PASSAP®

E 8000

Operating Manual

Operating Manual

ELECTRONIC 8000

Model E8812VH

This operating manual assumes that the machine is fully installed with all its parts.

IMPORTANT SAFEGUARDS

When using your electronic knitting machine, basic safety precautions should always be followed, including the following:

Read all instructions before using this knitting machine.

DANGER

To reduce the risk of electric shock, or injury to persons:

The knitting machine should never be left unattended when plugged in. Always unplug the knitting machine from the electric outlet immediately after using and before cleaning.

WARNING

To reduce the risk of burns, fire, electric shock, or injury to persons:

1. Do not allow the knitting machine to be used as a toy. Close attention is necessary when the knitting machine is used by or near children.

2. Use the knitting machine only for its intended use according to this instruction manual. Use only attachments recommended by the manufacturer as contained in this instruction manual.

3. Never operate this knitting machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the knitting machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.

4. Never operate the knitting machine with the air openings of the electronic console blocked. Keep the air openings free of lint, hair, loose clothes and the like.

5. Never drop or insert any object into any opening.

6. Do not use outdoors.

7. Do not operate where aerosol (spray) products are being used or where oxygen is being administrated.

8. To disconnect, turn all controls to the off ("0") position. Then remove plug from outlet. Never operate on a soft surface such as a bed or couch where the air openings may be blocked.

9. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.

10. Always unplug the knitting machine from the electrical outlet when removing covers, lubricating or when making any other user servicing adjustments mentioned in the instruction manual.

SAVE THESE INSTRUCTIONS

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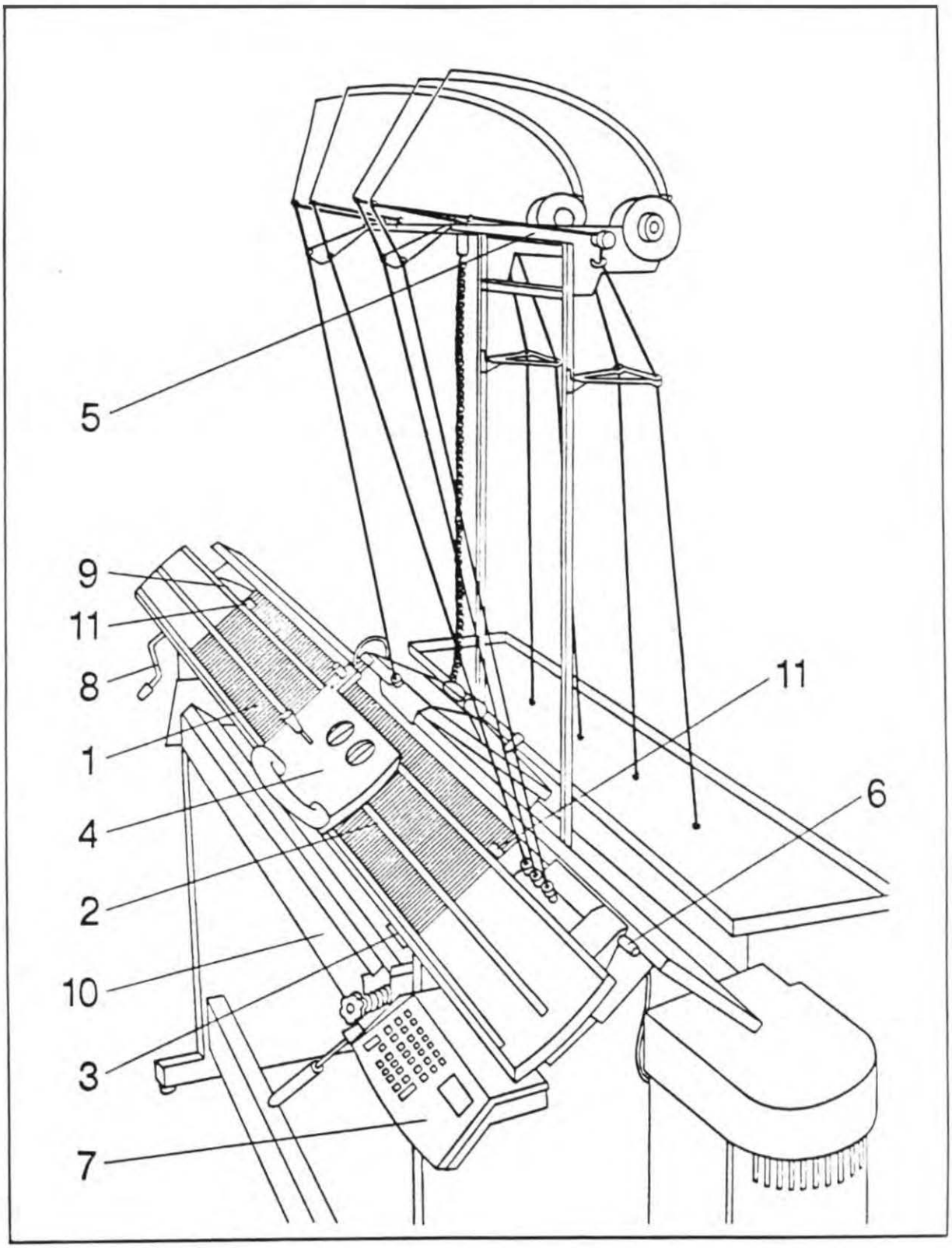
The machine



