

Chapter 140

CABLES AND TWISTS

Cables and twists work the stitches out of the order in which they sit on the left-hand needle. Doing so makes the stitches that wind up “in front” or “on top” lean or slant to either the left or the right, and the stitches that are at “the back” or “underneath” are mainly not visible.

Cables and twists can involve as few as two stitches. Two-stitch cables and twists are often referred to as *crossed stitches* or *traveling stitches*, and they can usually be made without using a cable needle.

For cables with three or more stitches, it may be easier to work them with a cable needle, putting the first group of stitches on a cable needle, holding the cable needle to either the front or the back of the work, working the second group of stitches from the left needle, then working the first group from the cable needle.¹ Many knitters drop *all* of the cable’s stitches off the left needle, then pick the stitches up in the order they should be worked, having moved one group to the front or back as required.

If some of the stitches in a cable are purled instead of knitted, the cable is often called a *twist*. Usually the front stitches are knitted, while the back stitches are purled. This mixture has the effect of making the knitted stitches even more prominent, as they seem to pop off the background of reverse stockinette. Even an ordinary cable often has at least one purl stitch on either side to emphasize it.

If we’re doing an Aran sweater with multiple cables that cross on different rows, a chart can really help us see and keep track of which stitches are crossed when.

Which Way Will They Slant?

Cables and twists cross, or slant, either to the left or to the right. If the first group of stitches is held toward the front of the work, the cable will slant to the left. If they’re held toward the back of the work, the cable slants to the right.

To help us remember which way cables and twists slant, we can remember

- ☉ that *left* and *front* both have the letter *f*
- ☉ that *right* and *rear* both start with the letter *r*
- ☉ the phrase *I’ll be right back* (so holding the cable needle to the *back* means the cable will slant to the *right*)

Worst case, if we can’t remember the things that help us remember (!), we can also do a quick look-see both ways after we put the first group of stitches on the cable needle. If we put the cable needle to the front or back, then pull it to the left, we’ll see which way the ca-

¹ And oh, who among us has never forgotten to work the stitches waiting patiently on the cable needle? Then when we come to the next cable or twist, our cable needle is still holding stitches we ought to have worked at the previous cable.

ble will slant. If it doesn't look right, we put the cable needle to the other side of the work and again pull it to the left. Which side of the work we need to put the cable needle to should then be obvious.

The cable and twist symbols show both how many total stitches are involved and which way the cable slants. Because of this, the lie from the introduction (“each symbol represents one stitch”) is now resolved.² Instead of each knitting symbol representing one stitch, *the cable symbols represent, and are the width of, the number of stitches involved.*

How Many Rows Between the Crossings?

The general rule is that the stitches are crossed once in the number of rows that the cable or twist is wide in stitches. So a two-stitch cable usually crosses every other row, a four-stitch cable crosses every fourth row, and a twelve-stitch cable crosses every twelfth row.

We get different effects by changing the distance between the crossings. If we cross sooner, the cable will be squat and the fabric tighter than normal. If we cross later, the cable will be longer and the fabric more relaxed.

Sample Cable Patterns

Cables can involve any number of stitches, and the two parts of the cable may or may not have the same number of stitches.

Cable 3/3 Right

This is a basic, ordinary cable. If we tell other knitters that our sweater has cables on it, this is the kind of cable most knitters will think of.

This cable happens to be six stitches wide with the same number of stitches at the front and the back, but you can pretty much make cables as wide as you want and with any number of stitches in the two parts.³

multiple of 6
 C6F: put 3 sts on cn and hold to front, K3, K3 from
 cn.
 Rows 1 and 5 (RS): K.
 Rows 2, 4, and 6 (WS): P.
 Row 3: C6F.
 Rpt rows 1–6.

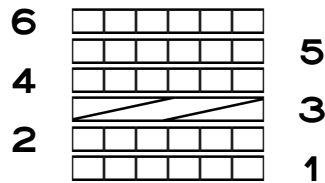


² OK, this is still only part of the truth. One more part of the lie will be resolved later.

³ But the more stitches involved, the thicker the fabric will be at the crossing. Garments with really wide cables may be unattractively lumpy.

