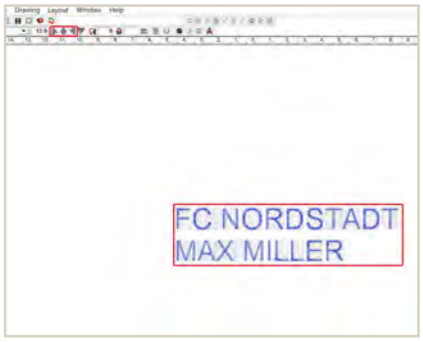
There are special fonts for small lettering such as Arial (4-7mm). All settings for spacing, density and connection are in the Text Parameter window, pull compensation and underlay behind Extended.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 10

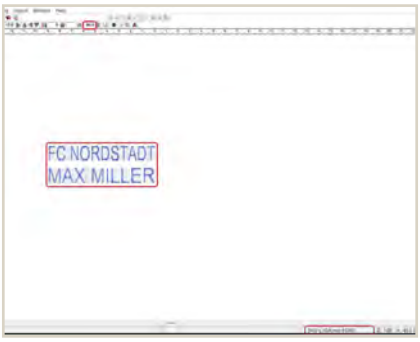
Shaping lettering: lines, arc, envelope

Lettering does not have to be straight. You align lines, limit the **text length**, slant the letters, place them on an **arc** or give them a shape with an **envelope**. The letters stay text and can be changed at any time.



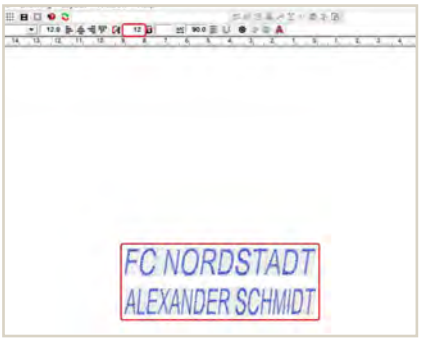
1 Align the lines

- Press Ctrl + A to select the text
- Click left aligned, centred or right aligned
- We continue with centred



2 Set the width to 90 mm

- Type 90 into the field
- Press Enter
- Both lines are now exactly 90 mm wide



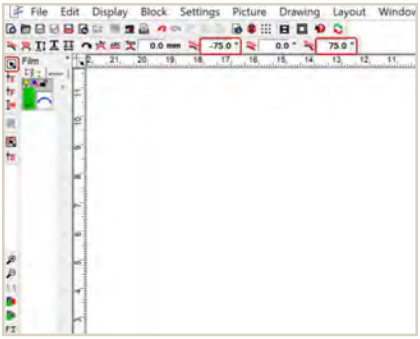
3 Add a slant

- Press Ctrl + A
- Slant angle: type 12
- Press Enter



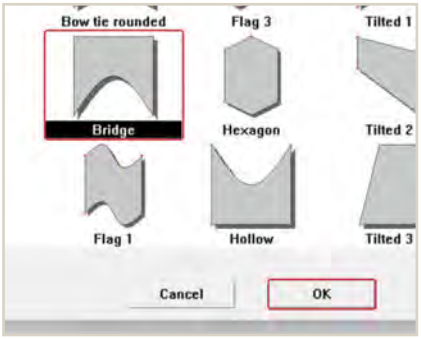
4 Type your text

- Type NORDWERK SERVICE
- The letters follow the circle
- The text centres itself around the cursor



5 Set where the text starts and ends

- Module mode: click the text
- Double-click the start angle, type -75, Enter
- Double-click the end angle, type 75, Enter



6 Pick a shape

- 19 shapes are ready to use
- Click Bridge
- Confirm with OK

GOOD TO KNOW

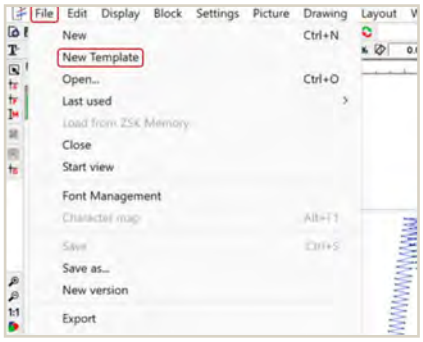
Text on an arc: first draw a circle in drawing mode, then click on the line in text mode and type. You set start and end angle in select mode.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 11

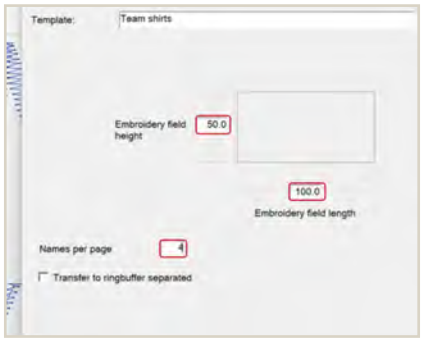
Name templates for production runs

For team shirts or name badges you create a **template**: field size, font, height and maximum length are fixed once, then you only type the names. BasePac fits long names automatically, and the template sets stop and trim after every field.



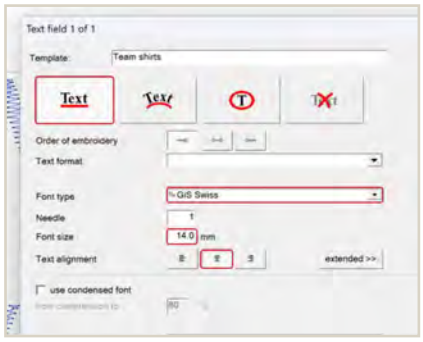
1 Open New Template

- Open the File menu
- Click New Template



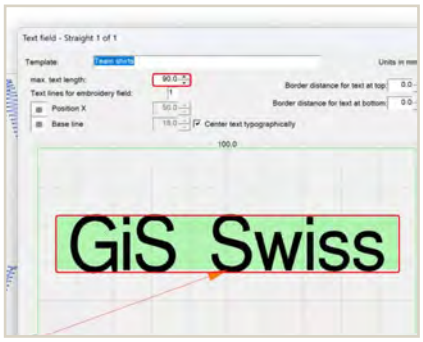
2 Set the embroidery field

- Height 50 mm, length 100 mm
- Names per page: 4
- Click Next



3 Define the text

- Keep straight text
- Choose font type and needle
- Font size 14 mm, centred



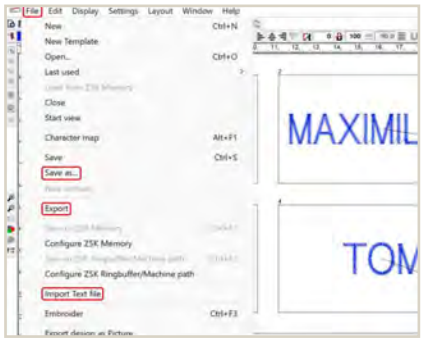
4 Limit the text length

- Max. text length: 90 mm
- One text line per field
- Click Next



5 Type the names

- Type a name and press Enter
- The cursor jumps to the next field
- Long names are fitted automatically



