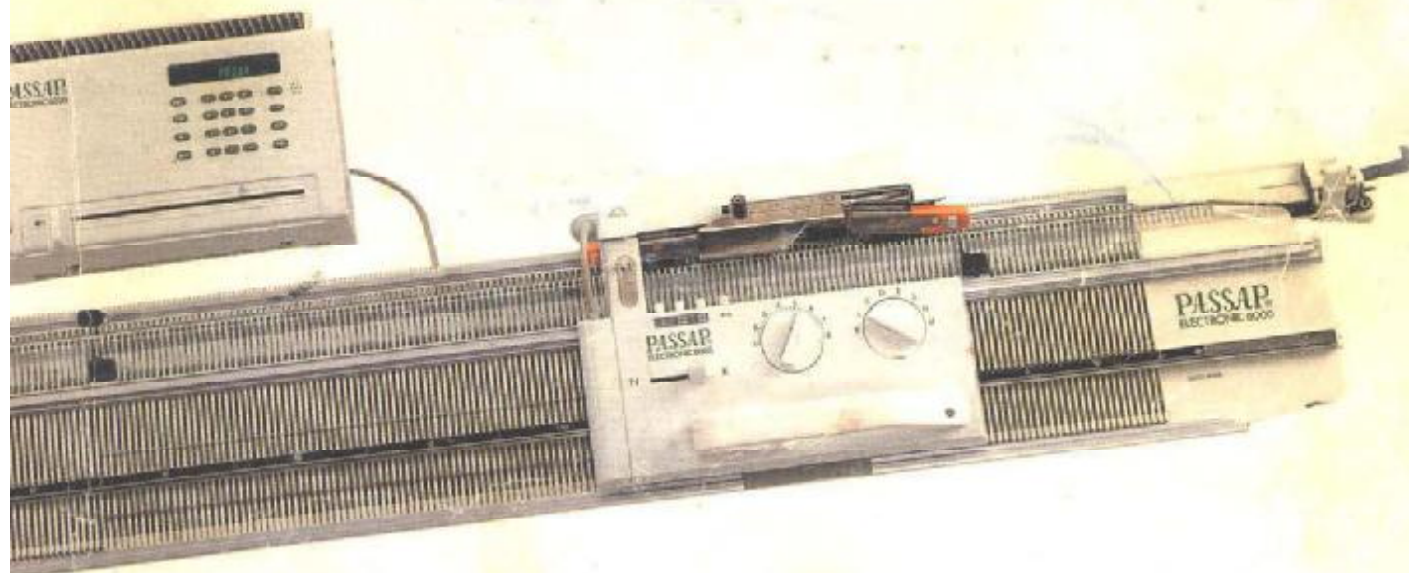


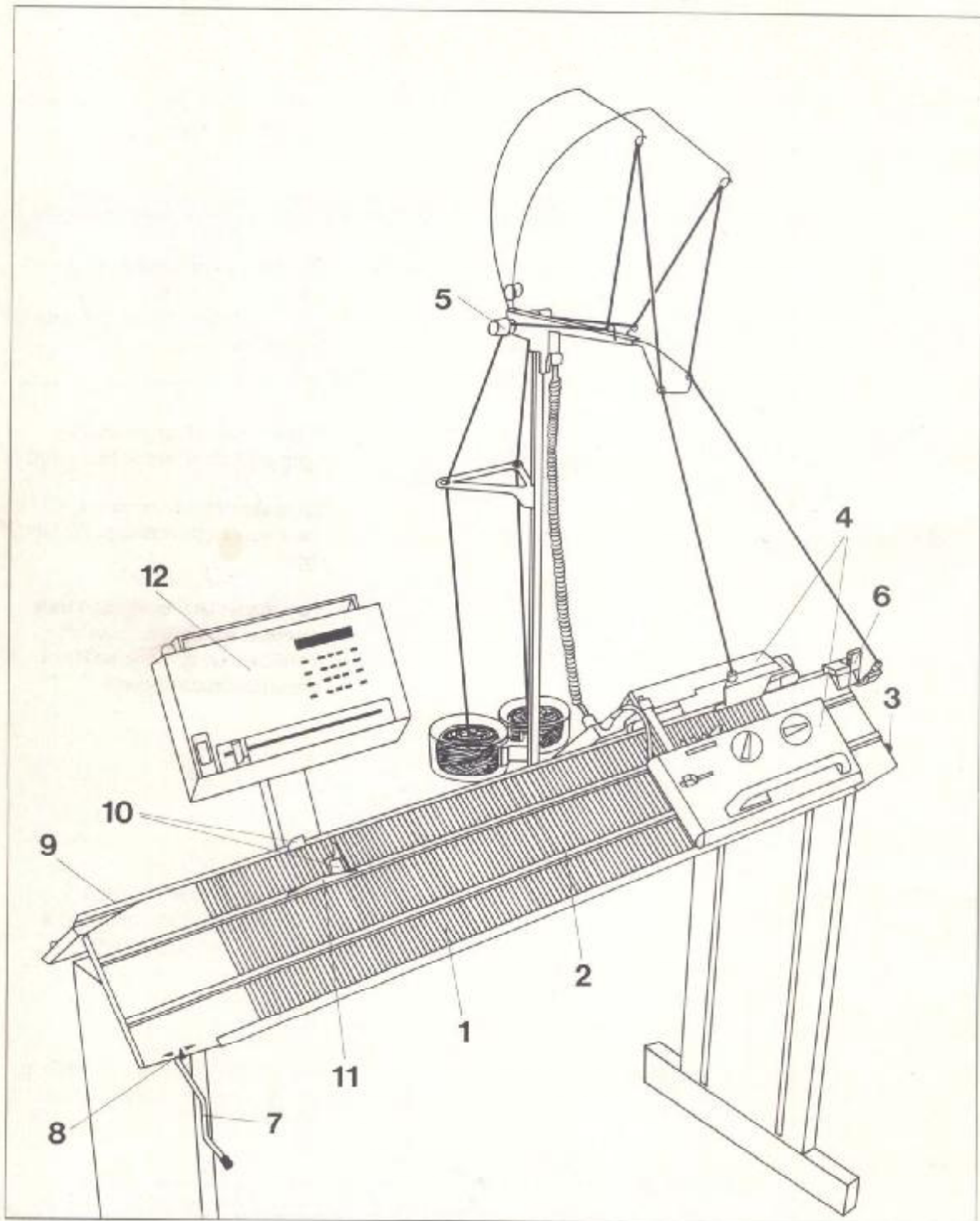
english

PASSAP[®]

ELECTRONIC 6000



The machine and its parts	2
Threading up	15
BASIC PROGRAM	18
ALTER	34
ENLARGE/POSITION	55
Inserting a stitch pattern sheet	72
FORM	78
Program for basic sweater	84
KNITTING = START CAST ON	88
Displays for stitch pattern knitting	88
Displays for shaping and how to do it	103
Skirt knitted fully automatically	121
Making up	123
Drawing a pattern sheet	125
KNITTING TECHNIQUE	133
Error messages	182



The illustrated stand with the support for the console may be bought as an optional extra.

The machine

The most important parts of the machine are:

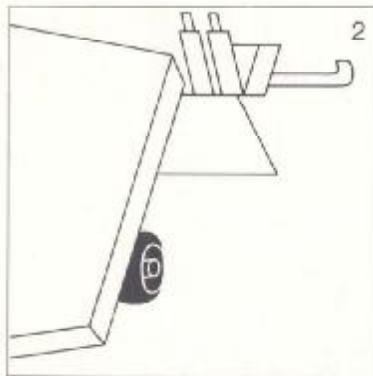
1 The needle beds

Front and back bed, each having 179 latch needles.

2 The needle scale

The needle channels are numbered from the centre outwards to make it easy to count the needles.

3 The knob for lowering the front bed



The knob is situated on the right underneath the front bed.

To lower the front bed, lift the knob slightly and pull to the right.

To return the beds to their normal position, push the front bed up and the knob to the left simultaneously.

4 The locks

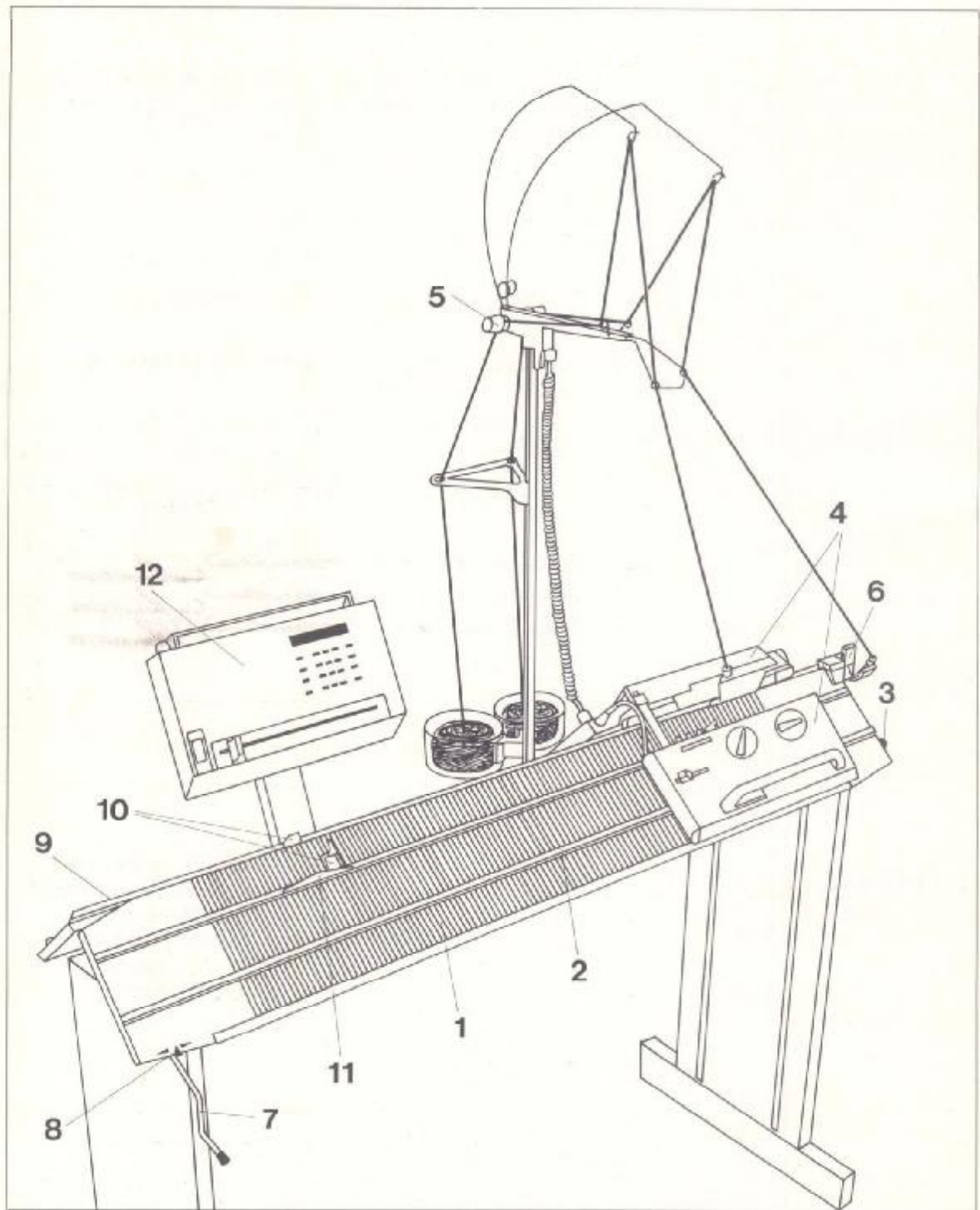
They are the heart of the machine. Their functions are explained on pages 8–11.

5 The yarn guides

Threading the yarn and setting the yarn tension is explained on pages 15–17.

6 The two-colour changer

Allows automatic changing of two yarns. See page 17.



The machine

7 The racking handle

It moves the back bed sideways in relation to the front bed – in either direction. The handle may be up or down during knitting. The computer always shows you the handle position.

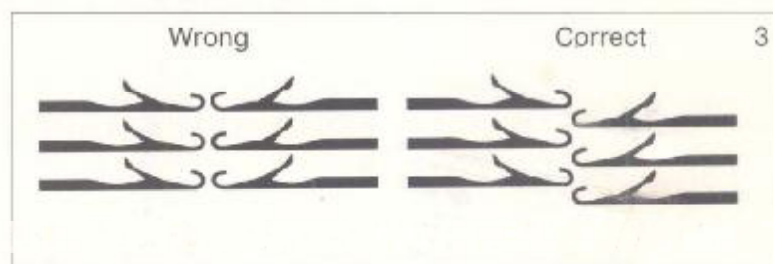


Means handle up.



Means handle down.

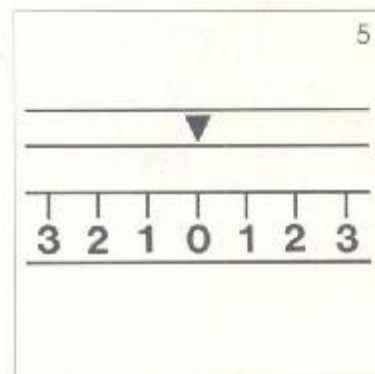
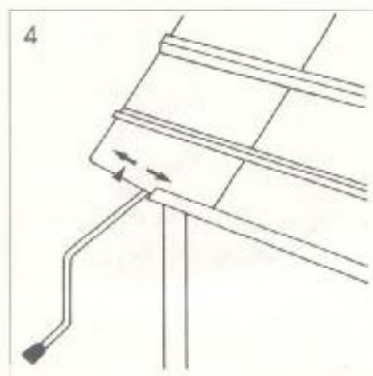
Follow the computer's instructions exactly. Failure to do this could result in damaged needles.

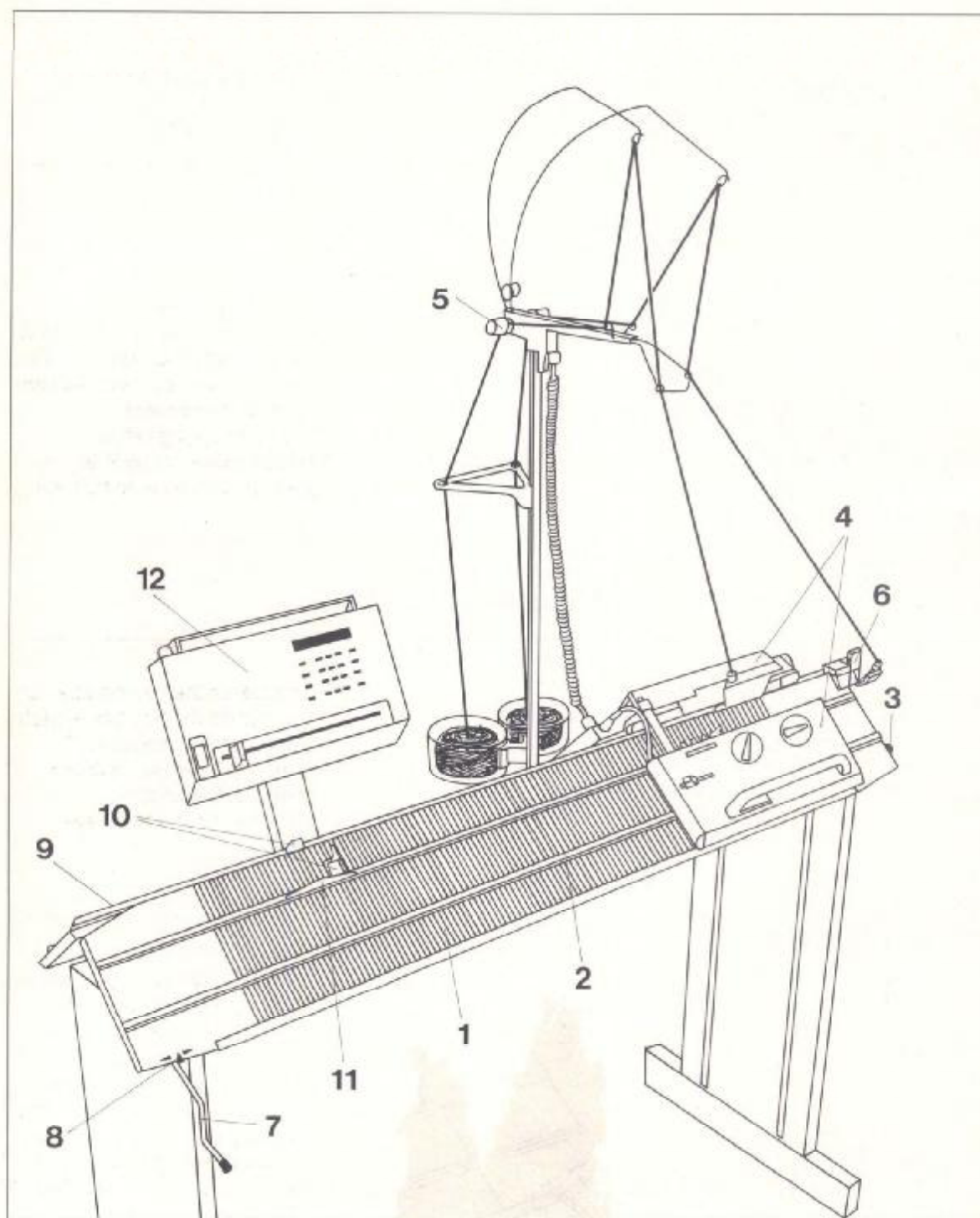


8 The racking indicator

The racking indicator situated above the racking handle indicates the direction of the last racking movement.

The scale at the top left of the front bed shows the number of racking movements possible and how far you have racked left or right. The normal position is at the centre.



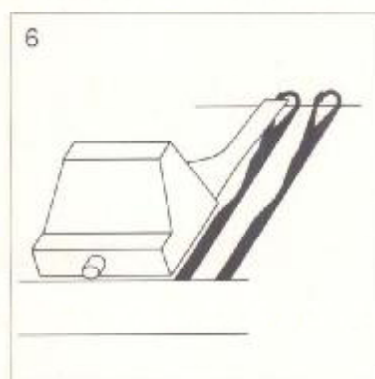


The machine

9 The blocking rail

The blocking rail is situated on the bed. Its function is explained on page 14.

10 The four edge springs

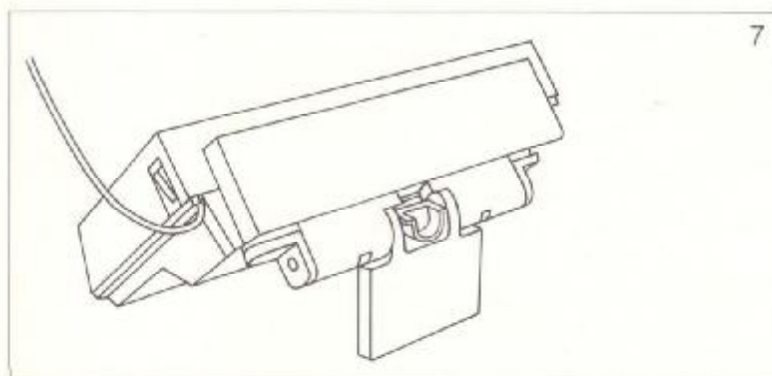


Two on each bed.
They must always be placed on the edges of your knitting. **The needle latches under them should be closed.**
The edge springs may be moved sideways by lifting them slightly by their handles.

11 The trip cam for the row counter

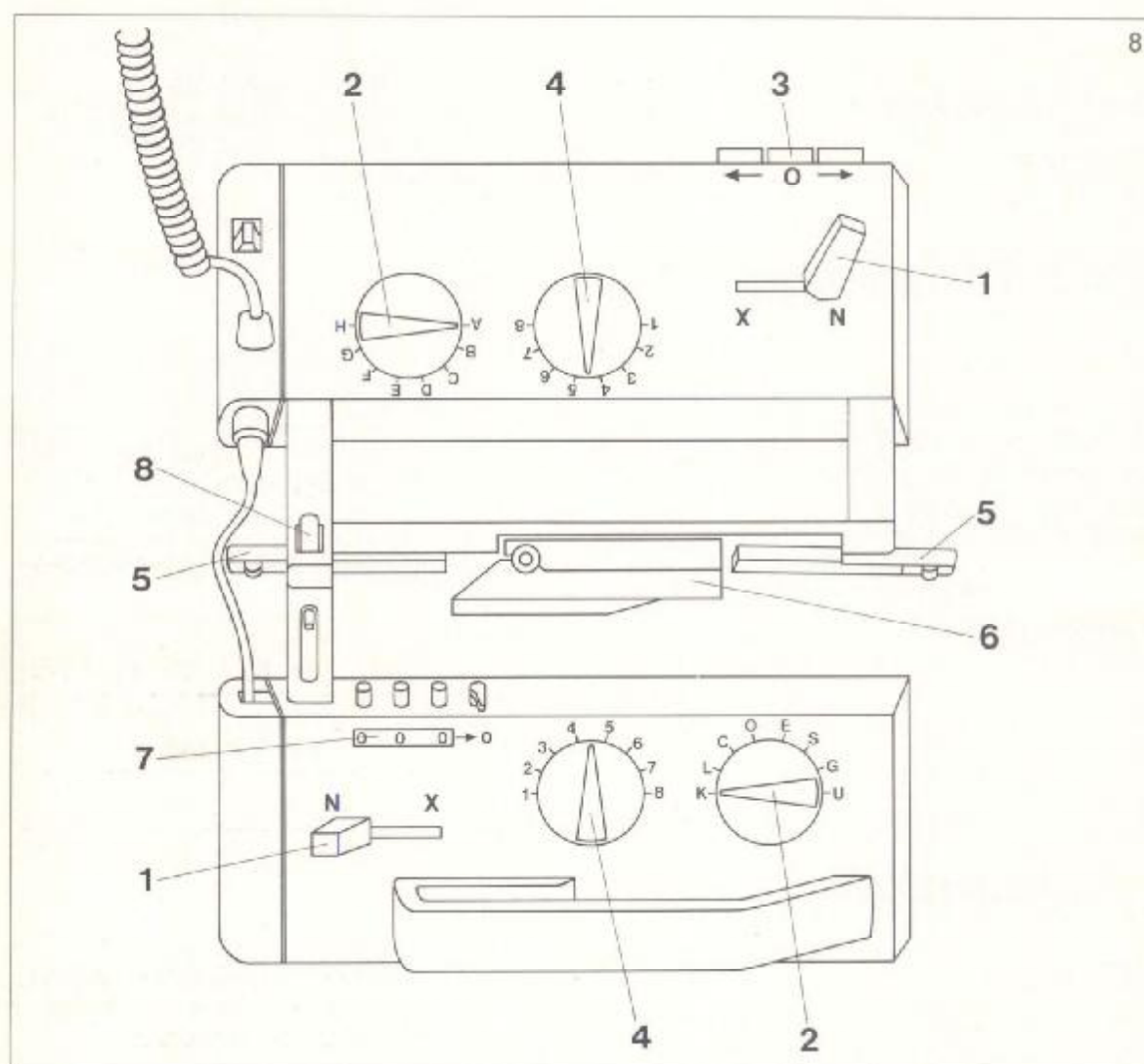
It activates the mechanical row counter on the front lock each time it moves across it.
Its normal position is at the centre of the knitting.
It can be moved sideways.

12 The Electronic Console



The console has its own mounting bracket attached to the rear of the stand. You can swing it forward to a convenient position for programming or even remove it from the machine completely if you prefer. The console is provided with a detachable support bracket. Should you wish to position it elsewhere than on the mounting bracket, make sure it is always in a clearly visible position so that you can read the displayed information easily.

The lock



The usual position of the locks is at the right-hand end of the beds. Do not leave them on the left-hand end of the beds for long periods as this could cause the cable to stretch.

1 The N-X lever

The computer tells you whether to set this at N or X.
(If the lever is on N it will always knit stocking stitch.)

2 The pattern selector dial

The computer tells you the setting of the pattern selector dial for the chosen stitch pattern.

Note: To turn the pattern selector dial first set the N-X lever to N. During knitting, however, it must always be on X as indicated by the computer.

The lock

3 The arrow keys

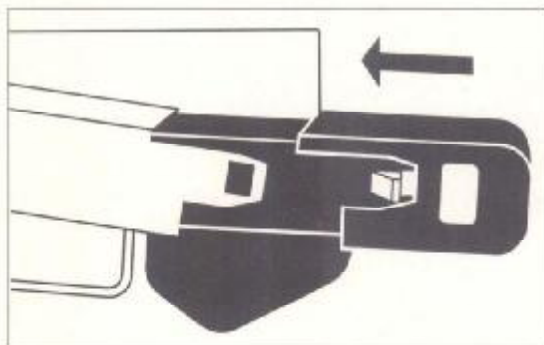
They are situated on the lower part of the back lock.
The computer tells you which keys have to be depressed, if any.
Otherwise they should be left in line.
To bring them all into line press the centre key.

4 The stitch size regulator

The setting of the stitch size regulator depends on the type of yarn and pattern used.
The following table gives approximate settings relating only to ordinary smooth yarns but not special yarns.

Material	Length metres per 100 g		Stitch size		
			Stocking stitch	K/K	1:1 rib
Sports yarn 3-ply	310-320 m	3-4	6½-7½	4½-4¾	3½-4
Medium yarn 2-ply	430-440 m	2½-3	5¾-6¼	3¼-3½	2½-3
Industrial yarn	800 m		4½-5¼	1¾-2	

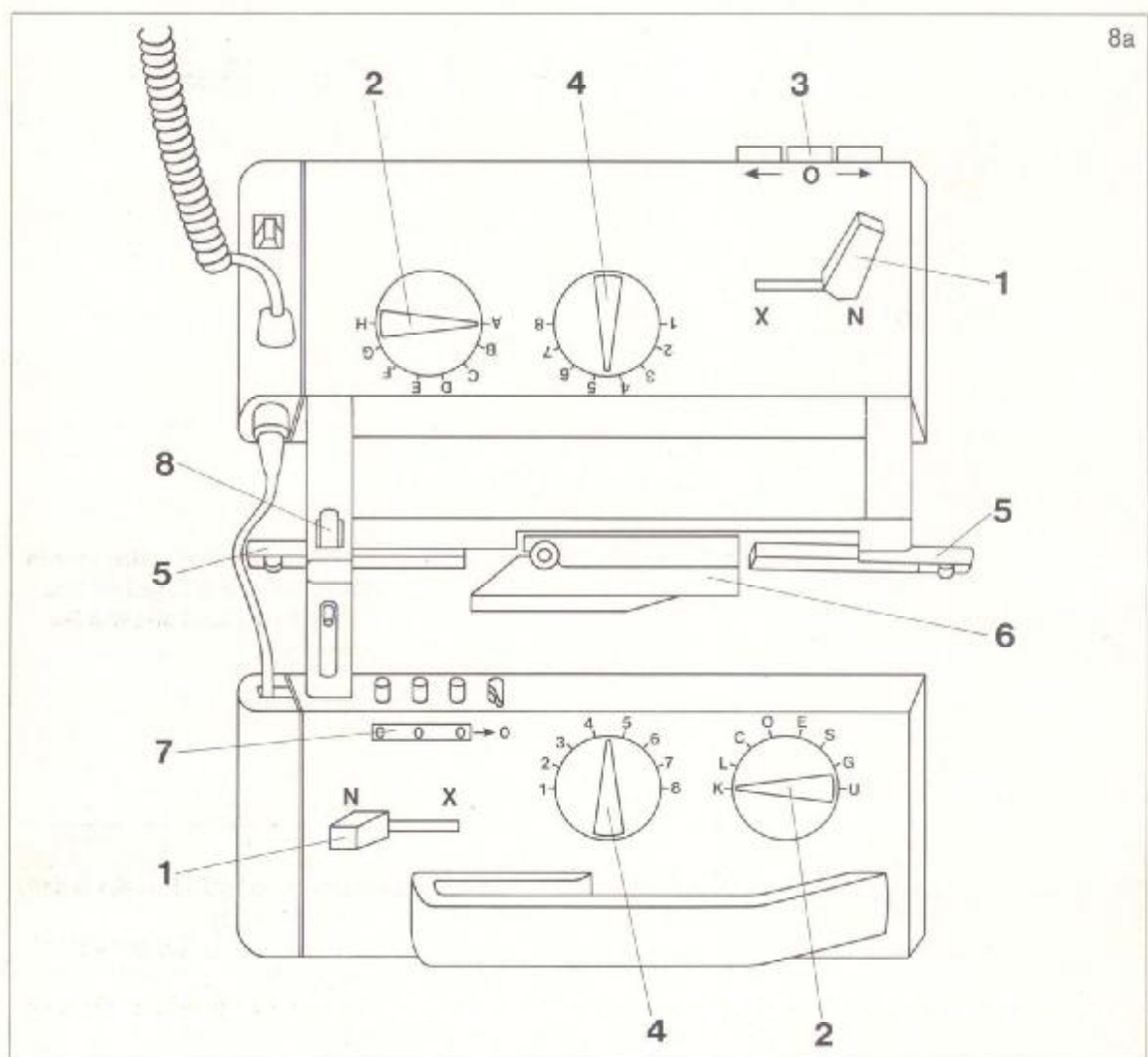
5 The strippers



The computer tells you which strippers (orange or black) to use. Insert them into the lock until they click into place. To remove them depress the small key.

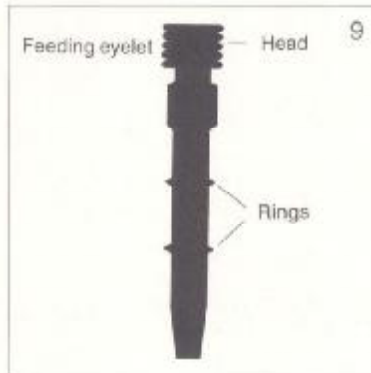
The basic rule is orange strippers for double bed work, black strippers for single bed and tubular knitting but there are some exceptions.

The lock

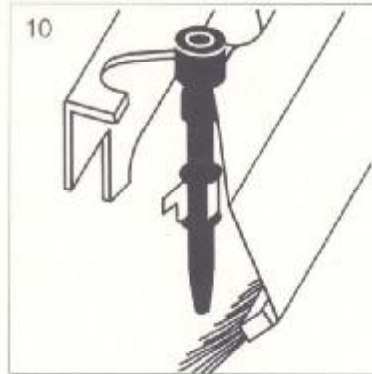


The lock

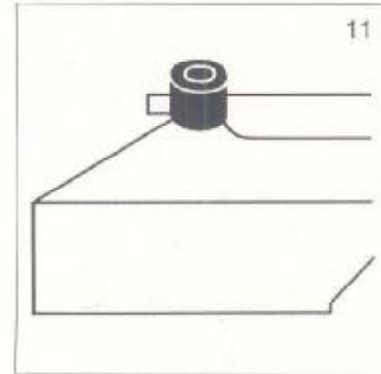
6 The jaws for the feeding eyelets



The colour changer automatically brings the feeding eyelet into the correct position in the scissor-like jaws.



When inserting a feeding eyelet manually the jaw should grip it between the two sets of rings.



Important: Once the jaw is shut, only the head of the feeding eyelet should be visible.

7 The row counter

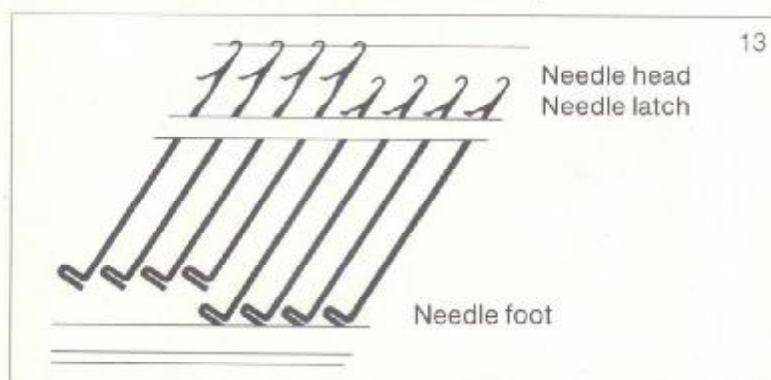
The Electronic 6000, besides being equipped with the electronic row counter, also has a mechanical row counter. On the mechanical row counter each number can be set individually with the aid of the corresponding knob. By pushing the small «L»-shaped lever at the right-hand edge of the counter all numbers are set to zero.

8 The connecting bolt

To separate the locks unplug the connecting cable from the back lock and slide the connecting bolt down. Important: while knitting the connecting bolt must always be up and the connecting cable plugged in.

The needles and pushers

The needles have two positions



Working Position:

The feet of the needles are approx. 1,5 cm (5/8 inch) away from the needle rail. The needle heads must be in line with the top edge of the needle bed.

Out of Working Position:

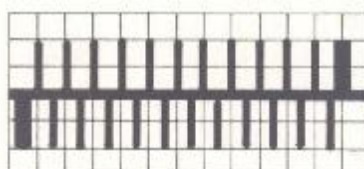
The feet of the needles touch the needle rail.

Diagram:

Vertical lines above the horizontal line = needles in Working Position on back bed.
Vertical lines below the horizontal line = needles in Working Position on front bed.
● = needles out of Working Position.

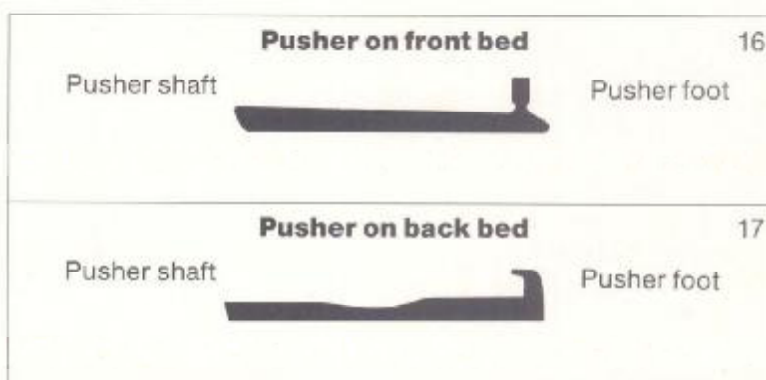
Needle rule:

When knitting on both beds this rule must be observed to ensure your knitting has a neat edge.:



Last needle at right = on the back bed
Last needle at left = on the front bed

The pushers

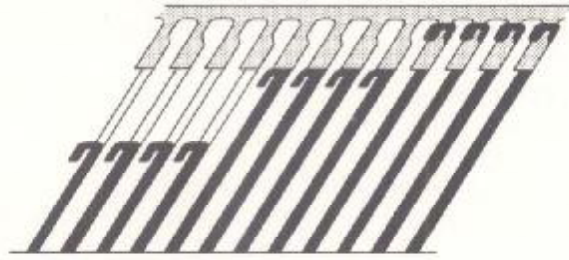


The needles and pushers

The pushers have three positions

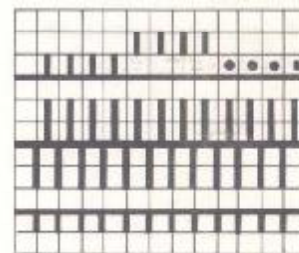
Pushers on back needle bed

18



Pushers on front needle bed

19



Working Position:

On every alternate bar between the pushers you will find a marking. Always bring the pusher feet exactly in line with these markings.

It is most important that the pushers are aligned precisely or the machine will jam.

On the back needle bed the setting of the pushers in working position is roughly the same but you do not have to align them so precisely.

Rest Position:

In this position the pusher feet are in line with the lower edge of the pusher channels.

The computer automatically brings the pushers to this position when necessary.

On the back needle bed the pushers are not inside the blocking rail but touch it.

Out of Working Position:

In this position the pusher feet touch the lower edge of the front needle bed.

On the back needle bed the pushers are inside the blocking rail.

Diagram:

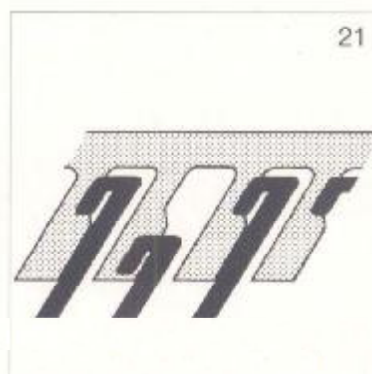
When knitting with the Electronic diagrams always show the pushers in working position, i.e. a short vertical bar touching the lower horizontal line. On the back bed pushers in working position are shown identically to the front bed but in Rest Position they are indicated by a short vertical bar one square below the horizontal line. A dot means that the pusher is out of work, i.e. inside the blocking rail.

The needles and pushers

Moving the pushers in and out of the blocking rail on the back bed

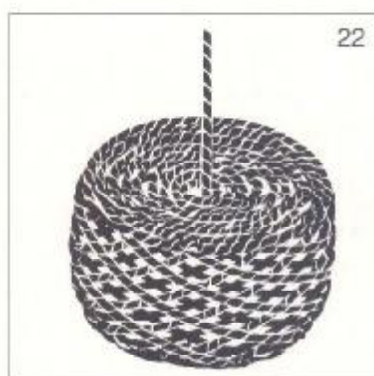
The blocking rail has a stud on the left-hand end. Pull it to the left and hold it while you bring the pushers out of the rail. On releasing the stud the rail will automatically close.