The machine

The most important parts of the machine are:

1 The needle bed

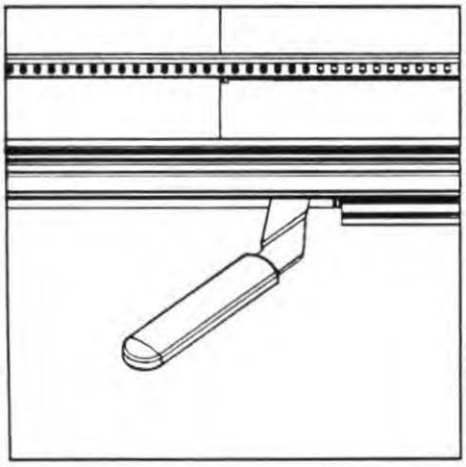
Front and back bed, each having 383 latch needles.

2 The needle scale

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

3 The handle for lowering the front bed

The handle is situated to the right underneath the front bed.



To lower the front bed, pull the handle down and to the right.

To return the bed to its normal position, push the handle to the left and upwards.

4 The cam boxes

They are the heart of the machine. Their functions are explained on pages 10 - 13.

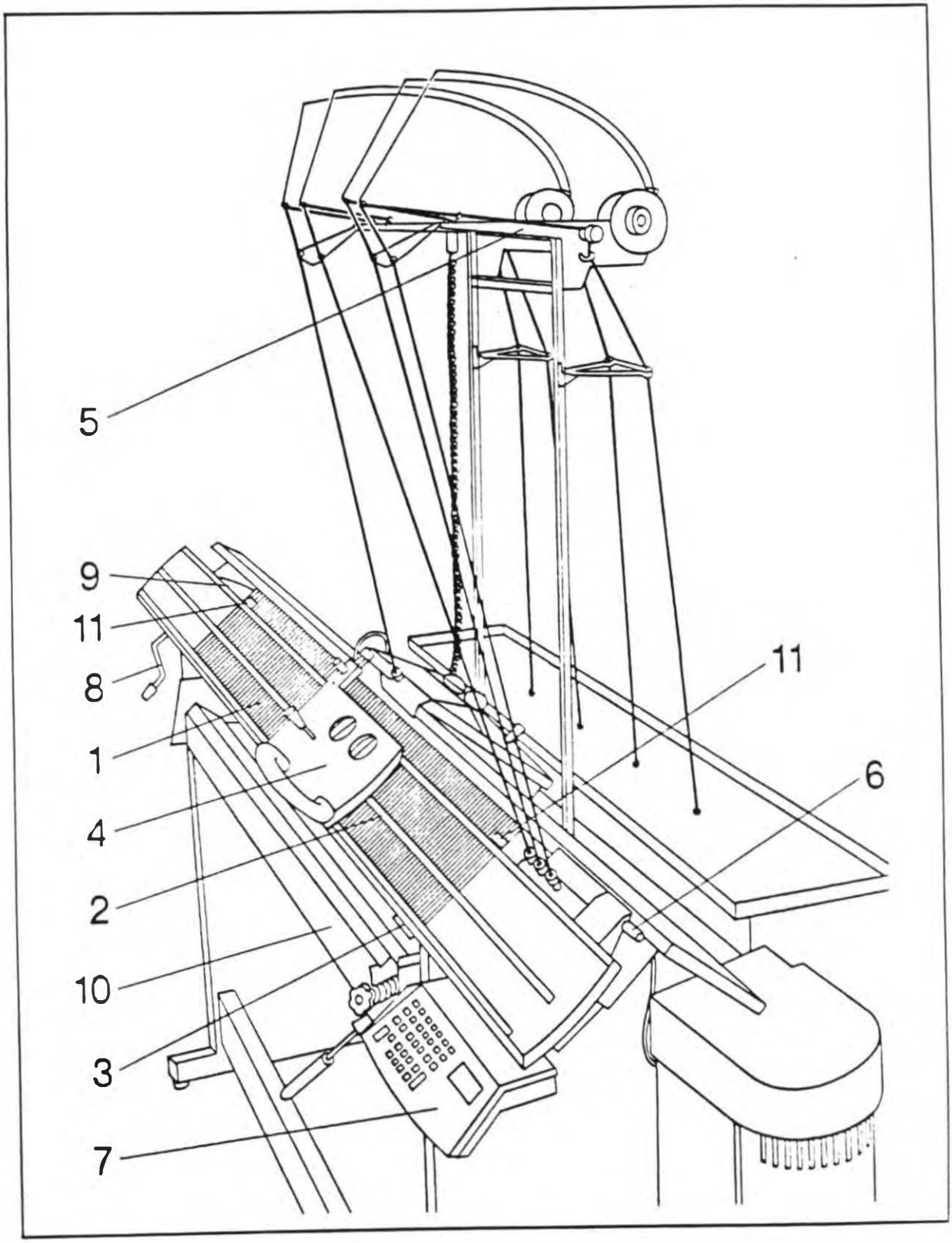