Note that the pattern instructions don't tell us how many stitches to cast on. Instead, the first line says "multiple of 6." Since this is just a small pattern, not a full set of instructions like we had with the purl-diamond project, we would be expected to have lots of these cables across our project or to combine this pattern with others to make up a project. Since we know this pattern is six stitches wide, we would use that number, plus the number of stitches of any other patterns, to figure out how many stitches to cast on. If we wanted ten of these cables on our piece, then we would cast on six stitches for each of the ten cables, for a total of sixty stitches.

Just glancing over the instructions, the only "real" row is row three, where we actually do the cable. The other five rows, public side and private side, just form a column of knit stitches.



Notice that the cable symbol has only two lines in it, to show us which way the cable slants. If we see the cable symbol in isolation, like this



we may not be able to tell how many stitches wide it is, but as soon as we put a row of symbols above or below it, we can tell instantly that the cable is made on six stitches and that there are three stitches in each part of the cable.

This cable follows the convention of cabling only once in the same number of rows as it is wide in stitches.

Typing Up the Chart

The five rows of public-side, all-knit stitches are easy to enter: just type

kkkkkk

in five of the pattern's table cells. The cable itself, though it looks complicated as a symbol, is easy to type.

Since the most common cables are made on two, four, six, and eight stitches crossing half of those stitches over the other half to either the left or the right, their symbols are on the first four letters of the alphabet. The lowercase letters slant left, and the uppercase letters slant right.

a		Cable 1/1 Left	A		Cable 1/1 Right
b		Cable 2/2 Left	B		Cable 2/2 Right
c		Cable 3/3 Left	C		Cable 3/3 Right
d		Cable 4/4 Left	D		Cable 4/4 Right

So for this particular cable, the only thing we type in row three of the pattern chart is a capital

C

The Complete Chart

The entire chart is typed as

```

kkkkkk
kkkkkk
kkkkkk
C
kkkkkk
kkkkkk

```

It looks like the cabling row is too short, but the cable symbol is six stitches wide, so it's the same width as the rows before and after it.

Fishbone

This cable is used in Elizabeth Zimmermann's Aran sweater in her *Knitter's Almanac*.

multiple of 9

Cable 1/3 Right (CR): put 3 sts on cn and hold to back, K1, K3 from cn.

Cable 1/3 Left (CL): put 1 st on cn and hold to front, K3, K1 from cn.

Row 1 (RS): K.

Rows 2 and 4 (WS): P.

Row 3: CR, K1, CL.

Rpt rows 1–4.



Fishbone is actually easy, even though we cable twice on row three. The other rows, as with Cable 3/3 Right, just make a field of public-side knit stitches.

On row three, we cross one over three to the right.

**3**

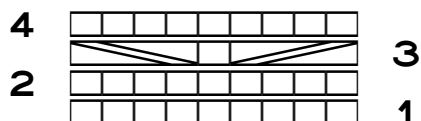
Then we knit the middle stitch of the nine

**3**

and finish with a cable that crosses one over three to the left.

**3**

So the complete Fishbone chart is



Typing Up the Chart, Option A

Three of these chart rows are just nine knit stitches, made by typing

kkkkkkkkk

The 1/3 cables are not very common, but they have been put in the knitting font on the letter G, primarily because Elizabeth Zimmermann's books are so popular. The capital G slants to the right, and the lowercase g slants to the left.

So to enter row three directly, we read row three in the written-out instructions from the end of the line to the beginning. Since the last group is the Cable 1/3 Left, we type

g

then we type

k

to add the next-to-last group, and the very first group of the line is the Cable 1/3 Right, which we enter as

G

So our complete row three, as typed, is

gkG

When we change that line to the knitting font, we get



Typing Up the Chart, Option B

If we want to read row three's instruction in the normal direction, we can do that as long as we move the cursor to the left of each group after we type it. So, since the instructions start with the Cable 1/3 Right, we first type

G

Then we have to move the cursor to the left of the G and add a lowercase

k

to get the plain knit stitch. We move the cursor to the left of the knit stitch, and since the final group on row three is for the Cable 1/3 Left, we type a lowercase

g

which gives us

gkG

the exact same result as option A gives.