6 Save, export or import a list

- Save as keeps the filled template
- Export creates the machine file
- Import Text file reads a whole name list

GOOD TO KNOW

Read a whole list of names with Import Text file. Save the empty template: it is ready to use for the next job.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 12

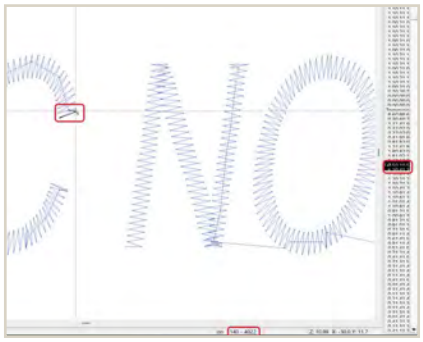
Stitch mode: editing stitches

In stitch mode you work on **single stitches**. You need this for third-party stitch files without objects, for small repairs and to insert machine commands such as trim or stop. You also step through the design stitch by stitch here and check the sequence.



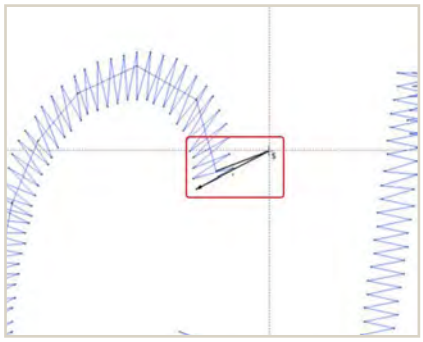
1 Switch to edit mode

- Click the edit mode icon in the left bar
- Or press Alt + S
- The stitch display opens on the right



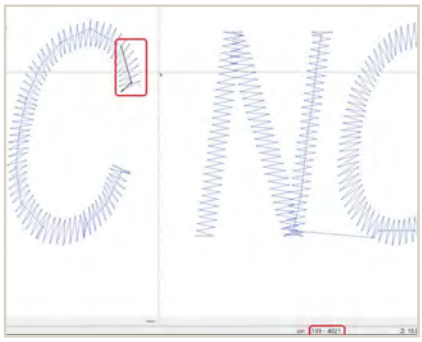
2 Select one stitch

- Click on the end point of a stitch
- The stitch turns black
- Status line: stitch 140 of 4022



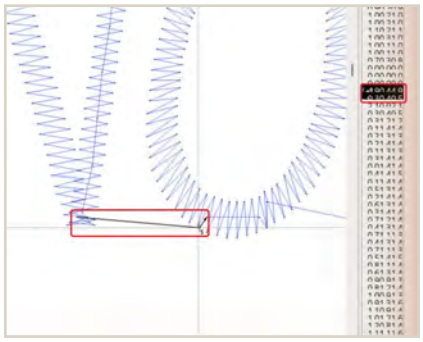
3 Move the stitch

- Keep the mouse button pressed on the point
- Drag it to the new position
- Release



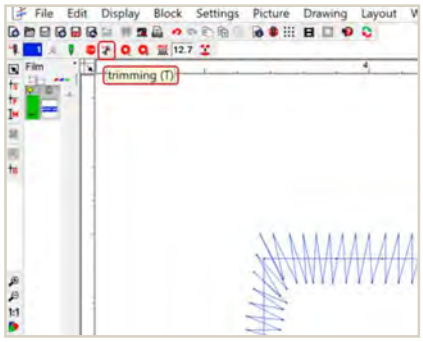
4 Delete a stitch

- Select the stitch
- Press Delete
- The count drops from 4022 to 4021



5 Walk through the design

- Click any stitch
- Arrow keys step forward and back
- Here: a 4.9 mm link between N and O



6 Forgot a thread cut? Add it

- Step to the last stitch before the jump
- Click the trimming icon
- Or press T

GOOD TO KNOW

Forgot a trim? Go to the last stitch before the jump and press T. Stitch editing is meant for fine repairs. Larger changes are better re-punched as an object.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 13

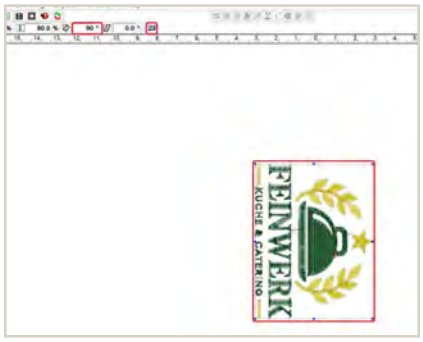
Modifying designs: size, parts, colours

A finished design can be adapted without punching again: **size and rotation** of the whole design, single parts after **breaking the group**, and the assignment of **needles** when a design has more colour sections than necessary.



