

Chapter 390

THE HOLLYKNITS KNITTING FONT

My First Steps in Charting

When I first started making charts to knit from, I used a drawing program to make little pictures for knit, purl, yarnover, decreases, cables, and whatever other stitches a particular project required.

To create the project chart, I had to copy each little picture multiple times, put them all on a page, and spend a lot of timing lining them up horizontally and vertically.

I began to think that knitting-book publishers could not possibly spend so much time to make charts, if they bothered to provide charts at all.

Then I found a book whose publisher offered a font that knitters could download to make their own charts. I found other knitting fonts elsewhere on the Internet.

But...



Problems with Available Knitting Fonts

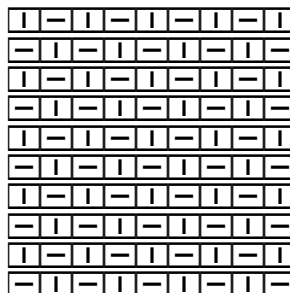
The fonts I downloaded from the Internet (as well as the symbols used in charts in many knitting books) all seemed to be deficient in at least one way.

Some Symbols Were Missing

Some downloadable fonts do not have “all” the necessary symbols. For example, the font might have a symbol for a six-stitch cable crossing three over three to the left, but it doesn’t have the matching symbol for crossing three over three to the right.

The Symbols Made the Charts Busy

Some fonts use a rectangle with a vertical line  for the knit stitch and a rectangle with a horizontal line  for the purl stitch. If the chart is all knit and purl stitches, it’s hard to tell the difference between the sides of the rectangles and the lines inside them. For example, this chart for a common knitted fabric requires a lot of concentration to determine the pattern:



The Symbols Relied on Color

Some fonts rely on symbols with colored backgrounds because the symbols are hard to distinguish from one another. If there are many of these colored symbols in a particular chart, they emphasize those parts of the pattern unnecessarily.

And if you want to make a chart for a multi-color project, the already-colored symbols are going to be confusing.

The Symbols Didn't Always Look Like the Work

Some fonts' symbols contain vertical lines even for symbols that pull stitches sideways.

For example, in a three-over-three cable, the symbol will have five vertical lines to indicate the six stitches involved in the cable, which is technically accurate but gives a misleading appearance, since the three front stitches will actually be slanted, not vertical, and the back stitches are essentially invisible when the cable has been worked.

The Symbols Had Very Thin Lines

Some fonts have lines so fine that it is very difficult to read charts made with them. If we need to fit a big chart on an 8.5x11 piece of paper, we will have to make the font size quite small.

The smaller the font size goes, the harder it is to see those fine lines.

The Keys the Symbols Were Assigned to Didn't Always Make Sense

With twenty-six lowercase letters, twenty-six uppercase letters, and lots of punctuation marks, why not put the most commonly used symbols on the keys that are the easiest to type?

The most common symbols of all, for knit, purl, yarnover, slip, K2tog, and SSK ought to be on the k, p, y, s, /, and \ keys.



Of course, not all symbols can be put on the keys of their starting letters. But the main ones can be.

So I Made My Own Knitting Font

To overcome these difficulties, I decided to make my own knitting font, which is what is used throughout this book.¹ This font tries very hard to eliminate the problems listed above.



¹ I used the wonderful program FontFonge available at www.sourceforge.net/fontforge to create the symbols. The knitting symbols used in this book are available as a font you can download from HollyBriscoe.com.

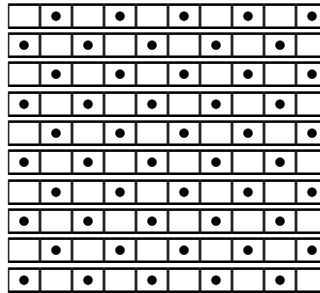
Paired Symbols Are Both There

There are matching left and right cable symbols. So three-over-three cables that slant left and right look like  and .

²

The Symbols Are as Simple as Possible

The most common symbols, those for knit and purl, are as simple as can be. The knit stitch is just an empty rectangle , and the purl stitch is the same rectangle with a dot . Compare the chart above with this one, which is made with the simpler versions of knit and purl:



The checkerboard pattern of seed stitch is much clearer here, discernible with just a glance.

The Symbols Do Not Rely on Color

This paragraph is white text on a black background. The symbols, the letters themselves, are white. The background is black.