Important: If a pusher gets caught in the upper half of the blocking rail, the rail will not close properly, and this will produce faults in the knitting.



Waxing and winding yarn into balls

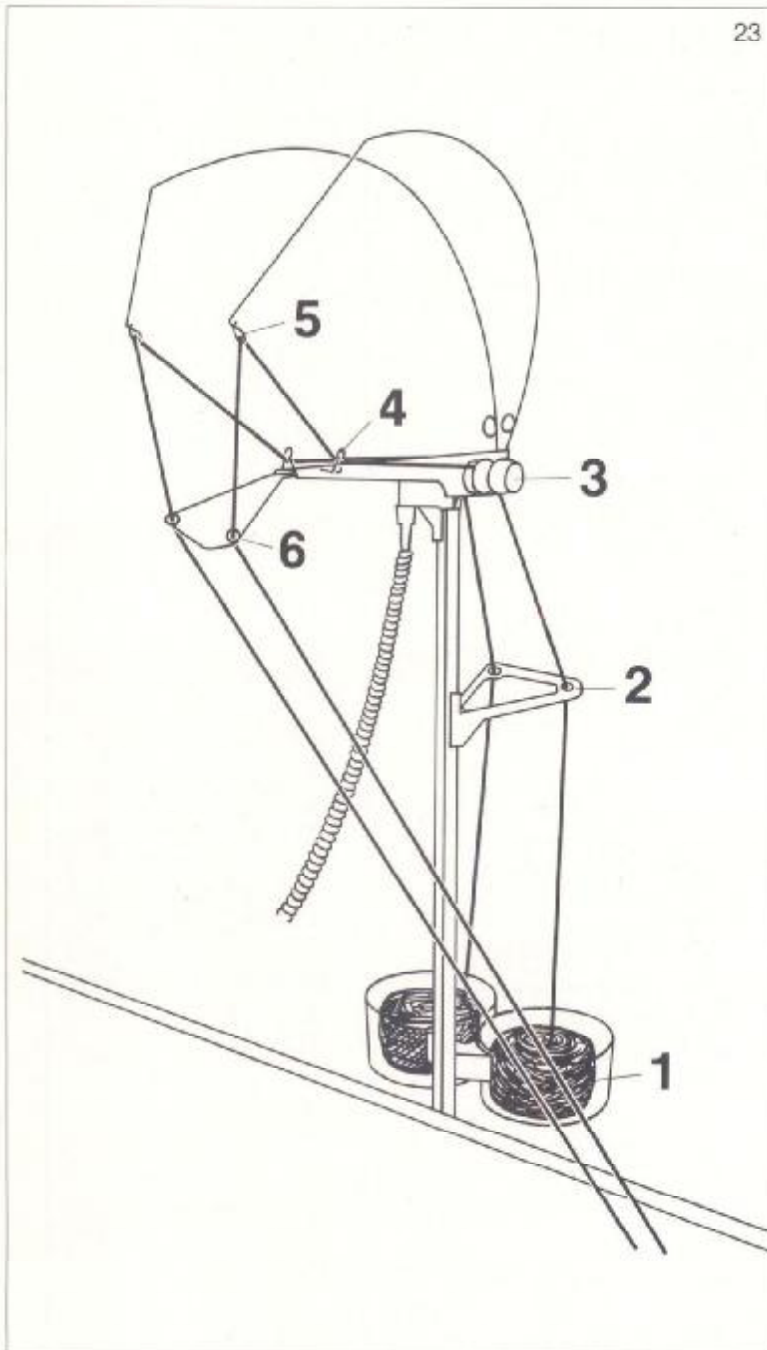
It is most important that the yarn is waxed and wound properly. When winding yarn let it run over the piece of paraffin wax provided. To obtain a correctly wound ball be careful not to hold the yarn too tightly.



Always knit with the end of yarn coming from the centre of the ball. If the yarn does not flow **freely** and **smoothly**, the ball has been wound too tightly, and must be wound again to avoid difficulties.

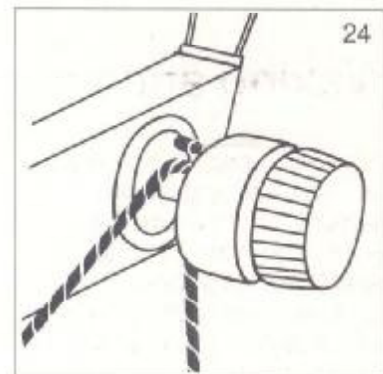
Threading up

23



Threading the yarn guide

- **Place the ball of yarn into the yarn holder 1.**
Pick up the loose end of yarn coming from the centre of the ball, and insert it into one end of the double end bodkin.
- **Guide the yarn through eyelet 2.**
- **Then take the yarn between the two tension discs 3** by pulling the outer disc away slightly.



24

Take great care that the yarn is under the small protruding pin. This will prevent the yarn from jumping out of the tension discs.

- **Guide the yarn through eyelet 4 but do not guide it through eyelet 5 yet. Instead, thread down through eyelet 6** and then through a feeding eyelet (see page 16). Pull the yarn through the centre of the beds and secure it in the yarn holder. Place the feeding eyelet into an empty colour changer clamp. Now place the yarn from left to right in eyelet 5 on the tension wire.

15

Threading up

The yarn tension disc

The yarn tension discs are numbered 1 to 7. 1 is the loosest setting and 7 is the tightest. Start off with the setting at 7 and adjust down until the yarn tension wire starts to pull up slowly. This will probably be about 3½ but will depend very much on the yarn itself. Do this separately for each yarn you are threading.

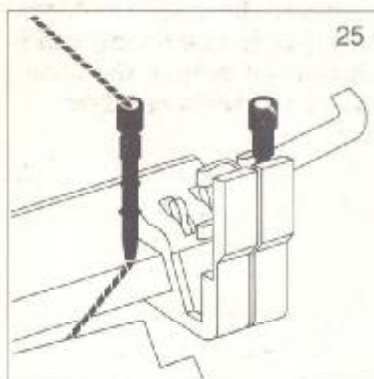
General rule:

If loops appear at the edge of the knitting, increase the setting on the tension disc to a higher number.

If the edge stitches are either too tight or even not knitted in spite of using edge springs, lower the setting on the tension disc.

Threading the feeding eyelets

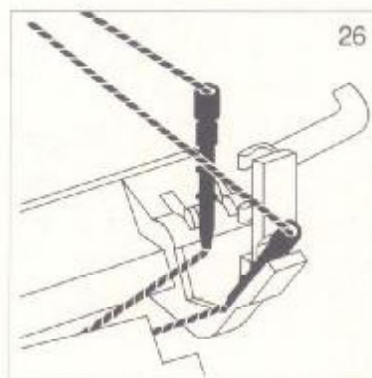
Note: The yarn of the right yarn guide goes into the right feeding eyelet. The yarn of the left yarn guide goes into the left feeding eyelet.



- Pull the lever of the colour changer twice to the right. Both feeding eyelets are now up.
- Take the left feeding eyelet out of its holder by pressing it to the left.
- Thread it, and hold the yarn end.
- Put the feeding eyelet back into its holder.

Note: The two rings of the feeding eyelet must be between the two clips of the holder.

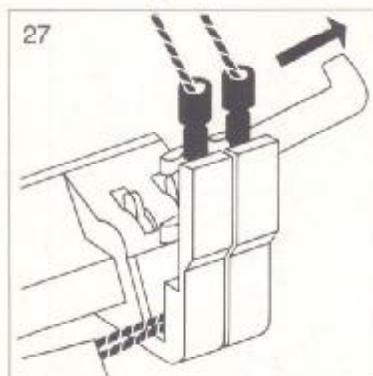
- Pass the yarn end between the two beds, and insert it in the yarn holder on the right-hand clamp. Remember to guide the yarn through eyelet 5.
- Press down the holder of the left feeding eyelet.



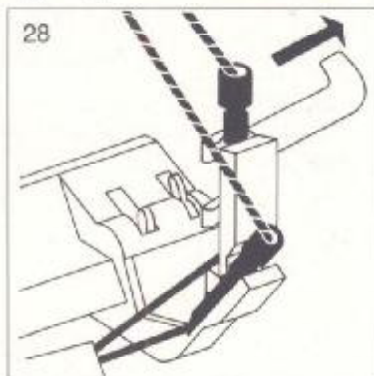
The right feeding eyelet can now be threaded in the same way.

Threading up

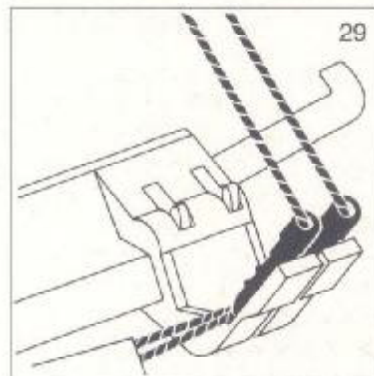
Moving the feeding eyelet into the jaws on the lock



- Pull the colour changer lever twice to the right. Both feeding eyelets are up.



- Press down the feeding eyelet you want to use first.
- Pull the lever of the colour changer once to the right.



- Press down the second feeding eyelet. You can now move the lock to the right until it operates the lever of the colour changer, and the required feeding eyelet is automatically brought into the jaws on the lock.

Automatic colour change

Move the lock to the right into the colour changer until it operates the lever. If you do not want to change colour, do not take the lock right to the end, take it back before it operates the lever.

Important: Never take the lock into the colour changer unless the eyelet holders are down or there is only one empty holder in the up position. Never take the lock across the bed with an empty feeding eyelet in the jaws.

Dropping off the knitting with an empty lock. Set lock to N.

Move the lock to the right until the colour changer lever is activated.

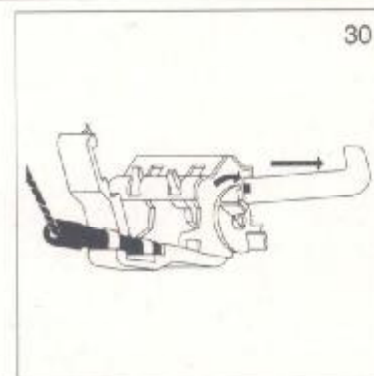
Press down the eyelet that has been selected and bring the empty lock across the needles.

Putting the colour changer out of action

If you want to move the lock to the extreme right without activating the colour changer:

- Bring the feeding eyelet with which you are knitting into the lock.
- Pull the lever of the colour changer to the right.

- Turn the locking disc of the colour changer to the rear to lock it in the hole of the lever.
- Now you may move the lock to the extreme right without changing the colour.



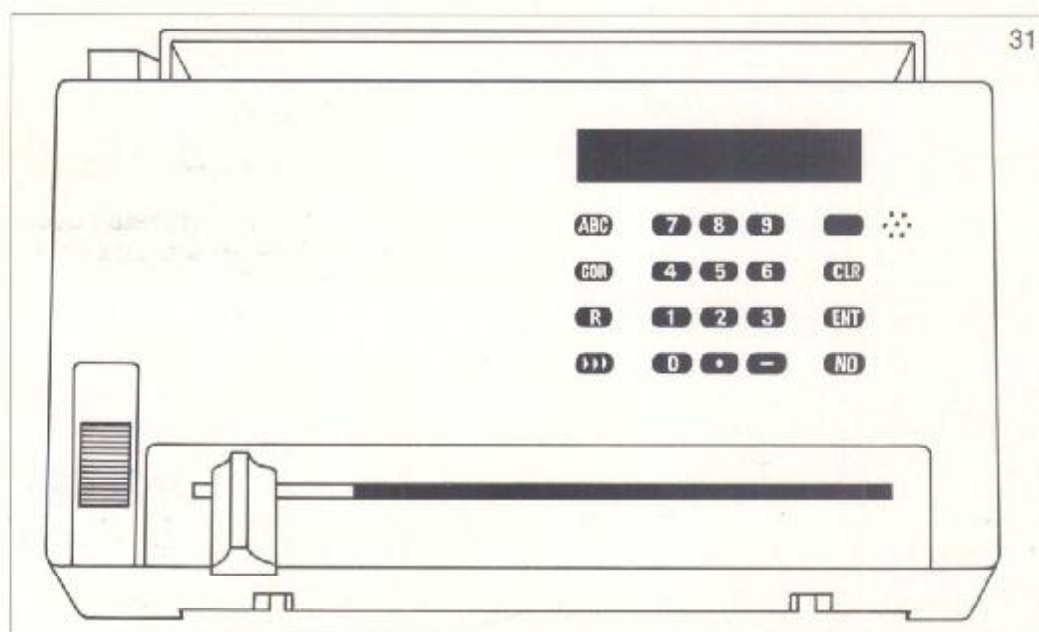
30

The basic program

Programming

This section deals with the way you tell the computer what you want to knit. It is a real "two-way conversation", hence the term "dialogue program". The computer shows you the options available and you decide whether or not you want to take them. Watch the console. It is there that your dialogue with the computer takes place.

The console



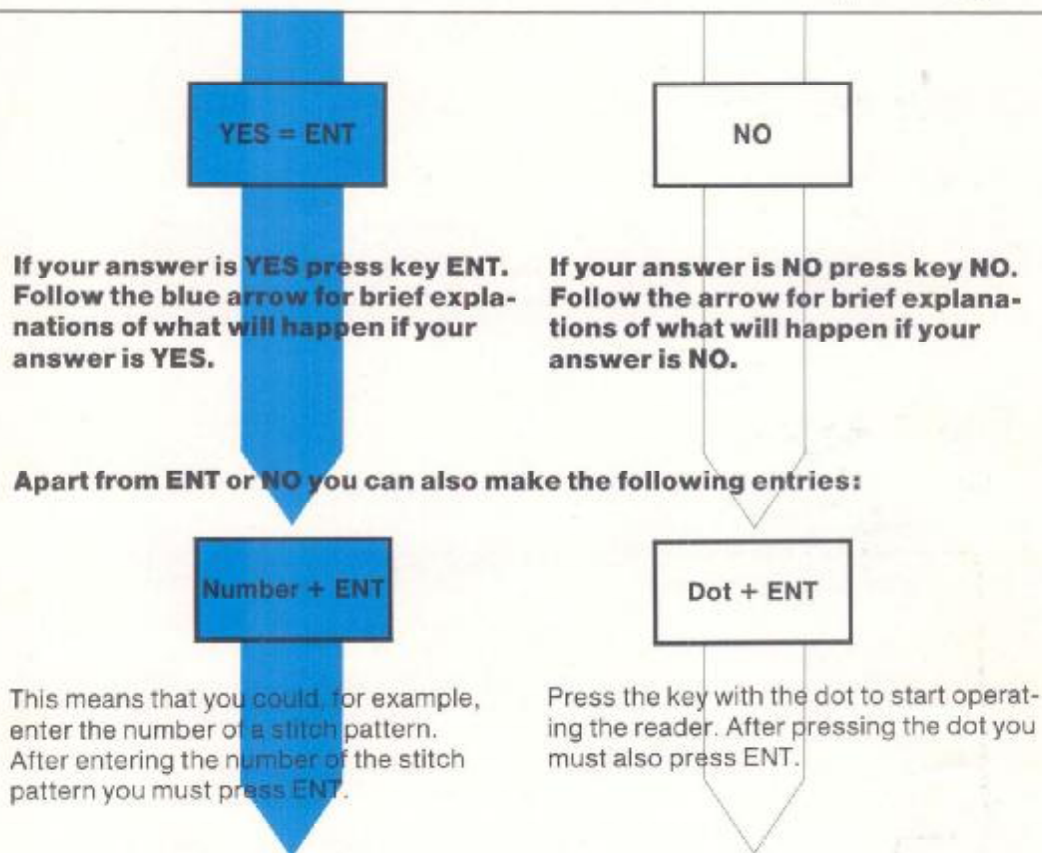
At the top right hand corner is the visual display.

There you will read all the questions the computer asks and the knitting instructions it gives you.

The following pages explain all the various displays that may appear while you are programming a garment.

The horizontal boxes show the displays.
The vertical arrows lead you to the answers you may give.

The basic program



Arrows pointing towards the edge of a page saying:



mean turn to a display number. Display numbers are printed **BOLD** in the page margins for easy reference.

If you always follow the arrows you will find that programming is quite simple.

Before you start programming, even if you are only practising without actually knitting, you will have to select a stitch pattern from the book.

The first time you choose a stitch pattern from the stitch pattern book we recommend you choose one with two sets of numbers and no asterisk.

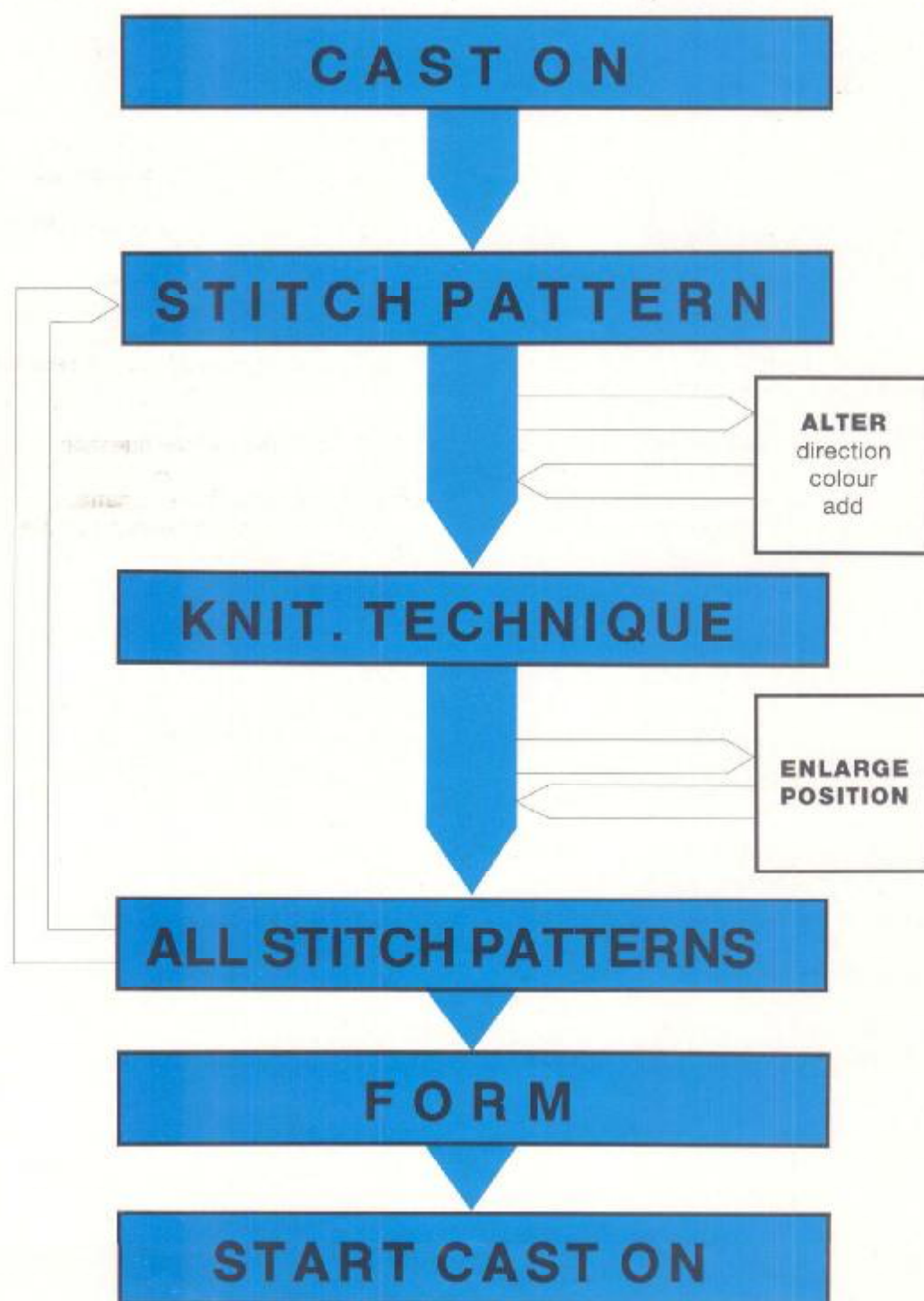
Always have the console in front of you and answer every question in the way required.

Note: The displays shown overleaf do not necessarily always appear.

(There are stitch patterns that can neither be enlarged nor altered, in which case the display concerned does not appear. Simply continue to follow the blue arrow.)

The basic program

The following diagram will help you to gain a better understanding of how the program is built up.



The basic program

The build-up of the program

The broad navy arrow pointing down shows you the most important steps of the basic program.

You will find the exact description of the **basic program** for stitch pattern knitting on pages 23 to 33. These are identified by a **dark blue tab**.

(If you wish to knit a stitch pattern without alterations, you need only look at these pages.)

The exact description of how to enter a **FORM program** for shaping your piece of knitting can be found on the pages 78 to 87. These are identified by a **dark grey tab**.

This basic program is followed by two additional programs. The first is called **ALTER** and the question relating to it appears after the question STITCH PATTERN.

Here you may turn or mirror image the patterns, change one colour for another, combine several stitch patterns or create three or four-coloured patterns by superimposing stitch patterns.

The exact description of all these options can be found on the pages 34 to 54. These are identified by a **pale blue tab**.

The second additional program is called **ENLARGE/POSITION** and the question relating to it appears after the question KNIT. TECHNIQUE.

Here you may enlarge and lengthen the patterns or alter the sequence of a pattern repeat in various ways. The exact description of all these options can be found on the pages 55 to 71. These are identified by a **blue/grey tab**.

The basic program

What to do if you accidentally press the wrong key?

To be able to program, you have to know the meaning of the following keys:

CLR

If you notice that you have entered a wrong number **before having pressed key ENT**, clear the wrong number by pressing key **CLR (= clear)**. You can now enter the correct number. If you have already pressed the key ENT or NO when you notice your mistake, proceed as follows:

▶▶▶

Press the key for **fast forward ▶▶▶**. The display reads **START CAST ON**. Press the key for **fast forward** again. The display reads **PROGR**. Press key **ENT**. The display reads **ERASE**. Press key **NO**. The computer now shows you what you have programmed so far. You can alter it by simply **writing over** it. By pressing ENT you will always come to the next display.

R

At certain points in this program it is also possible to go back one step by pressing **key R (= return)**. The computer displays what you have programmed so far enabling you to make alterations by **overwriting**. To obtain the next display always press ENT.

(Exceptions:

If you have entered a stitch pattern via the reader, the display 0 will appear.
If you have altered a stitch pattern, the original stitch pattern will no longer appear but an *.
If you think that you have made an error in the section ALTER, you may once more enter the original stitch pattern number in this place, and then enter the alterations again.)

The basic program

This is the first display to appear on switching on the Electronic:
(Should the display **PROGR** appear, read display 1, page 25.)

M E M O

This display indicates that there is no program in the working memory.

(This may be due to several reasons: either nothing has ever been stored or the program has been lost through a malfunction or the accumulator is no longer charged. The Electronic unit is equipped with an accumulator that re-charges itself automatically when the unit is connected to the main current and has been switched on. This accumulator can bridge a power cut of up to 10 days and so keep the program stored. If the power cut lasts longer than that the program will be cleared, and you have to reprogram it.)

Press key

ENT

This tells the computer that you have taken note of the information.

D E U T S C H

This is the first real question, i.e. do you wish to have the displays in German?

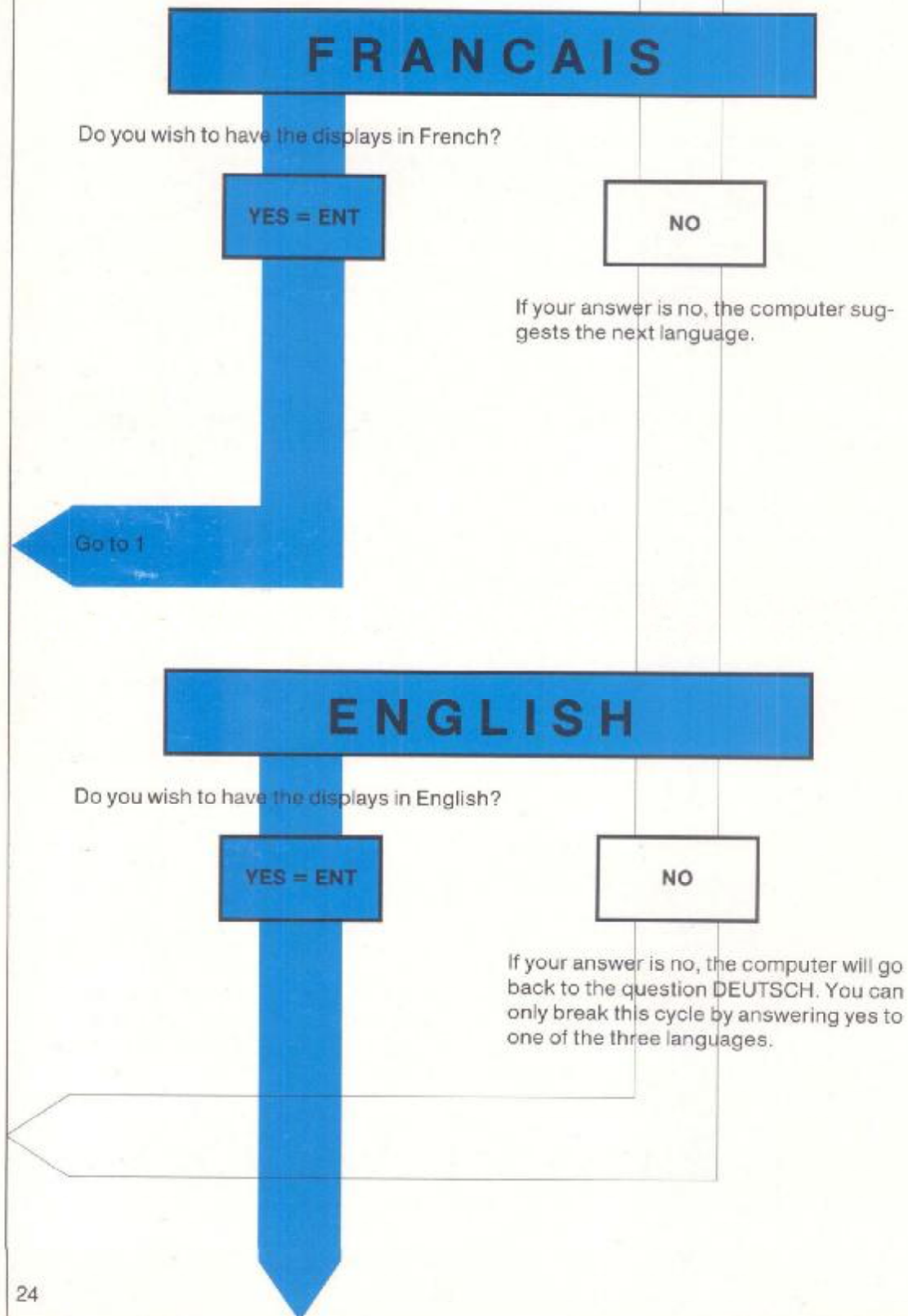
YES = ENT

NO

If your answer is no, the computer suggests the next language.

Go to 1

The basic program



The basic program

1

PROGR

Do you wish to enter a new program?

(This is where you actually start programming. This is always the first display if the accumulator is charged. If this display appears before you have chosen a language, press key R, the information DEUTSCH, FRANCAIS or ENGLISH will appear. Refer to page 23 on how to proceed.)

Should the first display be START CAST ON, press the key for fast forward, the display PROGR will appear.)

YES = ENT

Yes, you wish to enter a new program or alter the existing one.

NO

If you say no, the computer will jump to the beginning of the knitting part: START CAST ON.

Go to page 88

ERASE

Should the program in the memory be erased or retained so that you can alter it?

YES = ENT

All programs in the working memory will be completely erased.

NO

If you say no, every display will tell you what has been programmed up to this particular point. You may alter it by writing over it or leave it as it is.

The basic program

CAST ON

What kind of cast-on do you want to begin with?

(You will find the number of the cast-on on the pages 134 to 137 as well as suggestions on how to choose the correct cast-on.)

NUMBER +
ENT 3

Enter the number of the chosen cast-on. When you have entered the correct number, press ENT.

Until you have pressed ENT, you are free to alter the number by pressing the key CLR and then enter the new correct number.

. + ENT

Press the key with the dot if you wish to enter a cast-on via the reader. Then press ENT to activate the reader.

(Refer to page 72 on how to use the reader.)

2

ALL ST. PATT

Have you already programmed all the stitch patterns that will appear in your knitting?

(This question appears at this point because you can continue to knit the type of knitting intended for the cast-on without having to enter it as a stitch pattern again.)

YES = ENT

Yes, you have programmed all the stitch patterns and do not want to program further patterns.

Go to 8

NO

No, you have not programmed all the stitch patterns and wish to program further patterns.

The basic program

3

ST. PATT A

What is your next stitch pattern?

(If you come back to this question later on, B, C or D etc. will appear in this place instead of A depending on how many stitch patterns you have already programmed.)

**NUMBER
+ ENT**

12

. + ENT

Enter the pattern number. This is the first set of numbers below the illustration in the stitch pattern book. Press ENT.

(If there is only one set of numbers below the illustration, enter this one.)

Press the dot and ENT if you wish to enter a stitch pattern from a pattern sheet via the reader.

(Refer to page 72 on how to use the reader.)

4

ALTER

Do you wish to alter the stitch pattern?

You may alter it as follows:

1. Alter the direction, i.e. rotate it or mirror image it.
2. Reverse the background and motif colours.
3. Combine several motifs.
4. Programme three-colour or four-colour fairisle patterns by superimposing different stitch patterns.

YES = ENT

NO

Yes, you wish to alter the stitch pattern.

No, you do not wish to alter the stitch pattern.

Go to 10

The basic program

5

KNIT. TECH

What type of knitting technique do you wish to use for your stitch pattern?

NUMBER +
ENT

183

. + ENT

Enter the number of the chosen knitting technique, i.e. the second, three-digit number below the illustration. (If there is only one number below the illustration, this question will not appear.)

Press dot and ENT if you wish to enter a knitting technique from a pattern sheet via the reader.

6

ENLARGE POSITION

Do you wish to enlarge or position your pattern?

YES = ENT

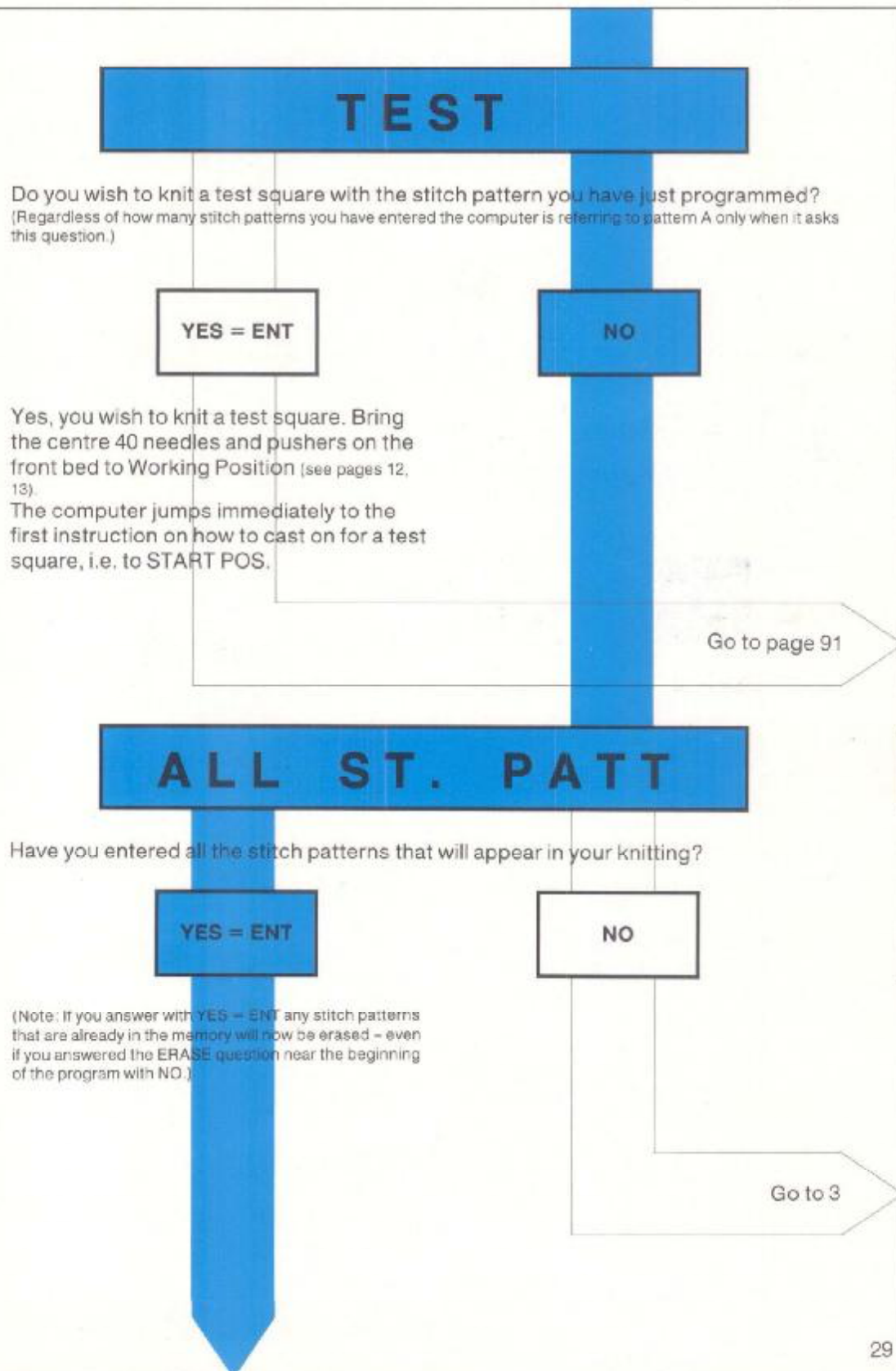
NO

Yes, you wish to enlarge or position your pattern.

No, you do not wish to alter your pattern.

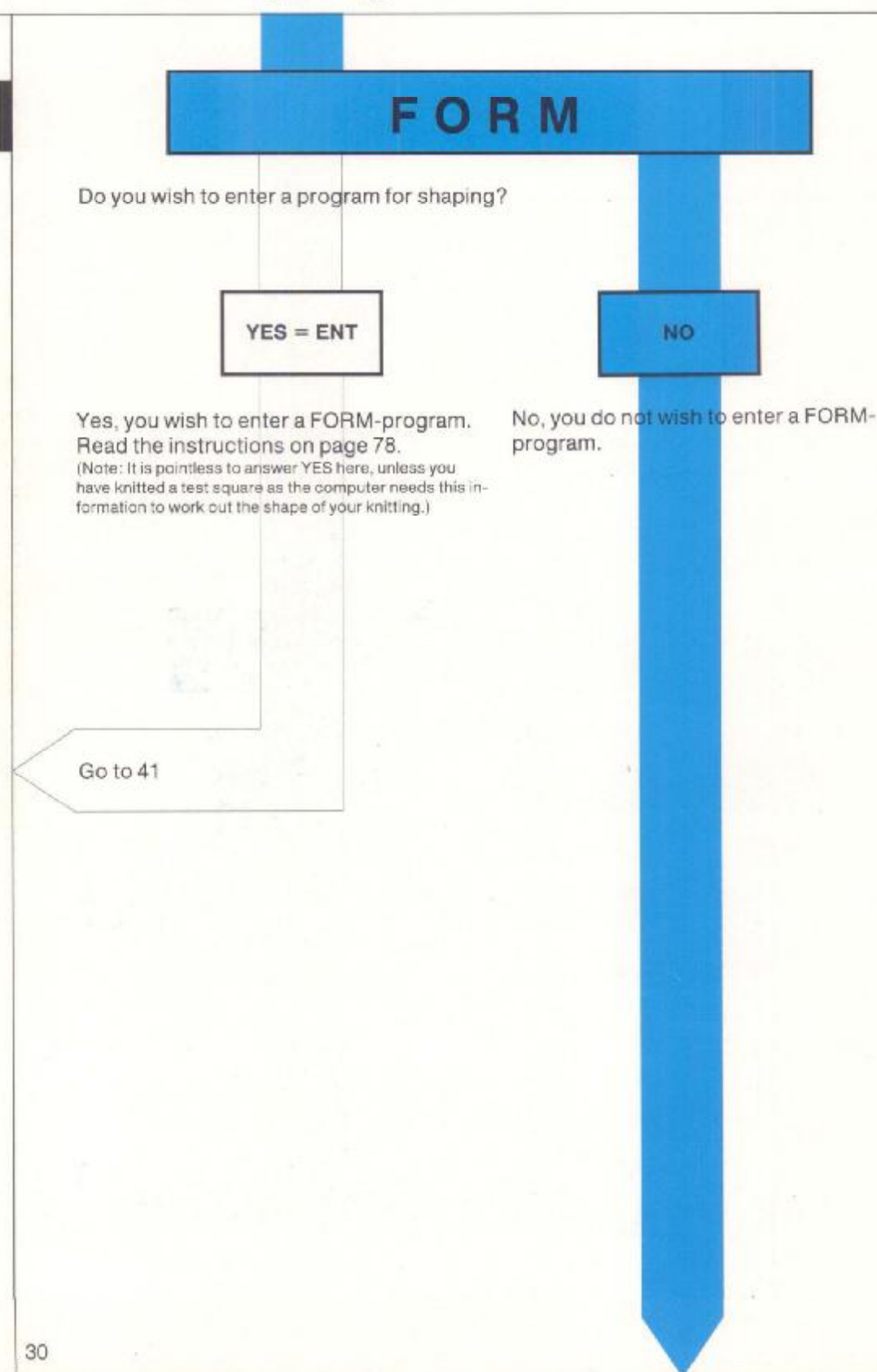
Go to 27

The basic program



The basic program

8



The basic program

9

L . N D - 90

The computer is ready to knit up to needle number 90. The minus sign indicates that this is to the left of centre.