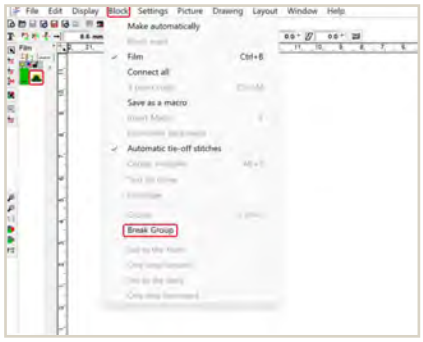
1 Enter the new size

- Width: type 80 %
- Height: type 80 %
- Click OK at the end of the toolbar



2 Rotate the design

- Angle: type 90
- Click OK
- The design turns by 90 degrees



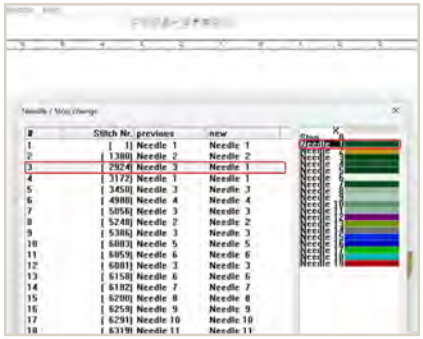
3 Break the group

- Module mode: click the block in the Film
- Open the Block menu
- Click Break Group



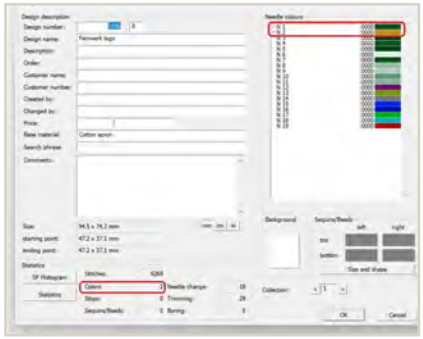
4 Make it bigger and move it

- Width 130 %, press Enter
- Height 130 %, click OK
- Drag the star to its new place



5 Move a section to needle 1

- Click line 3 in the list
- Click Needle 1 in the palette
- The column new shows Needle 1



6 Check the result

- Press Ctrl + I again
- Colors: 2 instead of 11
- Only needle 1 and needle 2 are ticked

GOOD TO KNOW

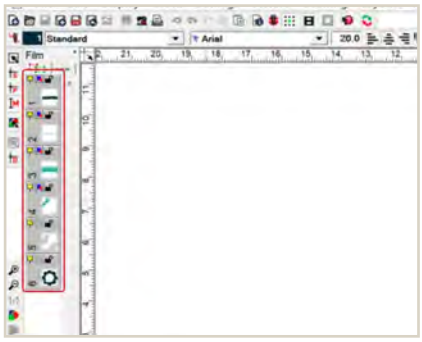
Save a copy with File, Save as before every change. The original stays untouched. Always check in TrueView after scaling, especially small lettering.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 14

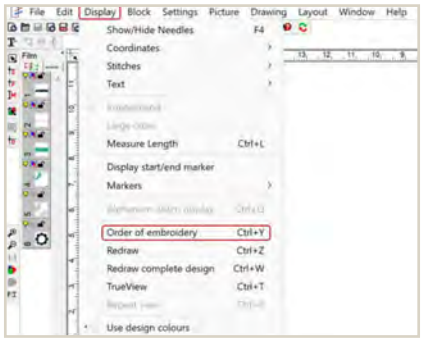
Checking before production

Before a design goes to the machine you check it on screen: **sequence**, **dimensions**, **needle changes**, **start and end point** and the look in **TrueView**. Five minutes of checking save a spoiled test stitch-out.



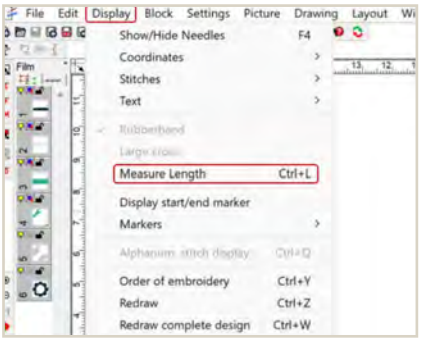
1 Read the film strip

- The Film on the left shows the design in blocks
- Six blocks, from top to bottom



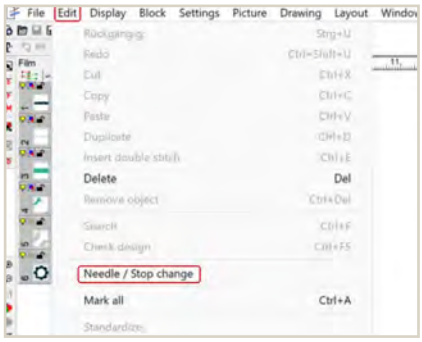
2 Open the stitch player

- Open the Display menu
- Click Order of embroidery
- Shortcut: Ctrl + Y



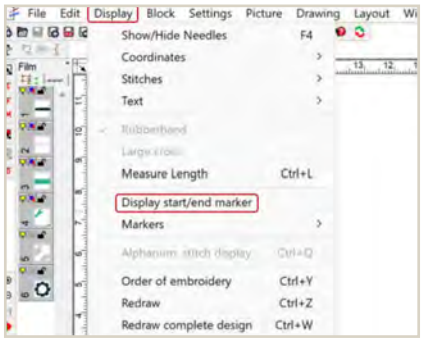
3 Measure inside the design

- Place the mouse on the start point
- Open Display, Measure Length
- Shortcut: Ctrl + L



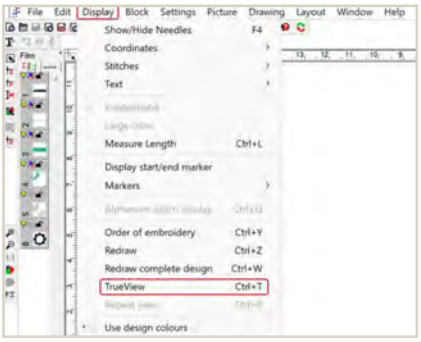
4 Check the colour sequence

- Open the Edit menu
- Click Needle / Stop change



5 Show the start point

- Open the Display menu
- Click Display start/end marker



6 Open TrueView

- Open the Display menu
- Click TrueView
- Shortcut: Ctrl + T

GOOD TO KNOW

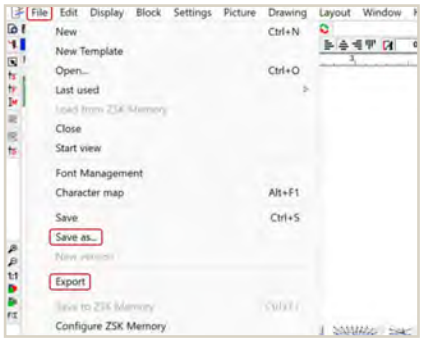
Get used to a fixed order: play, measure, check colours, check start and end, TrueView. Then stitch a test on the original material.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 15

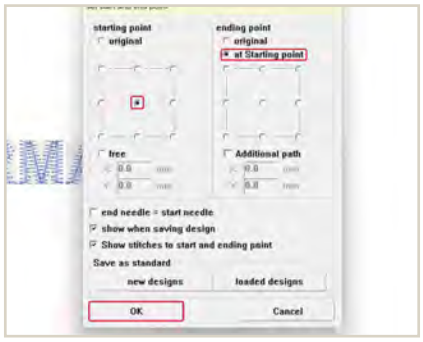
Saving, export and import

BasePac knows two kinds of files. The **BasePac format** stores your design with all objects and parameters. Only there can you change text and shapes later. **Export** creates the stitch file that the machine reads. For ZSK machines this is the ZSK Transportcode (*.Z00).