The knitting font's symbols are simply shapes, just like characters in a regular font. Since they are "letters," we can change both their own color and the color of the background behind them. Since the symbols are mainly blank space, the background color will show through, just like it does inside the shapes of the letters in the previous paragraph.

If we need to, we can use these same techniques with the knitting symbols, to highlight anything tricky, or even to show different yarn colors that might be used for color work.

The Symbols Try to Show What the Actual Knitting Looks Like

In symbols that span more than one stitch, there are no vertical lines whose only purpose is to show how many stitches the symbol represents.

For example, symbols for cables have only two slanted lines, since the slant is what we

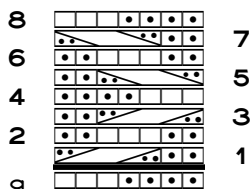
² They probably look tilted, but that's just an optical illusion.

see after we work the cable. For the most part, we can't even see the stitches that wind up at the back of the cable. So there is no reason to put in lines for those back, mostly unseen stitches.

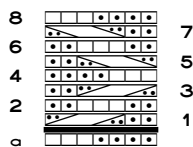
In multi-stitch symbols like those for the cables, it may not be obvious *from the symbols themselves* how many stitches a symbol encompasses, but in the rows below and above them, there will almost always be symbols for the individual stitches that go into and come out of the multi-stitch symbols. The surrounding rows therefore show us how many stitches a particular symbol represents.

Lines Are Wide for Visibility at Small Font Sizes

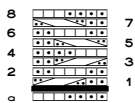
If we have to make a big chart, we're probably going to have to use a pretty small font size so that the printed chart will fit on a single piece of paper. That means the lines have to be fairly thick so that they are still clear at eight,



six,



or even four points.



If We Can Read One Chart, We Can Probably Read Them All


Once we've figured out how to read, work from, and create knitting charts, we usually have no trouble adjusting to a different symbol set in another book.

Worst case, if we find a pattern's symbols too confusing, we can re-chart with the symbols we prefer.

If you don't like the font used in this book, then by all means, find one you do like and use it.

And if you're really crazy, you can make your own knitting font!³

The Font Symbols








The symbol definitions given here are completely arbitrary, though many of them do use mnemonics. If you prefer a rectangle with a vertical line (, under the comma) instead of an empty rectangle to represent a knit stitch, that's absolutely fine. Use the symbols any way you want, since your chart should be a help, not a hindrance.






Remember that charts show what the stitches look like from the *public* side of the work.

Direct-Entry Symbols

All the symbols in this section are entered by typing the standard letters, digits, and most punctuation marks, either by pressing a key alone or by pressing Shift while pressing a key.⁴









Basic Stitches

k		Knit ( on comma)
p		Purl ( on period)
y		Yarnover
s		Slip knitwise with yarn to private side
z		Slip knitwise with yarn to public side

K		Knit thru the back loop
P		Purl thru the back loop
Y		Double yarnover
S		Slip purlwise with yarn to private side
Z		Slip purlwise with yarn to public side


Decreases and Increases





If you need a decrease or increase that isn't shown here, use one of the symbols in the Additional Symbols section. Or, simply redefine any of the symbols below to mean a particular technique in a particular chart.



/		K2tog	\		SSK	`		P2tog	~		SSP
-		K3tog	_		SSSK	w		P3tog	W		SSSP

³ Be warned, though, that creating fonts is fun and highly addictive!

⁴ The single and double quote marks are not assigned knitting symbols because many people set their word processors to change them to curly (or "smart") quote marks, which would wreak havoc while typing charts.



=		S2KP: Slip 2 tog knitwise, K1, pass 2 slipped sts over ⁵
---	-----------------------------------------------------------------------------------	---------------------------------------------------------------------

+		Make 1 (any method)
?		Knit in front and back
x		Cat Bordhi's LLinc
X		Cat Bordhi's LRinc

;		Increase in running thread from back
:		Increase in running thread from front

Row Numbering

In addition to numbering each row on the chart, these numbers can also be used to help make large charts. You might also use them to record in the chart the number of stitches in extended sequences of identical stitches.

Suppose you need a chart 150 stitches wide. Instead of starting with 150 knit symbols (either  or ) , first type 0987654321. Copy the group, and paste it fourteen times. Then start your chart above the row of numbers. (You type them as 0987654321 instead of 1234567890 so that in the chart, the 0 appears every tenth stitch from the right, in the same direction you would be counting while working public-side rows.) There are also boxed numbers one through one hundred that are all one stitch wide that could be use as stitch counters; see the Additional Symbols section.