YES = ENT

Yes, you wish to knit to needle 90 at left of centre.

**NUMBER
minus
ENT**

Enter the needle number for the extreme left-hand edge of your knitting. Then press key — (minus) and ENT.
(Note: If the last needle on the left of the knitting is on the right half of the needle bed, do not press «minus» here.)

R . N D + 90

The computer is ready to knit as far as needle 89 to the right of the centre.

YES = ENT

Yes, you wish to knit to needle 89 at right of centre.

**NUMBER +
ENT**

Enter the number of the needle as far as you wish to knit on the right, then press key ENT. (There is no + key.)

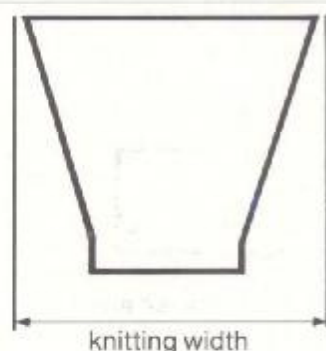
Go to **START CAST ON**, page 88
(But first read the explanations on the knitting width on page 32.)

The basic program

There are two important points to note concerning the displays shown here:

- 1. The computer can only knit over the width that you have entered.**
In other words, do not bring up more needles than programmed as the computer will ignore them. However, you can alter the width while you are knitting, as explained on the following page.
- 2. Always pass the lock over the full knitting width that was programmed –**
even if your piece of knitting is narrower – which is quite possible.

With these points in mind there are two ways of proceeding.



33

1. At the very beginning enter the knitting width corresponding to the widest part of your knitting.

Note: Always pass the lock over the whole knitting width. To help you remember, place an edge spring on the last needle of the knitting width on the left.

2. At the beginning enter the knitting width corresponding to the cast-on and alter the setting continuously as you go along.

Note: Never forget to enter the new knitting width when you increase stitches.

The basic program

As soon as you have entered the knitting width, bring the desired number of needles and pushers on the front bed to Working Position (see explanations on page 12).

Altering the width of the knitting

If you wish to alter the knitting width while you are knitting because you have chosen procedure 2, press key

COR

(Note: You can only press key COR if the row counter is visible in the display and the lock is on the right of the knitting. If the display shows a knitting instruction, press ENT until the row counter appears.)

L . N D - . . .

The display showing you the needle up to which you are knitting on the left appears. You can alter it by writing over it.

**NUMBER
minus
ENT**

R . N D + . . .

The display showing you the needle up to which you are knitting on the right appears. You can alter it by writing over it.

**NUMBER
ENT**

You can now continue to knit with the new knitting width.

Alter

ALTER

This display appears if you answered YES to question ALTER.

10

DIRECT.

Do you wish to alter the direction of the pattern?
By answering YES here you will also be able to reverse the background and motif colours.

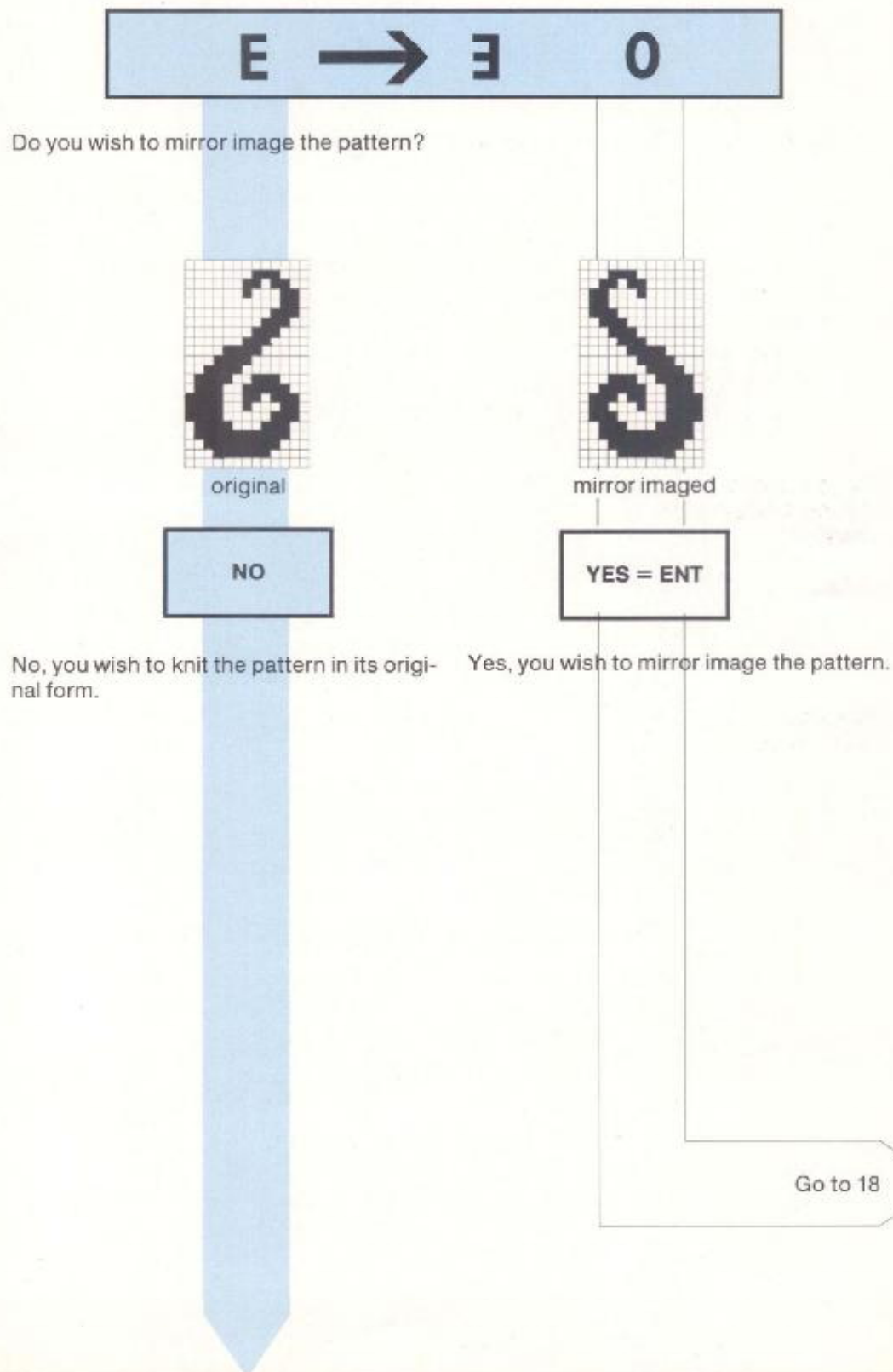
YES = ENT

NO

Yes, you wish to alter the pattern as described above.

No, you do not wish to alter the pattern in the manner described above.

Go to 19



Alter

12



Do you wish to turn the pattern upside down?



original



upside down

NO

YES = ENT

No, you do not wish to turn the pattern upside down.

Yes, you wish to turn the pattern upside down.

Go to 18



Do you wish to double the pattern, i.e. once in its original direction and once mirror imaged?



original



mirror imaged

NO

No, you do not wish to double the pattern as described above.

YES = ENT

Yes, you wish to double the pattern as described above.

Go to 18

Alter

14



Do you wish the pattern to appear one on top of the other, with the top one upside down?



original

NO

No, you do not wish the pattern one on top of the other as described above.



pattern one on top of the other

YES = ENT

Yes, you wish the pattern one on top of the other as described above.

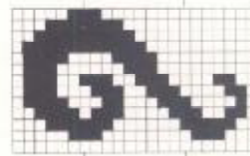
Go to 18



Do you wish to turn the pattern by a quarter turn (90°) to the right?



original



turned to the right

NO

No, you do not wish to turn the pattern.

YES = ENT

Yes, you wish to turn the pattern.

Go to 18

Alter

16



Do you wish to turn the pattern by a quarter turn (90°) to the left?



original



turned to the left

NO

No, you do not wish to turn the pattern.

YES = ENT

Yes, you wish to turn the pattern.

Go to 18

COL. REV. 0

Do you wish to reverse the background and the motif colours?



original



turned to the right

NO

No, you do not wish to reverse the background and motif colours.

YES = ENT

Yes, you do wish to reverse the background and motif colours.

Go to 18

Go to 11

Alter

18

DIRECT OK

Have you finished your change of direction instructions?

(This question is necessary because you can make more than one direction change to the pattern, so producing many interesting results.)

(You can see some examples on pages 43-45. When you have studied them come back to this section.)

YES = ENT

NO

Yes, you have turned your pattern as much as you wanted to.

(Note: Once you have said yes here you cannot review your alterations. If you do wish to check them press key R and the DIRECT displays will appear again – last one first.

If you did make an alteration "yes" the figure 1 will appear at the extreme right of the display.

If you did not make an alteration "no" the figure 0 will appear instead.

If you want to change your answer, press key CLR and answer the question again.)

No, you have not yet entered all the desired changes. The computer goes back to the questions 11-17.

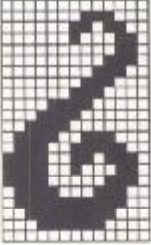
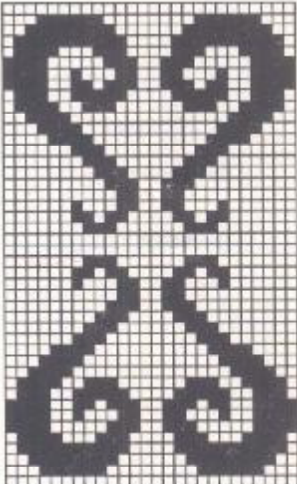
Go to 11-17

Go to 19

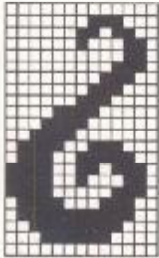
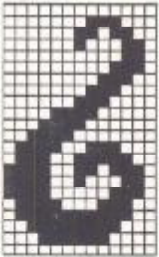
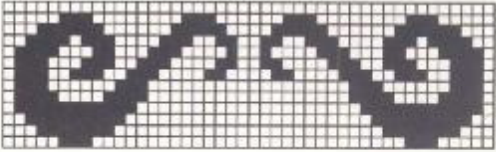
If you arrive at this display for the second time because you have added a pattern, go to 22.

Go to 22

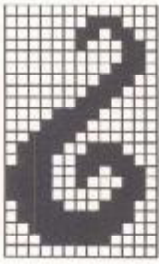
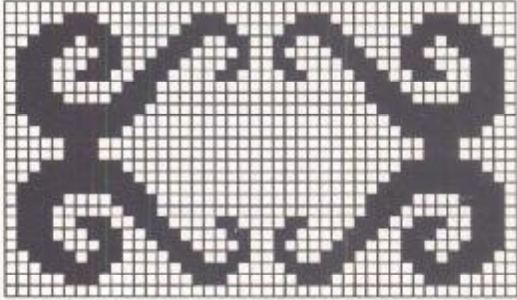
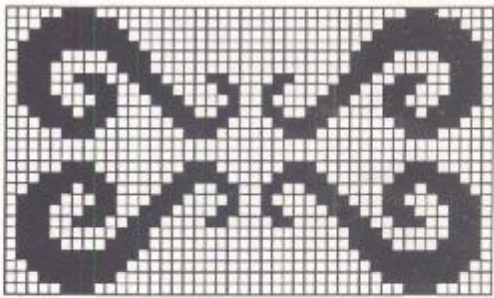
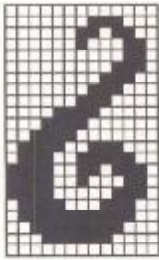
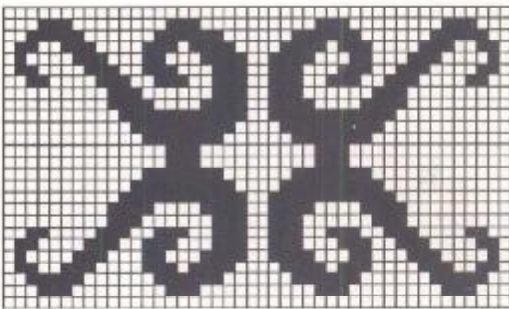
Alter

Original	Direction changes with YES answers (the numbers refer to display numbers)	Result
 original	E → E 11 E → EE 13	
 original	E → EE 13 W → W 14	
 original	E → E 11 E → EE 13 W → W 14	

Alter

Original	Direction changes with YES answers (the numbers refer to display numbers)	Result
 original	E → E 11 W → W 12 E → E 13 W → W 14	
 original	W → W 12 E → E 13 W → W 14	
 original	W → W 14 E → W 16	

Alter

Original	Direction changes with YES answers (the numbers refer to display numbers)	Result
 original	E → E 11 E → E 13 W → W 14 E → W 16	
 original	E → E 13 W → W 14 E → W 16	
 original	E → E 11 W → W 12 E → E 13 W → W 14 E → W 16	
 original	W → W 12 E → E 13 W → W 14 E → W 15	

Alter

19

ADD

Do you wish to add a second stitch pattern to the one you have just entered and/or altered, to place it next to the first one (example: man 1162 and dog 1164) or to place the second pattern on top of the first one for a three-coloured Fairisle? (Example 1286 ADD 1285)

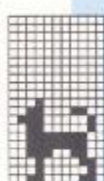
NO

Go to 5



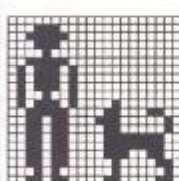
1162

+



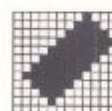
1164

=



1286

+



1285

=



3-col.
Fairisle

YES = ENT

20

ADD

WHAT

Which pattern do you wish to add to the first one?
The computer shows you which pattern you entered last.

NUMBER +
ENT

Enter the number of the pattern you want to add to the first one.

. + ENT

Press the dot and ENT if you wish to enter the additional pattern via the reader.
(See page 77 on how to use the reader.)

ALTER

Do you wish to alter the stitch pattern you have just added by turning it or reversing the background and motif colours?

YES = ENT

NO

Yes, you want to alter the pattern you have added.
The computer now runs through the questions 10 to 17.
Finally you arrive back here at 22.

No, you do not wish to alter the added pattern.

Go to 10

3. COL

Should the added pattern represent the third colour in a three or four-coloured Fairisle pattern? Note: In this case the second pattern must be exactly the same size as the first pattern.

YES = ENT

NO

A YES answer adds the third colour for a three or four-coloured Fairisle pattern.

No, the added pattern does not relate to the 3rd colour of a three or four-coloured Fairisle pattern.

Go to 25

Alter

23

A D D

Do you wish to add a third stitch pattern as the fourth colour in a four-coloured Fairisle pattern?

YES = ENT

NO

Yes, you wish to knit a four-coloured Fairisle pattern and now enter the fourth colour.

No, you wish to knit only a three-coloured Fairisle pattern and have already entered the third colour.

Go to 5

24

A D D

W H A T

This display which looks the same as number 20 means here that you must now enter the number or the sheet for the fourth colour.

**NUMBER +
ENT**

. + ENT

Enter the number of the pattern sheet of the fourth colour.

Note: This pattern must be exactly the same size as the first and second pattern.

Press the dot and ENT because you wish to enter the 4th colour via the reader.

ALTER

Do you also wish to alter the stitch pattern direction for the fourth colour?

YES = ENT

Yes, you also wish to alter the fourth colour.
The computer now runs through questions 10 to 17 again.
Finally you arrive back here.

NO

No, you do not wish to alter the stitch pattern direction.

4. COL

Is the last pattern you have added the fourth colour in a four-coloured Fairisle pattern?

YES = ENT

Yes, the pattern is the 4th colour in a four-coloured Fairisle pattern.

NO

No, you have changed your mind.

Go to 23

Go to 5

Alter

25

DIST. R 0

The display is asking how many blank rows you want between the two stitch patterns when one is placed on top of the other. The distance in rows is measured from the last row of the first stitch pattern to the first row of the second one. If there is a blank row already shown at the top or bottom of the patterns it is included within the pattern.

(Note: In this area the distances are measured in rows of squares of the stitch pattern drawing. How many actual rows this makes up in your knitting depends on the knitting technique you are using. With most Fairisle techniques one row of squares corresponds to four rows of knitting.)

**NO
ENT**

You press NO and ENT if you do not wish to arrange one pattern above the other.

Note:

If you say NO here you must answer the next question, relating to stitches, with a number even if it is "0" or your second pattern cannot be placed and will not appear.

(If you subsequently check the displays, the display DIST. R will not appear here if you have answered NO.)



Enter: NO

**NUMBER +
ENT**

Enter the number of rows of squares you wish to knit between the last row of the first stitch pattern drawing and the first row of the second stitch pattern drawing. If you enter zero the stitch patterns will directly follow one another.

Note: You cannot enter more than 256 rows of squares minus the rows of squares of the two stitch pattern drawings.



Enter: 0



Enter: 6

DIST. STS 0

How many squares do you want between the two stitch patterns when they are placed side by side?

NO
ENT

Press NO and ENT if you do not wish to arrange the patterns next to each other.

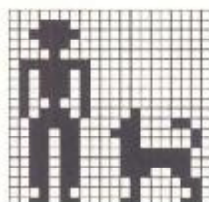
Note:

You may only say no here if you have entered a number at the previous question relating to rows.

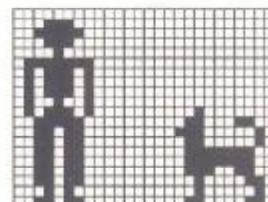
(If you subsequently check the displays, the display DIST. STS will not appear here if you have answered NO.)



Enter: NO



Enter: 0



Enter: 6

NUMBER +
ENT

Enter the number of the squares you wish to have between the last stitch at right of the first stitch pattern and the first stitch at left of the second stitch pattern.

The same rule regarding blank rows within a stitch pattern (see 25) applies when calculating spaces between patterns placed side by side.

If you enter zero the two patterns will directly follow each other.

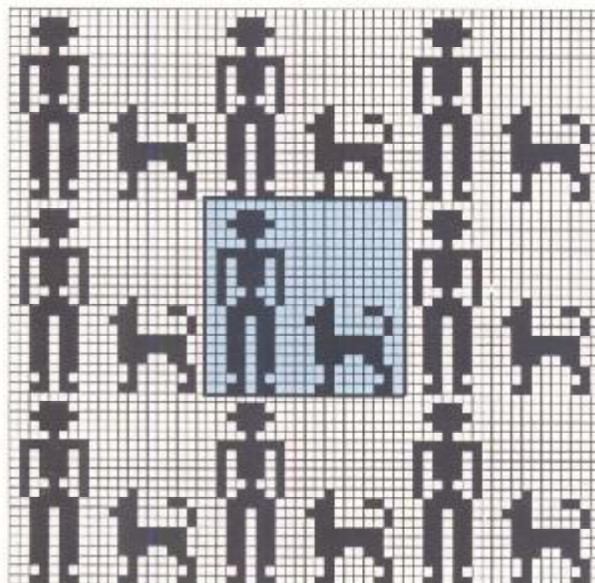
Note: Never enter more than 256 squares minus the squares of the two patterns.

Go to 19

Go to 19

You may enter a number at DIST. R as well as at DIST. STS. The following examples illustrate what happens.

Alter



This is an example of a combined stitch pattern drawing when entering:

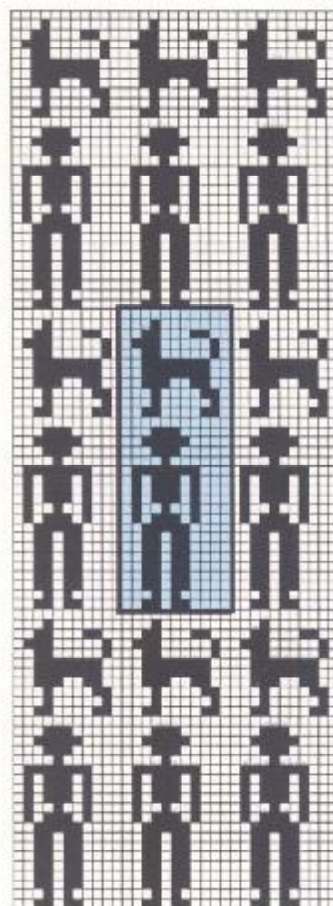
DIST. R = NO

You did not want the second pattern on top of the first one.

The framed area represents one pattern repeat of the newly combined stitch pattern drawing.

DIST. STS = 0

You did not want a space between the two patterns.



This is an example of a combined stitch pattern drawing when entering:

DIST. R = 0

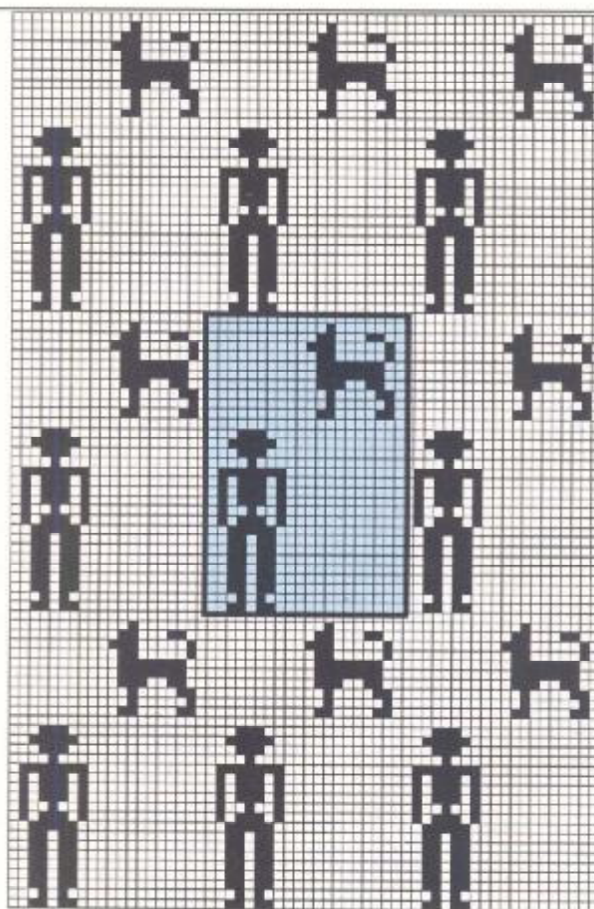
You wanted one pattern on top of the other with 0 extra rows between.

The framed area represents one pattern repeat of the newly combined stitch pattern drawing.

DIST. STS = NO

You did not want the patterns next to each other.

Alter



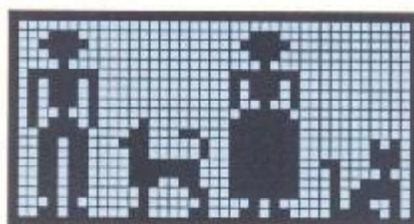
This is an example of a combined stitch pattern drawing when entering:

DIST. R = 0 DIST. STS = 0

The framed area represents one pattern repeat of the newly combined stitch pattern drawing..



Newly combined patterns become single motifs in their own right. They may of course also be placed as single motifs if you answer the display ENLARGE POSITION (6) with YES = ENT.



You may add further stitch pattern drawings in the same way if you answer the display ADD (19) with YES = ENT.

Enlarge Position

ENLARGE POSITION

You arrive here if you have answered question ENLARGE POSITION with yes.

CM ?

Do you wish to enter the details on the enlarging and positioning of your stitch pattern in centimetres?

(Note: You can only say yes here, if you have already knitted a test square of your pattern as without these measurements the computer is unable to work out the required details in centimetres. Once you have decided whether you wish to work in rows or cm you must keep to that choice for the rest of the program.)

YES = ENT

Yes, you wish to enter the details about enlarging and positioning in centimetres, and you already have the measurements of the test square of your stitch pattern.

NO

No, you wish to enter the details about enlarging and positioning in stitches and rows.

Go to 28

MM 40 R 0

How many millimetres to 40 rows are there in your knitting?

(Note: Never enter more than 256 here – it is beyond the range of the computer and you will get an error message.)

NUMBER +
ENT

27

Enlarge Position

MM 40 ST 0

How many millimetres to 40 stitches are there in your knitting?
Count and measure only the stitches on the front bed.

(Note: Never enter more than 256 here !)

**NUMBER +
ENT**

↑ R . . .

↑ CM . . .

The computer is telling you the height in rows or centimetres of one pattern repeat of your stitch pattern.

At the same time the computer is asking you if you agree with the height.

(Note: In this case it is the rows of knitting that are counted and not the rows of squares in the stitch pattern drawing.)

YES = ENT

Yes, you agree with the height of the pattern, and you do not wish to alter it.

Go to 31

NO

No, you do not agree with the height of the pattern, and you wish to enlarge it.

(Instead of saying no, you can enter directly the desired height of your pattern in rows or centimetres. The computer will jump straight to display 30 and tell you the measurement it can attain and which will come nearest to your wishes.)

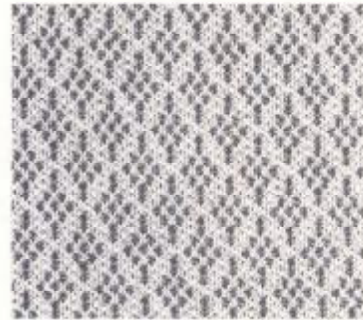
Enlarge Position

29

↑ × 1

By how much do you wish to multiply the height of your pattern to enlarge it?
You may multiply your pattern only by whole numbers (maximum 99).

NUMBER +
ENT



Enter: ENT
(If you wish to retain the original.)



Enter: 4 + ENT

Enlarge Position

30

↑↑ R

↑↑ C M

Here you can see the height in rows or centimetres of the enlarged stitch pattern.

YES = ENT

NO

Yes, you agree with the height of your pattern.

No, you do not agree with the height of your pattern. If you press NO, display 29 will re-appear. By writing over it you can alter the number you chose before.
(You may also proceed as given at display 28 and enter the desired height in rows or centimetres immediately.)

Go to 29

Enlarge Position

↔ STS . . .

↔ CM . . .

The computer tells you the width of one repeat of your stitch pattern in stitches or centimetres.
At the same time the computer asks you whether you agree with the width of your stitch pattern.

YES = ENT

NO

Yes, you agree with the width of your pattern.

No, you do not agree with the width of your pattern and wish to alter it.
(Here again you may enter the desired width immediately in stitches or centimetres as in display 28. The computer will then jump to 33, and show you what measurement comes closest to the desired one.)

Go to 35

↔ × 1

By how much do you wish to multiply your pattern to enlarge it?
(Note: You may only multiply your stitch pattern by whole numbers and at most by 99.)

NUMBER +
ENT

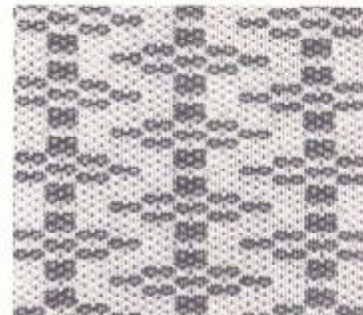


Enter: ENT
(if you wish to retain the original)

31

32

Enlarge Position



Enter: 4 + ENT



STS

. . .



CM

. . .

The computer is telling you the width in stitches or centimetres of the enlarged pattern.

YES = ENT

NO

Yes, you agree with the width of your pattern.

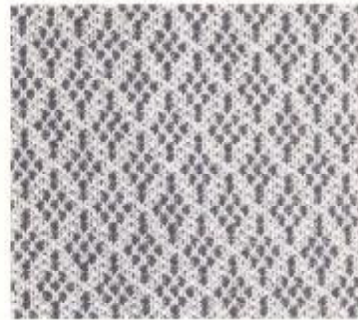
No, you do not agree with the width of the pattern. If you press NO, display 32 will reappear. You can write over it and alter the number you chose before.

(You may also proceed as at display 31 and enter the desired width in stitches and centimetres immediately.)

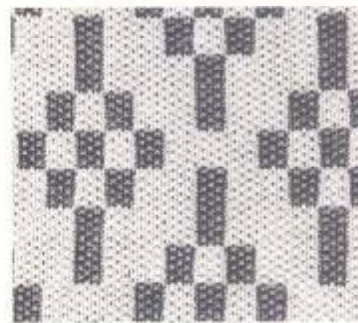
Go to 32

Enlarge Position

You may of course multiply the width and the height of your pattern by the same amount.



Original



Enter: $\uparrow \times 4$
 $\leftrightarrow \times 4$

You may also multiply the height and the width by different amounts.



Enter: $\uparrow \times 3$
 $\leftrightarrow \times 7$

Enlarge Position

34

OUTLINE

0

Do you wish to leave the outline as it is now (i.e. with «steps») or do you wish to smooth it?



Stitch pattern 1157
↑ R × 3
↔ ST × 3

YES = ENT

Yes, you wish to leave the outline as it is.

Go to 35



Stitch pattern 1157
↑ R × 3
↔ ST × 3

NO

No, you wish to smooth the outline.

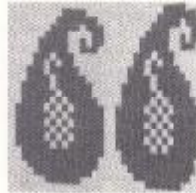
Go to 35

The smoothing of the outline is intended to even out the «steps» which are the result of enlarging. The resultant corners will be filled in in favour of the motif colour at the expense of the background colour.

The smoothing of the outline is intended only for single motifs in two colours that have been multiplied by the same number in both directions.

Enlarge Position

Note: As a result of smoothing the outline single stitches in the background colour have disappeared completely.



OUTLINE: YES = ENT



OUTLINE: NO

Note: In the case of a continuous stitch pattern, unforeseeable discrepancies may appear where the pattern repeats meet.



OUTLINE: YES = ENT



OUTLINE: NO

POSITION

Do you wish to position your pattern? You have the following options:

1. You can begin knitting and start the pattern later.
2. You can increase the distance between the pattern repeats.
3. You can stop the pattern from repeating itself vertically or horizontally.
4. You can move the centre of the pattern.
5. You can position a pattern as a single motif anywhere you like in the knitting.

(Normally, when positioning a pattern, the background colour is plain where there is no pattern. There is, however, the possibility of creating vertical stripes there. Read the explanations on page 155.)

YES = ENT

Yes, you wish to position the pattern as described above.

NO

No, you do not wish to position the pattern but knit it distributed evenly over the whole area.

Go to 7

Enlarge Position

36

PATT. AFT R 0

PATT. AFT CM 0.0

Do you wish to start the stitch pattern immediately at the beginning of the section, i.e. at row zero, or only after a few rows in the same knitting technique but without pattern?

(Note: The knitted rows are counted and not the rows of squares in the stitch pattern drawing.)

YES = ENT

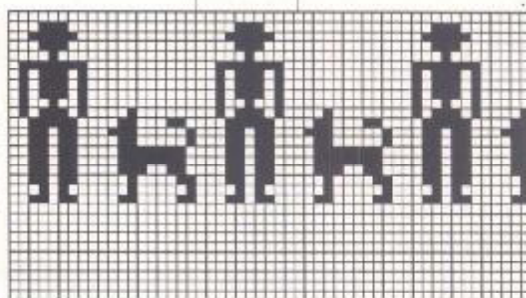
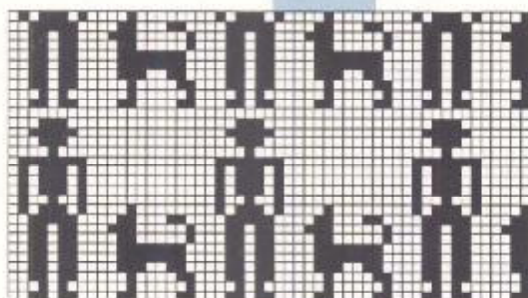
Yes, you wish to start the pattern at row zero.

NUMBER +
ENT

No, you do not wish to start the pattern at row zero, but only after a certain number of rows or centimetres.

Enter the number of rows or centimetres and press ENT.

(Note: The computer will not accept more than 127 rows or the number of centimetres corresponding to 127 rows of your test square.)



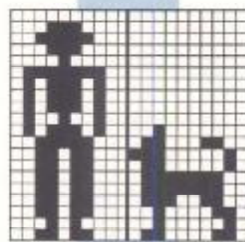
Enlarge Position

T O R . / L . - 0

Normally, the centre of your motif appears at the centre of the needle bed. Do you wish to move the motif to the right or left?

YES = ENT

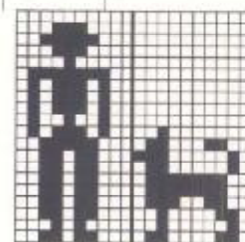
Yes, you want the centre of the motif at the centre of the needle bed.



Centre needle bed
Centre motif

**NUMBER +
ENT**

No, you do not want the centre of the motif at the centre of the needle bed. You wish to move the centre of the motif by a certain number of stitches to the right (enter number and press ENT) or to the left (number, minus and ENT).



Centre needle bed
Centre motif
Enter: 7 ENT



Centre needle bed
Centre motif
Enter: 6 - ENT

37

Enlarge Position

38

IN PATT. ATR 0

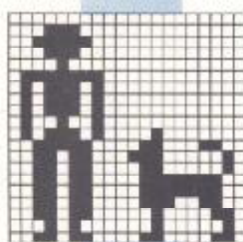
IN PATT. AT CM 0.0

Do you wish to begin at the beginning of the motif or later in the pattern?

(Note: This question does not appear if you begin your pattern after a certain number of rows or centimetres, as these two possibilities cannot be combined.)

YES = ENT

Yes, you wish to start at the beginning at row or centimetre zero.



Enter: YES = ENT

NUMBER +
ENT

You do not want to start at the beginning of the motif but at a certain number of rows or centimetres.

(Note: You may never enter more than 127 or the number of centimetres corresponding to 127 rows of your test square.)



Enter: 24 + ENT

Enlarge Position

39

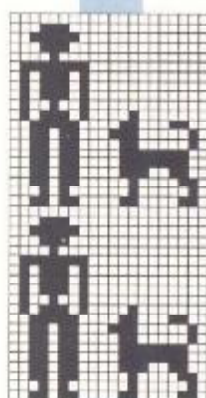
↑↑ REP. R 0

↑↑ REP. CM 0.0

Do you wish to repeat your stitch pattern vertically without interval, do you wish to increase the distance between the pattern repeats or do you not wish to repeat the pattern at all?

YES = ENT

Yes, you wish to repeat the motif with 0 rows interval.



Enter:
YES = ENT

NUMBER
+ ENT

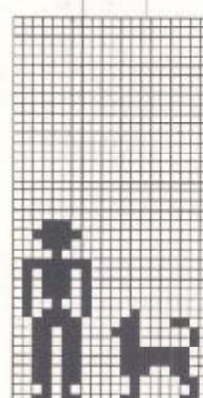
You wish to repeat the motif at an interval of a certain number of rows or centimetres.
(You may enter only 256 rows at the most or the corresponding number in centimetres.)



Enter:
20 + ENT

NO
+ ENT

No, you do not wish to repeat the motif vertically.
(When you subsequently check the displays, nothing will appear in this place at REP. R or CM, if you have answered NO here.)



Enter:
NO

Enlarge Position

40

↔ REP. ST 0

↔ REP. CM 0.0

Do you wish to repeat the stitch pattern horizontally without interval, do you wish to increase the distance between the pattern repeats, or do you not wish to repeat the pattern at all?

YES = ENT

NUMBER +
ENT

NO
+ ENT

Yes, you wish to repeat the motif at 0 stitches interval.

Yes, you wish to repeat the motif at an interval of a certain number of centimetres.

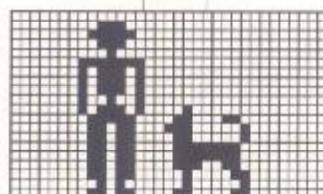
No, you do not wish to repeat the motif horizontally. (When you subsequently check the displays, nothing will appear in this place at REP. ST or CM, if you have answered NO here.)