The Complete Chart

The entire chart as typed is

```

kkkkkkkkk
gkG
kkkkkkkkk
kkkkkkkkk

```

The cabling row looks like it's short a few stitches, but both cables are four stitches wide. Adding those eight stitches to the single knit stitch on that row means the cabling row actually is nine stitches wide.

Note also that even though the cables cross one stitch over three, they still cross only once every four rows, which is the total number of stitches in the cables.

Braid

This cable looks exactly like its name. Like Fishbone, it does the same cable in opposite directions, but it does the cables on two different rows instead of on the same row.

multiple of 6

C4F: put 2 sts on cn and hold to front, K2, K2 from cn.

C4B: put 2 sts on cn and hold to back, K2, K2 from cn.

Foundation row (WS): P.

Row 1 (RS): C4B, K2.

Row 2 (WS): P.

Row 3: K2, C4F.

Row 4: P.

Rpt rows 1–4.



Right off the bat we have a new wrinkle, a *foundation row*, which requires a new charting rule:

Foundation rows are only worked once, at the very beginning of the piece.

There are four foundation-row markers in the knitting font.⁴

[a	Foundation row A]	b	Foundation row B
{	c	Foundation row C	}	d	Foundation row D

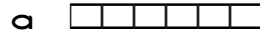
Notice the last line of the pattern instructions. We repeat only rows **one** through four, **not** the **foundation row** through row four. When there are foundation rows in a pattern's instructions, once you've worked them, however many there may be, then for the rest of the piece, you will not work the foundation rows again.

Generally, it looks better if we don't cable on the very first row after the cast-on. So having a foundation row (or several foundation rows) means there's some fabric between the cast-on and the first cable crossing.

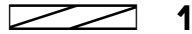
Braid's foundation row is six purl stitches on the private side. Since private-side rows

⁴ If you need more than four foundation row markers, you can repeat them, or you can select from the full set of boxed capital or lowercase letters elsewhere in the knitting font.

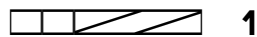
have their row numbers on the left, we'll put the foundation row A marker there, plus six knit stitches (because private-side purls are public-side knits).



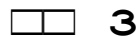
The public-side row one starts with a cable, a balanced or symmetric cable with four stitches, which slants to the right (remember, *right* and *rear* both start with the letter *r*).



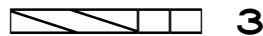
Two knits follow the cable.



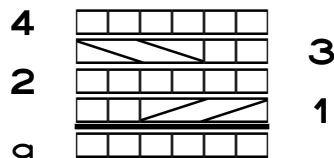
We'll skip row two, since we just purl back (which means the chart shows six knit stitches). Row three starts with two knits



and ends with the cable crossing in the opposite direction of the cable on row one.



Row four, like row two, is just purling back. So here are all four pattern rows put together with the foundation row.



A dark line separates the foundation row from pattern row one. That dark line helps us remember that after we work the foundation row, we will work only rows one through four for as long as we're knitting this pattern.

That is, the first time we work this pattern, we'll work rows

A-1-2-3-4

but from then on, the sequence of the rows we'll work will be

1-2-3-4-1-2-3-4-1-2-3-4-1-2-3-4-1-2-3-4-1-2-3-4...

Note that although we cable on every public-side row, we cable groups of four stitches only every four rows, according to the general rule of crossing cables.

Typing Up the Private-Side Rows

Three of the rows are composed of six public-side knit stitches, so we just type

kkkkkk

Typing Up the Cabling Rows, Option A

For the two rows with cables, we have plain 2/2 cables slanting left and right, which are typed with a lowercase b and an uppercase B, respectively.