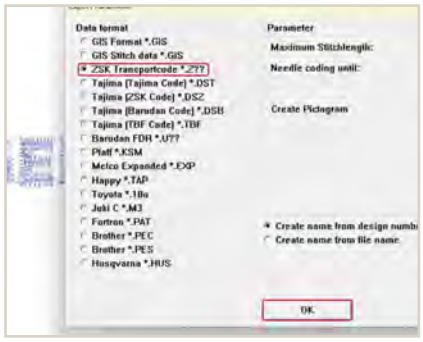
1 Save and export

- Open the File menu
- Save as: keeps the editable design
- Export: creates the machine file



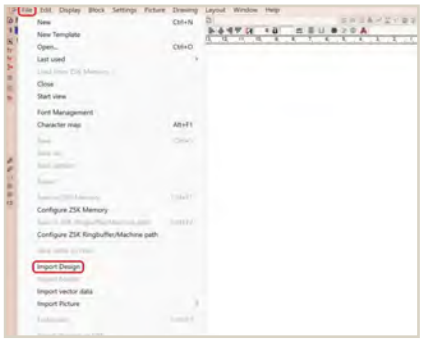
2 Start and end in the centre

- Starting point: centre
- Ending point: at Starting point
- Confirm with OK



3 Choose ZSK Transportcode

- Select ZSK Transportcode *.Z??
- Confirm with OK
- Save the file



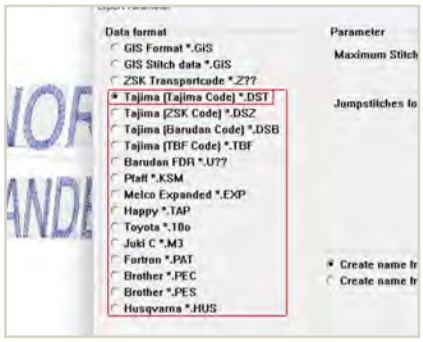
4 Open Import Design

- Start a new design
- Open the File menu
- Click Import Design



5 Turn jumps into trims

- Trimming after jumpstitch: 3
- Optimize stitch data stays ticked
- Confirm with OK



6 Or export for another machine

- The same window offers all formats
- Tajima DST, Barudan, Brother PES and more
- Pick the format and confirm

GOOD TO KNOW

Always keep the BasePac design, not only the machine file. Set up a sensible folder structure and back up your data regularly. Save a new version with File, New version.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 16

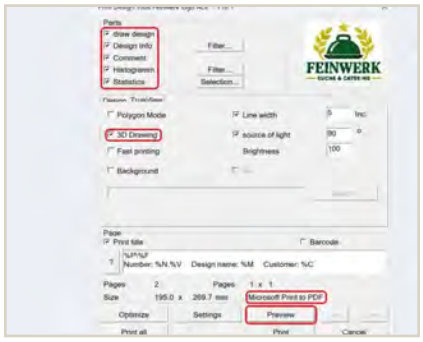
Printing and approval picture

A printout accompanies the design into production: picture in real size, needle sequence, thread numbers and thread consumption. For **customer approval** you also export the design as a picture that shows the thread as stitched.



1 Open the print dialog

- Open the File menu
- Click Print



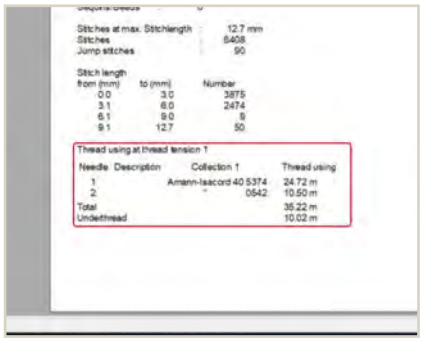
2 Choose what goes on the sheet

- Tick the parts: design, Design Info, Statistics
- 3D Drawing prints the realistic view
- Click Preview



3 Page 1: the design

- Needle colours with thread numbers
- The design in its real size
- Dashed lines mark the centre



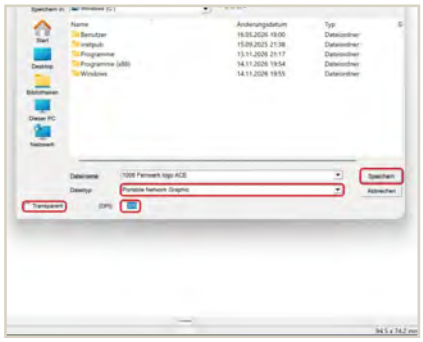
4 Thread consumption

- Thread per needle in metres
- Needle 1: 24.72 m, needle 2: 10.50 m
- Underthread: 10.02 m



5 Open Export design as Picture

- Open the File menu
- Click Export design as Picture



6 Choose format and resolution

- File type: Portable Network Graphic (PNG)
- Resolution: 300 DPI
- Choose a folder and click save

GOOD TO KNOW

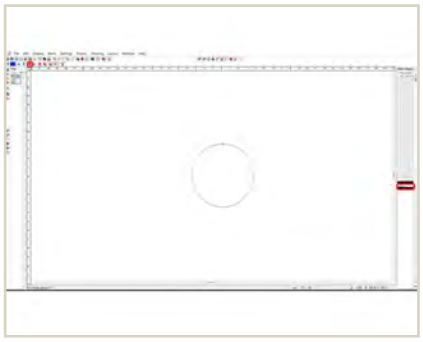
Send the customer picture and key data together: size, stitch count and thread numbers from the design information. This avoids misunderstandings at approval.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 17

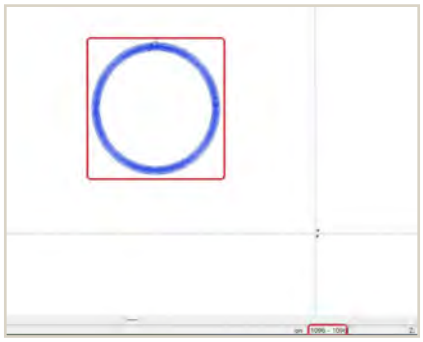
Effects: applique, macros, stencils

A few steps create special effects. An **applique** replaces large stitched areas with fabric. A **macro** places small motifs along a line. A **stencil** gives an area a texture without changing thread or colour.