Enter:
YES = ENT



Enter:
4 + ENT



Enter:
NO

The motif will be knitted once at the **centre of the needle bed**. If you do not want it at the centre of the needle bed, you have to move the centre as in question 37.

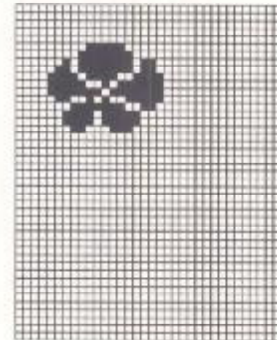
Go to 7

Enlarge Position

An example of how to position a single motif.



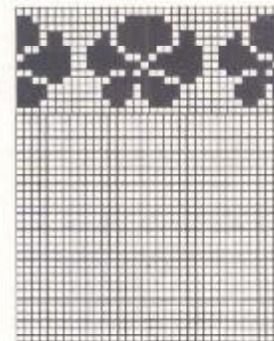
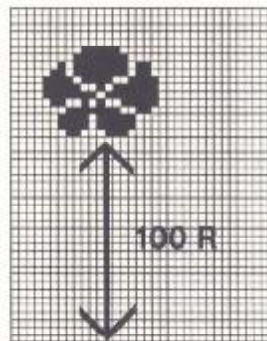
The original stitch pattern.



The way you wish to knit it.

PATT. AFT R 0

100+ENT



Result:
Pattern begins
after 100 rows.

*Single Motif
without*

Moving To Side

20 - 100 - 100

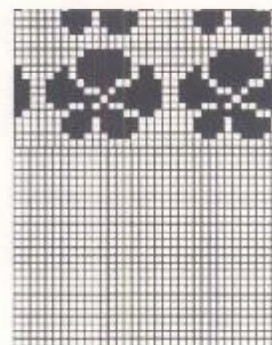
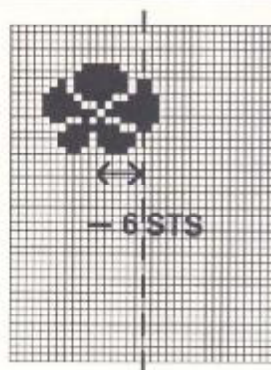
ASNEED

Enlarge Position

T O R . / L . - 0

6 - ENT

*DONT ENTER NO ST
Just YES ENT*



Result:
The centre of the pattern
has been moved 6 stitches
to the left.

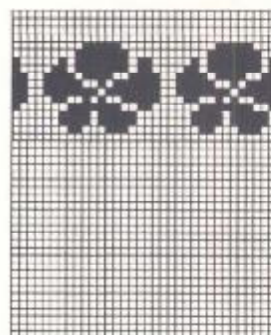
I N P A T T . A T R 0

YES = ENT

↑

R E P . R 0

**NO
+ ENT**

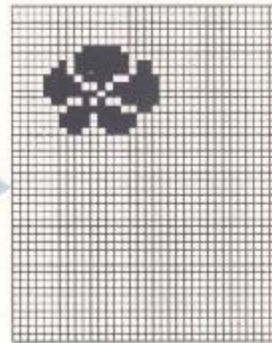


Result:
The pattern is not repeated vertically.

Enlarge Position

↔ REP.ST 0

NO
+ ENT

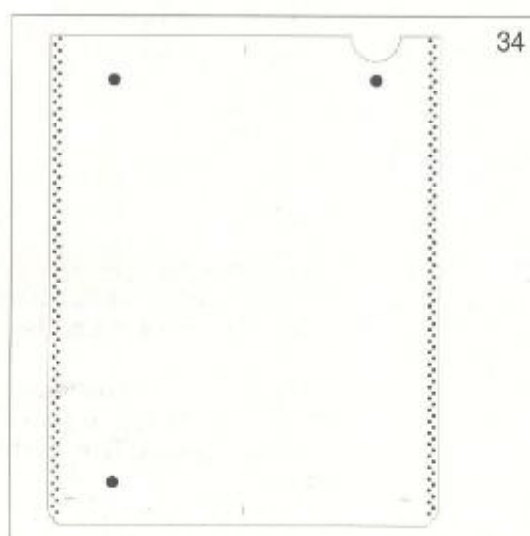


Result:
The pattern is not repeated horizontally.
You have reached the target!

The reader

READER

This display appears if you pressed DOT + ENT at display ST. PATT (3).
To be able to enter the stitch pattern drawing you have to insert it inside the pattern sleeve.



34

Pick up the pattern sleeve.
At the top you will find a semi-circular cut-out.
The lower end of the transparent foil is sealed and the corners are slanted.
Remove the three red press studs from the accessories bag.



35

Insert your stitch pattern drawing into the pattern sleeve, i.e. underneath the transparent foil.
The arrow on the stitch pattern drawing must point downwards.
Fix the stitch pattern drawing to the pattern sleeve using the three red press studs, flat sides facing you.

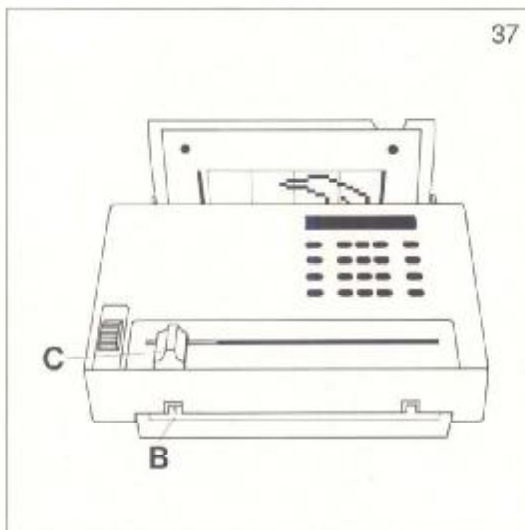
The reader



First slide the reading knob to the left-hand edge of the slot on the lower edge of the reader.

At the top of the console you will find another slot. From above insert the pattern sleeve, arrow first and transparent foil facing you, into the slot as far as it will go.

Turn the transport wheel A to the rear and at the same time continue to ease the pattern sleeve further down until the toothed wheels grip it properly.



Continue to turn the transport wheel until the figure 1 appears in the cut-out B at the left-hand lower front edge of the reader.

You cannot begin reading the pattern into the computer until the figure one has appeared in this cut-out. To read the pattern into the computer slide the reading knob C smoothly and not too fast back and forth.

Note: Always slide the reading knob to the very end of the slot. Each time you slide the knob across, the display will indicate that you have successfully read a row by changing the row number on the screen.

(If you go too fast, or not to the end of the slot, or have inserted the card incorrectly, or it has slipped, etc, an error message will appear and you will have to start again as follows. Turn the transport wheel to the rear until the pattern sleeve comes right out of the front slot of the reader.

DO NOT PULL IT OUT. Press ENT. Display ST. PATT (3) appears.

Press Dot + ENT. Display READER appears and start reading the pattern again.)

The display shows the number of rows that have been read.

(This is useful if you have to locate a badly drawn square.)

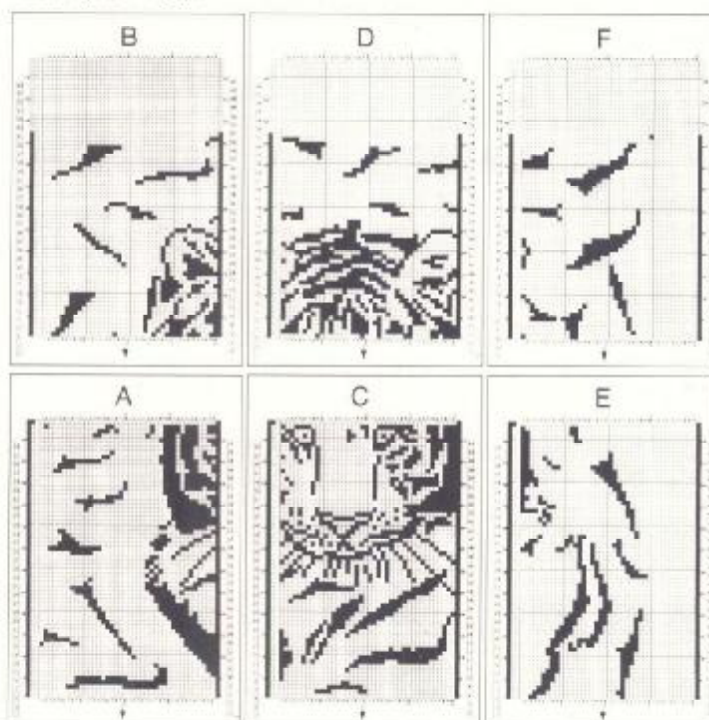
Continue reading the pattern into the computer until display ALTER appears. Slide the reading knob to the left, if it is not there already, and remove the pattern sleeve by turning the transport wheel. Now make your pattern alterations as you wish.

(Note: Never leave the pattern sleeve in the reader.)

The reader

Entering a stitch pattern drawing consisting of more than one sheet.

Example: "Tiger"



Begin with sheet A.

When you have entered sheet A, the display that appears is

CONTINUE

Press

YES = ENT

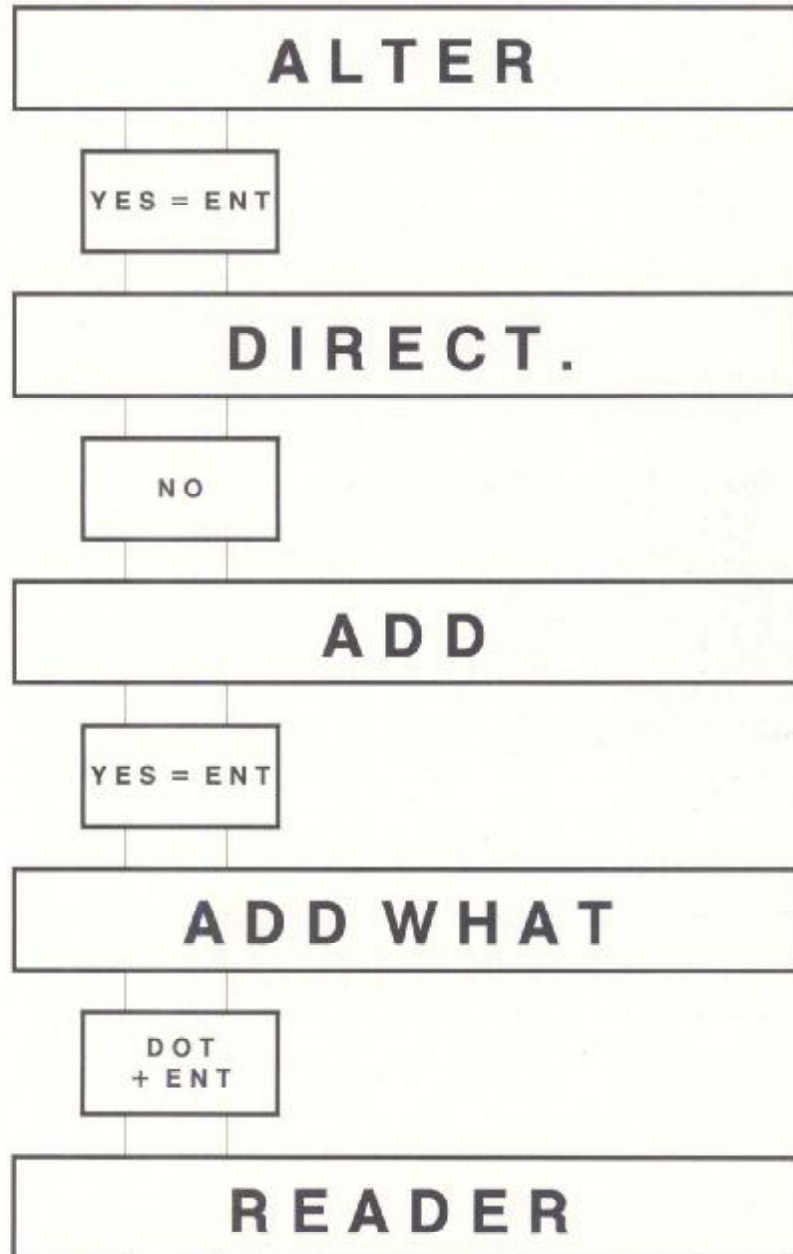
The display that has appeared is

READER

Enter sheet B.

The reader

When you have entered sheet B, proceed as follows:



Enter sheet C and D as you entered A and B.

When you have entered the two pattern sheets, say YES = ENT at display ALTER and continue as follows:

The reader

DIRECT.	
NO	
3. COL	
NO	
DIST. R	0
NO ENT	
DIST. STS	0
0 + ENT	
ADD	

Proceed as you have done for pattern sheets C and D.

When you have entered the two sheets E and F answer the following questions as you have done for pattern sheets C and D, i.e.:

DIRECT (NO), 3. COL (NO), DIST. R. (NO), DIST. STS (0 and ENT), ADD (NO)

Finally, display KNIT. TECH will appear.

Go to 5 = KNIT. TECH

The reader

How to proceed when a stitch pattern consists of more than 6 pattern sheets.

If a stitch pattern consists of 12 pattern sheets, you cannot enter the complete pattern in one procedure as the working memory will have been filled.

The working memory has a capacity to store between 6 and 9 full pattern sheets. (It depends on what other data you have already stored, e.g. for other patterns or for shaping.)

Example: A stitch pattern drawing consisting of 12 pattern sheets:

44		
D	H	M
C	G	L
B	F	K
A	E	I

Here you start by entering sheets A, B, E, F, I and K, which you are going to knit first.

(When tracing these sheets you will, of course, have already taken care not to mark them with the continuation sign.)

Calculate how many rows you will have to knit to complete this part of the design and make a note of it.

Continue in the basic program and knit the first part of your design.

When you have reached the number of rows you have previously noted, stop.

(Note: If you do not stop here, the computer will simply start again at the beginning of the stitch pattern.)

You now wish to read the remainder of your design into the computer, so press "fast forward" >>>

to get to display PROGRAM.

Continue as follows: "PROGRAM"
"ERASE"
"CAST ON"
"ALL ST. PATT"
"ST. PATT A"
"ALL ST. PATT"
"ST. PATT B"

ENT = yes

NO

ENT = the original cast-on remains

NO

Enter the number of the knitting technique you have used for your pattern.

NO

You can now enter the pattern sheets C, D, G, H, L and M as described above.

Finally, enter the knit. technique again and with the "fast forward" key jump to display "START CAST ON"

Here you answer with NO.

The computer jumps directly to the place where you can continue to knit.

Now press the ABC key to get to the new pattern section.

Form

41

FORM

You arrive here if you have answered the question FORM with YES.

FORM 1 0

This display means that you can enter the first number of the FORM-program after the shop size.

(If you have never knitted with a FORM-program before and have not yet chosen a suitable FORM-program for your knitting, refer to pages 80-83.)

**NUMBER +
ENT**

FORM 2 0

The counter has now moved on by one number, as the computer always tells you what number of your FORM-program you now have to enter.

Enter all the numbers of your FORM-program in succession. Press key ENT after each number.

(As long as you have not pressed ENT you can amend the numbers by pressing CLR and then enter the correct number.)

The last number of a FORM-program is always an 0. Enter the 0 and press ENT.

0 + ENT

Checking the FORM-Program

FORM 1 . . .

Alternating with the display FORM 1, the first number of the FORM-program you have entered now appears. The purpose of these and the following displays is to check whether you have entered your program correctly.

Carefully compare the number with your program and only ENTER it when you are quite sure. The next number of your FORM-program now appears. Check your program slowly and carefully.

If you miss an incorrect entry and do not correct it at this point you will have to go back to 1 of your basic program.

How to correct a mistake when you discover one.

If you find a wrong number simply write the correct one over it, i.e. press the correct number, the wrong one will automatically be replaced by the correct one. Only press ENT when you are quite sure that the correct number is in the correct place. After the 0 at the end you also press ENT!

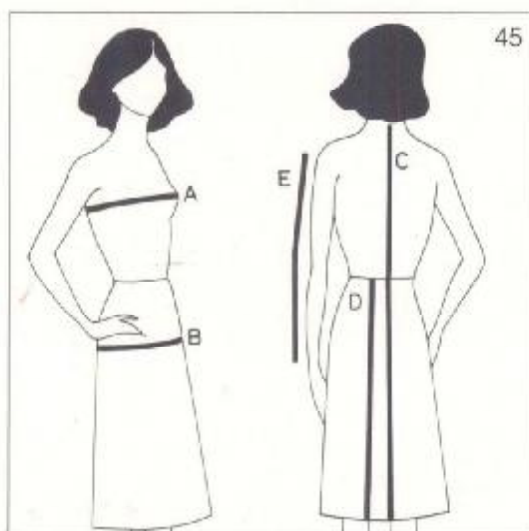
0 + ENT

(The display WAIT may appear at this point while the computer is checking the entered program.)

Go to START
CAST ON page 88

Form

Choosing the correct FORM-program



The program for each piece of knitting is contained in the corresponding row of numbers given in the description for the garment.

Each part (e.g. back, front, etc.) must be programmed separately.

When one part is finished, a new FORM-program has to be entered for the following part. If the stitch pattern remains the same there is no need to reprogram the pattern section.

Start by taking your own measurements, or those of the person for whom you are going to knit. Look at the chart below, and in the garment descriptions, to see what measurements you need and what individual measurements can be inserted in your program. All the measurements are body measurements and therefore the tape measure should fit closely.

A = The bust/chest size is measured over the widest part of the bust/chest.

B = The hip size is measured over the widest part of the hips.

C = The total length is measured from the nape of the neck down to the required length of the sweater or dress.

D = The total length of the skirt is measured from the waist band to where the hem should be.

E = The total length of the sleeves is measured along the extended arm from the shoulder point to the length required. Note: This also applies to sleeves that are not set in in the normal way, e.g. kimono or raglan sleeves.

Form

Pattern Book Size Chart - 1990

Chart sizes						
Ladies' sizes			Men's sizes		Children's sizes	
Size	Bust	Hips	Size	Chest	Height	Age
34 - 31	80 cm	86 cm	42	84 cm	86 cm	1
36 - 33	84 cm	90 cm	44	88 cm	92 cm	2
38 - 35	88 cm	94 cm	46	92 cm	96 cm	3
40 - 37	92 cm	98 cm	48	96 cm	104 cm	4
42 - 39	96 cm	102 cm	50	100 cm	110 cm	5
44 - 41	100 cm	107 cm	52	104 cm	116 cm	6
46 - 43	104 cm	111 cm	54	108 cm	122 cm	7
48 - 45	110 cm	117 cm	56	112 cm	128 cm	8
50 - 47	116 cm	123 cm			134 cm	9
52 - 49	122 cm	129 cm			140 cm	10
54 - 51	120 cm	135 cm			146 cm	11
					152 cm	12
					158 cm	13
					164 cm	14

Inserting individual measurements in the program

Compare your personal measurements against chart sizes shown above. If your measurements do not correspond exactly with those in the chart, choose the **next smaller size**. When entering the program insert your own measurements in the places provided for this purpose. The computer will now calculate the garment to your exact measurements ensuring a perfect fit.

Back of lady's sweater

34-36	38-40	42-44	46-48	
84	84	84	84	
172	172	172	172	
		15		mm 40 R
		160		mm 40 sts
118	128	138	146	
88	96	105	114	Hip chart size
		107		Your hip size in cm
195	195	195	195	
		60		mm 40 R Border
7	7	7	7	
11	11	11	11	
38	38	38	38	
118	128	138	146	
82	90	96	107	
		150		cm Bust chart size
				Your bust size in cm
23	22	21	21	
58	58	58	58	cm Total length chart size
		63		Your total length in cm
103	103	103	103	
5	5	5	5	
184	184	184	184	
133	133	133	133	
7	7	7	7	
53	55	57	60	
188	188	188	188	
150	153	155	160	
0	0	0	0	

Form

Test square

In each program the third and fourth line are left blank for inserting the measurements of the test square as follows:

mm 40 R : Insert measurement in millimetres (mm) for 40 rows of your knitting.

mm 40 sts: Insert measurement in millimetres (mm) for 40 sts of your knitting

(or the measurement which results when knitting over a width of 40 needles on the front bed).

A further blank line may appear for the border:

mm 40 R Border: Measurement in millimetres for 40 rows in the knitting technique chosen for your border.

Individual measurements

The measurements are always taken in centimetres (cm).

The places where individual measurements can be entered are specially marked in each program.

The measurement corresponding to the chart size chosen by you can be seen from the line immediately above the corresponding blank line and is expressed in centimetres.

If you do not wish to alter the chart size measurement, it must still be repeated in the blank line.

Important: You must always insert a number in a blank line. If you skip this position when entering a program the computer cannot function correctly.

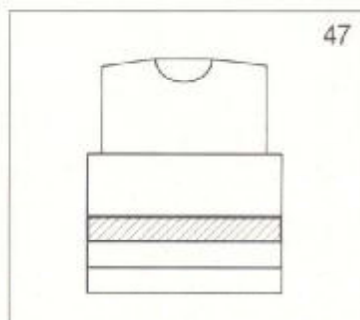
Inserting individual measurements in the program

When inserting individual measurements the following must be remembered:



Measurements related to the length such as overall length of dresses, sweaters, skirts and sleeves (i.e. the measurements referring to rows) **can be increased or decreased.**

Do not forget to adapt the figures of both front and back if you do.



47

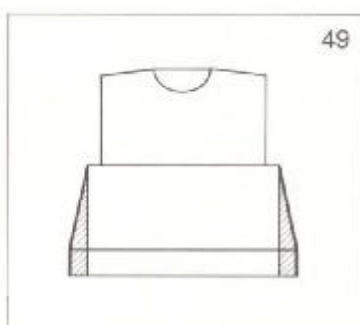
On a sweater adaptations in the length are made between the border and the armhole. On a sleeve between the cuff and the start of the sleeve head. The armhole and the sleeve head may not be altered.



48

Measurements across such as bust, chest, hip and sleeve widths (i.e. measurements referring to stitches) **can only be enlarged.**

If by mistake you have made one of these measurements smaller, display ERR (error) 163 will appear.

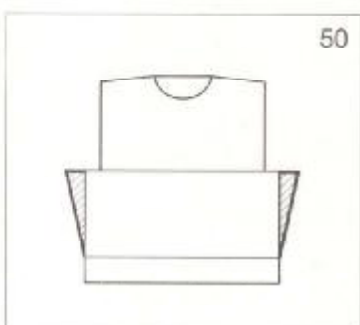


49

Increasing the hip width of a sweater:

The sweater will be wider at the bottom by as many cm as you have increased the chart measurement.

If you do not increase the bust measurements, the added stitches will be decreased between the border and the armhole.



50

Increasing the bust/chest measurements:

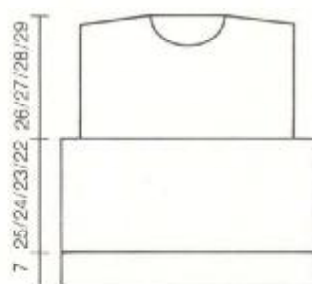
The sweater will be larger at the bust by as many cm as you have added to the chart size measurement. The added stitches will be decreased in the armhole, the width of the shoulders will always stay the same width.

Form

Lady's sweater

Fig. I – Back

	34-36	38-40	42-44	46-48	
1	84	84	84	84	
2	172	172	172	172	
3					mm 40 R
4					mm 40 sts
5	118	128	138	146	
6	88	96	105	114	
7					cm
8	195	195	195	195	hip size
9					mm 40 R
10	7	7	7	7	border
11	11	11	11	11	
12	38	38	38	38	
13	118	128	138	146	
14	82	90	98	107	
15					cm
16	23	22	21	20	bust
17	58	58	58	58	
18					cm
19	103	103	103	103	total length
20	5	5	5	5	
21	184	184	184	184	
22	133	133	133	133	
23	7	7	7	7	
24	53	55	57	60	
25	188	188	188	188	
26	150	153	155	160	
27	0	0	0	0	



51/55/59/63

Lady's sweater

Fig. II – Front

	34-36	38-40	42-44	46-48	
1	84	84	84	84	
2	172	172	172	172	
3					mm 40 R
4					mm 40 sts
5	118	128	138	146	
6	88	96	105	114	
7					cm
8	195	195	195	195	hip size
9					mm 40 R
10	7	7	7	7	border
11	11	11	11	11	
12	38	38	38	38	
13	118	128	138	146	
14	82	90	98	107	
15					cm
16	23	22	21	20	bust
17	58	58	58	58	
18					cm
19	231	231	231	231	total length
20	5	5	5	5	
21	184	184	184	184	
22	133	133	133	133	
23	7	7	7	7	
24	53	55	57	60	
25	188	188	188	188	
26	150	153	155	160	
27	70	70	71	71	
28	184	184	184	184	
29	128	129	129	130	
30	154	162	162	162	
31	164	164	164	165	
32	166	166	175	175	
33	2	3	128	128	
34	0	0	4	5	
35			0	0	

For a front with a V-neck:
Starting from "cm total length"
enter the following numbers:

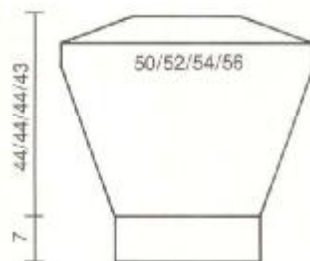
					cm total length
18					
19	231	231	231	231	
20	5	5	5	5	
21	184	184	184	184	
22	133	133	133	133	
23	7	7	7	7	
24	52	55	57	60	
25	188	188	188	188	
26	149	153	157	160	
27	68	68	68	68	
28	191	191	191	191	
29	140	141	142	143	
30	49	52	54	55	
31	2	2	2	2	
32	0	0	0	0	

Form

Lady's sweater

Fig. III = Sleeve

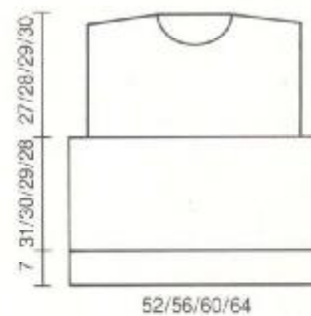
	34-36	38-40	42-44	46-48	
1	84	84	84	84	
2	172	172	172	172	
3					mm 40 R
4					mm 40 sts
5	63	65	68	70	
6	3	3	3	3	
7	3	3	3	3	
8	195	195	195	195	
9					mm 40 R border
10	7	7	7	7	
11	11	11	11	11	
12	38	38	38	38	
13	116	121	126	130	
14	3	3	3	3	
15	3	3	3	3	
16	39	39	39	38	
17	58	59	60	60	
18					cm total length
19	101	101	101	101	
20	7	7	7	7	
21	5	5	5	5	
22	191	191	191	191	
23	155	157	158	159	
24	128	128	128	128	
25	0	0	0	0	



Man's sweater

Fig. I = Back

	44-46	48-50	52-54	56-58	
1	84	84	84	84	
2	172	172	172	172	
3					mm 40 R
4					mm 40 sts
5	122	130	140	148	
6	96	104	112	122	
7					cm hip size
8	195	195	195	195	
9					mm 40 R border
10	7	7	7	7	
11	11	11	11	11	
12	38	38	38	38	
13	122	130	140	148	
14	90	98	106	114	
15					cm chest
16	30	29	28	27	
17	66	66	66	66	
18					cm total length
19	103	103	103	103	
20	5	5	5	5	
21	184	184	184	184	
22	133	133	133	133	
23	7	7	7	7	
24	55	57	60	62	
25	188	188	188	188	
26	149	151	155	158	
27	0	0	0	0	



Form

Man's sweater

Fig. II – Front

	44-46	48-50	52-54	56-58	
1	84	84	84	84	
2	172	172	172	172	
3					mm 40 R
4					mm 40 sts
5	122	130	140	148	
6	96	104	112	122	
7					cm hip size
8	195	195	195	195	
9					mm 40 R border
10	7	7	7	7	
11	11	11	11	11	
12	38	38	38	38	
13	122	130	140	148	
14	90	98	106	114	
15					cm chest
16	30	29	28	27	
17	66	66	66	66	
18					cm total length
19	231	231	231	231	
20	5	5	5	5	
21	184	184	184	184	
22	133	133	133	133	
23	7	7	7	7	
24	55	57	60	62	
25	188	188	188	188	
26	149	151	155	158	
27	71	71	71	71	
28	184	184	184	184	
29	129	130	130	131	
30	170	170	170	170	
31	164	173	182	182	
32	167	167	167	175	
33	128	1	1	2	
34	4	4	5	6	
35	0	0	0	0	

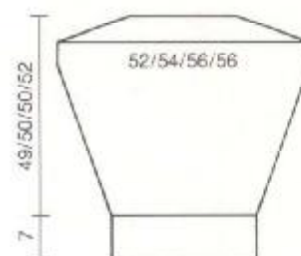
For a front with a V-neck: starting from "cm total length", enter the following numbers:

	44-46	48-50	52-54	56-58	
18					cm total length
19	231	231	231	231	
20	5	5	5	5	
21	184	184	184	184	
22	133	133	133	133	
23	7	7	7	7	
24	55	57	60	62	
25	188	188	188	188	
26	149	151	155	155	
27	68	68	68	68	
28	191	191	191	191	
29	142	144	145	147	
30	50	51	52	53	
31	2	2	2	2	
32	0	0	0	0	

Man's sweater

Fig. III – Sleeve

	44-46	48-50	52-54	56-58	
1	84	84	84	84	
2	172	172	172	172	
3					mm 40 R
4					mm 40 sts
5	70	72	74	76	
6	3	3	3	3	
7	3	3	3	3	
8	195	195	195	195	
9					mm 40 R border
10	7	7	7	7	
11	11	11	11	11	
12	38	38	38	38	
13	122	126	130	136	
14	3	3	3	3	
15	3	3	3	3	
16	44	45	46	47	
17	61	63	65	67	
18					cm total length
19	101	101	101	101	
20	7	7	7	7	
21	5	5	5	5	
22	191	191	191	191	
23	157	158	160	161	
24	128	128	128	128	
25	0	0	0	0	

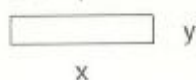


Neckband

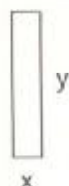
When you have knitted the front and back and sewn the shoulder seams, you can measure the neck opening.

Use the test square you have entered for the border of the sweater and with the FORM-program for border, knit the neck lines and jacket edges:

Example 1



Example 2



You can knit borders lengthwise or sideways, i.e. you cast on many stitches and knit few rows (example 1) or you cast on few stitches and knit many rows (example 2).

In both cases you use the program on the right. Where it says «x» insert **the measurement in cm** that your border should have at this place. For «y» insert **the measurement in cm** that your border should have at that place.

1	80	
2	100	
3		mm 40 R
4		mm 40 sts
5	4	
6	1	
7		x
8	38	
9	4	
10	1	
11		x
12	6	
13	6	
14		y
15	0	

Knitting

50

START CAST ON

This is the very first instruction you receive concerning the actual knitting.

You have told the computer, by way of the program, what you wish to knit. The computer now tells you exactly, step by step, how to proceed to achieve what you have planned.

On the following pages, you will find short explanations of all the possible instructions the computer may give you.

We start with the displays that may appear in a cast-on, then the displays for the transition from one stitch pattern to another and finally all the displays that are possible during the knitting of the stitch patterns.

In the part that follows all the displays concerning shaping and the explanations of how to carry out the instructions will be listed. You will also need these explanations for shaping without the FORM-program.

Flashing and still displays

All displays appearing on the computer may either flash or stand still.

If the display flashes: you have to confirm by pressing key ENT that you have carried out the instructions.

(The displays always flash when they are followed by a further instruction you have to carry out before you can continue.)

If the display stands still: you can continue to knit immediately after carrying out the instructions without having to confirm first that you have carried out the instructions.

If the computer does not display any knitting instructions, then the **Row Counter** will appear in the display. It continuously counts the rows starting from the cast-on.

If you prefer a **Row Counter that counts backwards** you can press **key R** and the display

KNIT . . .

will appear. It always tells you how many rows you still have to go before the next instruction.

(Note: You can only use key R when the display shows a row counter number and the lock is on the right.)

START CAST ON

Do you want to start this piece of knitting with a cast-on?
(The computer always asks this question first and gives you the option of altering the program.)

YES = ENT

Yes, you wish to start with a cast-on.

NO

No, you wish to jump to the place where you have interrupted your knitting.

REV. SHAP.

(This display appears only if you have entered a FORM-program.)
The computer asks you if you wish to knit the piece of knitting the way it is programmed or if you wish to knit it with reversed shapings.
(Knitted with reversed shapings: e.g. the second part of a jacket.)

YES = ENT

Yes, you wish to reverse the shaping.

NO

No, you do not wish to reverse the shaping.

50

51

Knitting

52

FORM TEST

Would you like to know, before you start knitting, what instructions concerning the shaping (i.e. form) the computer will give you?

YES = ENT

NO

Yes, you wish to see in advance the instructions regarding the shaping. The computer now shows you to which needle on the left and right it is going to knit, followed by the number on the Row Counter at which the computer gives an instruction, followed by the actual instruction. You have to press ENT to see the next display. Press ENT after the last display END.

53

L . N D — . . .

(This display appears only if you have entered a FORM-program.)

This display is showing you the number of needles to cast-on left of centre, for the shape you have chosen.

Bring these needles and pushers into working position.

ENT

Confirm by pressing ENT that you have done so.

R . N D . . .

Bring the needles and pushers for the right-hand side of the cast-on into working position.

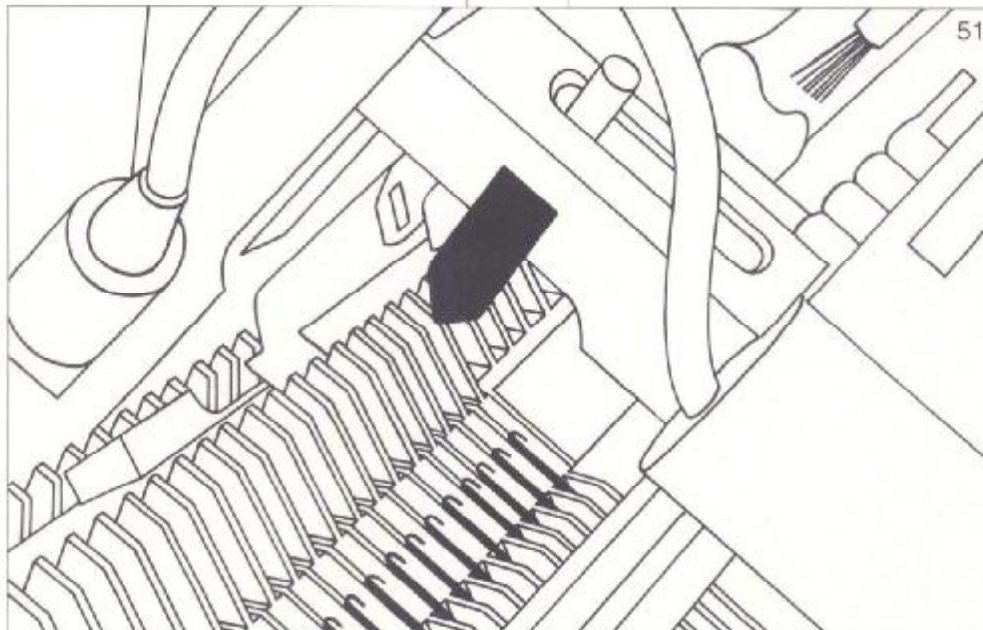
ENT

Confirm by pressing ENT that you have done so.

START POS

Bring the empty lock, i.e. without feeding eyelet or strippers, to starting position.

The lock is in starting position when the arrow at the top left on the front lock points exactly to the last grey bar of the striking comb.



Knitting

YES = ENT

Confirm by pressing ENT
that the lock is in starting position.

(If the lock is not exactly in STARTPOSITION, the display will read ERR 207. Press ENT and move the lock slightly,
then press ENT again.)

56

C A S T O N

Here you have the option of jumping directly to one of the programmed stitch patterns
instead of making the cast-on now.

(If you previously said you wanted to knit a test square, this display will not appear. Instead it will jump immediately to
the next one.)

YES = ENT

ABC

Go to page 100

Starting from here, the actual knitting instructions will appear. Remember the rule:
Every flashing display must always be confirmed with ENT.

57

— — — S X

The setting of the front lock

The three horizontal strokes at the lower edge of the display mean that the display
refers to the front lock.

Following the strokes is the setting of the pattern selector.

N means set the N-X lever to N. (When the lever is on N, position of the pattern selector dial is of no
importance.)

SX means that the pattern selector dial is set at the indicated letter (in our example = S)
and the N-X lever is on X.

(Note: You can only turn the pattern selector dial if the N-X lever is on N.)



58

The setting of the back lock

The three horizontal strokes at the upper edge of the display mean that the display refers to the back lock.

The setting of the pattern selector dial and the N-X lever is exactly the same as on the front lock.

For the back lock there may also be displays regarding the arrow keys.

↔ Press both arrow keys.

→ Press only the right arrow key.

← Press only the left arrow key.