If you have an extended group of the same stitch on a particular row, you could substitute a 0 every tenth stitch to help you keep count as you work from the chart. Or if you have a run of seven knit stitches, substitute the number 7 for the first knit stitch, so that you don't have to count the symbols on the chart before you start working them.


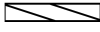
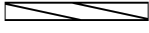



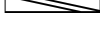
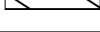

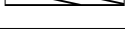
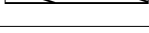


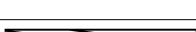
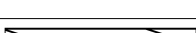
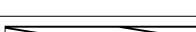


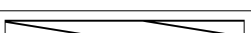
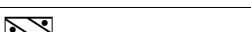


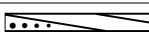




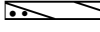

1	1	3	3	5	5	7	7	9	9
2	2	4	4	6	6	8	8	0	0


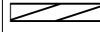





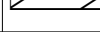
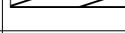
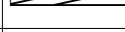
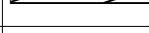


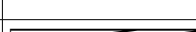
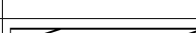



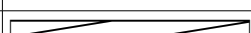
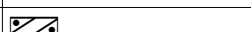


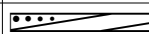




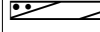

[a	Foundation row a	{	c	Foundation row c
]	b	Foundation row b	}	d	Foundation row d



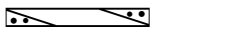
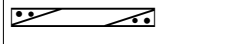
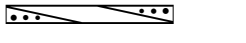
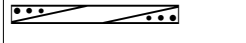
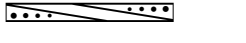
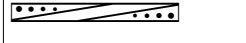
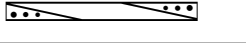
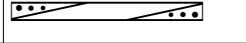
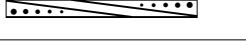

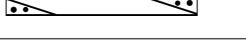
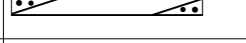
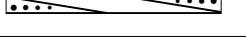
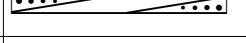
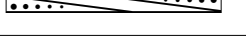
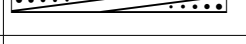
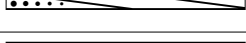
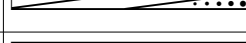
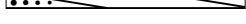
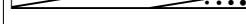
Cables and Twists

The commonest cables are directly available on letters not already in use, with lowercase giving left-slanting cables and uppercase giving right-slanting.

⁵ If you need an S2KP as the first symbol in a table cell, you may have trouble typing it because your word processor may go into "formula mode." If this happens, type any other symbol before the equal sign, type the equal sign and other stitch symbols, then delete the first symbol.

a		Cable 1/1 Left
b		Cable 2/2 Left
c		Cable 3/3 Left
d		Cable 4/4 Left
e		Cable 1/2 Left
f		Cable 2/1 Left
g		Cable 1/3 Left
h		Cable 3/1 Left
i		Cable 3/2 Left
		Cable 2/3 Left
j		Cable 4/2 Left
l		Cable 4/3 Left
		Cable 3/4 Left
		Cable 5/3 Left
		Cable 3/5 Left
		Cable 6/2 Left
		Cable 5/4 Left
		Cable 4/5 Left
		Cable 5/5 Left
		Cable 6/4 Left
m		Twist 1/1 Left
n		Twist 2/2 Left
o		Twist 3/3 Left
q		Twist 4/4 Left
r		Twist 2/1 Left
		Twist 1/2 Left
t		Twist 3/1 Left
		Twist 1/3 Left
u		Twist 3/2 Left