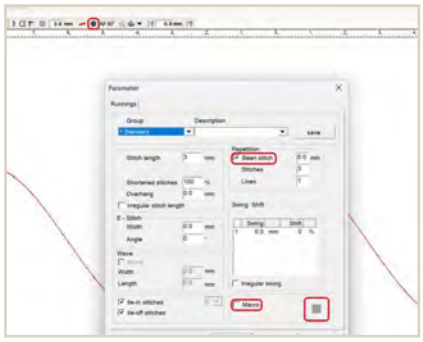
1 Insert a stop

- Click the stop icon
- Or press S
- Stop appears in the stitch display



2 Cover the edge

- Press X and click the circle
- Click use total curve
- Press Enter



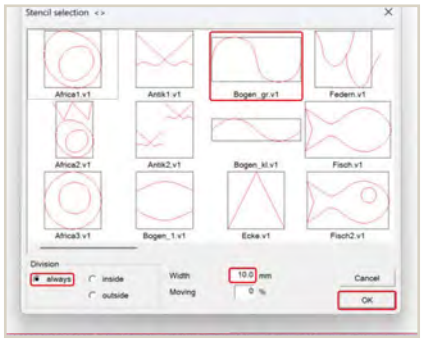
3 Open the running parameters

- Punch mode: Backspace opens the line
- Click the gear icon
- Untick Bean stitch, tick Macro



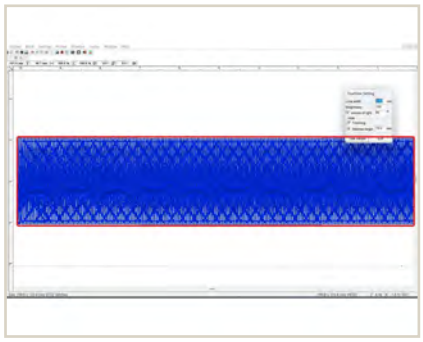
4 Choose a motif

- Click Blatt2, a leaf
- The preview shows the motif in a row
- Confirm with OK, then OK again



5 Choose a stencil

- Click Bogen_gr, a large wave
- Width 10 mm sets the size of the pattern
- Division: always, then OK



6 See the pattern in TrueView

- Zoom in and press Ctrl + T
- Waves run through the fill
- Same thread, same colour: only the texture changes

GOOD TO KNOW

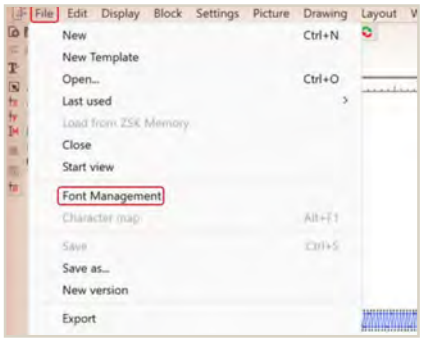
Applique in three passes: placement line, stop, tack-down line, stop, satin edge. Bean stitch and macros on lines are available from Premium, stencils from Professional.

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PART 1 · LEARNING THE FUNCTIONS · CHAPTER 18

Creating your own fonts

If the supplied fonts are not enough, you convert any **TrueType font** into an embroidery font. BasePac digitizes the letters automatically, and afterwards the font is available in text mode like any other.



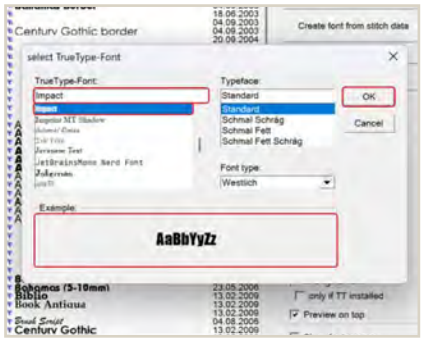
1 Open the Font Management

- Open the File menu
- Click Font Management



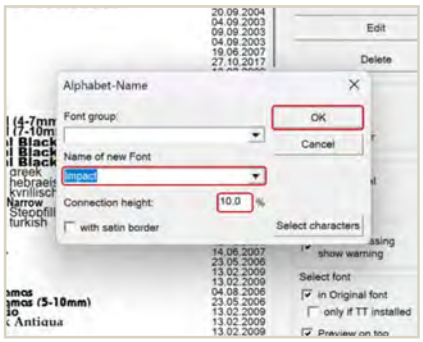
2 Click Convert Windows TrueType font

- The list shows all installed embroidery fonts
- Click Convert Windows TrueType font



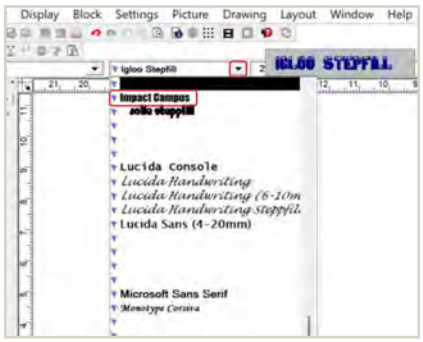
3 Choose the font

- Type the first letters of the name
- Click the font: here Impact
- Check the example and click OK



4 Name your embroidery font

- Type a name: Impact Campus
- Connection height stays at 10 %
- Click OK



5 Find your font in the list

- New design, text mode
- Open the font list
- Click Impact Campus



6 Type as usual

- Click on the worksheet
- Type NORDWERK
- 20 mm high: 112 mm wide, 2204 stitches

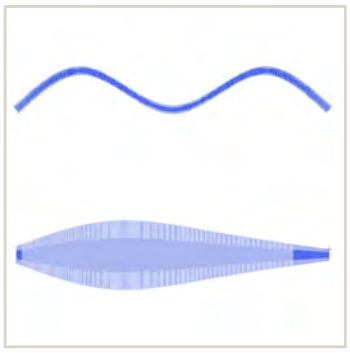
GOOD TO KNOW

The font must be installed in Windows, otherwise it does not appear in the list. Always check a new embroidery font in TrueView and with a test stitch-out before you use it for jobs.