(Remember: To release the arrow keys, press the centre key, i.e. the zero key.)



59

Empty rows

This display means that you move the empty lock, i.e. **without strippers and without feeding eyelet**, over the needles.

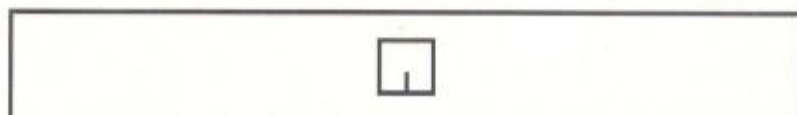
(Remember to bring needles and pushers into working position for these empty rows.)

This display appears every time before a cast-on or a new stitch pattern.

You have to work the empty rows, as only then can the computer select the needles and pushers correctly. Moreover, it is only after the second empty row that you will be able to see how to arrange the needles and pushers on the back bed.

Knitting

60



The racking handle

This display indicates the position of the racking handle found on the left front of the needle bed.

The handle "clicks" in the "up" and the "down" positions, which are its main positions, although it may also face to the right or the left at certain times, as indicated.



This sign means that the handle must be **down.**

(6 o'clock position)



This sign means that the handle must be **up.**

(12 o'clock position)



This sign means that the handle must face to the **left.**

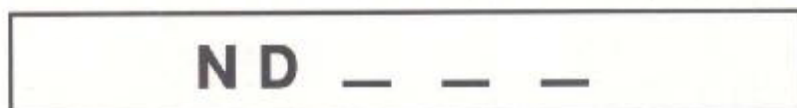
(9 o'clock position)



This sign means that the handle must face to the **right.**

(3 o'clock position)

61



The front needles

This display shows you the needle setting on the front bed. It always appears after the first empty row and asks you to observe the position of the pushers on the front bed. From the position of the pushers you will know which needles have to be in Working Position and which ones do not.

If all the pushers are in Working Position, it means that you are knitting a pattern or a cast-on where all the needles of the front bed are in Working Position.

If pushers are in Rest Position, it means that the corresponding needles of your pattern or cast-on should be out of Working Position. Where you see a pusher selected in rest position, bring it and the corresponding needle into the out of working position.

(For the position of the needles and pushers see page 12.)

ND — — —

62

The back bed needles

This display means that for your pattern or cast-on the **needles on the back bed must be in Working Position.**

This display appears only for double bed patterns and after the second empty row.

Which needles on the back bed have to be in Working Position can be seen from the needle diagram corresponding to the number of your cast-on or pattern.

You will find the needle diagrams in the section on knitting techniques (page 133-181).

PUSH — — —

63

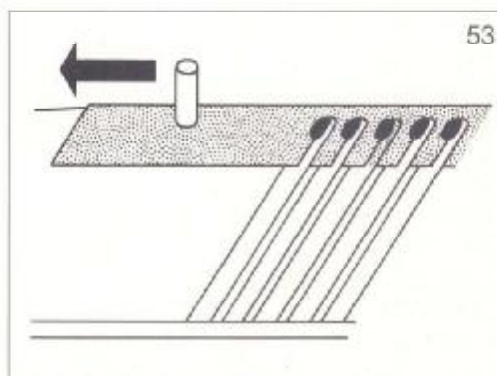
The back bed pushers

This display tells you that for your cast-on or pattern you also need pushers on the back bed.

Which pushers you need and the position they have to be in, can be seen from the needle diagram corresponding to the number of your cast-on or pattern.



52



53

For pusher position and how to set them see pages 13 and 14.

Knitting

64

WASTE Y

(This display appears only if you knit a test square, otherwise the next instruction will appear immediately.)

Begin and end every test square with a few rows waste yarn.

This enables you to measure it correctly.

Any odd bits of yarn left over from another piece of knitting may be used as waste yarn but we recommend that the waste yarn contrasts clearly with the main colour used for knitting the garment. After 20 rows knitted in waste yarn, the display COL 1 will appear, meaning that you should now continue knitting in the main yarn. After 40 rows in main yarn, display WASTE Y will appear again.

Following a further 14 rows in waste yarn, the display END will appear, meaning that you have finished your test square and can release the stitches.

(To release the knitting, set the lock at N and pass it over the needles without yarn in it.)

Then press ENT, the computer will jump to the programming part and display 7 ALL ST. PATT.

COL 1

The display tells you to place the feeding eyelet with the first colour you wish to use into the lock.

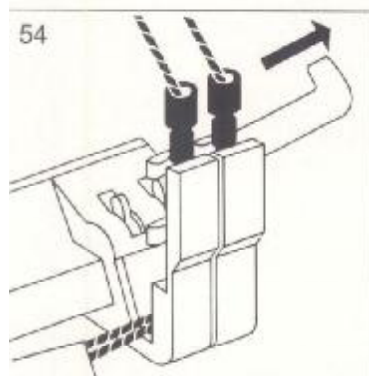
The computer may of course also display other colours, like COL 2, COL 3 and COL 4. You decide what colours you want to knit in place of COL 1, 2, 3 or 4.

Exception: For two-coloured patterns, where the colour is changed regularly every alternate row, the colour change will **not** be indicated.

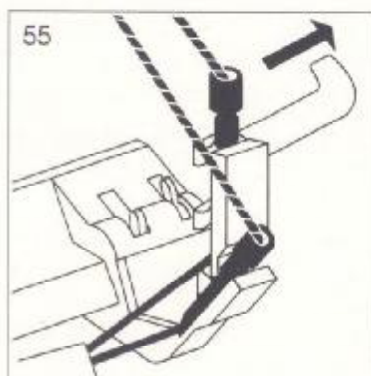
Instead, at the beginning of the pattern, will be displayed: **COL 2/2**.

In all other cases the computer will indicate the colour change.

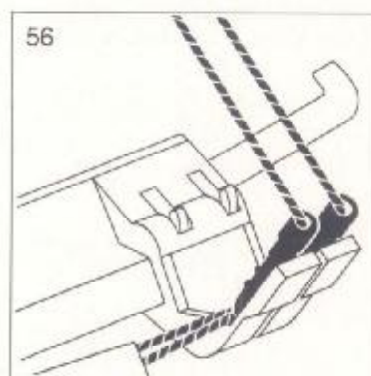
Remember:



Pull the colour changer lever twice to the right. Both feeding eyelets are up.



Press the feeding eyelet with colour 1 = COL 1 down. Pull the colour changer lever once more to the right.



Press down the second feeding eyelet. Move the lock into the colour changer.

ST. SIZE

The display asks you to set the stitch size.

This display appears at the beginning of every cast-on and stitch pattern. With certain cast-ons, this display may appear more than once, for instance if you begin with a smaller stitch size and then gradually increase it.

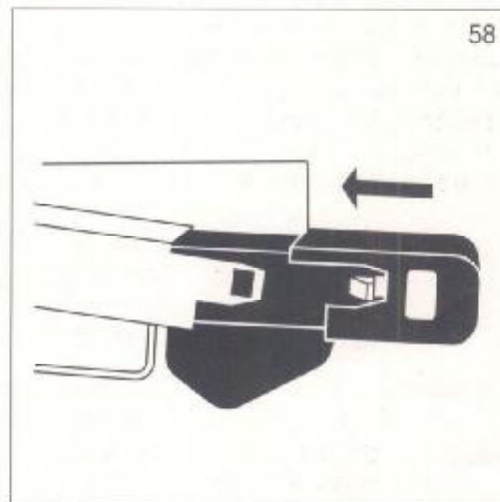
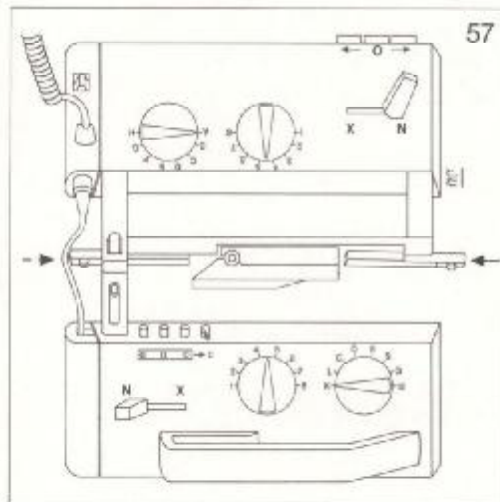
The computer cannot tell you what stitch size you need as this depends on the type of yarn you are using.

The table below serves only as a rough guide.

Material	Length metres per 100 g		Stitch size		
			Stocking stitch	K/K	1:1 rib
Sports wool 3-ply	310-320 m	3-4	6½-7½	4½-4¾	3½-4
Medium yarn 2-ply	430-440 m	2½-3	5¾-6¼	3¼-3½	2½-3
Industrial yarn	800 m		4½-5¼	1¾-2	

STRIP B

This display tells you to insert the strippers indicated (example: black) into the supports on the back lock.



STRIP O = orange strippers
STRIP B = black strippers

END C 0

This display indicates that the cast-on has been completed. You can continue in this stitch pattern.

(Example: You wish to knit a 1:1 rib border. You have programmed a cast-on for 1:1 rib and now simply continue to knit to the desired number of rows. Press the key ABC when you wish to change to stitch pattern.)

Note: There are a few exceptions to the above, i.e. cast-on 11-14, pages 136, 137.)

If however you really only wish to knit the cast-on and then immediately change to a programmed stitch pattern as pattern A, press key ABC now.

Knitting

Changing the pattern

ABC

Press key ABC if you wish to go from the cast-on to the first programmed stitch pattern or if you change from pattern (A) to the second pattern (B) etc.

(Note: You can only press key ABC if the lock is to the right of the knitting and the row counter is displayed, if not, press ENT.)

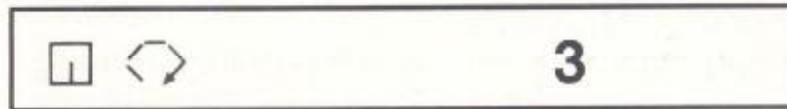
ST. PATT A

This display is showing the first pattern you programmed as pattern A and your first option. If you do not want pattern A but pattern B or C, press key ABC until the desired pattern appears.

When the desired pattern is displayed, confirm with ENT that you wish to knit this pattern.

ENT

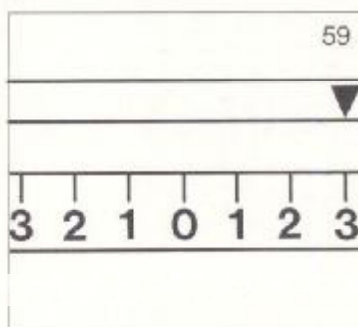
Now, similar displays will appear again as for the cast-on.



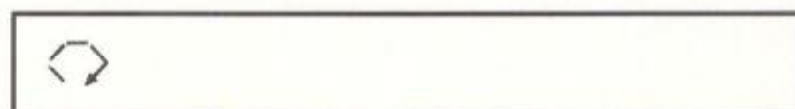
Racking at the beginning of the stitch pattern

This display means that the handle must be down, but that you have turned the handle three full turns to the right from the centre.

If you have turned the handle correctly, the racking indication at the left top of the side plate looks like this:



(Note: This type of display appears at the beginning of every racking pattern, though you would not normally have to rack over to the same extent. However, especially on double-bed knitting or if you have chosen knitting technique 168, ensure that you have racked sufficiently to allow for the pattern movement before you cast on.)



Racking

This display indicates a full turn of the handle in the direction of the arrow, i.e. to the right = clockwise.

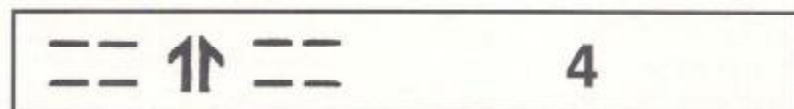


This is what a turning of the handle in the other direction looks like, i.e. to the left = anti-clockwise.

These displays appear while knitting a racking pattern or some cast-ons.

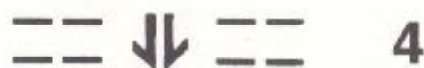
Knitting

72



Transferring

This display tells you to transfer the stitches from the front to the back bed using the U 100E on position 4.



The display may also look like this, meaning that the stitches from the back bed have to be transferred to the front bed.

The number on the right always indicates the setting on the U 100E.

Displays for shaping

The following pages explain the meaning of the displays that appear if you have entered a FORM-program.

Listen for the bleep. Every time you hear it, there is an instruction for shapings. To be sure that you do not miss a display for shaping, we recommend that you switch to the row counter that counts **backwards** when you knit with a FORM-program. To do this proceed as follows: From the display START CAST ON, press key R when the row counter display appears. The backwards counting row counter always shows you how many rows you still have to knit until the next instruction.

If you are not knitting with a FORM-program you will have to work out for yourself when to increase, decrease and cast off.

You can read **how** to do this on the following pages.

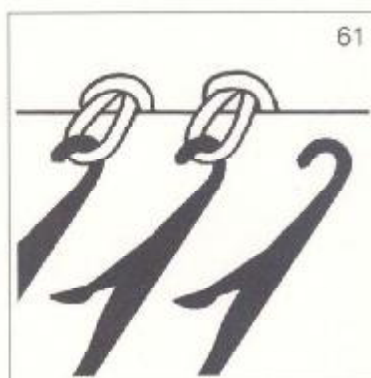
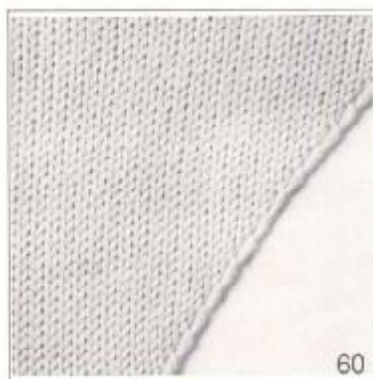
+ 1

Increasing one stitch

This display always means that you increase the stitch on the side of the knitting where the lock is when the display appears.

There are various methods of increasing: Choose the one that you like best and suits your garment.

Increasing 1 stitch at the edge of the knitting



- **On the side where the lock is bring one empty needle and pusher into Working Position.** Continue to knit. **For double bed knitting proceed in the same way** but bring one needle on back and front bed to Working Position, i.e. increase one stitch on each end.

Shaping

73

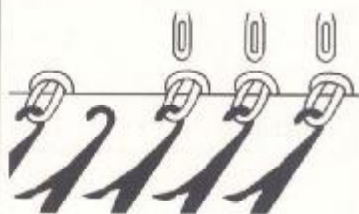
+ 1

Increasing 1 stitch with triple decker



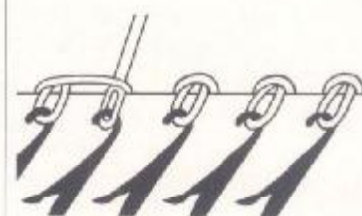
62

63



- At the edge of the knitting bring one empty needle and pusher into Working Position.
- Using the triple decker tool, move the three end stitches one needle out.

64



- Place the purl stitch loop of the adjacent stitch on-to the now empty 4th needle.

Continue to knit.

The procedure remains the same when two or more stitches are moved out simultaneously.

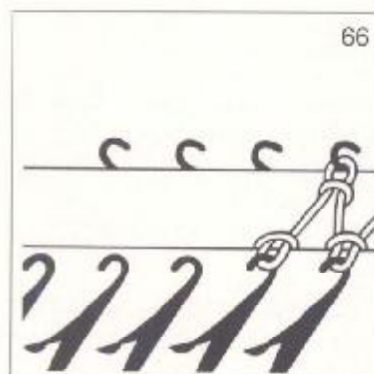
+ 5

74

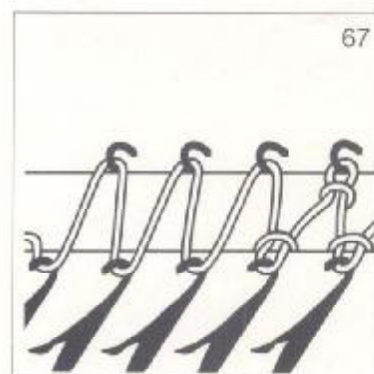
Increasing several stitches at the same time in double bed knitting

When an increase of more than one stitch is indicated by the display, bring up the required number of needles and pushers into Working Position – but at the **opposite** side of the lock.

Bring up the corresponding needles and/or pushers on the back bed.



– Here the lock is at right, increasing is at left.
Bring the needles corresponding to the pushers into Working Position on the front and back bed.
 Continue to knit.



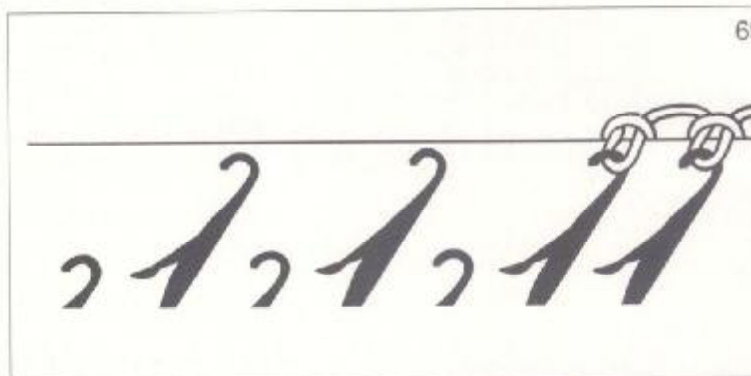
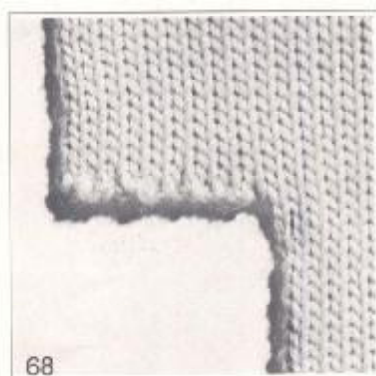
This method is suitable only when a knitted row results in the yarn zig-zagging between the beds – in 1:1 or all needle rib, etc.

Shaping

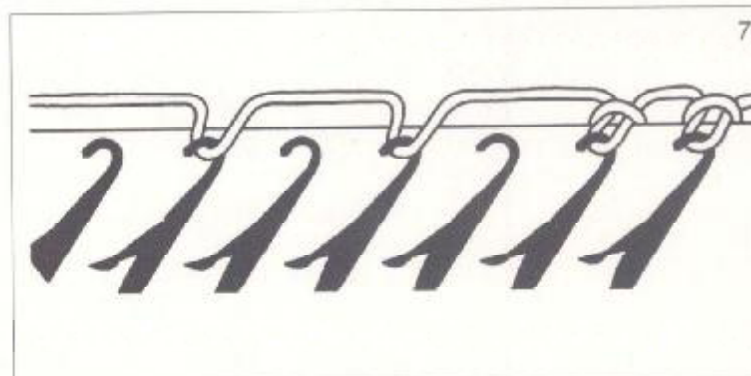
74

+ 5

Increasing several stitches at the same time in single-bed knitting



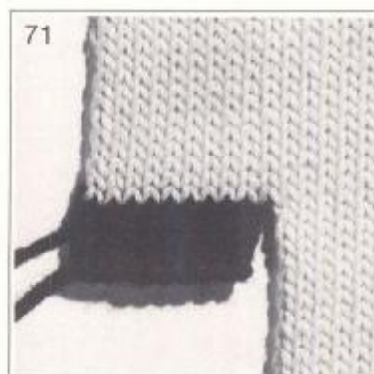
- On the side opposite the lock bring every alternate needle and pusher to Working Position
(= half the desired number of stitches).
- Knit 1 row.



- Push up the rest of the needles and pushers.
- Note:** From the very beginning make sure that the edge needle is pushed up only with the second group of needles; i.e. for an even number in 1:1 division, begin with the first needle out from the edge, for an odd number begin with the second needle out.
- Knit 1 row.

Shaping

Increasing several stitches with the aid of a contrasting piece of knitting



This method is recommended for edges that have to form a very neat seam.

- **Take a contrasting piece of knitting** you no longer need, like an old test square. Unravel a few rows.
- **Using the orange tool place as many loose stitches from the old test square as you want to increase on the needles of the machine at the edge of the knitting. Bring the corresponding pushers to Working Position.**

This procedure is possible only on the side opposite the lock.

When making up the garment, unravel the rows of contrasting material, and join the loose stitches.

Increasing with short rows

Sometimes you will find in the printed FORM-programs the remark:

Increase with short rows.

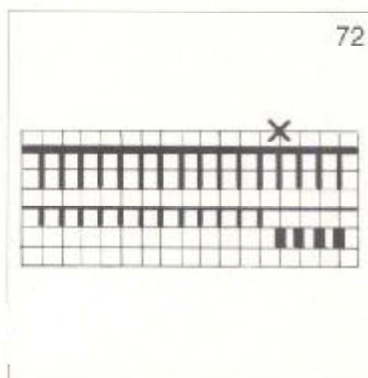
This is possible only with lock setting LX.

Before you can increase with short rows, the respective pushers must first be brought into Rest Position or out of work as you can only increase with short rows if there are already stitches on the needles.

(Example:

Display "increase 5 stitches on the right".

In case the pushers were out of work, push 5 pushers to Rest Position on the right while the lock is on the right-hand side. Continue to knit. The Electronic now selects these pushers and the corresponding needles will only knit in the following row. If you knit with FORM-program, this will happen automatically.)



Stocking stitch in single-bed knitting will produce **small holes** where there are graduations.

These can be avoided as follows:

Lay the yarn into the needle head of the first non-knitting needle.

Knit one row.

Shaping

75

— 1

Decreasing one stitch

When this display appears you decrease one stitch on the side of the knitting where the lock is.

There are various methods of decreasing, choose the one that suits you most.

Decreasing 1 stitch at the edge of the knitting



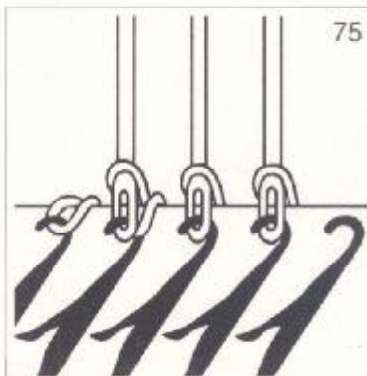
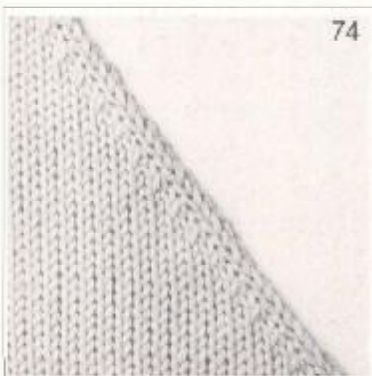
- Using the orange tool, transfer the edge stitch onto the adjacent needle.

- Push empty needle and pusher out of Working Position.

Continue to knit.

- For double-bed knitting proceed in the same way, but decrease one stitch on the front and one on the back bed at the same time.

Decreasing 1 stitch with triple decker

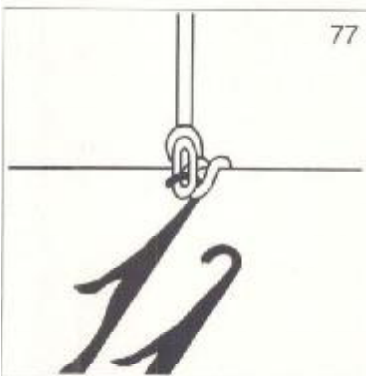


- Place the last three stitches on the triple decker tool and move them one needle in (i.e. there are now two stitches on the third needle).

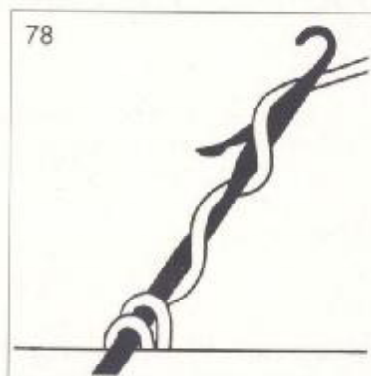
- Push the empty needle and pusher out of Working Position.

Continue to knit.

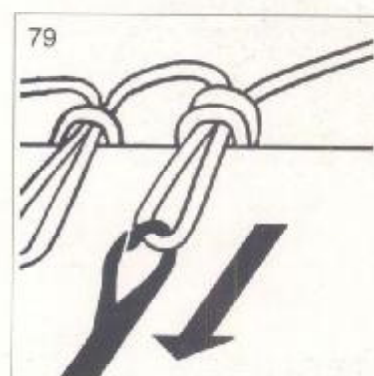
Decreasing several stitches at the same time in single-bed knitting



- **Transfer the first stitch on the lock side onto the adjacent needle.**
- **Pull this needle upwards** until both stitches lie behind the latch.



- **Wind the yarn with which you are knitting twice round the needle**, so that it once lies at the back and once at the front of the latch.



- **Pull the needle downwards** until the original stitch and the yarn slip over the closed latch to form a new stitch.
 - **Place the newly formed stitch onto the next needle**, and continue in the same way.
- Push the empty needle and pusher out of Working Position. This procedure is possible only on the lock side.

Shaping

Decreasing several stitches at the same time in double-bed knitting

- **On the side where the lock is, and using the double-ended bodkin, transfer the required number of stitches from the back bed to the corresponding needles on the front bed.**

Continue as given for decreasing in single-bed knitting.

Decreasing with short rows

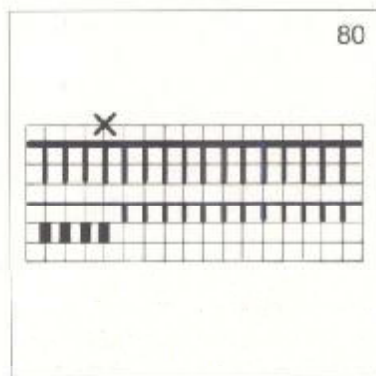
In FORM-programs you will sometimes come across the remark: **Decrease with short rows.**

This is possible only at lock setting LX.

When decreasing with short rows only those needles under which pushers have been left in Working Position will continue to knit. Stitches remain on the other needles without new ones being formed.

Decreasing with short rows is always done on **the side opposite the lock.** (If you knit without FORM-program, knit 1 more row after the display - 5, and only then push the 5 pushers to Rest Position on the side opposite the lock.

If you knit with FORM-program, the Electronic will already have brought the 5 pushers into Rest Position when the display - 5 appears. To avoid a float, push these 5 pushers to Working Position again. After this, the Electronic will bring them back to Rest Position and you can continue to knit.)



If you knit single-bed stocking stitch, **small holes** will appear where there are graduations.

Avoid them as follows:

Lay the yarn in the needle head of the first non-knitting needle.

Knit one row.

END BORD

You have completed the border of the garment.
If you have chosen a different stitch pattern for the main part of your knitting, press key ABC to switch to the next stitch pattern.
(Key ABC, see page 100)

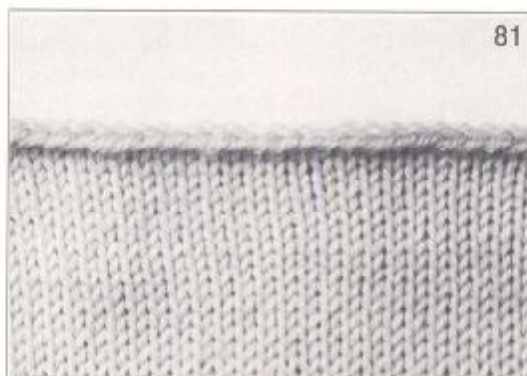
END 1

or

END

END 1 means that the first shoulder has been knitted and that you have to cast off the remaining stitches of this part.
You now knit the second shoulder.
END means that the whole piece of knitting is finished and that you have to cast off the remaining stitches.
(Exception: Instead of casting off, you can end a piece of knitting with a few rows in waste yarn.)
There are different methods for casting off, depending on the type of knitting, or your own choice.

Casting off with the latch needle in single-bed knitting.



- For every needle in Working Position on the front bed, bring one needle on the back bed to Working Position.
- Lock front and back N.
- Stitch size approx. 4.
- Handle down.
- Knit 1 row.
- Lower front bed.
- Crochet off the stitches on the needles of the front bed as given for casting off by transferring in double-bed knitting (page 113).

Shaping

79

END

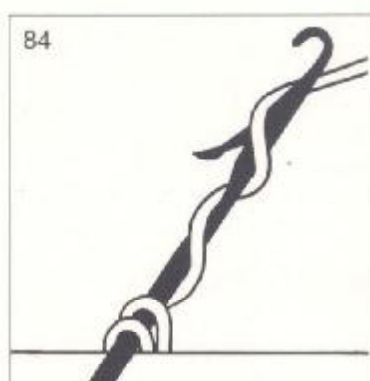


Casting off by hand in single-bed knitting

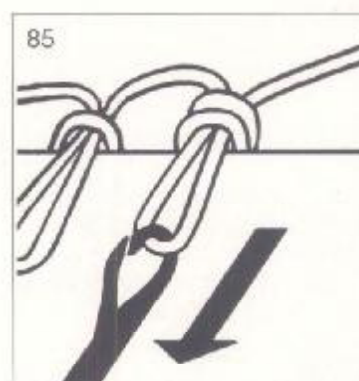
This will result in a somewhat tighter edge than the one described above.



- Place the first stitch on the right on the adjacent needle on the left.
- Pull this needle upwards until the two stitches slip behind the latch.



- Wind the yarn which was used for knitting twice round the needle in such a way that the thread once lies at the front and once at the back of the latch.



- Push the needle downwards until the two stitches slip over the closed latch and the yarn to form a new stitch.
- Continue pulling the needle downwards to make the new stitch slightly larger than the adjacent stitches. The more you enlarge the new stitch, the looser the cast off.
- Now transfer the new stitch to the adjacent needle on the left and continue as already described.
- Put the empty needles and corresponding pushers out of Working Position.

Casting off by transferring stitches in double-bed knitting



This method results in a very neat finish and can be used for all double-bed knitting.

- Transfer all stitches from the back to front bed.

It may be necessary to put empty needles and pushers on the front bed to Working Position, e.g. for 1:1 or 2:2 rib.

- Increase stitch size by one number at the back.

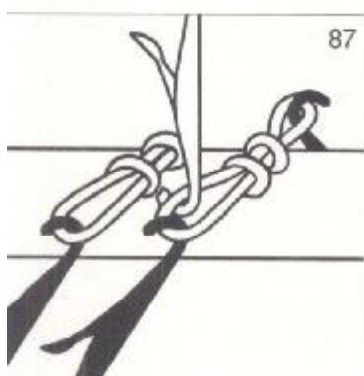
(If necessary, all needles on back bed in Working Position.)

- Knit one row.

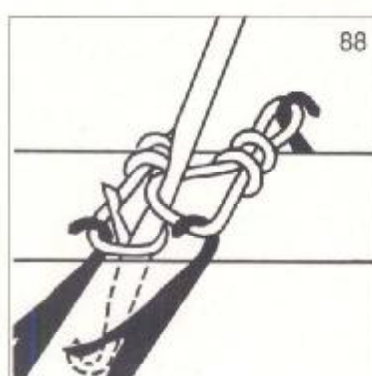
- Lower front bed.

Push the knitting towards the back bed to lengthen the stitches on the needles of the front bed.

- Using the latch needle crochet off the stitches which are on the needles of the front bed in zig-zag fashion as follows:

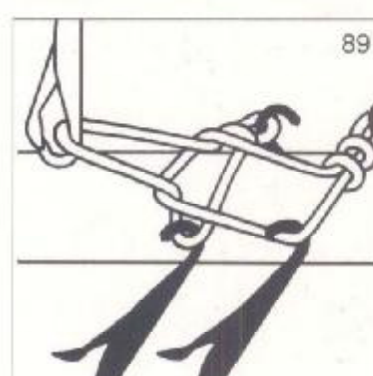


Insert the open latch needle into the first stitch on the right.



From above, insert the latch needle into the second stitch, moving it downwards until the first stitch slips behind the open latch.

Important: The second stitch must on no account slip behind the latch.



Now pull the latch needle upwards until the first stitch slips over the closed latch and the second stitch. One stitch remains in the latch needle. Continue as described above by inserting the latch needle into the following stitch.

Finally break off the yarn and pull it through the last stitch.

For certain yarns which are not as elastic, for example cotton or rayon, or if a particularly loose cast off is required, it may be necessary to increase the stitch size at the back by more than one number.

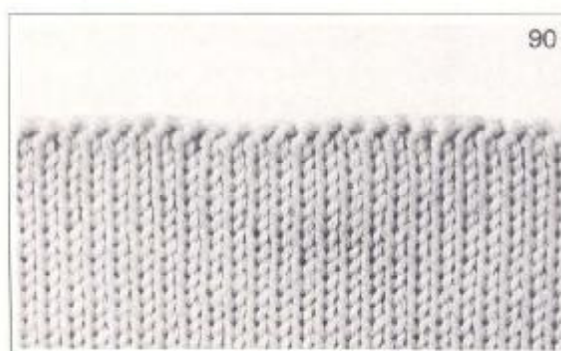
Shaping

79

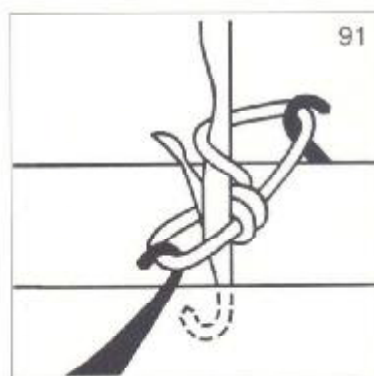
END

Casting off without transferring stitches in double-bed knitting.

This type of cast off is slightly looser than the one described above.



- Increase the stitch size by up to double the size used for the main knitting.
- Knit the last row.
- Lower the front bed.
- Using the latch tool crochet off the stitches which are on the needles in zig-zag fashion as follows:



With the open latch needle pick up the last stitch on the right at the back, then insert the latch needle into the first stitch on the front bed, moving downwards until the first stitch slips behind the latch. Pull the latch needle upwards until the first stitch slips over the close latch and the second stitch. You now have only one stitch on the latch needle. Continue as described above by inserting the latch needle into the next stitch on the back bed. Finally break off the yarn and draw it through the last stitch.

END

79

Knit a few rows with waste yarn, release

When display END appears, change to a different yarn from the one you have been using for your knitting.

(For your waste yarn we advise using a yarn quite different in colour from your main yarn.)

Apart from that you may use any odd bit of yarn left over from another piece of knitting.

Set the front lock at N, the back lock as well if you have stitches on the back bed.

Using waste yarn, knit approximately 10 rows.

To release the stitches of your knitting proceed as follows:

Move the lock to the extreme right to activate the colour changer.

Press down the second feeding eyelet that has come up.

Pass the empty lock, i.e. the lock without feeding eyelet, across the needles in Working Position. The knitting will fall off the needles.

Shaping

30

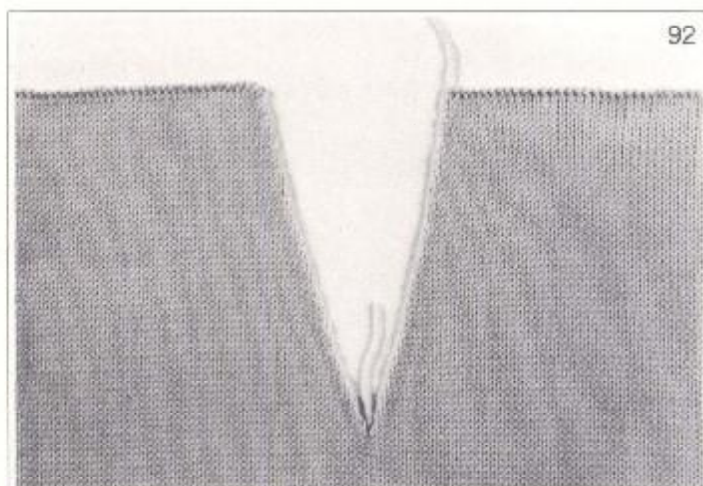
DIVIDE

You now have to divide your knitting to shape the neckline. With a FORM-program you always knit the right half first.

There are different methods of shaping a neckline. Choose the one most suitable for your pattern and garment.

Knitting first one half and then the other half using pushers.

This method is possible only at lock setting LX on the front bed and BX or HX on the back bed.



Example: V-neck

- For the left half of the knitting bring all pushers to Out of Working Position.

(i.e. move them right down)

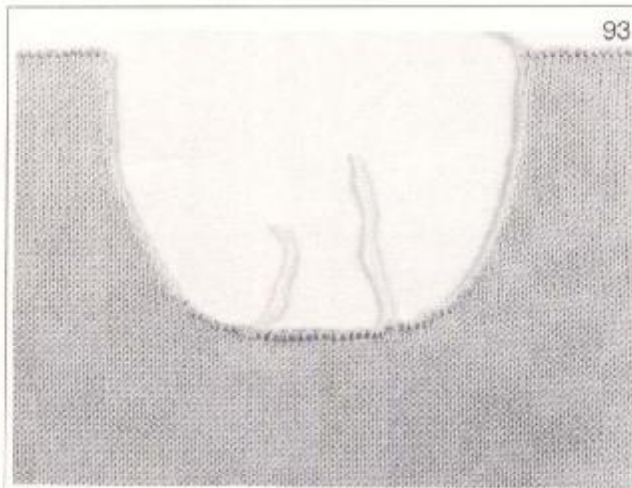
If you knit without a FORM-program make sure you note down the number on the row counter.