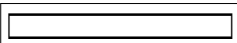

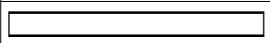
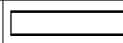
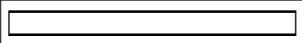
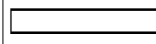
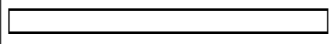
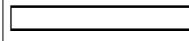
A		Cable 1/1 Right
B		Cable 2/2 Right
C		Cable 3/3 Right
D		Cable 4/4 Right
E		Cable 1/2 Right
F		Cable 2/1 Right
G		Cable 1/3 Right
H		Cable 3/1 Right
I		Cable 3/2 Right
		Cable 2/3 Right
J		Cable 4/2 Right
L		Cable 4/3 Right
		Cable 3/4 Right
		Cable 5/3 Right
		Cable 3/5 Right
		Cable 6/2 Right
		Cable 5/4 Right
		Cable 4/5 Right
		Cable 5/5 Right
		Cable 6/4 Right
M		Twist 1/1 Right
N		Twist 2/2 Right
O		Twist 3/3 Right
Q		Twist 4/4 Right
R		Twist 2/1 Right
		Twist 1/2 Right
T		Twist 3/1 Right
		Twist 1/3 Right
U		Twist 3/2 Right

		Twist 2/3 Left			Twist 2/3 Right
		Twist 4/2 Left			Twist 4/2 Right
v		Twist 4/3 Left	V		Twist 4/3 Right
		Twist 3/4 Left			Twist 3/4 Right
		Twist 5/3 Left			Twist 5/3 Right
		Twist 3/5 Left			Twist 3/5 Right
		Twist 6/2 Left			Twist 6/2 Right
		Twist 5/4 Left			Twist 5/4 Right
		Twist 4/5 Left			Twist 4/5 Right
		Twist 5/5 Left			Twist 5/5 Right
		Twist 6/4 Left			Twist 6/4 Right

If you are working a project with twisted-knit-stitch cables and twists, usually referred to as *Bavarian knitting*, the entire set of symbols shown above has twisted-knit counterparts at the end of the chapter.

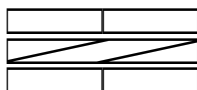
Multiple-Stitch Blocks

Empty blocks can decrease clutter in areas of plain knitting.

@		2-Stitch Group	&		7-Stitch Group
#		3-Stitch Group	*		8-Stitch Group
\$		4-Stitch Group	(	9-Stitch Group
%		5-Stitch Group)		10-Stitch Group
^		6-Stitch Group			

In a Cable 3/3 Right, for example, you may find it easier on the non-cabling rows to see the six knit stitches as

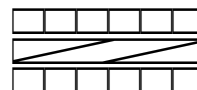
two groups of three



or a complete set of six



rather than charting them individually







Miscellaneous Symbols

The No Stitch symbol keeps all the other stitches aligned properly in rows below an increase, since there won't be a stitch in that location for several rows to come. It can also be used above stitches that have been decreased, to keep the stitches that remain in their proper locations relative to one another.

The Repeat Marker separates stitches in the stitch repeat from any plus stitches that come before and/or after the repeat. If you're making your chart in a multi-column table, you can change the width and/or color of the proper cell border, or you can use an empty column to show the ends of the stitch repeat.

Pressing the space bar makes a space the same width as the knit stitch but without any outline. A simple blank space may be preferred to indicate areas where stitches don't exist, either below an increase or above a decrease, because the darkness of an extended group of no-stitch symbols can overwhelm the adjacent parts of the chart.

!		No Stitch	<		Wrap stitch and turn (for short rows)
		Repeat Marker	>		Unfilled No Stitch

Deleting the Repeat Marker

Note that the repeat marker has no width, which allows it to float above the symbols on either side of it.⁶ Since it takes up no width in the chart, deleting it can be tricky.



To delete a repeat marker, do one of two things:

1. Click to the **right** of the symbol to the **right** of the repeat marker (between the two knit stitches in the example above), press the **Left** Arrow key, then press **Backspace**.
2. Click to the **left** of the symbol to the **left** of the repeat marker (between the two purl stitches in the example above), press the **Right** Arrow key, then press **Delete**.

Please do note that the key you use to remove the repeat marker depends on which side you do the removal from. Pressing Delete removes the character to the **right** of the cursor, but pressing Backspace removes the character to the **left** of the cursor.⁷

⁶ If it didn't, then the stitches on either side of it would be pushed slightly out of position compared to any rows that didn't contain a repeat marker.


⁷ This directionality of deleting applies for all programs and all fonts, in case you've gotten unexpected results at other times.

Additional Symbols

For the symbols that are one stitch wide, you can simply use something like Insert | Symbol or Insert | Special Character to open a dialog box showing all the characters in the font. You may need to select “Boldest” in the font pulldown, because the dialog box may default to some other font.