5 The yarn guides

Threading the yarn and setting the yarn tension is explained on pages 16 - 18.

6 The color changer

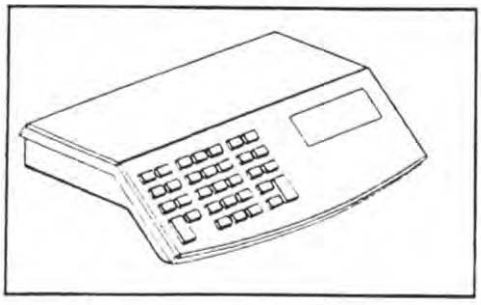
Allows automatic changing of two, three and four yarns. Its functions are explained on page 19 - 24.

The machine

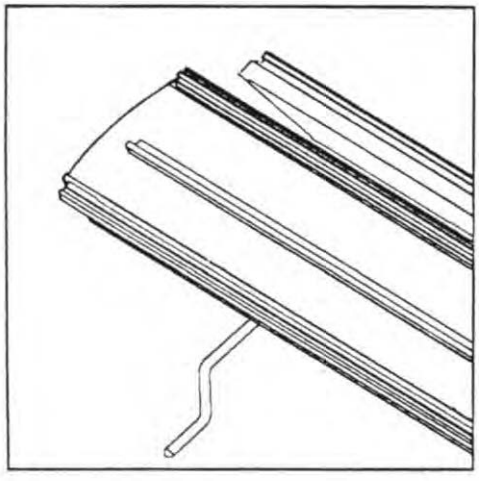


7 The control unit

With the control unit, the E8000 is programmed. Its functions are explained on pages 29 - 34.



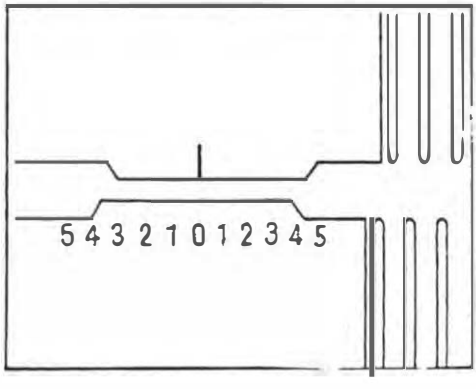
8 The racking handle



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 display always shows you the handle position for each knitting technique.