- Knit the right half, decreasing for the neckline and possibly for the armhole. End by casting off and breaking off the yarn.
 - Bring all pushers of the right half to Out of Working Position.
 - Bring the pushers of the left half to Rest Position.
- If you are not using a FORM-program, go back to the number you noted down previously, i.e. press key CORR but make sure that a row counter is displayed first. If it is not displayed press ENT. If necessary correct the knitting width displayed, then enter the row number you noted down and press ENT.
- If you are using a FORM-program simply press ENT and the computer will automatically go back to the correct position of the pattern.

DIVIDE

80

Placing the stitches of the second half on deckercombs while knitting the first half.



Example: Round neck

- **For the centre of the neck cast off the centre stitches as follows:**

(Our example: 20 stitches)

Take a length of yarn as used for the main knitting. Cast off the required number of stitches. Finally, pull down the two ends of yarn between the needle beds.

- **Place the stitches at the left of the cast-off section on deckercombs.**

- If you knit without a FORM-program, make a note of the number on the row counter and the needles holding the left half.

- Knit the right half to the end. If you are not using a FORM-program place the stitches of the left half back on exactly the same needles as those from which you previously removed them. Go back to the row number you also noted down at that time, i.e. press key CORR (making sure that a row counter is displayed) and correct the displayed knitting width if necessary. Press ENT.

If you are using a FORM-program press ENT and bring all needles and pushers into Working Position. Knit one empty row as the computer tells you to do. Observe the pushers that have now been selected by the computer into Working Position and place the left half of the knitting on to the corresponding needles. Continue to knit.

Shaping

81

ATT. R

The display means ATTENTION TO YOUR ROW COUNTER. It only appears while you are knitting the second half of a divided neckline and then only if you have indicated that you wish to unravel more rows than have already been knitted in that second half. If you press ENT here, the computer assumes that you really wish to do this and goes back to this place in its calculations! If you have made an error while entering the number of rows and wish to go back to the original number of rows, press NO.

82

REFER

In addition to the displays on FORM-knitting listed so far, there can also be flashing figures and the display REFER.

They do not appear for each garment, and their meanings vary. The explanation concerning a particular flashing figure can be found in the FORM-program for that garment.

(The flashing figure may for example indicate a colour change, buttonholes or such like.)

Simple buttonhole

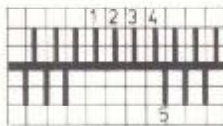
Using a length of waste yarn, knit off the required number of stitches by hand where you wish the buttonhole to be. Pull the end of the waste yarn down and continue to knit. When making up the garment you can pull out the waste yarn carefully and sew the loose stitches by hand.

Buttonhole in double-bed knitting

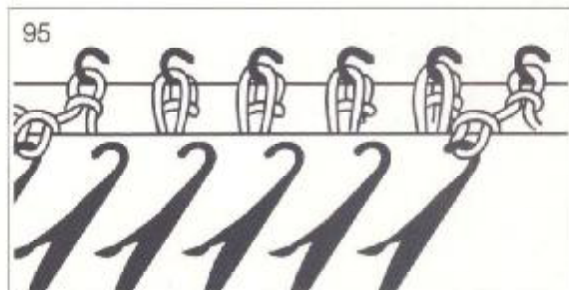
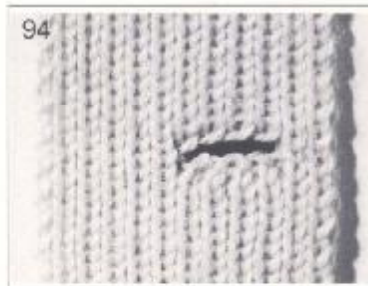
In the majority of cases it is advisable to work buttonhole bands in double-bed knitting. This will give the band more body.

The buttonhole in our example is 8 stitches wide.

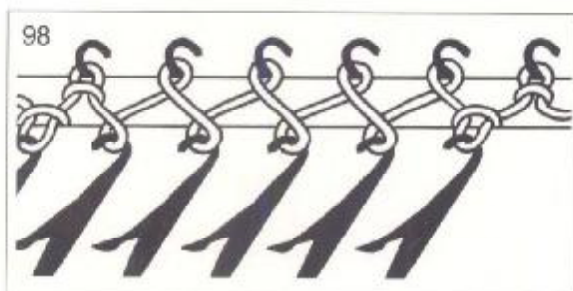
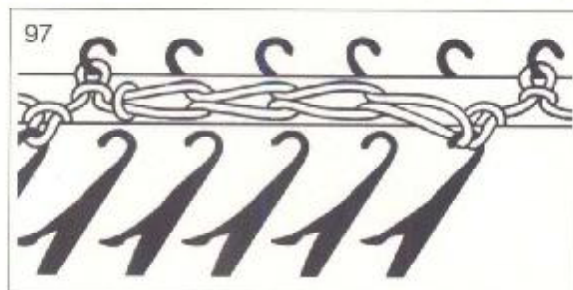
- **Transfer 4 stitches from front to back bed.**
- **Knit these stitches together with those on the needles of the back bed.** This means push the needle up until the first stitch slides behind the open latch **but not the second one.** Pull the needle down until the first stitch slides over the closed latch. Only one stitch now remains in the needle head.



- **Transfer stitch no 2 to needle no 1 and knit the two stitches together.**
- **Now return the stitch to needle no 2.**
- **Transfer stitch no 3 to needle no 2, knit the two stitches together, and so forth.**



Shaping



- Finally transfer the last stitch of the buttonhole to needle no 5 on the front bed.
- Leave all needles in Working Position.
- Knit 1 row.

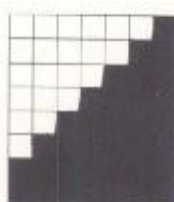
- Twist the zig-zag thread on the 8 needles.

Use the spike of the orange tool to lift the loop off the needle. Hold it to the side while you bring the needle up slightly and then slip it back into the needle head from the same side, so giving it the desired twist.

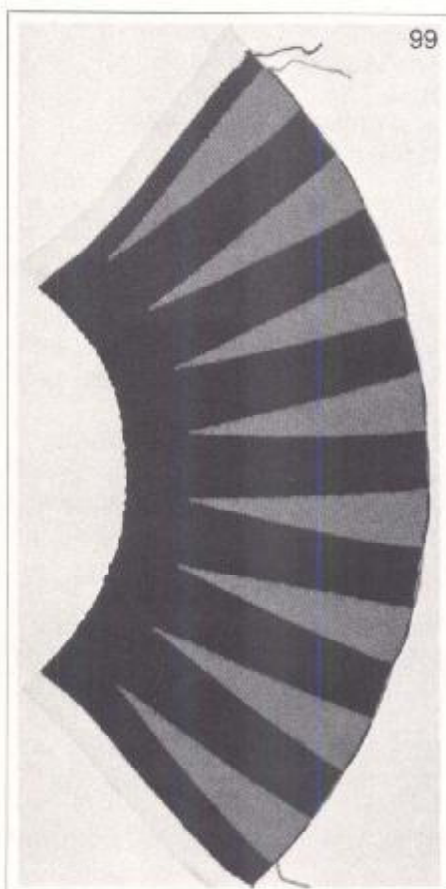
Continue knitting.
There is no need to further neaten this buttonhole.

Skirt knitted fully automatically

This skirt is knitted with **stitch pattern 1410** and **knitting technique 171**.
The knitting technique knits stocking stitch where there are black squares on the stitch pattern. You therefore have to knit a **test square for stocking stitch**.
The skirt is sideways knitted, i.e. the knitting width is the skirt length.



1410



The stitch pattern drawing 1410 is 7 squares wide.

To achieve an **adequate skirt length** you will therefore have to enlarge the width considerably but its program does not allow you to enlarge from a width of 7. Instead work as if it was a width of 5.

Divide the required number of stitches by 5 and use this number to enlarge the width of stitch pattern 1410.

(i.e.: If you wish to knit across the whole needle bed, multiply the number of stitches by 36. ($5 \times 36 = 180$).)

To establish the **number of rows** you have to knit, assume that at the top edge of the skirt, i.e. the waist, you will knit 6 rows per pattern repeat.

(You can of course also enlarge the stitch pattern drawing in height. This will only influence the number of graduations you will knit but not the actual shape of the skirt. We recommend that you multiply the stitch pattern drawing in height by about 4 or 5.)

Important: Always smooth the outline for this skirt, i.e. OUTLINE → = NO.

Shaping

If you do not wish to calculate the number of stitches and rows, use the following **FORM-program.**

1	80	
2	100	
3		mm 40 R
4		mm 40 sts
5	40	
6	10	
7		cm skirt length
8	98	
9	69	
10	67	
11	38	
12	40	
13	10	
14		cm skirt length
15	20	
16	20	
17		cm skirt width at hem
18	0	

To work out the **skirt width at the hem**, double the width at the waist. Be generous when measuring the waist and add about 10%. You can always gather the waist slightly when joining the waist-band or insert a waist elastic.

Always begin and end with waste yarn as this will result in a very neat grafted side seam (see page 124).

Flashing figure 9: appears 2 cm after the cast-on and means the end of the waste yarn. You have used the waste yarn to knit the cast-on you chose for stocking stitch knitting.

Now continue to knit in main yarn and press key ABC to get to pattern A = stitch pattern drawing 1410, technique 171.

For "end with waste yarn", see page 115.

Enlarging the stitch pattern drawing when knitting with a FORM-program.

You first have to know how many stitches you require to enlarge the stitch pattern drawing correctly. You therefore have to start by programming stitch pattern drawing 1410 without enlarging it.

As soon as the computer tells you how many stitches it will cast on, use the key for "fast forward" and jump back to the programming part. Answer "erase" with NO and run through the program until you reach the question ENLARGE. There you enter at the question on "enlarging" the number you have received when you divide the stitches of the cast-on by 5.

Continue to go through the program until you have answered the question ALL ST. PATT, after which you can jump to the beginning of the cast-on by pressing the key for "fast forward".

Tip: To achieve a neat hem, push on the extreme right on the back bed four needles to Working Position opposite the last four needles on the front, and set the back lock at CX.

To avoid the small holes, proceed as given for "decreasing with short rows" described on page 110.

Blocking and pressing

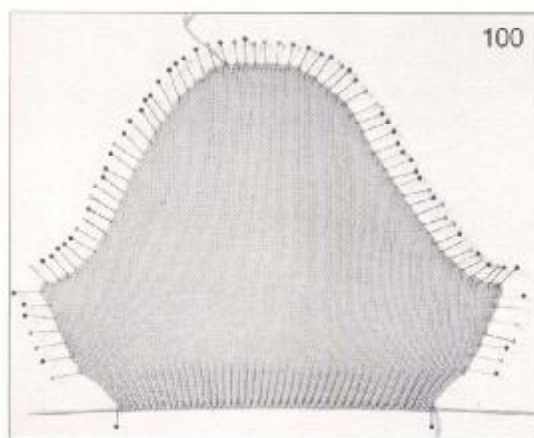
Before making up a garment almost all fabrics made of wool, as well as some synthetics, have to be pressed.

Exceptions for wool: Raised patterns must never be pressed.

For synthetic yarns: Always press the test square first and check the result.

Pinning out to size

Before pressing, each part should be pinned out to size on an ironing board.



Proceed as follows: Check the measurements on your diagram. Transfer these with the aid of a tape measure to the ironing board, marking the corners with pins. In the case of a straight edge use, say, your finger nail to mark the straight line on the ironing board. Pin the two corners first, then place the next pin into the centre of the line and so forth. Doing it this way prevents you from pulling the fabric out of shape. Leave approx. 1 cm ($\frac{1}{2}$ inch) between pins which should be in the edge stitches if possible.

Pressing

Place a damp cloth over the pinned-out parts, and press very lightly with a hot iron. Never use pressure. Wait for the pieces to dry completely before removing them from the ironing board.

Pressing welts and borders

In order to retain their elasticity welts and borders must be pressed in the following manner:

Insert a fine knitting needle into the tubular rows of the cast-on, and hold it in position by pinning the ends of the needle to the ironing board. Now pull the welt or border lengthwise and hold it while you press it.

Making up

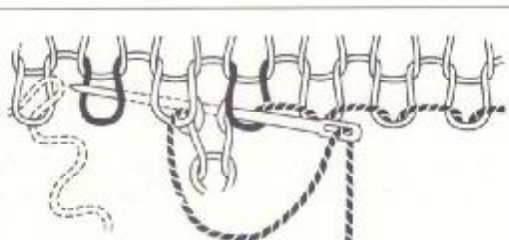
Seams

101



Making a hem

Stitch by stitch sew open row of stitches, always picking up two stitches at a time and unravelling the contrast yarn stitch by stitch.

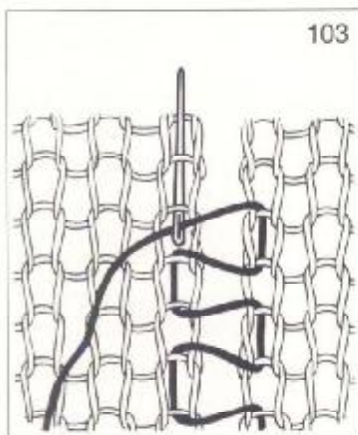


102

Back stitching, stitch by stitch

Enter into the open stitch at right of the stitch sewn last and emerge from the open stitch at left of it, unravelling contrast yarn stitch by stitch.

103



The mattress stitch on the right side of the fabric

For inconspicuous side seams. Sewn on the right side of the knitting.

104



The graft stitch

With right side of the knitting facing you, form the missing row of stitches.

Stitch pattern drawing

How to make your own stitch pattern drawings

To ensure that the reader reads your pattern drawings correctly use only the printed pattern sheets and the special pen that come with the machine.

(In an emergency you may also use black colouring pencil but black felt tip pens are not suitable. It is most important to fill in the whole square accurately.)



Place the pattern sheet in front of you with the arrow pointing downwards.

A = The pattern area is 40 squares wide and 63 squares high.

This represents the area where you can draw your pattern.

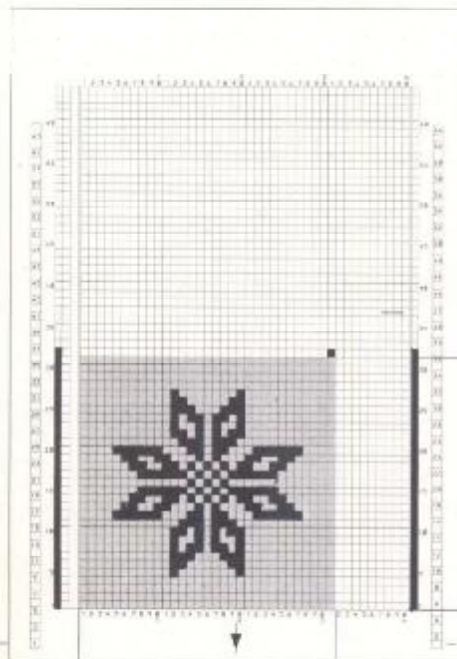
Note: The top row of squares may never be used for the pattern.

B = The double column of squares on the left and the **single column of squares** on the right serve to indicate the height of the pattern.

C = The columns on the extreme left and right marked with numbers serve to count the number of rows when you enter the pattern sheet.

Stitch pattern drawing

Since the procedure may vary depending on the technique you intend to use, we start with the basic procedure which is the same for all stitch pattern drawings.



The height of the pattern

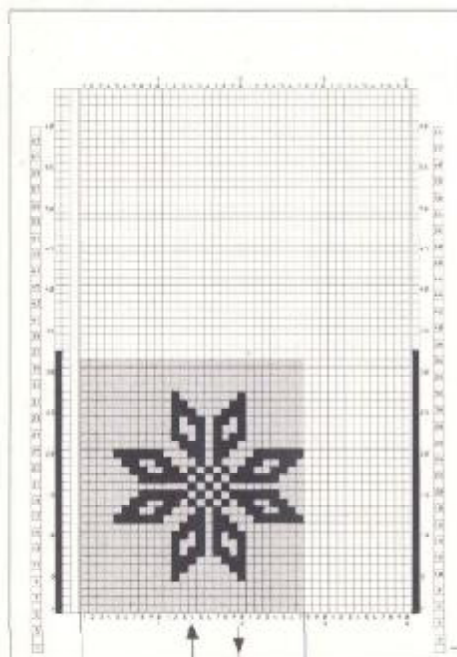
You indicate the height of the pattern by filling in **the left column of the two columns of squares on the left** and the **column of squares on the right**.

Note: Always fill in one more square than the desired height.

Pattern height.

Example: The star is 23 squares high, at the bottom you have left 4 empty squares and would also like to leave 4 empty squares at the top. This means: 23 plus 4 plus 4 equals **31 plus one additional square**.

You must therefore fill in a total of 32 squares.



126

centre
pattern width

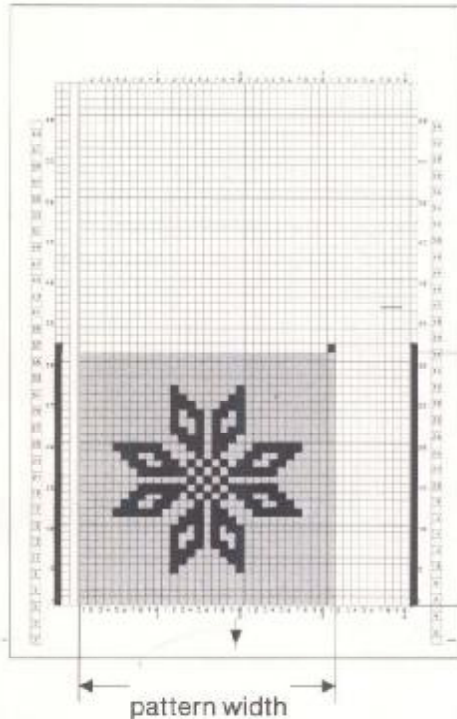
The width of the pattern

If you do not give special instructions regarding the width of the pattern, the computer will work with the width from the left edge of the pattern area to the last square in black on the right.

Example: In this case, there would only be 4 stitches between the two stars. The pattern would be 23 plus 4 = 27 stitches wide.

Note: Since the computer always brings the centre of the pattern in line with the centre of the needle bed, in our example the **centre of the star would not be in the centre of the needle bed**.

Stitch pattern drawing



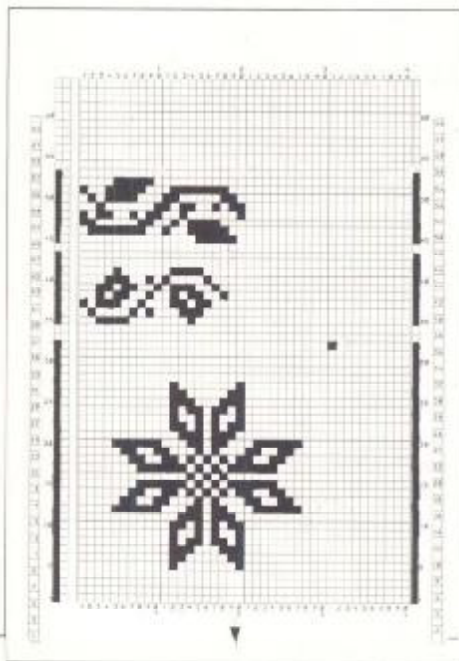
Setting the pattern width

If you want your pattern to be wider than the last black square on the right, you have to draw a black square in the first row **following the pattern**, that is where the last square of your pattern should be.

This means, the empty squares vertically down from this black square are still part of the pattern.

(Note that this black square determining the edge is on the same level as the two additional squares you have filled in to determine the height of the pattern.)

More than one stitch pattern on one sheet



Of course you can draw more than one pattern on a pattern sheet.

The columns of squares indicating the pattern height have to be interrupted by at least one empty square between the two patterns.

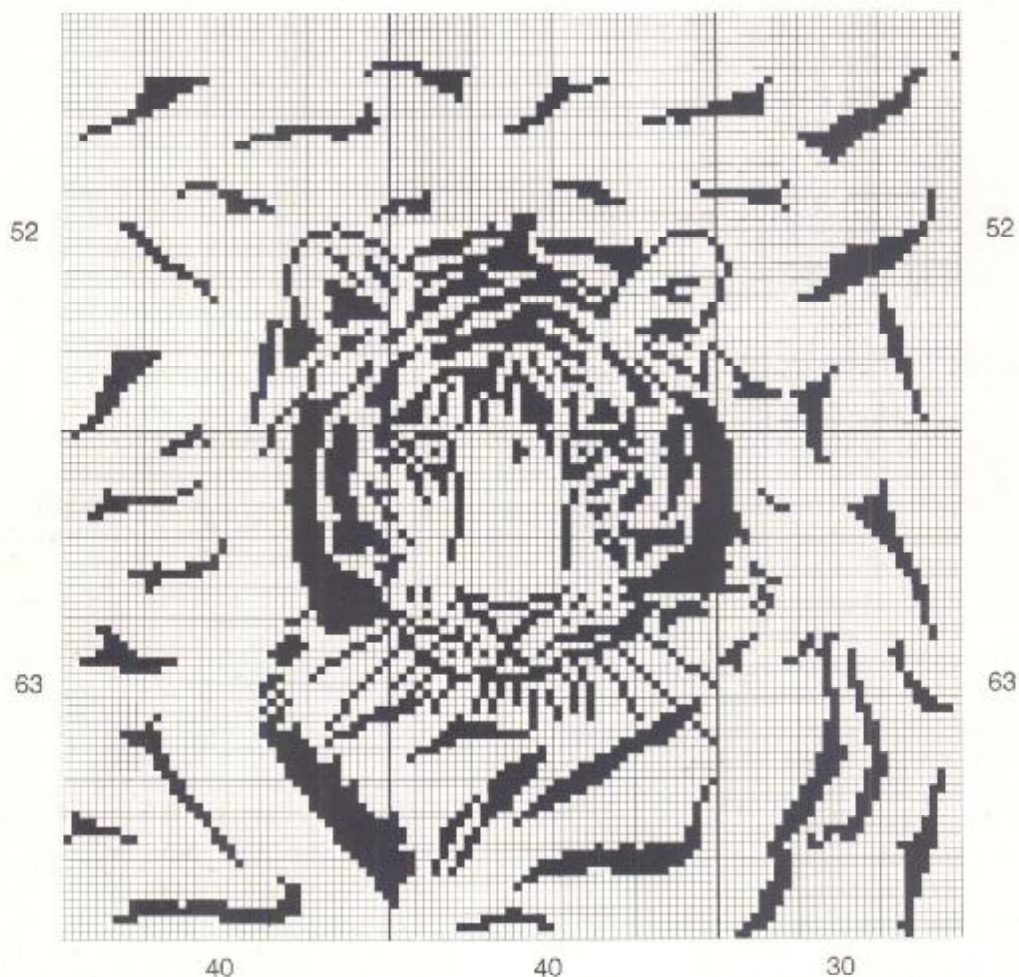
Note: The new pattern always has to begin with an **odd** row number.

(In our example: row 1, 35, 45.)

If you want to enter one of the upper patterns, turn the sheet until the row number where the pattern begins, appears in the left-hand window of the card reader.

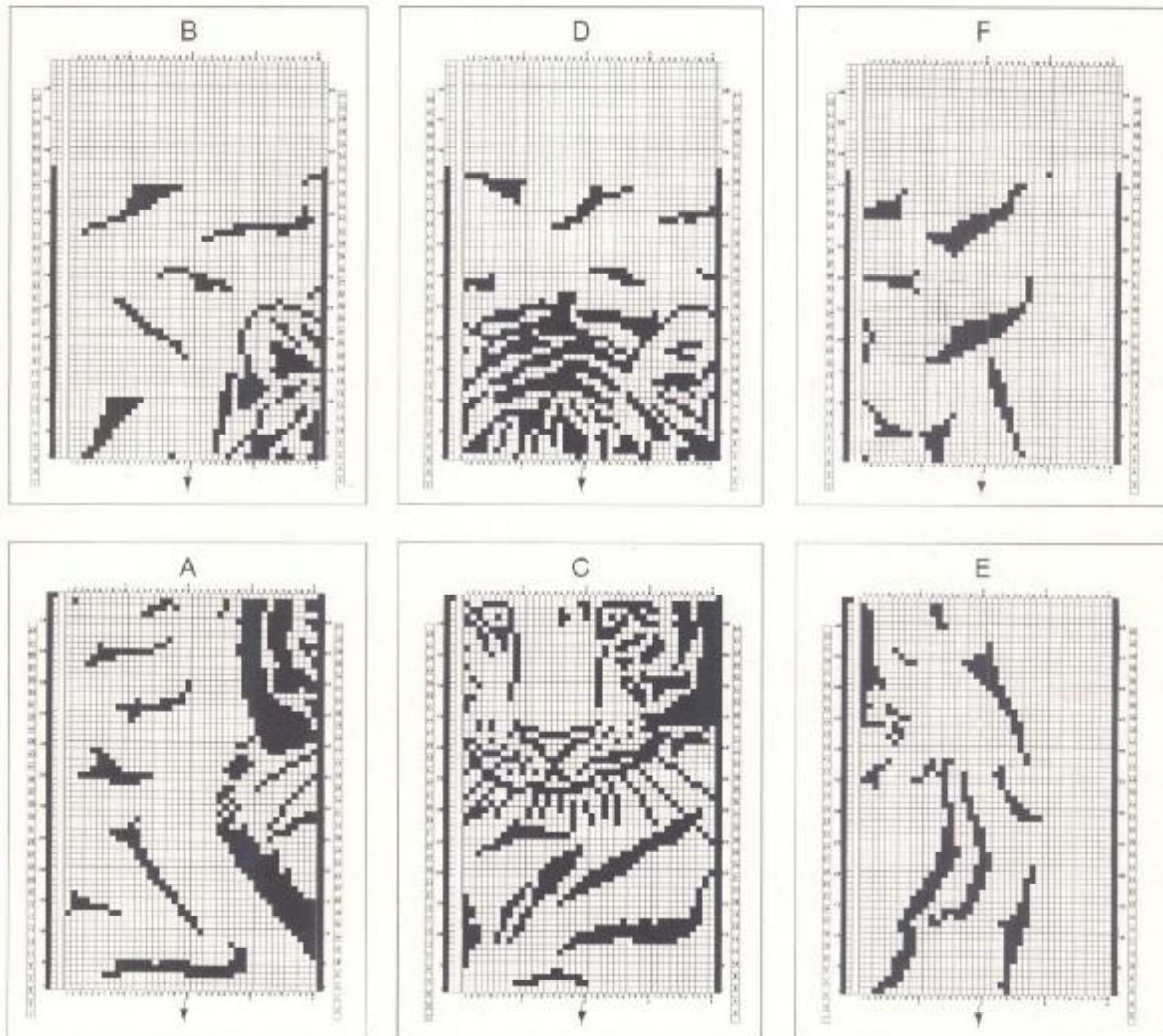
Stitch pattern drawing

Your pattern is larger than the pattern sheet



Draw your design on a large sheet with squares and then divide it up into sections 40 squares wide and 63 squares high.
You can now transfer your design onto pattern sheets.

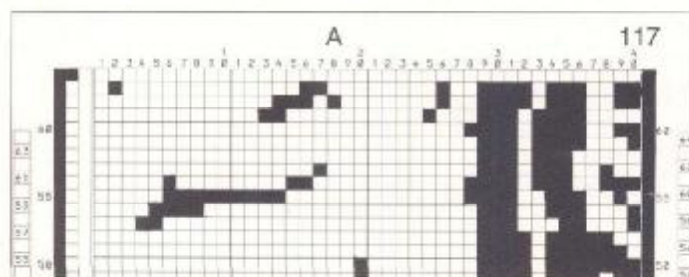
Stitch pattern drawing



Continuation of the pattern in height

The lower pattern sheets (= sheets A, C and E) have to be marked so that the computer recognises that the following sheet is the continuation of the pattern in the height.

For this purpose an additional square has to be coloured black at the top of the double column on the left in each case.



For sheets E and F mark the right edge of the pattern with a black square as described on page 127.

Stitch pattern drawing

Stitch pattern drawing for the various knitting techniques

Before you start drawing a pattern you must look up the technique you wish to use and read the directions. Only then will you be able to see what the black and white squares mean in relation to that particular technique.

Here the most important points, but always look carefully at the technique you have chosen.

2-coloured Fairisle:

In general a black square here means two rows motif colour, a white square two rows background colour.

(Note: There are some exceptions to the rule.)

Single-bed tuck stitch:

Make absolutely sure here that you never draw two black squares next to each other as this results in two adjoining loops which the machine cannot knit off.

Observe how many loops will be produced by each black square in your technique. Remember that even with very thin yarn your machine can knit off only about 8 loops at the most.

Double-bed tuck stitch:

Here you may draw several black squares next to each other, but you still have to be careful how many black squares follow each other vertically, as depending on the technique a black or even a white square may stand for 4 loops. Here you may knit off up to 20 loops if you are knitting with very fine yarn and the electric motor.

3 and 4-coloured Fairisle

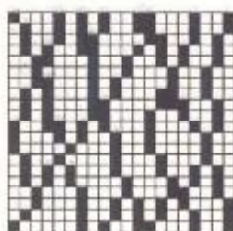
Here we differentiate between two methods of drawing the pattern sheets. Both offer certain possibilities but are also subject to certain restrictions. So choose the method that suits your design best.

1. Three or four-coloured Fairisle created by superimposing stitch pattern drawings

It is very important here that the stitch pattern drawings **all have the same size**.

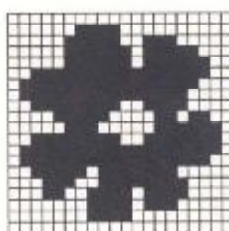
For superimposing you may use two stitch patterns of the same size from the computer memory.

Example:



1229

ADD



1228

For the stitch pattern
see the pattern book
page 88.

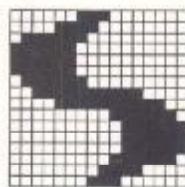
Stitch pattern drawing

You can also superimpose two or three same-size stitch pattern drawings you have designed yourself by entering them via the reader.

You may also combine stitch patterns from the computer memory with stitch patterns you have designed yourself by drawing a stitch pattern for the third or fourth colour in addition to the existing pattern in the memory.

You can also superimpose the same stitch pattern twice by altering the direction. (This applies only to square stitch pattern drawings).

Example:



1284

ADD



1284

For the stitch pattern
see pattern book
page 108.

Variations:

You may also **mirror image** or **change the direction** of these three or four-coloured stitch patterns.

(Note: Before superimposing these patterns make the mirror image and direction alterations to each one separately.)

They may be **enlarged**, but without **smoothing the outline**.

Restrictions:

These patterns can only be 40 stitches wide maximum (i.e. the width of a stitch pattern sheet).

They are **knitted** with the following techniques:

3-coloured 195–206

4-coloured 207–218

When superimposing patterns the following happens:

The black squares of the second stitch pattern cover the black squares of the first stitch pattern, in other words, the colour knitted there is the colour belonging to the second stitch pattern.

In the same way the black squares of the third stitch pattern drawing cover those of the first and second stitch pattern.

The colour sequence when knitting is as follows:

col. 1 = the background colour, knits where white squares remain after superimposing all the stitch patterns.

col. 2 = the motif colour, knits where black squares of the first stitch pattern can still be seen after superimposing all the stitch patterns.

col. 3 = the second motif colour, knits where black squares of the second stitch pattern can still be seen after superimposing.

col. 4 = the third motif colour, knits where on the uppermost, i.e. the third stitch pattern drawing, black squares remain.

Stitch pattern drawing

2. Three and four-coloured Fairisle where all the colours are drawn on one single sheet.

For this you need for each colour one horizontal row of squares on the pattern sheet:

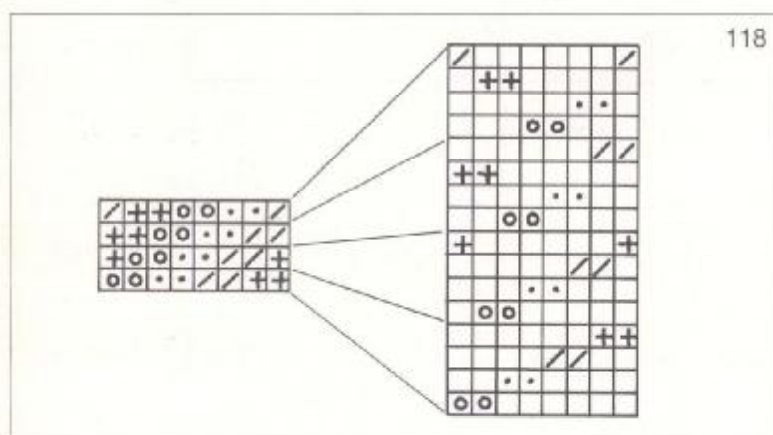
Where the **background colour** should appear, on the first row of squares colour the corresponding squares black.

Where the **first motif colour** should appear, on the second row of squares colour the corresponding squares black.

Where the **second motif colour** should appear, on the third row of squares colour the corresponding squares black.

Where the **third motif colour** should appear, on the fourth row colour the corresponding squares black.

This means that for 3-coloured Fairisle you need for two rows of knitting three rows of squares on the pattern sheet, and for 4-coloured Fairisle four rows on the pattern sheet.



Example: You wish to knit diagonal stripes in 4 colours. In the above illustration you can see on the left what the pattern will look like in your knitting. On the right you can see what the pattern drawing for this stitch pattern looks like (although every square containing a colour symbol has to be coloured black).

The colour sequence when knitting corresponds to the sequence of the rows of squares.

col. 1 = 0

col. 2 = .

col. 3 = /

col. 4 = +

With this method you can draw stitch patterns to cover the whole width of the needle bed of your knitting machine, i.e. 179 stitches wide. The stitch pattern drawings are entered as described on page 74 onwards.

Restrictions:

Patterns drawn in this way can be widened and mirror-imaged, but they cannot be lengthened nor can they be turned. ($E \rightarrow m$ or $E \rightarrow \omega$)

These patterns are **knitted** with the following techniques:

3-coloured 219-230

4-coloured 231-242

Knitting techniques

On the following pages you will find the needle diagrams and lock settings for all **KNITTING TECHNIQUES**.

Whenever you knit double-bed stitch patterns you have to look in this section to see which needles, and possibly also which pushers on the back bed, must be in Working Position. The following display tells you when you have to refer to this section.

ND — — —

This display appears when you have to put the needles on the back bed to Working Position.

PUSH — — —

This display appears when you also have to bring pushers on the back bed to Working or Rest Position.

(In the following section we give you short descriptions with needle diagrams and lock settings for **all** techniques in the computer's memory. This is important in case you wish to draw your own stitch pattern and choose an appropriate technique.)

The functions of the different lock settings

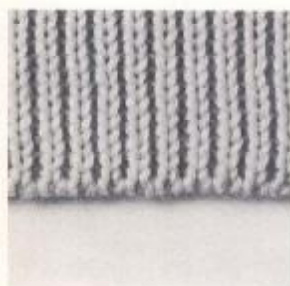
Front bed			
	Pushers up	Pushers down	No pushers
KX	Stitch	Tuck	
LX	Stitch	No stitch	
OX	Tubular stitch from R to L	Tubular tuck from R to L	
SX	Does not knit but selects pushers		
UX	Intended for future use		
Back lock (and front lock where appropriate) without Electronic			
	Pushers up	Pushers down	No pushers
N	–	–	Stocking stitch
AX	Stitch	Tuck	
BX	Stitch	No stitch	
CX	–	–	Tubular in stocking stitch
DX	Tubular st. stitch	Tubular tuck stitch	
EX	–	–	Fisherman's rib
FX	Stitch	Fisherman's rib	
GX	Free move		
HX	Tubular st. stitch	Tubular, no stitch	

Casting on

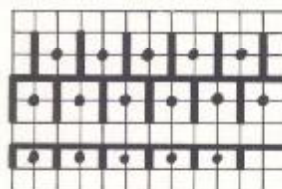
After each cast-on you can continue in the same knitting technique or change to a different stitch pattern if you prefer (see 68). The computer will tell you when you have completed the cast-on.

Choosing the cast-on

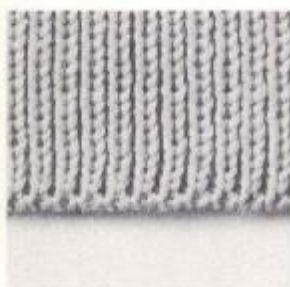
If you do decide on a different stitch pattern after casting on try and choose one with the same needle setting as the cast-on.