For symbols more than one stitch wide, using the Insert | Symbol dialog box can become a little unwieldy, because in normal alphabetic fonts, the symbols don’t have such wildly varying widths. For those symbols, it’s probably easiest to simply copy and paste the symbols from an online version of the font at HollyBriscoe.com.

Letters, Selected Punctuation, and Numbers

 might represent the location of a bobble, for instance.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
a	b	c	d	e	f	g	h	i	j	k	l	m
n	o	p	q	r	s	t	u	v	w	x	y	z
?	!											

A portion of the following rows would be useful as stitch labels at the top or bottom of a chart.

Z	Y	X	W	V	U	T	S	R	Q	P	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
z	y	x	w	v	u	t	s	r	q	p	o	n	m	l	k	j	i	h	g	f	e	d	c	b	a

These digits are enclosed in boxes, while the row numbers are not.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

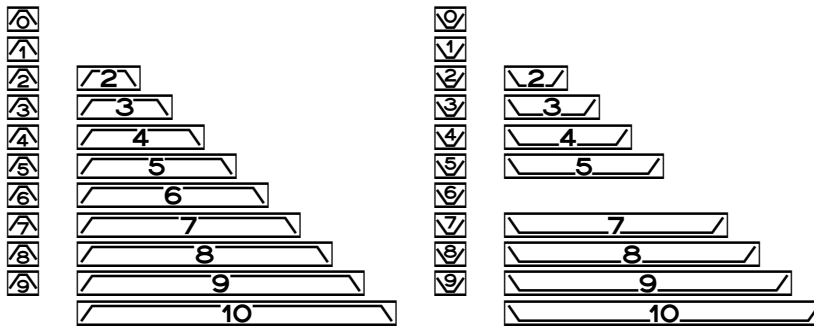
A portion of the following row would be useful as stitch counters at the top or bottom of a chart.



These digits are enclosed in shapes.

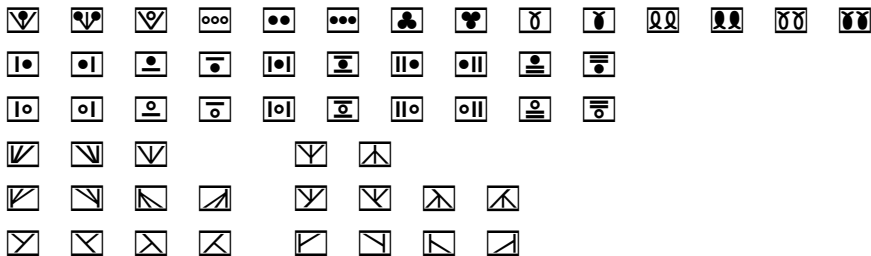


Digits with brackets would be useful to represent either multiple-stitch decreases (first two columns) or multiple-stitch increases (last two columns).



Variations of the Basic Stitch Symbols

You may prefer to use one of these symbols to represent a particular increase or decrease.



Multi-Stitch Symbols

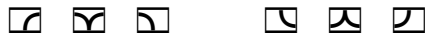
These stitches work on more than one stitch at a time, but they are not cables.

	In same three stitches, P3tog, K3tog, P3tog
	In same three stitches, K3tog, P3tog, K3tog
	In same three stitches, K3tog tbl, K3tog, K3tog tbl
	In same three stitches, K3tog, K3tog tbl, K3tog
	Sl 1, K2, pssso K2 (shows as three stitches started with)
	Sl 1, K1, yo, K1, pssso K1-yo-K1 (shows as three stitches that result)

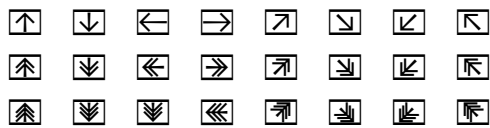


Top- and Bottom-Edge Symbols

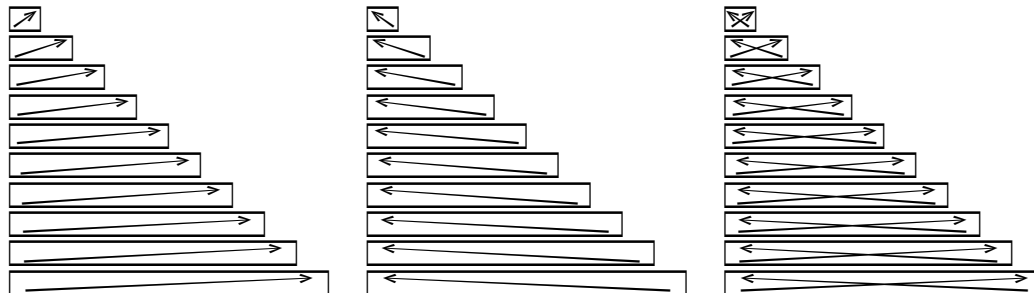
The first group might be used to show stitches cast off on part of a row to make, for example, a shaped edging. The second group would be used to show where stitches should be cast on.