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PART 2 · CHAPTER 1 · BASICS

Stitch types



Almost every embroidery consists of just three stitch types. The **running stitch** is a line of single stitches. The **satin stitch** swings in a zigzag from edge to edge and forms a shiny column. The **fill stitch** covers large areas with many short, offset stitches. Which type fits is decided mainly by the **width of the shape**.

Where do I find it? Switch to punch mode › Choose the stitch type by key › Enter the shape, Enter

Which stitch type do I use when?

Fine lines, outlines under 1 mm	**Running stitch (R)**
Bold line, decorative seam	**Running with Bean stitch**
Lettering, borders, 1 to 7 mm	**Satin (M or P)**
Bands of even width	**Centre-line satin (M)**

RULE OF THUMB

Line = running stitch. **Narrow shape** of 1 to 7 mm = satin. **Wide area** = fill stitch.

In detail with exercise and checklist: Parameter Sheet 05 at campus.zsk.de

PART 2 · CHAPTER 2 · BASICS

Stitch length and bean stitch



Stitch length is the distance from one needle penetration to the next. In a running stitch it decides how **round a curve** and how fine a line looks. With **Repetition** every stitch is sewn several times: the thin line turns into a bold **bean stitch**.

Where do I find it? Open the Parameter window › Stitch length › Repetition

Which stitch length do I use when?

Small details, tight curves	**1.5 to 2.0 mm**
Outlines, normal lines	**2.5 to 3.0 mm**
Straight runs, basting lines	**3.0 to 4.0 mm**
Placement line for applique	**3.0 mm**

RULE OF THUMB

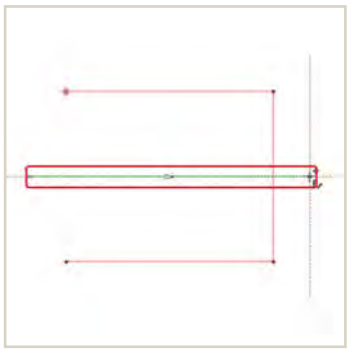
Tight curves need short stitches, **straight runs** can take long ones. For a bolder line use a bean stitch, not a thicker thread.

In detail with exercise and checklist: Parameter Sheet 06 at campus.zsk.de

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PART 2 · CHAPTER 3 · BASICS

Stitch direction



Stitch direction defines **at which angle the stitches lie in an area**. It decides how the thread reflects the light, in which direction the fabric pulls in and how three-dimensional an area looks. Two areas in the same colour look like two shades when their stitch directions differ.

Where do I find it? Enter the contour › Press W, set two points › Enter

Which stitch direction do I use when?

Satin columns, letter strokes	**across the column**
Large fill areas	**45°**
Two areas side by side	**offset by 45° to 90°**
Stretch fabrics (piqué, knits)	**not in the stretch direction**

RULE OF THUMB

The stitches lie **across the narrow side** of the shape. Neighbouring areas get **different** directions so that they stand out from each other.

In detail with exercise and checklist: Parameter Sheet 10 at campus.zsk.de

PART 2 · CHAPTER 4 · BASICS

Density (Distance)



Density defines **how far apart two neighbouring threads lie**. It decides whether an area covers the fabric cleanly, how many stitches your design has and how soft or stiff the embroidery feels. In BasePac the field is called **Distance**.

Where do I find it? In lettering › When digitizing › Change it later

Which value do I use when?

Thread No. 40 (standard) on firm fabric	**4.00**
Fine thread No. 60, small lettering	**3.00 – 3.50**
Strong thread No. 30	**5.00 – 5.50**
Very thick thread No. 12 (decorative)	**7.00 – 8.00**

RULE OF THUMB

The ideal distance is **about twice the thickness of the thread**. A standard No. 40 thread is roughly 0.2 mm thick. That is why the default value is **4.00**.

In detail with exercise and checklist: Parameter Sheet 01 at campus.zsk.de

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PART 2 · CHAPTER 5 · QUALITY

Underlay



Underlay means stitches that are sewn **first and underneath** the visible cover stitches. It ties fabric and backing together, keeps the fabric calm and lifts the cover stitches so that they do not sink into the material. BasePac offers two kinds: the **Running underlay** and the **Fill underlayer**.

Where do I find it? Open the Parameter window › Tab Running underlay › Tab Fill underlayer

Which underlay do I use when?

Small lettering, narrow satin under 2 mm	**Running: on center line**
Satin 2 to 5 mm	**Running: at contour**
Wide satin over 5 mm	**at contour + Fill single**
Fill areas, large logos	**at contour + Fill double**

RULE OF THUMB

The **wider** the shape and the **softer** the fabric, the more underlay. Underlay gives coverage. Higher density does not.

In detail with exercise and checklist: Parameter Sheet 02 at campus.zsk.de

PART 2 · CHAPTER 6 · QUALITY

Pull compensation



Every stitch pulls the fabric together a little. A satin column therefore **stitches narrower than it looks on screen**: letters appear thin, gaps open between two areas. Pull compensation makes the stitches slightly longer at both ends and balances this out.

Where do I find it? Open the Parameter window › Tab Covering stitches › Enter the values

Which values do I use when?

Firm woven fabric (twill, canvas)	**10 % / 0.2 mm**
Piqué, polo shirts	**15 % / 0.3 mm**
Knits, jersey, sweat	**15 to 20 % / 0.4 mm**
Fleece, terry	**20 % / 0.4 to 0.5 mm**

RULE OF THUMB

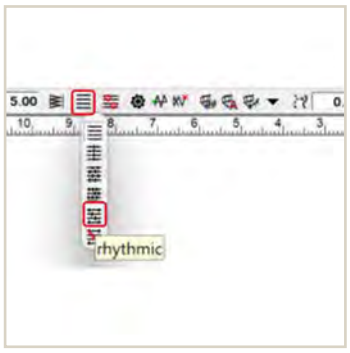
The **stretchier** the fabric and the **longer** the stitch, the more the shape pulls in, and the more pull compensation you need.