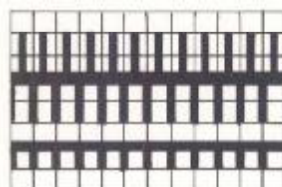
Tubular cast-on for 1:1 rib



1



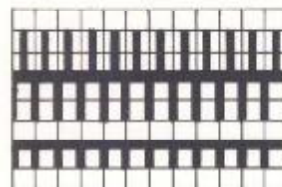
Tubular cast-on for **Knit/Knit**



2

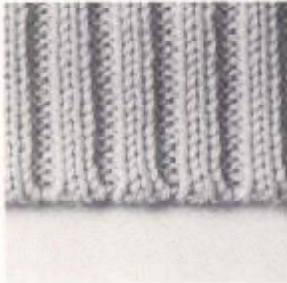


Cast-on with racking for **Knit/Knit**

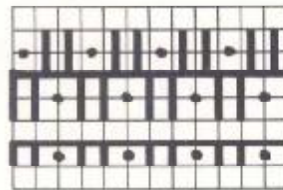


3

Casting on



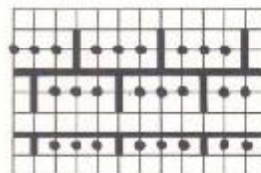
Tubular cast-on for 2:2 rib



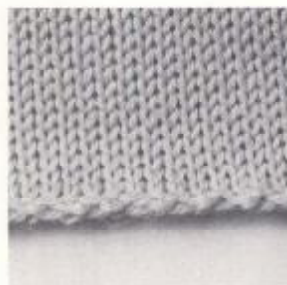
4



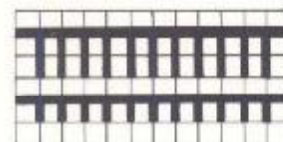
Tubular cast-on for 3:1 rib



5



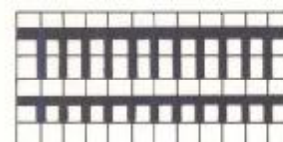
Cast-on in 4 rows for **stocking stitch**



6



Cast-on in 6 rows for **stocking stitch**

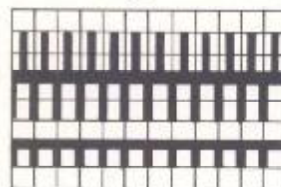


7

Casting on



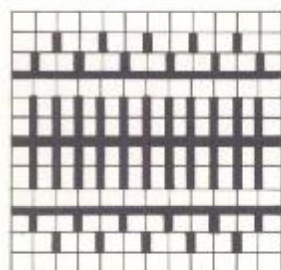
Closed edge cast-on for **tubular**



8



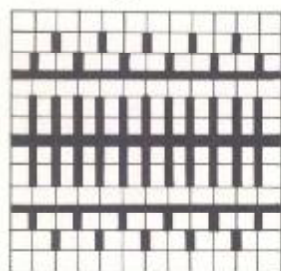
Open-edge cast-on in 8 rows for **tubular**



9



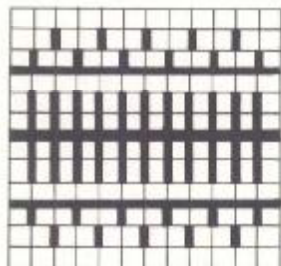
Open-edge cast-on in 12 rows for **tubular**



10



Open-edge cast-on in 8 rows for **half tubular** open at right



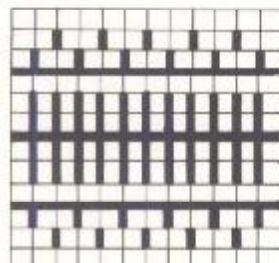
11

Note: With this cast-on you cannot continue to knit in this technique after the display "END CAST ON".

Casting on



Open-edge cast-on in 12 rows for **half tubular** open at right

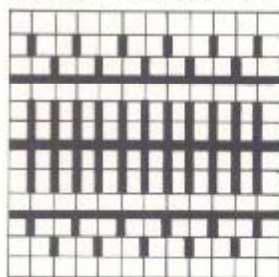


Note: With this cast-on you cannot continue to knit in this technique after the display "END CAST ON".

12



Cast-on in 8 rows for **half tubular** open at left

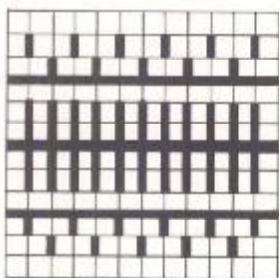


Note: With this cast-on you cannot continue to knit in this technique after the display "END CAST ON".

13



Cast-on in 12 rows for **half tubular** open at left



Note: With this cast-on you cannot continue to knit in this technique after the display "END CAST ON".

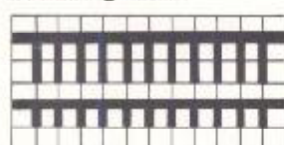
14

The basic knitting techniques

All basic knitting techniques can be knitted only as shown and not combined with a stitch pattern drawing.

100

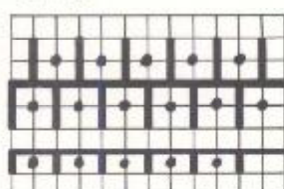
Stocking stitch



LX

101

1:1 rib



N

LX

102

Knit/Knit

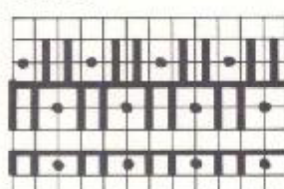


N

LX

103

2:2 rib



N

LX

The basic knitting techniques

104

Fisherman's rib

EX
KX

105

Half Fisherman's rib

N
KX

The purl stitch appears on the back bed.

106

Half Fisherman's rib

EX
KX

The purl stitch appears on the front bed.

107

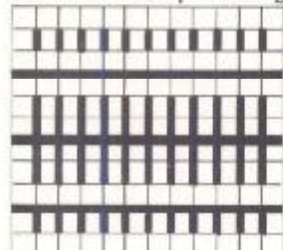
Tubular

CX
LX

The basic knitting techniques

108

Half tubular, open at right

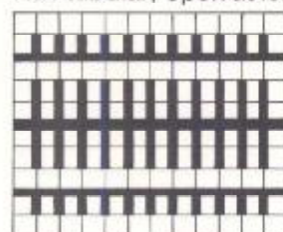


BX →

LX

109

Half tubular, open at left

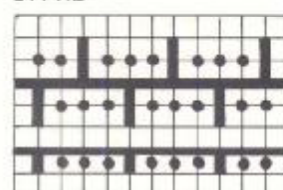


BX ←

LX

110

3:1 rib

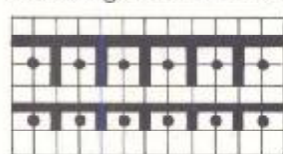


N

LX

111

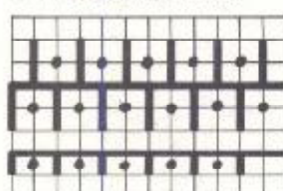
Stocking stitch with alternate needles



LX

112

1:1 Fisherman's rib



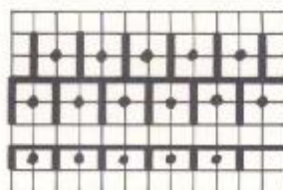
EX

KX

The basic knitting techniques

113

1:1 Half Fisherman's rib

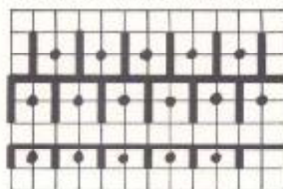


N
KX

The purl stitch appears on the back bed.

114

1:1 Half Fisherman's rib

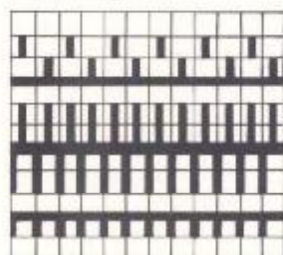


EX
KX

The purl stitch appears on the front bed.

115

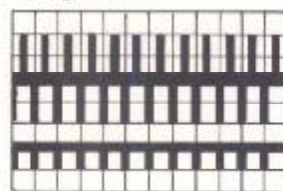
Fairisle, plain



BX ↔
LX

116

Long stitch



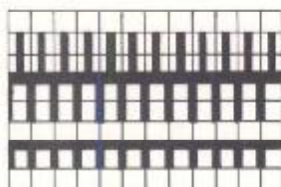
CX
LX

The long stitch appears on the back bed.

The basic knitting techniques

117

Long stitch

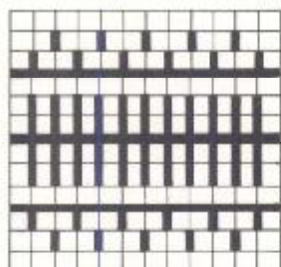


N
LX

The long stitch appears on the front bed.

118

Interlock

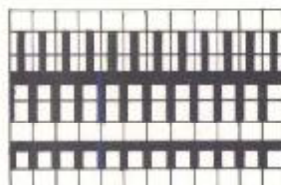


BX ↔
LX

Both sides of the knitting look the same.

119

Overknit



CX
LX

121 U100E

Garage stitch with
U 100E (optional extra)



CX
LX

Note: On right edge bring an additional three needles to Working Position on back bed. On left edge bring an additional three needles and pushers to Working Position on front bed.

Knitting techniques for tuck stitch patterns

Most techniques used for tuck stitch patterns may be combined with a stitch pattern. Where this is not possible, it is mentioned in the needle diagram.

General rule 1 row of squares = 2 rows of knitting
 1 white square = 2 stitches (one above the other)
 1 black square = 2 tucks (2 loops on the same needle)
 All exceptions are indicated in the needle diagram.

Important: Never have two black squares next to each other when attempting single-bed tuck stitch.

Tuck stitch techniques are normally shown as 3 digits starting with 1. In the stitch pattern book you may sometimes find that they begin with a 5. Adding 400 signifies that the technique is no longer using all needles.

Single-bed tuck stitch pattern



KX

Note:

1 row of squares = 1 row of knitting
 1 white square = 1 stitch
 1 black square = 1 tuck

129

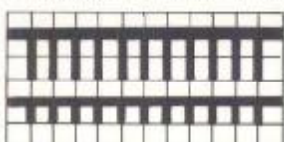
Single-bed tuck stitch pattern



KX

130

Single-bed tuck stitch pattern



KX

2 R col 1
 2 R col 2

131

Knitting techniques for tuck stitch patterns

Single-bed tuck stitch pattern in 2 colours



KX

2 R col 1
4 R col 2

132

Single-bed tuck stitch pattern in 2 colours



KX

4 R col 1
4 R col 2

133

Single-bed tuck stitch pattern in 2 colours

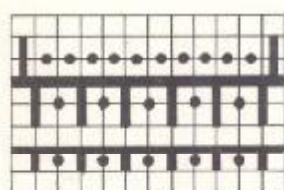


KX

2 R col 1
6 R col 2

134

Single-bed tuck stitch pattern with alternate needles



N

KX

On the back bed bring the last needle at right and left of the knitting to Working Position.

Note:

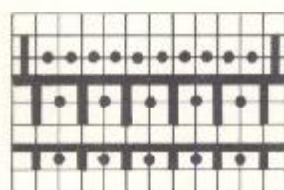
1 row of squares = 1 row of knitting

1 white square = 1 stitch

1 black square = 1 tuck

135

Single-bed tuck stitch pattern with alternate needles



N

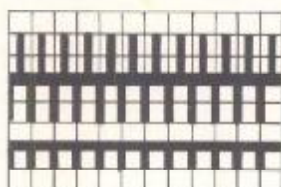
KX

On the back bed bring the last needle at right and left of the knitting to Working Position.

136

Knitting techniques for tuck stitch patterns

Double-bed tuck stitch pattern

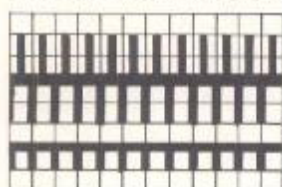


N
KX

1 white square = 2 tucks

137

Double-bed tuck stitch pattern

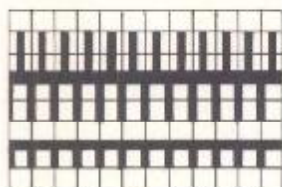


N
KX

1 black square = 2 tucks

138

Double-bed tuck stitch pattern



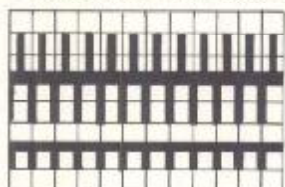
N
KX

Note:

1 row of squares = 4 rows of knitting
1 white square = 4 tucks

139

Double-bed tuck stitch pattern



N
KX

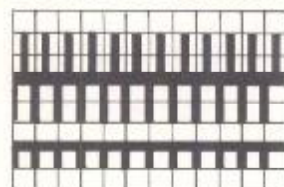
Note:

1 row of squares = 4 rows of knitting
1 black square = 4 tucks

140

Knitting techniques for tuck stitch patterns

Double-bed tuck stitch pattern in 2 colours

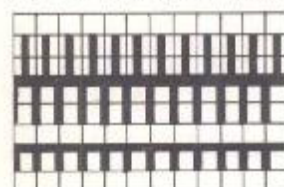


N
KX

2 R col 1
4 R col 2
1 black square = 2 tucks

141

Double-bed tuck stitch pattern in 2 colours

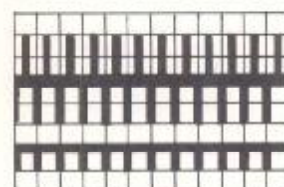


N
KX

4 R col 1
4 R col 2
1 black square = 2 tucks

142

Double-bed tuck stitch pattern in 2 colours

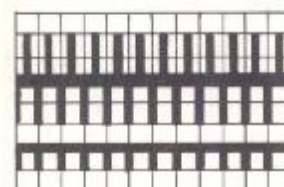


N
KX

2 R col 1
8 R col 2

143

Double-bed tuck stitch pattern with honeycomb effect in 2 colours



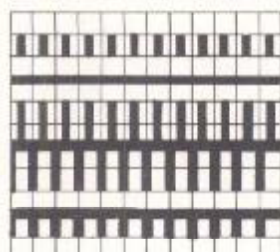
N
KX

10 R col 1
10 R col 2

144

Knitting techniques for tuck stitch patterns

Double Fisherman's rib



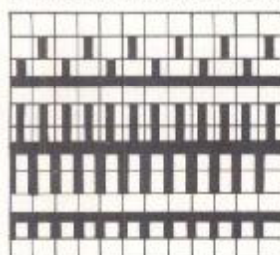
AX ←
KX

2 R col 1
2 R col 2

Cannot be combined with a stitch pattern.

145

Double-bed tuck stitch pattern



2R N
2R AX
KX

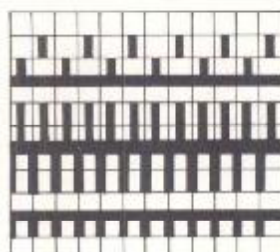
Semi-automatic

Cannot be combined with a stitch pattern.

(The pusher setting on the back bed may be the same as on the front bed or reversed, which will give the knitting a slightly different look.)

146

Double-bed tuck stitch pattern



4R N
4R AX
KX

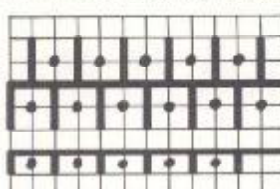
Semi-automatic

Cannot be combined with a stitch pattern.

(The pusher setting on the back bed may be the same as on the front bed or reversed which will give the knitting a slightly different look.)

147

Double-bed tuck stitch pattern in 1:1 rib



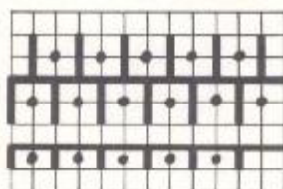
N
KX

1 row of squares = 2 rows of knitting
1 white square = 2 tucks

148

Knitting techniques for tuck stitch patterns

Double-bed tuck stitch pattern in 1:1 rib

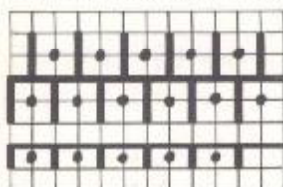


N
KX

1 row of squares = 2 rows of knitting
1 black square = 2 tucks

149

Double-bed tuck stitch pattern in 1:1 rib

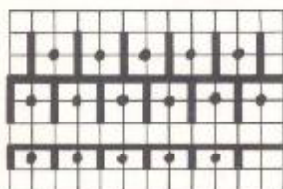


N
KX

1 row of squares = 4 rows of knitting
1 white square = 4 tucks

150

Double-bed tuck stitch in 1:1 rib

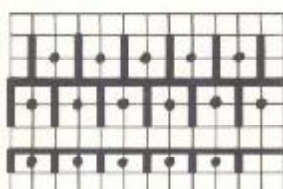


N
KX

1 row of squares = 4 rows of knitting
1 black square = 4 tucks

151

Double-bed tuck stitch pattern, in 2 colours, reversible



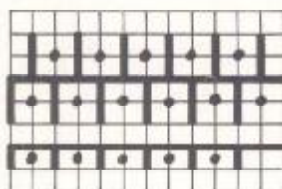
N
KX

4 R col 1
4 R col 2

152

Knitting techniques for tuck stitch patterns

Double-bed tuck stitch pattern, in 2 colours, reversible fabric



2R N
4R GX
KX

Semi-automatic

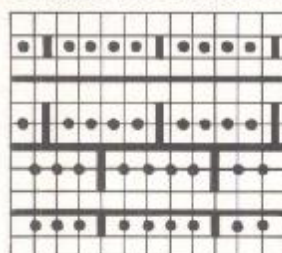
2 R col 1
4 R col 2

153

Cannot be combined with stitch pattern.

Note: For this pattern the colour change will not be indicated. Always when the display for the setting of the back lock appears, also change the colour.

Double-bed tuck stitch pattern over a wider needle distance



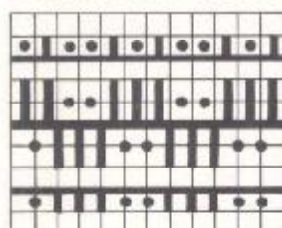
AX ←
KX

Particularly suitable for thicker yarns.

Cannot be combined with stitch pattern.

154

Double-bed lace effect with tuck stitch



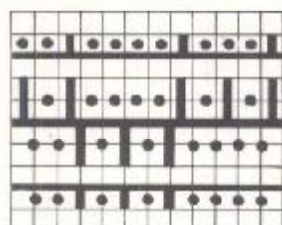
4R N
4R AX
KX

Semi-automatic

Cannot be combined with stitch pattern.

155

Lace effect pattern using alternate needles



4R N
4R AX
KX

Semi-automatic

Cannot be combined with stitch pattern.

156

Knitting techniques for tuck stitch patterns

Double-bed tuck stitch pattern in 2 colours



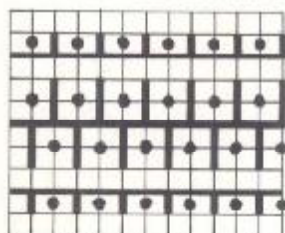
N
KX

2 R col 1
4 R col 2

Cannot be combined with stitch pattern.

157

Double Fisherman's rib using alternate needles in 2 colours



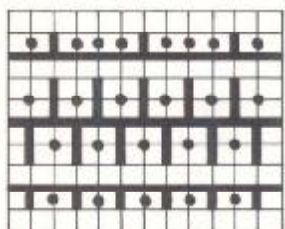
AX ←
KX

2 R col 1
2 R col 2

Cannot be combined with stitch pattern.

158

Double-bed tuck stitch pattern using alternate needles



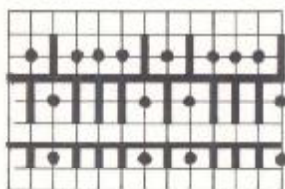
2R N
2R AX
KX

Semi-automatic

Cannot be combined with stitch pattern.

159

Double-bed lace effect tuck stitch



4R N
4R AX
KX

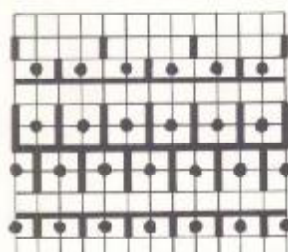
Semi-automatic

Cannot be combined with stitch pattern.

160

Knitting techniques for tuck stitch patterns

Double-bed tuck stitch pattern in 1:1 needle formation



4R N
4R AX
KX

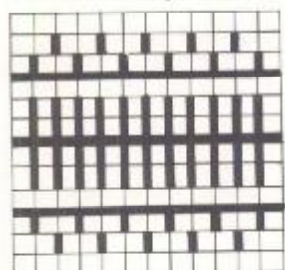
Note:
1 row of squares = 4 rows of knitting

Semi-automatic

Cannot be combined with stitch pattern.

161

Tuck stitch pattern in tubular knitting and 2 colours



2R DX →
4R DX
OX

Semi-automatic

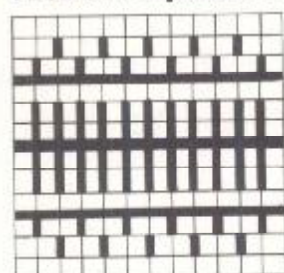
2 R col 1
4 R col 2

Cannot be combined with stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

162

Tuck stitch pattern in tubular knitting and 2 colours



DX →
OX

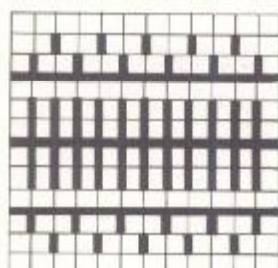
2 R col 1
2 R col 2

Cannot be combined with stitch pattern.

163

Knitting techniques for tuck stitch patterns

Tuck stitch pattern in tubular knitting and 2 colours



2R DX →
2R DX
OX

4 R col 1
4 R col 2

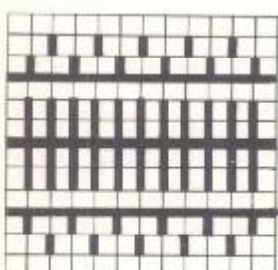
Semi-automatic

Cannot be combined with a stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

164

Tuck stitch pattern in tubular knitting and 2 colours



DX →
OX

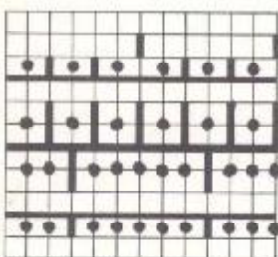
2 R col 1
6 R col 2

Cannot be combined with a stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

165

Lace effect tuck stitch pattern, suitable for thicker yarns



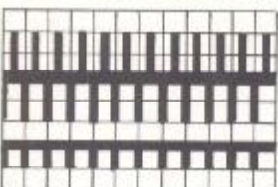
BX ↔
KX

Cannot be combined with a stitch pattern.

This pattern may be knitted in two colours in which case change the colour every alternate row.

166

Patterned Fisherman's rib

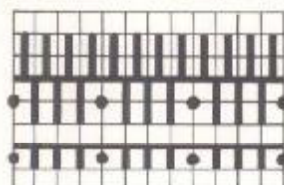


EX
KX

167

Knitting techniques for tuck stitch patterns

Patterned Fisherman's rib



N
KX

Cannot be combined with a stitch pattern.

168

Single-bed tuck stitch pattern

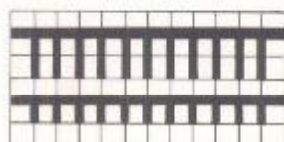


KX

Note: Follow single-bed tuck stitch rule (page 143).

169

Slip stitch



LX

Note: Only suitable for stitch patterns where there are not more than between 4 and 6 black squares next to each other.

170

Graduations



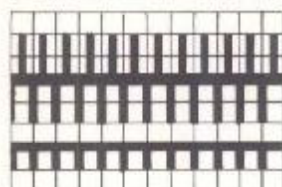
LX

1 square = 2 rows
Knits stocking stitch only where there is a black square. Look at the explanations given for "skirt knitted automatically" on page 121.

171

Knitting techniques for tuck stitch patterns

Double-bed tuck stitch



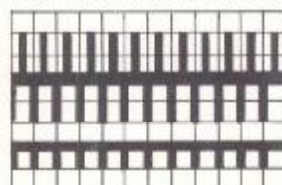
N
KX

1 row of squares = 1 tuck

Cannot be knitted without stitch pattern.

172

Double-bed tuck stitch

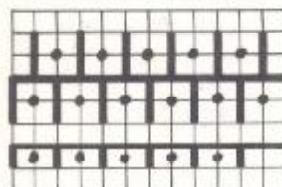


N
KX

Cannot be knitted without stitch pattern.

173

Double-bed tuck stitch in 1:1 rib



N
KX

Cannot be knitted without stitch pattern.

174

Knitting techniques for two-colour Fairisle

All Fairisle techniques can be combined with a stitch pattern. Exceptions to the general rules shown below are always indicated in the diagrams.

General rule: 1 row of squares = 2 rows background colour (white squares)
2 rows motif colour (black squares)

Always begin your knitting with the background colour.

The majority of the double-bed Fairisle patterns can also be knitted without stitch patterns, which will result in plain-coloured knitting in the background colour. Restrictions are shown in the respective technique.

All double-bed Fairisle patterns may be placed as single motifs.

Striped backgrounds for single motifs

As well as having plain backgrounds for your single motifs you can have striped backgrounds. Enter dot + number 1, 2 or 3 after the 3-digit number for the Fairisle technique and the background will have vertical stripes as follows:

xxx.1 – vertical stripes in 1:1 rib

xxx.2 – vertical stripes in 2:2 rib

xxx.3 – vertical stripes in 4:4 rib

(For examples see Stitch Pattern Book page 79.)

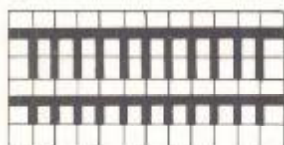
Fairisle, single-bed, in two colours



LX

176

Fairisle, single-bed, in three colours (for superimposed stitch patterns)



LX

2 R col 1
2 R col 2
2 R col 3

177

Fairisle, single-bed, in four colours (for superimposed stitch patterns)



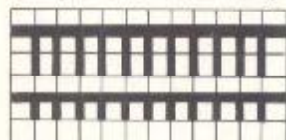
LX

2 R col 1
2 R col 2
2 R col 3
2 R col 4

178

Knitting techniques for two-colour Fairisle

Single-bed Fairisle, with single stitches



LX

1 row of squares = 1 row of knitting

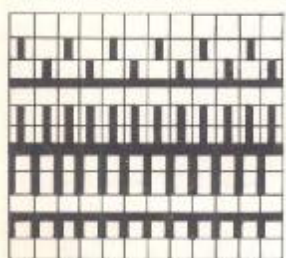
Note:

Only stitch pattern drawings with an even number of rows of squares may be used.

For this technique you always have to reverse the background and motif colours, i.e. ALTER: YES = ENT, COL: REV.: YES = ENT

179

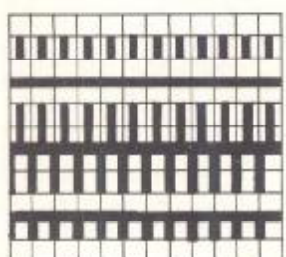
Birdseye double-bed Fairisle



BX ↔
LX

180

Double-bed Fairisle with background colour only on reverse side



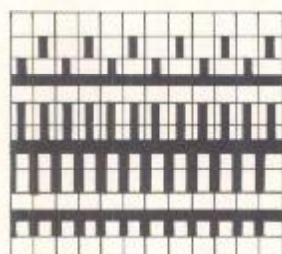
BX ←
LX

Cannot be knitted without a stitch pattern. To seal the edges of the knitting bring the first and last pushers on the back bed into Working Position.

181

Knitting techniques for two-colour Fairisle

Double-bed Fairisle with vertical stripes on reverse side



BX ←
LX

182

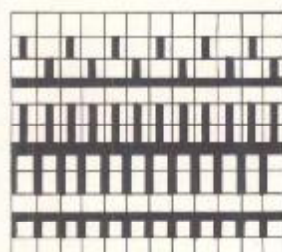
Double-bed Fairisle



N
LX

183

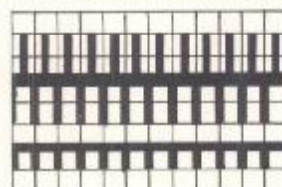
Double-bed birdseye Fairisle with long stitch



BX ↔
LX

184

Double-bed Fairisle with long stitch

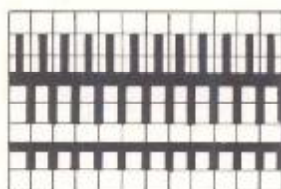


N
LX

185

Knitting techniques for two-colour Fairisle

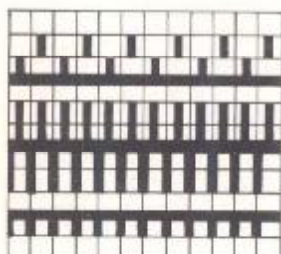
Double-bed Fantasy Fairisle with tuck stitch



N
KX

186

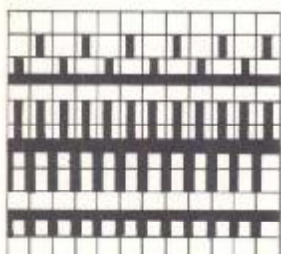
Double-bed Fairisle with tuck stitch on every row on the reverse side



AX ↔
LX

187

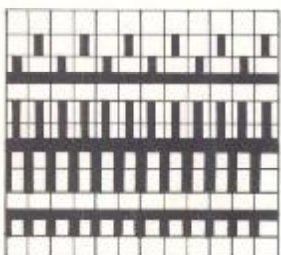
Double-bed Fairisle with half Fisherman's Rib on the reverse side



FX ←
LX

188

Double-bed Fairisle with contrasting stitch formations for background and motif colours



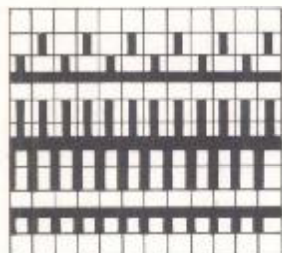
2R AX ↔
2R N
LX

Semi-automatic

189

Knitting techniques for two-colour Fairisle

Double-bed Fairisle with contrasting stitch formations for background and motif colours

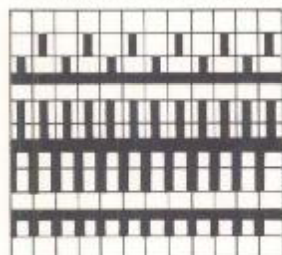


2R N
2R AX
LX

Semi-automatic

190

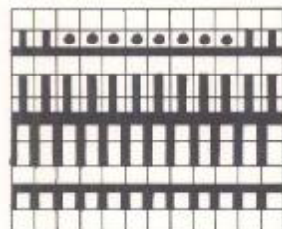
Double-bed Fairisle with two tucks on the reverse side



AX ←
LX

191

Double-bed Fairisle with pintucks



2R N
4R BX
LX

2 R background colour
4 R motif colour

Semi-automatic

On back bed, bring pushers into Working Position for the two edge needles.

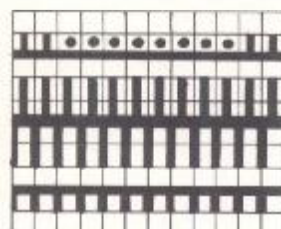
Cannot be combined with a stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

192

Knitting techniques for two-colour Fairisle

Double-bed Fairisle with pintucks



2R N
6R BX
LX

2 R background colour
6 R motif colour

193

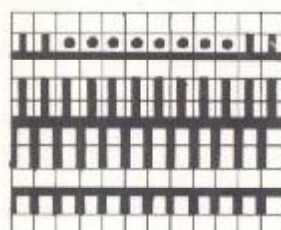
Semi-automatic

On back bed, bring pushers to Working Position for the two edge needles.

Cannot be combined with a stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

Double-bed Fairisle with pintucks



2R N
8R BX
LX

2 R background colour
8 R motif colour

194

Semi-automatic

On back bed, bring pushers to Working Position for the two edge needles.

Cannot be knitted without stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

Knitting techniques for three-colour Fairisle

The techniques 195–206 are used for 3-colour Fairisle if this Fairisle is the result of superimposing two stitch patterns.

(These may be stitch patterns from the Electronic memory or your own stitch pattern drawings entered via the reader.)

See page 131.

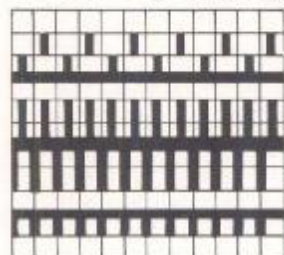
The rule for techniques 195–206 is: 1 row of squares = 2 rows background colour
2 rows motif colour
2 rows second motif colour

The techniques 219–230 (that appear in brackets), are used for 3-colour Fairisle where all 3 colours are marked over 3 rows of squares on the pattern sheet.

See page 132.

The rule for techniques 219–230 is: 1st row of squares = 2 rows background colour
2nd row of squares = 2 rows first motif colour
3rd row of squares = 2 rows second motif colour

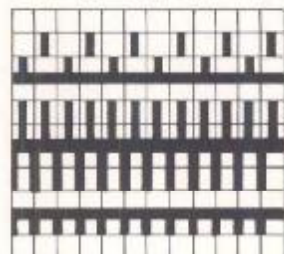
Double-bed birdseye Fairisle in 3 colours



BX ↔
LX

195
[219]

Double-bed Fairisle, in 3 colours, with tucks on the reverse side

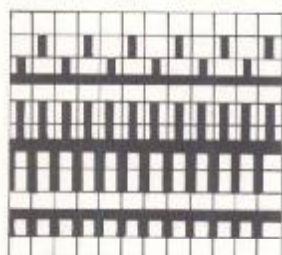


AX ←
LX

196
[220]

Knitting techniques for three-colour Fairisle

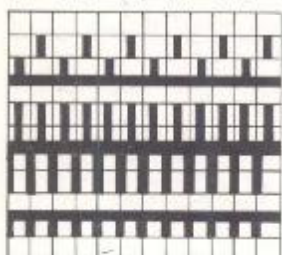
Double-bed Fairisle, in 3 colours, with spotted effect



BX ←
LX

197
[221]

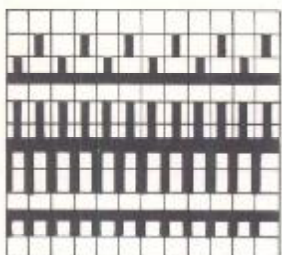
Double-bed Fairisle in Fisherman's Rib and 3 colours



FX
LX

198
[222]

Double-bed Fairisle, in 3 colours, with tucks on every row on the reverse side

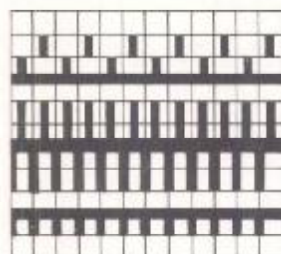


AX ↔
LX

199
[223]

Knitting techniques for three-colour Fairisle

Double-bed Fairisle in 3 colours with contrasting stitch formations on back bed

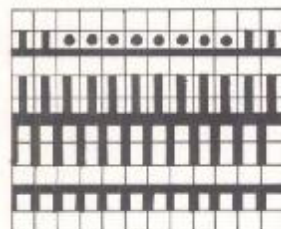


2R AX ↔
2R N ↔
LX

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

200
[224]

Double-bed Fairisle in 3 colours, with pintuck effect



4R N
4R BX
LX

2 R background colour
2 R first motif colour
2 R second motif colour

Semi-automatic

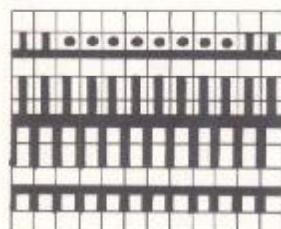
On the back bed, bring pushers into Working Position for the two edge needles. Cannot be knitted without a stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

204
[228]

Knitting techniques for three-colour Fairisle

Double-bed Fairisle in 3 colours, with pintuck effect



4R N
6R BX

LX

2 R background colour
2 R first motif colour
6 R second motif colour

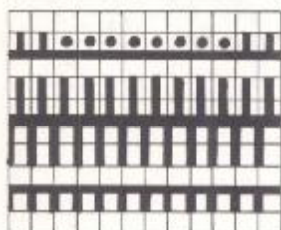
Semi-automatic

On back bed, bring pushers into Working Position for the two edge needles.
Cannot be knitted without a stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

205
[229]

Double-bed Fairisle in 3 colours, with pintuck effect



4R N
8R BX

LX

2 R background colour
2 R first motif colour
8 R second motif colour

Semi-automatic

On back bed, bring pushers into Working Position for the two edge needles.
Cannot be knitted without a stitch pattern.

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

206
[230]

Knitting techniques for four-colour Fairisle

The techniques 207–218 are used for 4-colour Fairisle if this Fairisle is the result of superimposing three stitch patterns.

(These may be stitch patterns from the Electronic memory or your own stitch pattern drawings entered via the reader.)

See page 131.