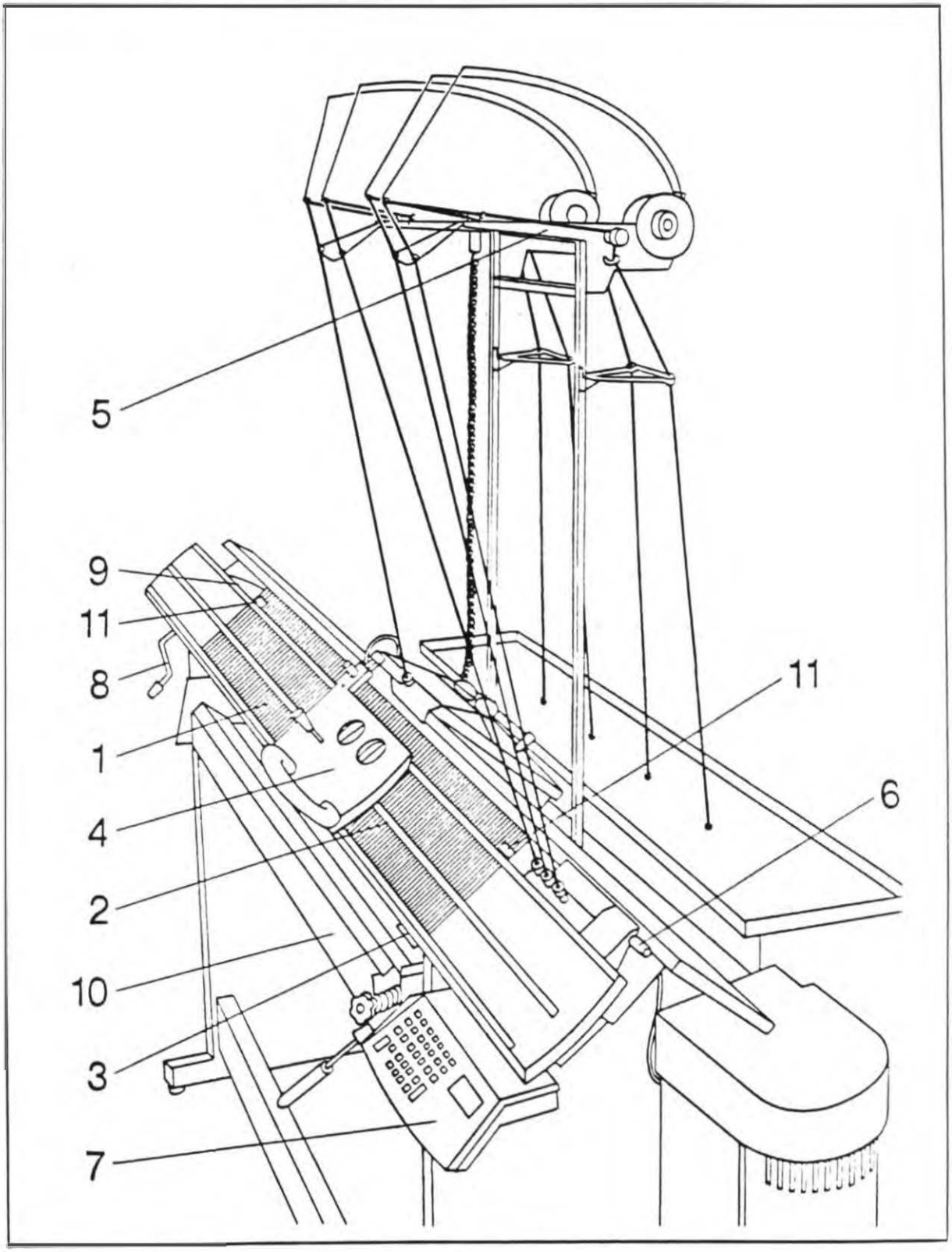
Follow the instructions exactly. Failure to do this could result in damaged needles.

9 The racking indicator



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.
Handle down means the needles are offset by one needle. See illustration.
Handle up means the needles are exactly opposite each other.

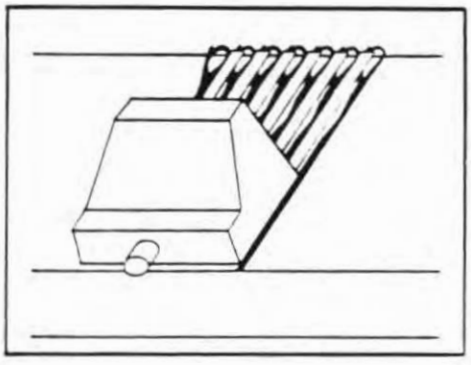
The machine



10 The fabric take down

The farbric take down ensures an even take down of the knitting. Its handling is explained on page 27.