In detail with exercise and checklist: Parameter Sheet 03 at campus.zsk.de

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PART 2 · CHAPTER 7 · QUALITY

Stitch division and rhythm



A satin stitch runs from edge to edge. When the shape gets wide, the stitch becomes **too long**: it lies loose, snags, and the machine can no longer sew it as a normal stitch. Stitch division places **needle penetrations inside the area** and splits the long stitch into several short ones. The **rhythm** defines how these penetrations are offset from row to row.

Where do I find it? Open the object › Click the division icon › Choose a type, Enter

Which division do I use when?

Satin up to about 7 mm wide	**no division**
Satin 7 to 10 mm	**once**
Wide areas, calm look	**regular / rhythmic, 4.0 mm**
Area should look lively	**irregular**

RULE OF THUMB

Divide from about **7 mm stitch length**. Short partial stitches make the area flat and durable, long stitches shine more.

In detail with exercise and checklist: Parameter Sheet 04 at campus.zsk.de

PART 2 · CHAPTER 8 · QUALITY

Shortened stitches



In a curve the outer edge of a satin column is longer than the inner edge. On the outside the stitch spacing is right. On the inside **the penetrations crowd together**, thread builds up and the needle keeps hitting the same spot. Shortened stitches solve this: individual stitches end before they reach the inner edge.

Where do I find it? Open the Parameter window › Tab Covering stitches › Enter the values

Which setting do I use when?

Straight columns, wide arcs	**100 % (default)**
Tight curves, letters such as S, C, O	**100 to 150 %**
Very wide satin in a curve	**150 to 200 %**
Thin thread (weight 60)	**80 to 100 %**

RULE OF THUMB

The **tighter the curve** and the **wider the satin**, the more shortened stitches matter. In straight columns they do not intervene.

In detail with exercise and checklist: Parameter Sheet 11 at campus.zsk.de

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PART 2 · CHAPTER 9 · WORKFLOW

Stitch sequence



The machine stitches a design **exactly in the order in which it was punched**: object by object, stitch by stitch. This order decides how often the thread is trimmed, how often the needle changes and whether the fabric distorts. A good sequence saves machine time and gives a cleaner result.

Where do I find it? Press Ctrl + Y › Play and pause › from here

How do I plan the order?

Areas and outlines	**area first, then outline**
Background and foreground	**back first, then front**
Several colours	**group the same colours**
Large designs	**from the centre outwards**

RULE OF THUMB

From back to front, from inside to outside, colour by colour. What lies underneath is stitched first. Outlines and lettering come last.

In detail with exercise and checklist: Parameter Sheet 12 at campus.zsk.de

PART 2 · CHAPTER 10 · WORKFLOW

Needle and colour change



A multi-needle machine has a separate needle for every colour. The design therefore does not store a colour but a **needle number**. When the design changes from needle 1 to needle 4, the machine trims the thread, moves the head to the new needle and continues. Which thread colour sits on which needle is defined at the machine.

Where do I find it? Set the first stitch of the new object › Click the needle icon › Click the needle once

How do I handle colours?

Logo with 2 to 3 colours	**one needle per colour**
Same colour in several places	**group them**
Light and dark overlap	**light first, then dark**
Customer logo with fixed colours	**note the needle assignment**

RULE OF THUMB

As few needle changes as possible. Every change means tie off, trim and start again. That costs time on every piece.

In detail with exercise and checklist: Parameter Sheet 13 at campus.zsk.de

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PART 2 · CHAPTER 11 · WORKFLOW

Tie-off, trim and stop



An embroidery design does not consist of stitches alone. In between there are **commands for the machine**. **Tie-in and tie-off stitches** secure the thread at the start and end of an object. **Trimming** cuts the thread before a jump. A **stop** halts the machine, for example to place fabric for an applique.

Where do I find it? Tie-in and tie-off › Trim and stop › Automatic in lettering

Which command do I set when?

Start of an object after a trim	**tie-in stitches**
End of an object before a trim	**tie-off stitches**
Jump to the next object over 5 mm	**Trim (T)**
Jump under 2 to 3 mm	**no trim**

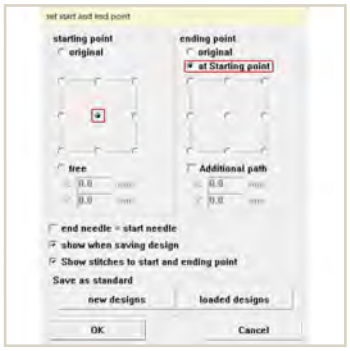
RULE OF THUMB

Tie off before every trim. If the thread jumps further than about 5 mm, trim it. Shorter paths are better connected with a running stitch.

In detail with exercise and checklist: Parameter Sheet 08 at campus.zsk.de

PART 2 · CHAPTER 12 · WORKFLOW

Start and end point



The **starting point** is where the needle stands when the machine begins. The **ending point** is where it stops after the last stitch. Both belong to the design and are exported with it. With the start in the **centre**, the design can be positioned in the hoop simply and always the same way.

Where do I find it? Export the design › Choose the starting point › Choose the ending point

Start and end point by job

Logos on chest, back, cap	**Start centre, end at Starting point**
Runs with many identical pieces	**End at Starting point**
Lettering that should sit flush left	**Start centre left**
Design along an edge or seam	**Start at the matching edge**

RULE OF THUMB

Start in the centre, end at the start. The position is right on every piece, and the machine is ready for the next one at once.

In detail with exercise and checklist: Parameter Sheet 09 at campus.zsk.de

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PART 2 · CHAPTER 13 · LETTERING

Letter height and small lettering



An embroidery thread has a fixed thickness. When lettering gets smaller, the strokes of the letters get narrower, until the **satin is only as wide as the thread itself**. Then the openings in a, e and o close up, and connecting threads stand out more than the letters. Letter height is therefore the first decision for every piece of lettering.

Where do I find it? Open text mode › Choose the font › Enter the height

Which height with which thread?

Under 4 mm	**avoid**
4 to 5 mm	**Thread 60, needle 65**
5 to 6 mm	**Thread 40 possible, 60 better**
6 to 10 mm	**Thread 40, needle 75**

RULE OF THUMB

Below 5 mm it gets critical. Small lettering needs a simple sans-serif font, thinner thread and more space between the letters.

In detail with exercise and checklist: Parameter Sheet 14 at campus.zsk.de

PART 2 · CHAPTER 14 · LETTERING

Character space and connection



In lettering two settings decide the result. **Character space** defines how much air remains between the letters. **Connection** defines where the thread travels from one letter to the next, and therefore whether you can see that thread later.