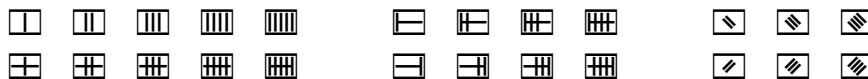
Arrows



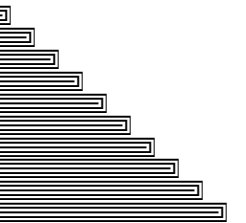
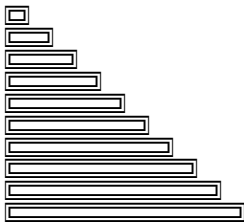
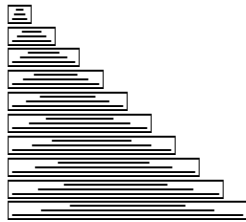
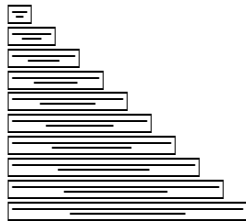
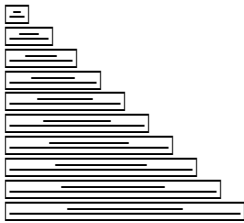
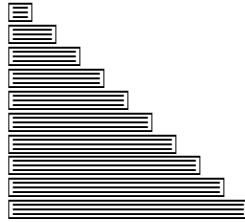
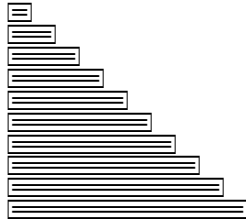
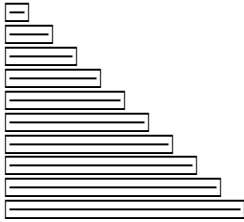
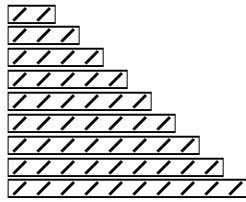
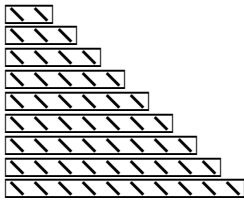
The third column below would be useful in charts where you cable opposite directions on either side of an item's center line. For example, suppose the back of a sweater is symmetrical about the center. If you do a Cable 3/3 Left on the wearer's left side, then instead of duplicating the whole chart just to show a mirror-image Cable 3/3 Right on the wearer's right side, you could just use the six-stitch-wide crossed-arrow symbol to represent both six-stitch cables in a chart that only shows half of the back (which means you should be able to use a bigger font size as well).