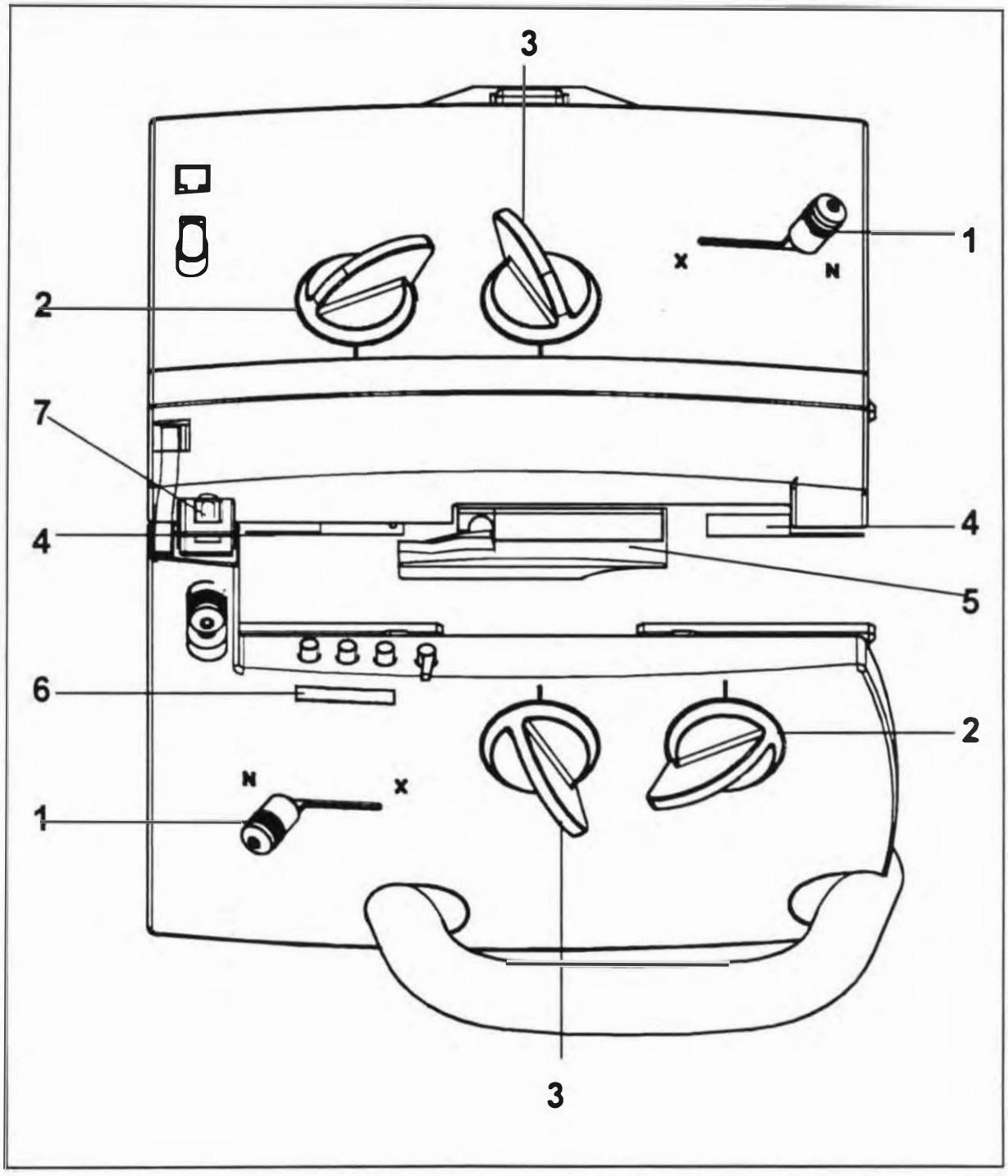
11 The edge springs



There are two edge springs on each needle bed their position is always on the last needles in working position to the right and the left of the knitting. Note: the latch needles underneath the edge spring have to be closed.

The edge springs can be moved sideways, by tilting them away from the needle bed.

The cam boxes



The normal position of the cam boxes 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.

The cam boxes

1 The N-X lever

When knitting a pattern, this lever has to be on X. If the lever is on N it will always knit stocking stitch.

2 The pattern selector dial

The display 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.

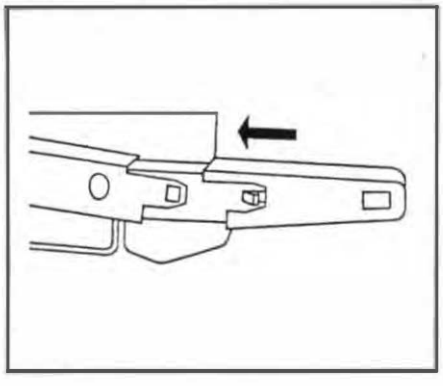
During knitting, however, it must always be on X for anything except stocking stitch.

3 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.