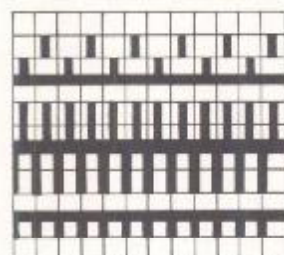
The rule for techniques 207–218 is: 1 row of square = 2 rows of background colour
 2 rows first motif colour
 2 rows second motif colour
 2 rows third motif colour

Techniques 231–242, that appear in brackets, are used for 4-colour Fairisle where all four colours are 4 rows of squares on the pattern sheet.

See page 132.

The rule for techniques 231–242 is: 1st row of squares = 2 rows background colour
 2nd row of squares = 2 rows first motif colour
 3rd row of squares = 2 rows second motif colour
 4th row of squares = 2 rows third motif colour

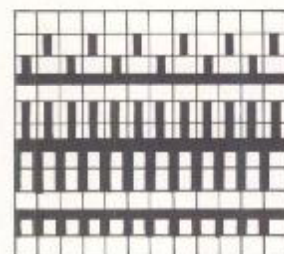
Double-bed birdseye Fairisle in 4 colours



BX ↔
 LX

207
[231]

Double-bed Fairisle in 4 colours, with tucks on the reverse side

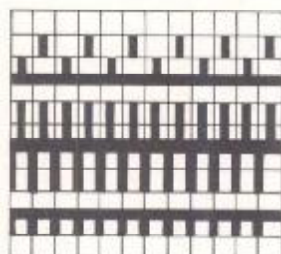


AX ←
 LX

208
[232]

Knitting techniques for four-colour Fairisle

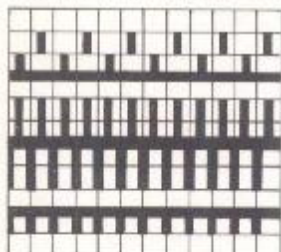
Double-bed Fairisle in 4 colours, with spotted effect on the reverse side



BX ←
LX

209
[233]

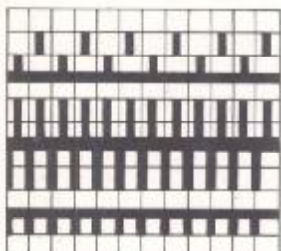
Double-bed Fairisle in Fisherman's Rib and 4 colours



FX
LX

210
[234]

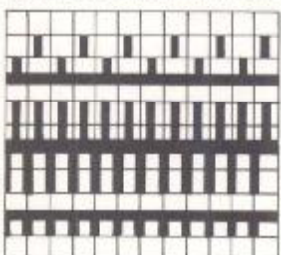
Double-bed Fairisle in 4 colours, with tucks on every row on the reverse side



AX ↔
LX

211
[235]

Double-bed Fairisle in 4 colours with contrasting stitch formations on the back bed



2R N ↔
2R AX ↔
LX

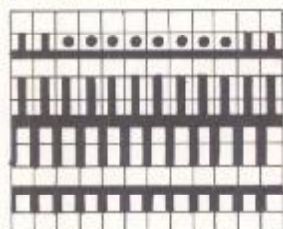
Semi-automatic

Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

212
[236]

Knitting techniques for four-colour Fairisle

Double-bed Fairisle in 4 colours, with pintuck effect



6R N
4R BX
LX

2 R background colour
2 R first motif colour
2 R second motif colour
4 R third motif colour

216
[240]

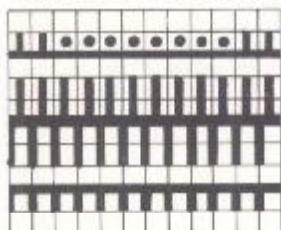
Semi-automatic

On the back bed, bring pushers into Working Position for the two edge needles.

Cannot be knitted without a stitch pattern.

Note: For this pattern the third motif colour change which produces the pintuck effect is not indicated, so change it when the display for the back lock changes.

Double-bed Fairisle in 4 colours, with pintuck effect



6R N
6R BX
LX

2 R background colour
2 R first motif colour
2 R second motif colour
6 R third motif colour

217
[241]

Semi-automatic

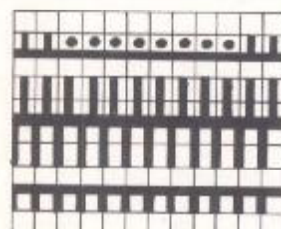
On the back bed, bring pushers into Working Position for the two edge needles.

Cannot be knitted without a stitch pattern.

Note: For this pattern the third motif colour change which produces the pintuck effect is not indicated, so change it when the display for the back lock changes.

Knitting techniques for tubular Fairisle

Double-bed Fairisle in 4 colours, with pintuck effect



6R N
8R BX
LX

2 R background colour
2 R first motif colour
2 R second motif colour
8 R third motif colour

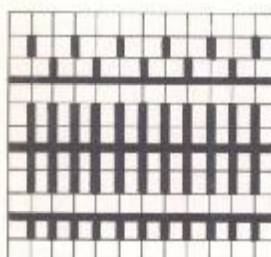
Semi-automatic

On the back bed, bring pushers into Working Position for the two edge needles. Cannot be knitted without a stitch pattern.

Note: For this pattern the third motif colour change which produces the pintuck effect is not indicated, so change it when the display for the back lock changes.

218
[242]

Tubular Fairisle in 2 colours



HX ←
LX

Arrange pushers yourself on back bed, as desired.

Cannot be knitted without a stitch pattern.

243

Knitting techniques for intarsia

None of these techniques can be knitted without stitch patterns.

It is essential that you thread your colours as follows:

COL 1 = first feeding eyelet at left

COL 2 = second feeding eyelet from the left

COL 3 = third feeding eyelet from the left

COL 4 = fourth feeding eyelet from the left

Important: Intarsia patterns always have to be enlarged in such a way that the full width of your piece of knitting comprises only one pattern repeat.

(Example: The stitch pattern drawing is 30 squares wide. You wish however to knit 120 stitches, in which case you have to multiply the stitch pattern drawing by 4 in the width.)

Enlarging stitch patterns in the height is generally not advisable.

Intarsia knitting produces small holes where the colours meet, but you can avoid them by laying the yarn with which you are knitting into the needle head of the next non-working needle. (See also "Knitting with short rows" [graduations] on pages 107 and 110.)

Intarsia in 2 colours



LX

Note: Yarn for the right part of the knitting into left feeding eyelet.
Yarn for the left part of the knitting into the right feeding eyelet..

245

Intarsia in 3 colours



LX

Col 1 = in the first feeding eyelet from the left for the right part of the knitting.
Col 2 = in the second feeding eyelet from the left for the centre part of the knitting.
Col 3 = in the third feeding eyelet from the left for the left part of the knitting.

246

Knitting techniques for intarsia

Intarsia in 4 colours



LX

Col 1 = in the first feeding eyelet from the left for the first part from the right in the knitting.

Col 2 = in the second feeding eyelet from the left for the second part from the right in the knitting.

Col 3 = in the third feeding eyelet from the left for the third part from the right in the knitting.

Col 4 = in the fourth feeding eyelet from the left for the fourth part from the right in the knitting.

248

Knitting techniques for pintuck patterns

The rule for all pintuck patterns is:
The pintuck is formed on the back bed.
1 row of squares = 2 rows of knitting on the back bed.

A pintuck formed where there are black squares in the stitch pattern

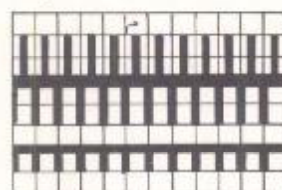


$$\frac{N}{LX}$$

For each row of squares, two rows are knitted on the front bed.

250

A pintuck formed where there are white squares in the stitch pattern



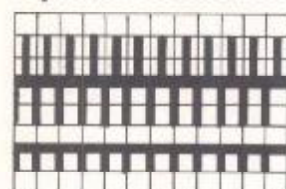
$$\frac{N}{LX}$$

For each row of squares, two rows are knitted on the front bed.

251

Knitting techniques for pintuck patterns

A pintuck formed where there are black squares in the stitch pattern.

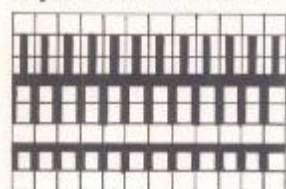


N
LX

For each row of squares, one row is knitted on the front bed.

252

A pintuck formed where there are black squares in the stitch pattern.



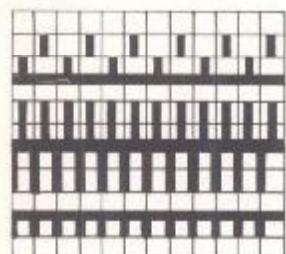
N
LX

For each row of squares, one row is knitted on the front bed.

253

A pintuck formed where there are black squares in the stitch pattern.

Pintuck with spotted effect



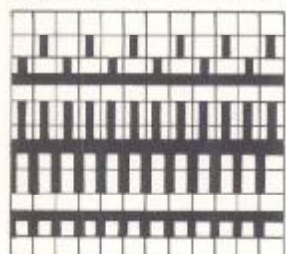
FX ←
LX

For each row of squares, one row is knitted on the front bed.

254

A pintuck formed where there are white squares in the stitch pattern.

Pintuck with spotted effect

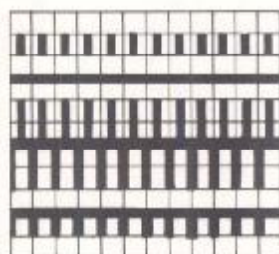


FX ←
LX

For each row of squares, one row is knitted on the front bed.

255

Knitting technique for lace patterns without transferring



BX ←

LX

1 row of squares = 2 rows of knitting, whereby the lock is passed 4 times over the needles.

256

Before beginning the pattern transfer all the stitches to the back bed.

Can be knitted only with stitch pattern drawings where there are not too many black squares next to each other.

For this pattern knit 2 rows with yarn in the lock and two rows without yarn or feeding eyelet in order to release the loops.

Knitting techniques for racking patterns

Stitch patterns 1100 to 1106 are particularly effective as racking patterns. You will only see the needles which will be knitting on the front bed when you see the pusher arrangement **after the second empty row**. At this point bring the pusher in rest position and its corresponding needle into out of working position. If they have stitches on them, first transfer them to the back bed.

Most racking patterns have been programmed with a minimum of racking (once to the right, once to the left). However, the patterns will be more impressive, if you rack several times consecutively in the same direction, producing a larger zig-zag effect.

In order to achieve this, you will have to **lengthen** the pattern. Note: You may multiply it only by 6 at the most, as the knitting machine can be racked by only 6 needles.

In racking patterns you must make sure at the outset that you have enough needles on the back bed at the edges to cover the amount by which you are racking.

At the start of each racking pattern the Electronic 6000 shows three turns of the racking handle to the right, assuming that the racking indicator is in the centre position.

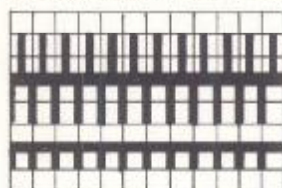
If you knit a pattern where you rack six times in one direction, you should remember to turn the racking handle to the extreme right before you cast on.

Note: If by racking the knitting results in a major part of it being single-bed you may have to use black strippers, even if the computer tells you to use orange strippers.

Note: If you tell the computer you wish to unravel a number of rows it will tell you where the beds should be when you have unravelled the final row.

The first display will be $\square$ = handle up but as this is an information display only, **DO NOT ACTUALLY MOVE THE HANDLE**. Instead press ENT. If you have knitted with the handle down the next information display will be $\square$ = half a turn to R or L. Just press ENT. The next information display tells you the correct racked position of the beds, working from the centre, and if this does not correspond with the actual position of the beds check your unravelling. The computer cannot be wrong. If correct press ENT and continue knitting.

Racking pattern in K/K

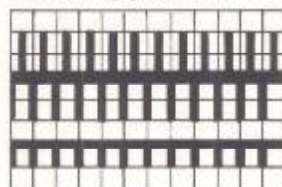


N
LX

Maximum lengthening $\times 6$

257

Racking pattern with long stitch



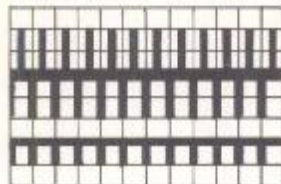
N
LX

Maximum lengthening $\times 6$

258

Knitting techniques for racking patterns

Racking pattern with one tuck every 2 rows

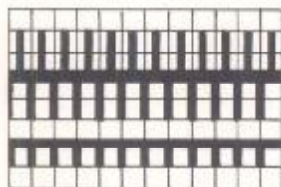


N
KX

Maximum lengthening $\times 6$

259

Racking pattern with Fisherman's Rib

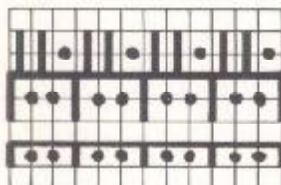


EX
KX

Note:
May not be lengthened.
Cannot be combined with a stitch pattern.

260

Racking pattern for double-side fabric

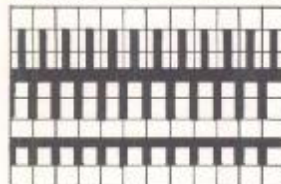


N
KX

Note:
May not be lengthened.
Cannot be combined with a stitch pattern.

262

Racking pattern with two tucks on the front bed every 2 rows



N
KX

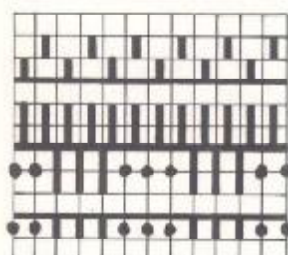
Maximum lengthening $\times 6$

Note:
Cannot be combined with a stitch pattern.

263

Knitting techniques for racking patterns

Racking pattern in 2 colours



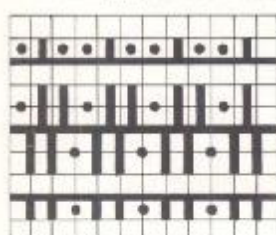
BX ↔
LX

Maximum lengthening × 6

Note:
Cannot be combined with a stitch pattern.

264

Racking pattern with lace effect in tuck

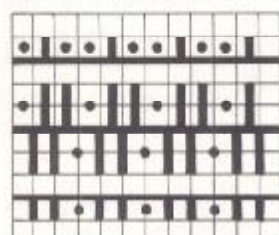


4R AX
2R N
KX

Note:
Cannot be altered.
Cannot be combined with a stitch pattern.
Semi-automatic

265

Racking pattern in 2 colours, with lace effect in tuck



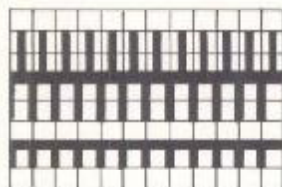
4R AX
2R N
KX

Note:
Cannot be altered.
Cannot be combined with a stitch pattern.
Semi-automatic
Note: For this pattern change of colour will not be displayed. When the display for the back lock setting changes you must change the colour too.

266

Knitting techniques for racking patterns

Fisherman's Rib racking pattern with large zig-zag effect



EX
KX

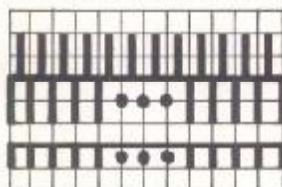
Note:

Cannot be altered.

Cannot be combined with a stitch pattern.

267

Racking pattern with pintuck effect



N
LX

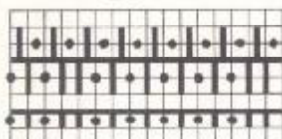
Note:

Cannot be altered.

Cannot be combined with a stitch pattern.

268

Racking pattern with contrasting stitch patterns in the same row



EX
KX

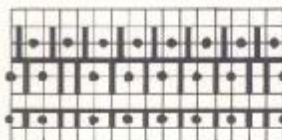
Note:

Cannot be altered.

Cannot be combined with a stitch pattern.

269

Racking pattern with contrasting stitch patterns in the same row



EX
KX

Note:

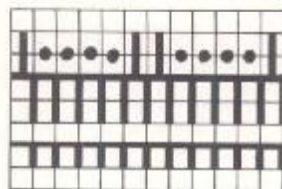
Maximum lengthening $\times 6$.

Cannot be combined with a stitch pattern.

270

Knitting techniques for racking patterns

Racking pattern with tuck stitch effect



EX
KX

Note:

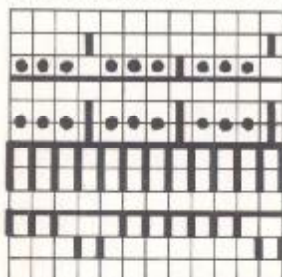
Maximum lengthening $\times 6$

271

Bring back bed needles into Working Position, as desired.

Cannot be combined with a stitch pattern.

Racking pattern with bobble effect using U 100E



1R BX ←
7R BX
KX

Semi-automatic

Note:

Cannot be altered.

272

Cannot be combined with a stitch pattern.

Knitting techniques for transfer patterns using the U 100E

Transfer patterns on the Electronic 6000 can be knitted only with the transfer lock U 100E. The Electronic 6000 always indicates whether to transfer from front to back or back to front bed and the setting on the U 100E. Normally the transfer point is only indicated once, at the beginning of the pattern.

Lace pattern using U 100E



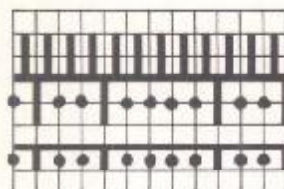
N
LX

Note:

Before beginning the pattern, transfer all stitches to the back bed.
Is best combined with a stitch pattern in 1:1 division (i.e. alternating black and white squares).

280

Tuck lace

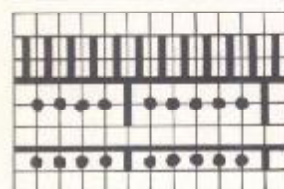


N
KX

Cannot be altered.
Cannot be knitted without a stitch pattern.
Before beginning the pattern, transfer all stitches to the back bed.

281

Tuck lace with racking



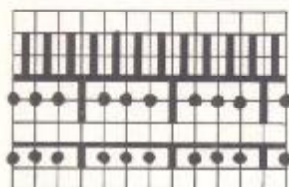
N
KX

Maximum lengthening $\times 6$.
Cannot be combined with a stitch pattern.
Before beginning the pattern, transfer all stitches to the back bed.

282

Knitting techniques for transfer patterns using the U 100E

Tuck lace with racking

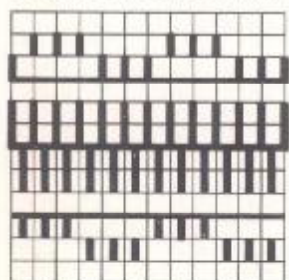


N
KX

Cannot be altered.
Cannot be combined with a stitch pattern.

283

Basket-weave stitch, double/single-bed



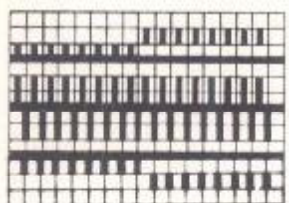
2R BX ←
6R BX
KX

Semi-automatic

Cannot be combined with a stitch pattern.
Cannot be altered.
Before beginning the pattern, transfer all stitches to the front bed.
For the first row start with the back bed pushers inside the blocking rail.
On the second row set them according to the diagram, i.e. where they are in Working Position on the front bed, put them into Rest Position on the back bed. Continue to knit.

284

Basket-weave stitch with knit and purl stitches



2R BX ←
LX
6R BX
LX

Semi-automatic

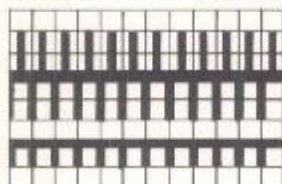
Cannot be altered.
Cannot be combined with a stitch pattern.

285

Attention: At the beginning, stitches should only be on needles on the front bed where the pushers are in working position, and on the back bed where the pushers are in rest position.

Knitting techniques for transfer patterns using the U 100E

Raised pattern with knit and purl stitches



N

LX

Note: Before beginning the pattern transfer all stitches to back bed.

At some points in this stitch pattern the display telling you to transfer may appear when there are no stitches that need to be transferred. Transfer anyway to be on the safe side.

286

What to do, if

You wish to alter the program

You can check and alter your program at any time, whether you are programming or knitting.

Press key for **fast forward once or twice** until display **PROGR** appears.

Press **ENT**.

Display **ERASE** appears.

Press **NO**.

You can now go through the program and check what you have programmed.

Answer the questions in the same way you answered them when you were programming.

In the places where you have entered numbers, these will appear again. If you wish to keep them, press **ENT**.

If you wish to alter them, enter the correct new number. It will replace the wrong one. Then press **ENT**.

Exception: If you have answered the question **ALTER** with yes, an asterisk will appear instead of the number of the stitch pattern drawing. When checking, you can no longer go back to the section **ALTER**. If you are uncertain as to whether you have altered a pattern correctly, enter it again as next pattern.

When you have entered a pattern via the reader, a zero and a dot will appear in place of the stitch pattern number.

(If you answered **NO** in the places where you could answer with a number or **NO**, nothing will appear when checking.

Note: If you do not answer the question **ALL PATT** neither the stitch pattern nor any alteration to it will be stored and therefore will not appear when you are checking the program.)

An error message appears

ERR.

Error messages draw your attention to programming errors and knitting mistakes. They help you to avoid making programming mistakes and correct errors as they occur.

When you get an error message look up its number in the manual to see what it means, then press ENT.

The computer will then go back to the place where you can correct the mistake or rectify the trouble.

What to do, if

3

Your program has been erased. Program it again.
(If this message appears frequently, consult your dealer.)

4

5

There is a defect in the Electronic console. Consult your dealer.

1 0 0

There has been an interruption in your program. Program it again.

1 0 1

The number entered is a cast-on.

1 0 2

The stitch pattern entered cannot be knitted with the knitting technique chosen.

1 0 3

The number entered is not a knitting technique but a stitch pattern.

1 0 4

The number entered is not a cast-on.

1 0 5

The working memory is full. This may be because you have already used up a lot of the memory for other stitch patterns. Check if there are stitch patterns in the memory that could be erased.

(If you get ERR 105 while checking your program, this means that your program has been stored and you can knit it, but that there is no spare capacity to check the program.)

1 0 6

The stitch pattern drawing in the pattern sleeve is not straight, or the column of squares indicating the height of the stitch pattern has not been coloured in correctly.

What to do, if

1 0 7 You have moved the reading knob too quickly.

1 0 8 The stitch pattern drawing in the pattern sleeve is not straight, or the squares on the stitch pattern drawing are not coloured in correctly or black enough.

1 0 9 You have not moved the reading knob right to the end, as far as it will go.

1 1 0 The working memory is full. (See 105)

1 1 1 The number entered is neither a stitch pattern nor a knitting technique.

1 1 2 The working memory is full. (See 105)

1 1 3

1 1 4 A stitch pattern drawing can only be 256 squares long. Your stitch pattern drawing is longer.

1 1 5 A stitch pattern drawing can only be 256 squares wide, your stitch pattern drawing is wider.

1 1 6 The number entered is not a stitch pattern but a knitting technique.

1 1 7 The two stitch patterns are different in size.

1 1 8 The working memory is full. (See 105)

What to do, if

1 2 1 Your stitch pattern has more than two colours.

1 2 2 Check that the FORM-program has been entered correctly. The computer does not accept the numbers.

1 2 3 A stitch pattern of this length cannot be knitted with the chosen knitting technique.

1 5 0 You have entered a number which cannot be entered here. Refer to the corresponding display in the instruction book to see what restrictions have to be observed.

1 6 0 With your test square you cannot achieve the desired knitting width with the needles at your disposal.
(Choose a different stitch size, a different yarn, or a different stitch pattern.)

1 6 1 Check that the FORM-program has been entered correctly. The computer does not accept the numbers. You may have altered a variable measurement in a way which is not possible.

1 6 9 The shape entered cannot be reversed.

What to do, if

200

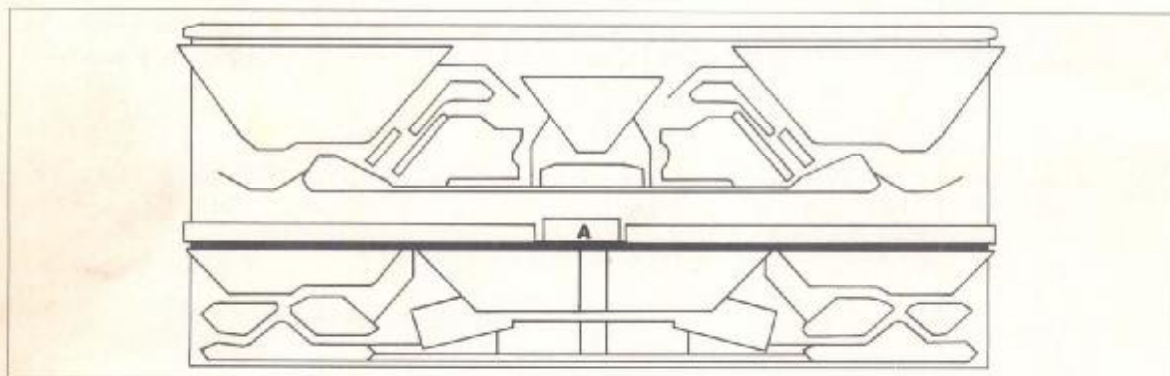
(Error 200 and all the following error messages are accompanied by a bleep.)

The photo cell cannot work properly because dust has accumulated on the guide rail.

(The slotted guide rail runs midway along the front bed.)

Clean it carefully with a brush. Take special care that no dust has accumulated in front of the white part of the lock which runs along the guide rail.

Should this message appear several times in succession, you must take the front lock off the needle bed and very carefully clean the channel on the underside (highlighted in the illustration) as well as the area of the photo cell (A).



If you press ENT after the message ERR 200, the following display will appear:

RETURN	1
---------------	----------

This display tells you how many rows to go back to get to the place where the computer lost the stitch pattern. Proceed as follows:

- 1 Move the locks in free move (front and back GX without strippers) to the right into START POSITION.
- 2 Unravel the number of rows necessary.
- 3 Confirm with ENT.

Now will follow all the displays that appear when beginning a stitch pattern.

(Tip: The computer sometimes tells you to unravel a row that has been knitted correctly. This is because it has to go back to a position where the lock is on the right to Start Position. Unravel it anyway.)

What to do, if

2 0 1

No other stitch pattern has been programmed.

2 0 2

You have forgotten to confirm with ENT.
If you press ENT now, the display RETURN will appear, read page 186 to see how to proceed.

2 0 3

See error message 122.

2 0 5

You continued too soon after a FORM-program display appeared. If you now press ENT, the display RETURN will appear. Read page 186 to see how to proceed.

2 0 6

You have not moved the lock over the programmed knitting width. If you now press ENT, the display RETURN will appear, read page 186 to see how to proceed.

2 0 7

The lock is not in START POSITION.

There may also be malfunctions that cannot be detected by the computer.

The lock jams in the knitting

Always set the lock at back and front at GX. Remove the strippers and the feeding eyelet from the lock.

Carefully guide the lock to the right into START POSITION.

Reasons for the blockage are:

The yarn has become entangled in the yarn guide and stopped the lock.

A pusher was not correctly aligned in Working Position, causing the lock to jam on the pusher.

Carefully check that all pushers are in good condition.

If the pusher foot is bent, it must be replaced. Pull it down and towards you and lift it out of its channel.

What to do, if

Rows have to be unravelled

Always move the lock to the right into START POSITION.

If you have to unravel a partly knitted row to do this, without getting an error message, do not count this row.

When error message 206 appears, follow the instructions until display START POSITION. If you wish to undo further rows, proceed as follows:

1 Note exactly how many rows you have unravelled from START POSITION.

2 Press COR.

3 L. ND . . appears. Press ENT if you do not wish to alter anything.

4 R. ND . . appears. Press ENT if you do not wish to alter anything.

5 Row Counter appears.

6 Enter the number of unravelled rows, then - (minus) and ENT.

7 Display RETURN . . . appears. If the displayed number corresponds with the number of rows you have unravelled, press ENT.

The computer now jumps to the desired row, and the usual indications given at the beginning of a stitch pattern will follow. After the first empty row the display "CHECK ST" will appear, meaning that the pushers are now in the position they were in for the last correctly knitted row. You can now check your knitting against the settings.

There are selection errors

This means that single stitches are knitted in motif colour when they should be knitted in background colour and vice versa.

If it becomes apparent that this mistake always happens **on the same needle**, you will have to **replace the pusher** in this place as it is faulty. To replace the pusher, see page 187.

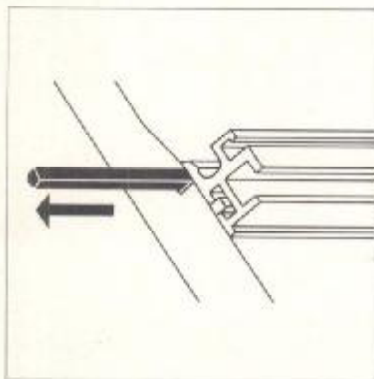
If the selection errors happen **at random**, you are knitting too fast.

There are dropped stitches

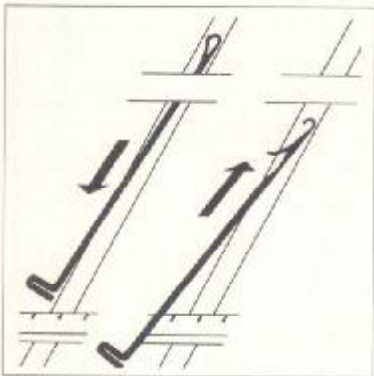
As you are working without weights any dropped stitches that you miss will not run and can easily be crocheted up later.

The reason for a dropped stitch may be a **damaged latch needle**.

Replacing a latch needle



- 1 Pull out the needle rail by the turned end far enough to clear the damaged needle. Do not allow it to bend.
- 2 If there is a damaged needle head or needle latch **you must cut it off with a pair of pliers.**



- 3 Ensure that there is no jagged end left and holding the needle by its foot slide it down and out of the needle channel. If the needle head is not damaged you must ensure that the latch is fully closed.
- 4 Insert the new needle with its latch open.
- 5 Failure to observe the above points will result in a damaged brake spring.
- 6 Replace the needle rail.

There are loops forming at the edges or the edge is too tight

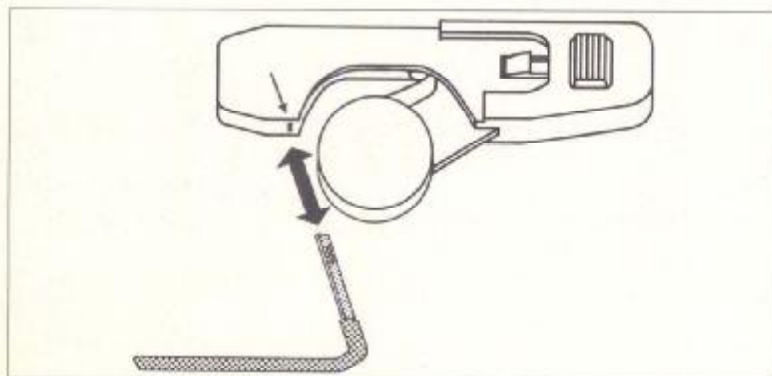
In both cases the yarn brake tension is set incorrectly. Loops may be due to the setting being too low, a tight edge to the setting being too high. Adjust the yarn brake tension accordingly.

You should also check that you are not taking the lock too far past the edge of your knitting.

What to do, if

The yarn is catching

This is usually due to damaged strippers. Replace an orange stripper complete. If the wheel is not damaged you can replace the blade only of a black stripper. See below.



The Electronic 6000 must be kept clean

Clean and oil the machine only after having removed the knitting.
A machine should never be left uncovered when not in use.
Always protect it against dust with a cover.

Cleaning

Every time you complete a garment, or daily if the machine is in constant use, proceed as follows:

- 1 With a soft dry cloth wipe off all surplus oil, or oil which has become black, from the lock and needle bed.
- 2 With a dry brush remove remaining yarn fluff from the needle bed and the interior of the lock.
- 3 Carefully wipe the insides of the rails on the needle beds with a cloth. Accumulated dust and oil can cause the lock to run stiffly.

You should clean the machine regularly and especially if it seems to be unusually stiff to operate.

What to do, if

Cleaning procedure

Home maintenance. Clean the lock parts, lock guides, needles and needle channels with a brush, then rub lightly with a cloth moistened with cleaning solution.

Use only the specified cleaning solution.

Special Note:

Never use petrol, gasoline, methylated spirits, or proprietary brand cleaning solutions on your machine, including the plastic parts. Do not rub the letters on the lock or machine body with a wet cloth or brush.

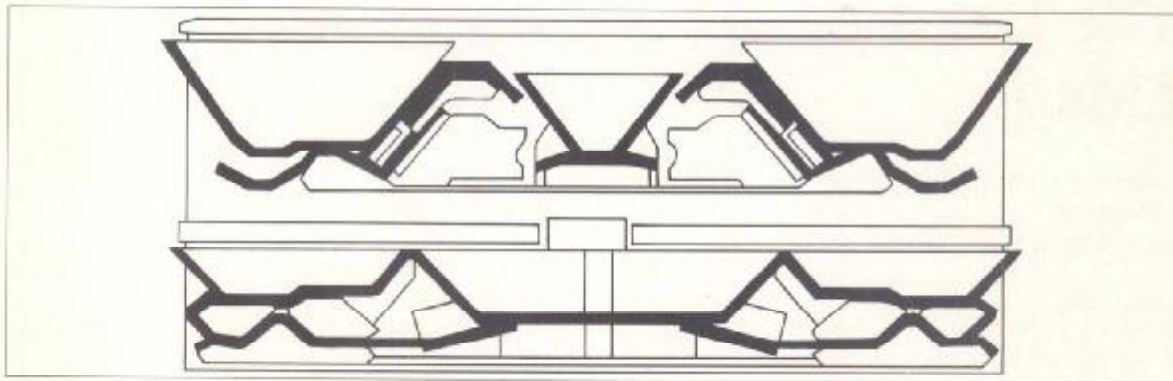
Cleaning solution

We suggest you use a mixture of 95% (approx. 1 pint) surgical spirit to 5% (approx. 1 fluid ounce) Bellodor oil (this prevents the machine parts from drying out too much). Never use methylated spirit on its own as it has a drying effect and might lead to rust.

Oiling after having cleaned the machine

1 The lock

Oil the parts marked in the illustration with Bellodor oil.



2 The guide rails

Put 2 to 3 drops of Bellodor oil on the middle part of each guide rail.

3 The needles and pushers

With a brush or oily cloth lightly rub all needle and pusher feet.

Special note

Only use Bellodor oil. Other qualities of oil may contain harmful ingredients.

Index of the displays

(The number of the display is bold type, the number of the page light type)

ADD 19, 23	46, 48	TO R/L - 0 37	65
ADD WHAT 20, 24	46, 48	1 R. EMPTY 59	93
ALL ST. PATT 2, 7	26, 29	READER	72
ALTER 4, 21	27, 47	REFER 82	118
ATT. R 81	118	REP. CM 39, 40	67, 68
CAST ON 56	26, 92	REP. R 39	67
CHECK ST.	188	REP. ST 40	68
CM? 27	55	RETURN	186
COL 1 65	97	REV. SHAP. 51	89
COL REV. 17	41	---SX 57	92
3. COL 22	47	ST. PATT A 3	27, 100
4. COL	49	ST. SIZE 66	98
CONTINUE	74	START CAST ON 50	86
DEUTSCH	23	START POS 55	91
DIRECT 10	34	STRIP B 67	99
DIRECT. OK 18	42	STRIP O 67	99
DIST. R 25	50	TEST	29
DIST. STS 26	51	WASTE Y 64	96
DIVIDE 80	116	1 R. EMPTY 59	93
END 79	111	3. COL 22	47
END BORD 77	111	4. COL	49
END C O 68	99	---GX 58	93
ENGLISH	24	---SX 57	92
ENLARGE POSITION 6	28	↑ R 28, 30	56, 58
ERASE	26	↑ CM 28, 30	56, 58
ERR.	182	↑ × 1 29	57
FORM 8, 41	30, 78	↑ REP. R 39	67
FORM TEST 52	90	↑ REP. CM 39	67
FRANCAIS	24	↔ STS 31, 33	59, 60
---GX 58	93	↔ CM 31, 33	59, 60
IN PATT. AT CM 38	66	↔ × 1 32	59
IN PATT. AT R 38	66	↔ REP. STS 40	68
KNIT	88	↔ REP. CM 40	68
KNIT. TECH 5	28	E → 3 11	35
L ND 9, 53	31, 90	ω → m 12	36
MM 40 R	55	E → E 13	37
MM 40 STS	56	ω → E 14	38
MEMO	23	E → m 15	39
ND --- 61	94	E → ω 16	40
ND --- 62	95, 133	□ 60	94
OUTLINE 34	82	□ ◊ 3 70	101
PATT. AFT CM 36	64	◊ 71	101
PATT. AFT R 36	64	== e == 4 72	102
POSITION 35	63	+ 1 73	103
PROGR 1	25	+ 5 74	105
PUSH --- 63	95, 133	- 1 75	108
R. ND 9, 54	31, 91	- 5 76	109