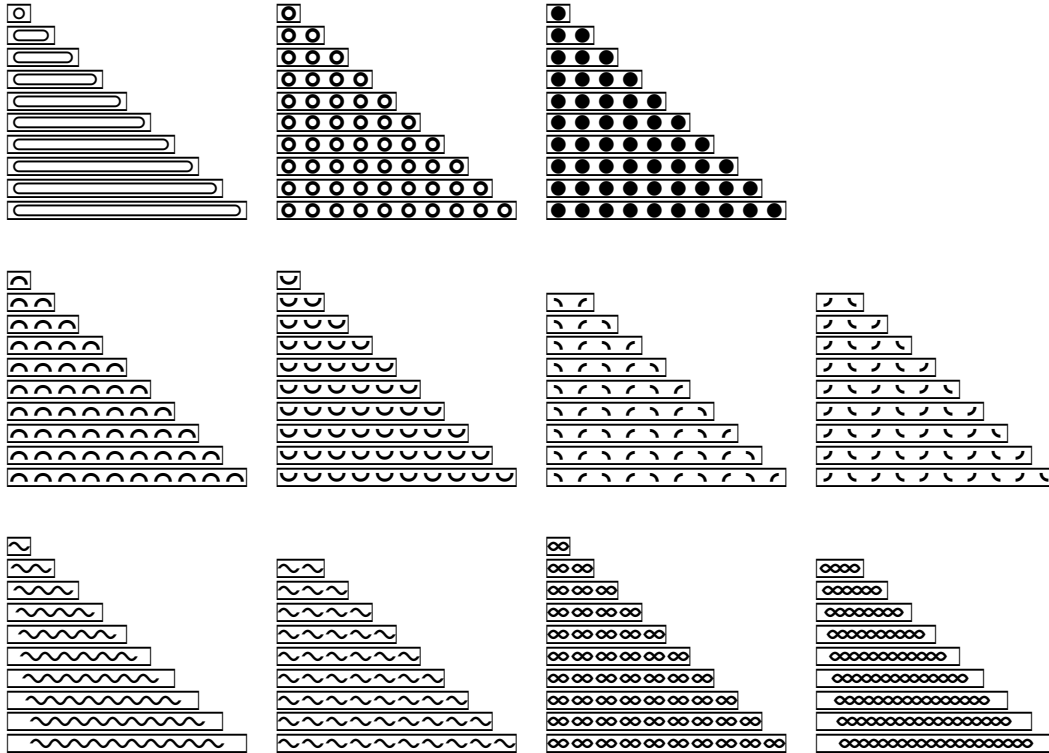


Lines



These multiple-stitch blocks are useful for any special patterns that involve up to ten stitches, like a cable or twist different from the ones already in the font.

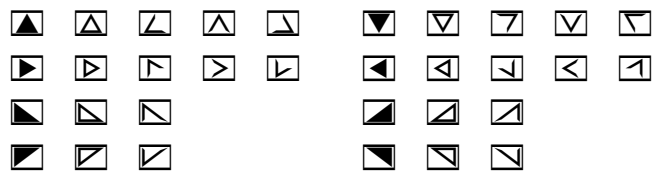




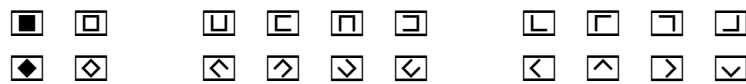
Geometric Shapes

These might be useful for representing colors or showing special stitches for a particular pattern.

Three-Sided Shapes



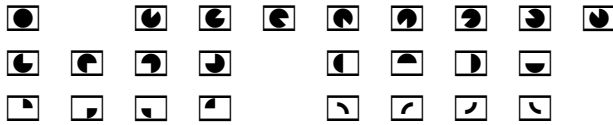
Four-Sided Shapes



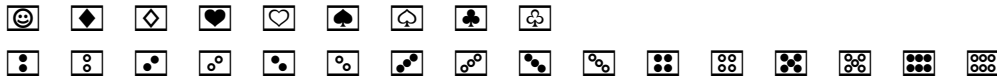
Five- and Six-Sided Shapes



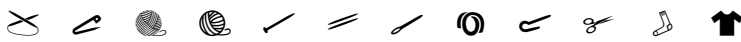
Circle-Based Shapes



Common Symbols



Knitting Dingbats



Stylized Stitches

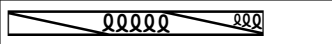
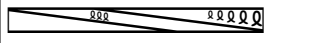
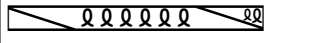
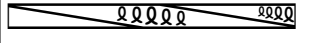
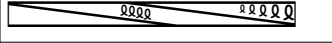
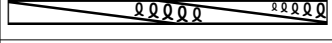
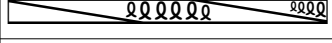

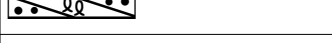
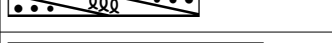
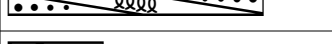
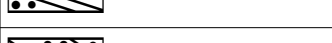
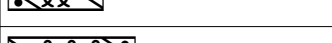

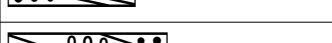

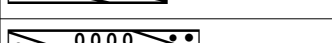
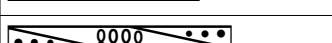

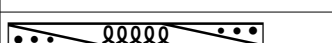
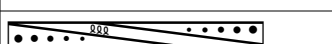
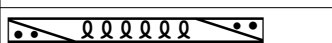
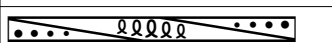
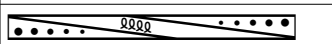
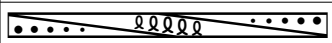
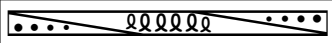