So for row one, as we read the written-out instructions from right to left, we type

kk

for the last group on the line, then

B

for the first group, which makes the complete row as

kkB

For row three, as we read the written-out instructions from right to left, we type

b

for the left-leaning cable, then

kk

for the row's first group, for a complete row of

bkk

When we switch those two lines to the knitting font, we get



and



Typing Up the Cabling Rows, Option B

For row one, we read the cable first, so we type

B

for the cable that slants to the right, then we move the cursor to the cable symbol's left and type the group

kk

without having to move the cursor between typing the two knits, for a complete row of

kkB

For row three, we read the group of two knit stitches first, so we type

kk

before we move the cursor to the left of both stitches, and type

b

for the cable that slants to the left. The complete row is thus

bkk

The Complete Chart

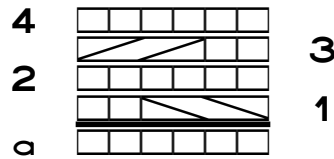
The entire chart as typed is

kkkkkk
bkk
kkkkkk
kkB

for the four rows of the pattern repeat. The lines with the cabling symbols are short because each cable uses four stitches. When we add the cables' four stitches to the two knits on those rows, those lines are actually six stitches wide.

Upside-Down Braid

Some people think of braids as having the outer strands crossing alternately over the center strand. Braid does just that. To make the center strand cross alternately over the outer strands, we reverse the direction that each cable crosses.



See if you can write out the instructions for Upside-Down Braid, checking yourself against the Answers.

Hugs and Kisses Cable

This cable looks complex, but it's actually very easy to work.

multiple of 8

Cable 2/2 Left (C4L): put 2 sts on cn and hold to front, K2, K2 from cn.

Cable 2/2 Right (C4R): put 2 sts on cn and hold to back, K2, K2 from cn.

Rows 1, 5, 9, and 13 (RS): K.

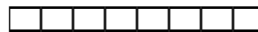
Row 2 and all WS rows: P.

Rows 3 and 15: C4L, C4R.

Rows 7 and 11: C4R, C4L.

Rpt rows 1–16.

These instructions are very short because there are cables in only four of the pattern's sixteen rows. The remaining four public-side rows and all of the private-side rows will just be knit stitches when looked at from the public side. So when we chart twelve of the sixteen rows, they are simply



Let's look at each pair of cabling rows.

Rows Three and Fifteen

Using the abbreviation definitions at the top of the instructions, we do a C4L then a C4R.⁵

A C4L will slant to the left, crossing two stitches over two. So the first symbol on these chart rows will be



⁵ Note that in the other patterns, similar cables were “C4F” and “C4B,” instead of the “C4L” and “C4R” used here. Both naming conventions mean the same thing. Remember that to get a left-sloping cable, we hold the first group of stitches to the front (*left* and *front* both have an *f*), and for the right-sloping cable, we hold the first group of stitches to the back (*right* and *rear* both start with *r*).



The C4R slants to the right, again crossing two over two. So we add that symbol to the left of the first one, since on public-side rows, we keep adding symbols to the left of the symbols already in place.



Rows Seven and Eleven

On these two rows, we do the same two cables as on the other rows, but we switch which one we do first. So rows seven and eleven start with C4R



and end with C4L.



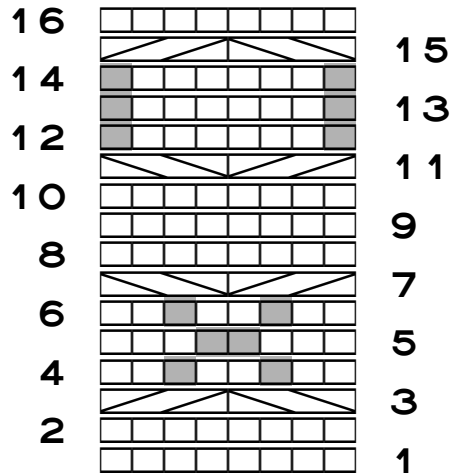
The Chart for the Hugs and Kisses Cable

Let's put all the rows together. We need eight private-side all-purl rows (don't forget the private-side row that must follow the last public-side row) that look like all knit from the public side, four plain all-knit public-side rows, and two rows of each of the two rows with the cables.

16		15
14		13
12		11
10		9
8		7
6		5
4		3
2		1

Can you see why this pattern is called “Hugs and Kisses”? Squinting a bit may help.

Rows eleven through fifteen form an O, and rows three through seven form an X. The O is the hug, and the X is the kiss, as the shaded symbols below try to show.