Where do I find it? Text mode, gear icon › Character space › Connection

Which setting do I use when?

Lettering 4 to 6 mm high	**Character space 6 to 10 %**
Lettering 8 to 15 mm high	**Character space 0 to 5 %**
Large lettering over 20 mm	**0 % or slightly negative**
Letter pairs such as "Ta" or "AV"	**Reduce the space**

RULE OF THUMB

The smaller the lettering, the more air between the letters. Connections belong on the baseline, where they are least noticeable.

In detail with exercise and checklist: Parameter Sheet 07 at campus.zsk.de

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PART 2 · CHAPTER 15 · MATERIALS

Fabrics and backing



Thousands of stitches pull and push the fabric. Without support it distorts, the embroidery puckers and outlines no longer line up. The **backing** lies under the fabric, absorbs these forces and keeps the embroidery in shape. Which backing fits depends on the fabric: the stretchier the fabric, the more permanent the support must be. At ZSK the backing is called **Würker**.

How to choose the backing Identify the fabric › Choose the type › Choose weight and colour

Which backing for which fabric?

T-shirt, polo, baby wear	**Cut-away 65 g**
Sweat, hoodie, knitwear	**Cut-away 80 g**
Workwear, jacket	**Tear-away Soft 80 g**
Bag, backpack, patch	**Tear-away Hard 80 g**

RULE OF THUMB

Stretchy fabric: cut-away. Stable fabric: tear-away. Cap: cap backing. High pile also gets a water-soluble topping on top.

In detail with exercise and checklist: Parameter Sheet 15 at campus.zsk.de

PART 2 · CHAPTER 16 · MATERIALS

3D embroidery with puffy foam



Puffy is an **embroidery foam** that is placed on the fabric and stitched over with dense satin. The needle perforates the foam at the edge, the rest can be pulled away, and a raised, three-dimensional design remains. Puffy is most often stitched on caps. **Würker 3D Puffy** is a closed-cell foam: lightweight, firm and clean to perforate.

How to work with puffy foam Choose foam in the thread colour › Place and stitch over › Remove the foam

How do I digitize for puffy foam?

Stitch type	**Satin**
Column width	**3 to 10 mm**
Density (Distance)	**2.00 to 2.50**
Underlay	**none under the foam**

RULE OF THUMB

Flat first, puffy last. Stitch all flat parts first, then a stop, place the foam and stitch the 3D parts.

In detail with exercise and checklist: Parameter Sheet 16 at campus.zsk.de

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PART 2 · CHAPTER 17 · MATERIALS

Thread weights and needles



The thread must run freely through the eye of the needle, and the needle must make a hole that suits the thread. If the needle is too thin, the thread breaks. If it is too thick, visible holes remain. The **thread weight** therefore decides the **needle size**, and the **fabric** decides the **point**. For thread weight numbers: the higher the number, the finer the thread.

How to choose the needle Read the thread weight › Identify the fabric › Check special cases

Which needle for which thread?

60 (fine)	**65/9 to 70/10**
40 (standard)	**75/11**
30 (thick)	**80/12 to 90/14**
Metallic	**80/12 to 90/14**

RULE OF THUMB

The thread decides the size, the fabric decides the point. The number 75/11 means 0.75 mm diameter. The thicker thread and fabric, the larger the number.

In detail with exercise and checklist: Parameter Sheet 17 at campus.zsk.de

PART 2 · CHAPTER 18 · TOOLS

The Parameter window



Almost every quality setting of a punched object lives in a single window: **Parameter**. It has six tabs in two rows. Once you know what is behind each tab, you find any setting in seconds. This sheet is the map.

Where do I find it? Enter the object › Click the gear icon › Choose a tab

Which tab for which job?

Covering stitches	**Shortened stitches, pull compensation, tie-off**
Stitch type	**Density, stitch division, repetition**
Center line	**Satin width, stitch direction**
Special corner	**Mitred corners**

RULE OF THUMB

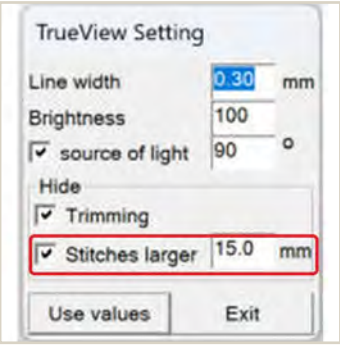
Covering stitches for the cover stitches, **Stitch type** for density and division, **Center line** for the width, the two **underlay** tabs for the foundation.

In detail with exercise and checklist: Parameter Sheet 18 at campus.zsk.de

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PART 2 · CHAPTER 19 · TOOLS

TrueView



In the normal view you see thin lines from penetration to penetration. **TrueView** shows the same stitches as **thread with real thickness**, with light and shadow. You can tell on screen whether an area covers, whether small lettering closes up and where connecting threads disturb. TrueView is the fastest quality check before the test stitch-out.

Where do I find it? Press Ctrl + T › Set the values › Hide

What do I set in TrueView?

Line width	**0.30 mm**
Brightness	**100**
source of light	**90°**
Hide: Trimming	**ticked**

RULE OF THUMB

TrueView first, then the machine. What closes up or shows gaps on screen will not get better on fabric.

In detail with exercise and checklist: Parameter Sheet 19 at campus.zsk.de

PART 2 · CHAPTER 20 · TOOLS

Resize and rotate



An embroidery design is not a picture. If it is simply enlarged, the stitches move apart and the area no longer covers. If it is reduced, they move together and the design turns hard. In the window **Stretch and Rotate** you change size, rotation and position, and with **automatic density adjustment** BasePac adapts the density as you do.

Where do I find it? Select the design › Open Stretch and Rotate › Enter the values

How do I proceed?

Logo slightly larger or smaller	**Width in %, lock closed**
Exact target size, e.g. 90 mm wide	**Enter Width in mm**
Size changes	**tick automatic density adjustment**
Design slanted or rotated	**Rot. angle**

RULE OF THUMB

Always take the density with you when scaling. If the size changes by more than about 10 to 20 %, also check underlay, stitch type and small lettering.

In detail with exercise and checklist: Parameter Sheet 20 at campus.zsk.de

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