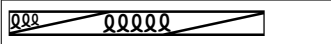
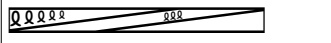
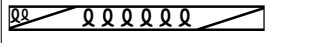
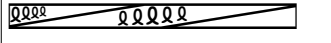
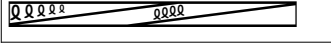
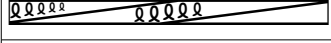
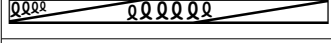

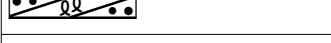
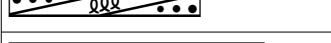
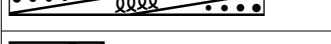
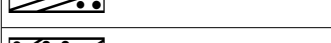
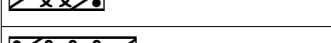


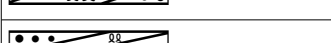
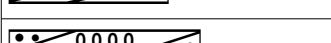
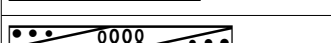
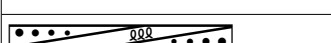
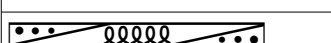
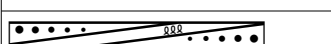
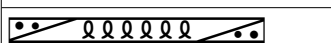
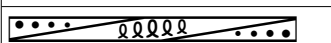
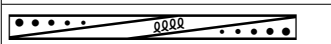
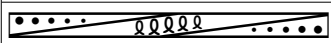
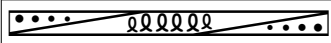

Twisted-Knit Cables and Twists

In Bavarian knitting, there are no regular knit stitches. All knit stitches are made through the back loop, resulting in twisted stitches. You could simply use the regular cable and twist symbols, but if you're afraid you'll forget to work each knit stitch through the back loop (I know I would!), then use these symbols.

	Cable 1/1 Left
	Cable 2/2 Left
	Cable 3/3 Left
	Cable 4/4 Left
	Cable 1/2 Left
	Cable 2/1 Left
	Cable 1/3 Left
	Cable 3/1 Left
	Cable 3/2 Left
	Cable 2/3 Left
	Cable 4/2 Left
	Cable 4/3 Left
	Cable 3/4 Left

	Cable 1/1 Right
	Cable 2/2 Right
	Cable 3/3 Right
	Cable 4/4 Right
	Cable 1/2 Right
	Cable 2/1 Right
	Cable 1/3 Right
	Cable 3/1 Right
	Cable 3/2 Right
	Cable 2/3 Right
	Cable 4/2 Right
	Cable 4/3 Right
	Cable 3/4 Right

	Cable 5/3 Left
	Cable 3/5 Left
	Cable 6/2 Left
	Cable 5/4 Left
	Cable 4/5 Left
	Cable 5/5 Left
	Cable 6/4 Left
	Twist 1/1 Left
	Twist 2/2 Left
	Twist 3/3 Left
	Twist 4/4 Left
	Twist 1/2 Left
	Twist 2/1 Left
	Twist 3/1 Left
	Twist 1/3 Left
	Twist 3/2 Left
	Twist 2/3 Left
	Twist 4/2 Left
	Twist 4/3 Left
	Twist 3/4 Left
	Twist 5/3 Left
	Twist 3/5 Left
	Twist 6/2 Left
	Twist 5/4 Left
	Twist 4/5 Left
	Twist 5/5 Left
	Twist 6/4 Left

	Cable 5/3 Right
	Cable 3/5 Right
	Cable 6/2 Right
	Cable 5/4 Right
	Cable 4/5 Right
	Cable 5/5 Right
	Cable 6/4 Right
	Twist 1/1 Right
	Twist 2/2 Right
	Twist 3/3 Right
	Twist 4/4 Right
	Twist 1/2 Right
	Twist 2/1 Right
	Twist 3/1 Right
	Twist 1/3 Right
	Twist 3/2 Right
	Twist 2/3 Right
	Twist 4/2 Right
	Twist 4/3 Right
	Twist 3/4 Right
	Twist 5/3 Right
	Twist 3/5 Right
	Twist 6/2 Right
	Twist 5/4 Right
	Twist 4/5 Right
	Twist 5/5 Right
	Twist 6/4 Right