Typing Up the Chart

We've already seen in Braid that 2/2 cables are the symbols on lowercase b and uppercase B, so we just need two lines, where the only difference between the lines is which symbol is on the right and which is on the left.

For rows three and fifteen, the letters we must have after we type are

Bb

and for rows seven and eleven, we must have

bB

Those two lines in the knitting font are



and



The Complete Chart

The entire chart as typed is

```

kkkkkkkk
  Bb
kkkkkkkk
kkkkkkkk
kkkkkkkk
  bB
kkkkkkkk
kkkkkkkk
kkkkkkkk
  bB
kkkkkkkk
kkkkkkkk
kkkkkkkk
  Bb
kkkkkkkk
kkkkkkkk

```

The four lines containing the cables look short in a normal font, because in the knitting font, each symbol represents a cable that is four stitches wide.

A Sample Twist Pattern

Twists can have all the variations that ordinary cables have with regard to the number of front and back stitches and in which way the twist slants, but they add in the extra wrinkle of purling the background stitches.⁶

Wavy Cable

This pattern seems tricky, since we're doing both knit and purl stitches in the crossing, but it isn't as difficult to execute as it might seem.

And really, it doesn't look like a cable at all, because the crossing stitches don't ever entwine around themselves, like Cable 3/3 Right, Fishbone, and Braid did.

⁶ Note that this is *not* the same as always purling the stitches held to the back or that are on the cable needle. *Background* means the stitches that wind up underneath, closer to the private side of the fabric, the stitches that are mainly covered up by the stitches "on top" or farthest forward on the public side.

multiple of 7

Twist 3/2 Left (T3L): put 3 sts on cn and hold to front, P2, K3 from cn.

Twist 3/2 Right (T3R): put 2 sts on cn and hold to back, K3, P2 from cn.

Foundation row (WS): P3, K4.

Row 1 (RS): P2, T3R.

Row 2 (WS): K2, P3, K2.

Row 3: T3R, P2.

Row 4: K4, P3.

Row 5: T3L, P2.

Row 6: K2, P3, K2.

Row 7: P2, T3L.

Row 8: P3, K4.

Rpt rows 1–8.



Here again is a pattern with a foundation row.⁷ Since this foundation row is a private-side row, we'll start with the row number at the left. Remembering that we have to switch knits to purls and purls to knits, and that we have to fill in the row's stitches from left to right, we first put in the three purls (but as knits) next to the row number.

a

--	--	--	--

Then we knit the last four stitches, but they'll look like purls when we turn the work around.

a

--	--	--	--	--	--	--	--

In row one, we start with two purl stitches,

•	•
---	---

 1

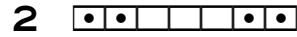
then we do the twist (apologies to Chubby Checker). Note that the twist symbol shows purl dots on the background stitches, which will help the appearance of the completed chart.

•	•	•	•	•	•
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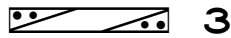
 1

⁷ Even though these two patterns' foundation rows have both been made on the private side, not all foundation rows are. Some patterns might have two or even more foundation rows, so they would alternate between being public- and private-side rows. The first of several foundation rows might be either public or private side; it just depends.

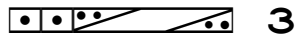
For row two, we knit the first two and last two stitches and purl the center three stitches, but each one must be represented as the other stitch.



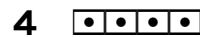
On row three, the twist is worked first,



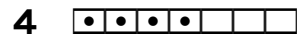
then we purl the last two stitches.



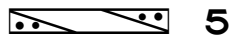
On row four, we knit the first four stitches



and purl the rest.



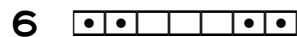
On row five, we zag the knit stitches to the left by holding the stitches we'll knit to the front of the work. We purl from the left-hand needle the other two stitches of the twist itself, then knit the three stitches on the cable needle,



and finally we purl the last two stitches.



On row six, another private-side row, we again knit the first and last two stitches and purl the three center stitches. But on the chart, we swap knit and purl.



Row seven starts with two purl stitches




then the twist is back at the left edge again.



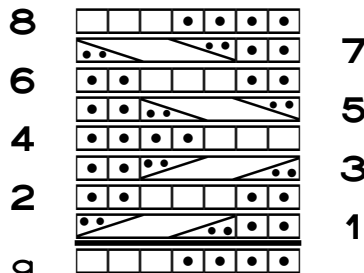
A final private-side row purls the first three stitches, which we must show as knits,

8 

and knits the last four, which we show as purls.

8 

So the whole chart is



If we look closely—maybe, as with the Hugs and Kisses Cable, squinting is better—at the knit squares and the front stitches of all the twists, we see a path of knit stitches moving sideways back and forth across a sea of purl bumps. This is the distinguishing characteristic of twists: a group of knit stitches zigzagging their way across reverse stockinette.

Just as with the chart for Braid, the dark line between foundation row A and row one helps us remember that after we work foundation row, the rest of the time we repeat only rows one through eight.

That is, the first time we work Wavy Cable, we'll work rows

A-1-2-3-4-5-6-7-8

but from then on, the sequence of the rows we'll work is

1-2-3-4-5-6-7-8-1-2-3-4-5-6-7-8-1-2-3-4-5-6-7-8...

(Since this pattern crosses knit stitches over purl stitches, the designer should probably have named it *Wavy Twist* instead of *Wavy Cable*.)

Typing Up the Chart

The full set of symbols in the knitting font is shown in chapter 390, but the two we need for the twists in this pattern happen to be on lowercase u and uppercase U.

So public-side rows will combine two purls, available on the lowercase p, with either a u or a U. The private-side rows will combine purls and knits.

The Complete Chart

The full chart gets typed as

kkkpppp
upp
ppkkkpp
ppu
ppppkkk
ppU
ppkkkpp
Upp

omitting the foundation row.

Note that the public-side rows have only three characters, since the twist symbols, at five stitches wide, will fill the same amount of space as five of the knits and purls on the private-side rows.

Symbols Included in the Knitting Font

The knitting font has symbols for cables and twists in the most common pairings of front and back stitches, from two to ten stitches total.

There is an entire school of knitting called *Bavarian knitting*, which uses no regular knit stitches at all. Instead, every knit stitch in the project is worked through the back loop. Working in the back loop results in a twisted knit stitch.

The knitting font also has twisted-stitch cables and twisted-stitch twists in the same pairings as regular cables and twists.

Why We Can't Put Each Symbol in Its Own Column

In chapter 120, which explained how to make a knitting chart in a word-processor table, I suggested that we might be tempted to put each stitch in its own column instead of putting all the stitches in a single column.

Cables and twists are why it's difficult to put each stitch in its own column. If we put each of the stitch symbols, including the Cable 3/3 Right symbol, in its own table column, we would have something like this:

k	k	k	k	k	k
k	k	k	k	k	k
k	k	k	k	k	k
C					
k	k	k	k	k	k
k	k	k	k	k	k

(The cable symbol C could be in any of the six columns initially.)

When we switch the table to the knitting font, we get

	□		□	□	□	□	□
	□		□	□	□	□	□
	□		□	□	□	□	□
	▀						
	□		□	□	□	□	□
	□		□	□	□	□	□

The knit stitches all work this way, but the cable symbol is six stitches wide, so the chart is wonky.

Word processors usually let you combine table cells, so if we combine all the cells on the cabling row, we have

□	□	□	□	□	□
□	□	□	□	□	□
□	□	□	□	□	□
▀					
□	□	□	□	□	□
□	□	□	□	□	□

The cabling column has blank space at both sides because there is a narrow cell border of 0.01 inches on all four sides of each table cell. Even if we set those to zero, we still have slight gaps before and after the cable.

□	□	□	□	□	□
□	□	□	□	□	□
□	□	□	□	□	□
▀					
□	□	□	□	□	□
□	□	□	□	□	□

The cabling cell, since it's actually six table cells merged together, will only cause prob-

lems in chapter 150, because word processors don't always deal with merged table cells in the way we expect.

Overall, it's best to put the pattern's symbols in a single table column.