	Fairisle double bed	Tuck stitches double bed	Double face T 540 - 542	Single bed knitting	Transition rows
Yarn Nm 30/2 to 20/2	4 1/2 to 5	4 to 4 1/2		7	6 to 7
Yarn Nm 15/2 to 13/2			7 to 8	7 to 8	7 to 8

4 The holding device for the strippers.

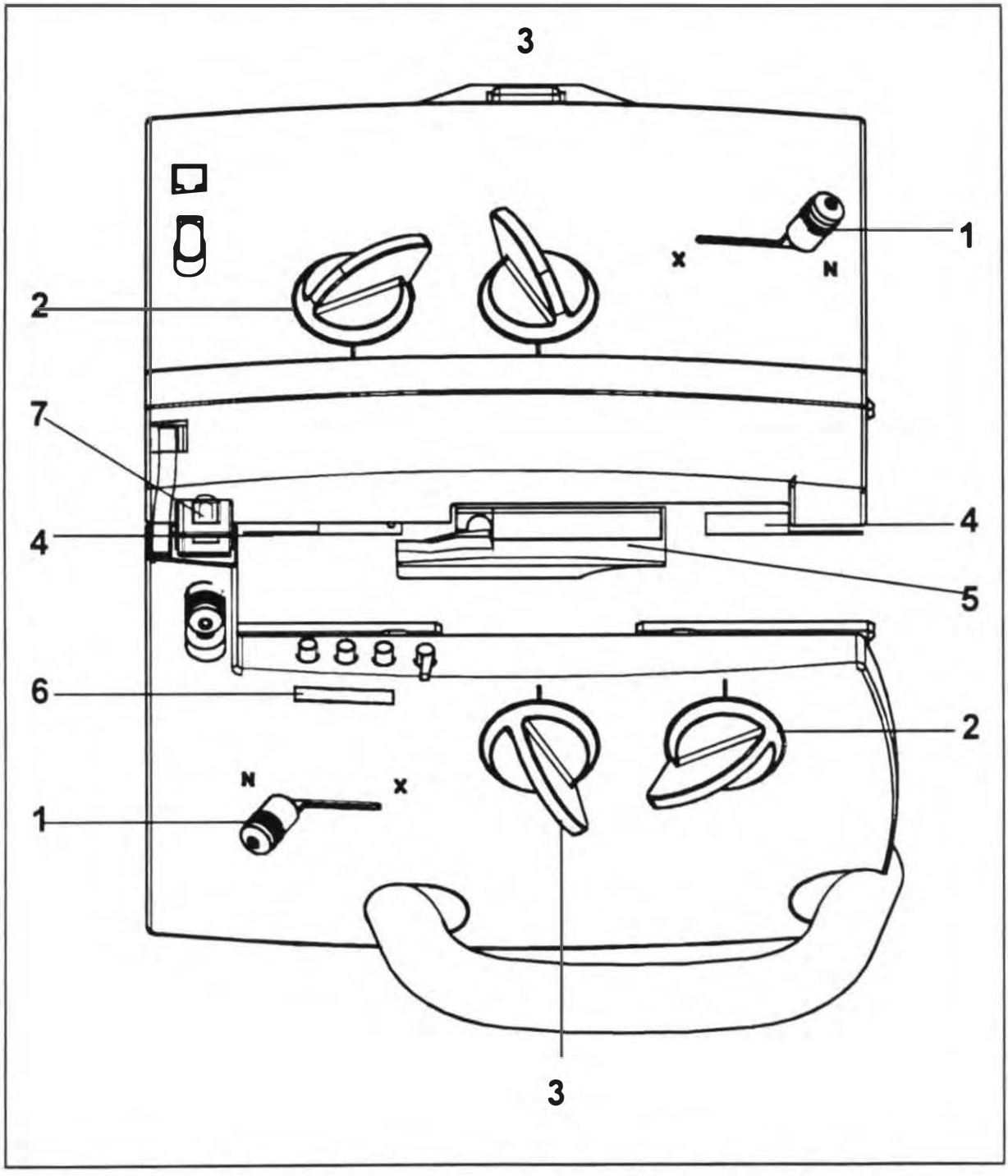


The strippers are accessories, that come with the machine. Insert them into the cam box until they click into place. To remove them depress the small key.

The strippers are needed to knit the pre-knitting rows with waste yarn, needed to put the fabric take down into action. See page 27 + 79.

They can also be useful for certain knitting techniques like tuck sticth patterns, where they help to give a nicer aspect to the stitches.

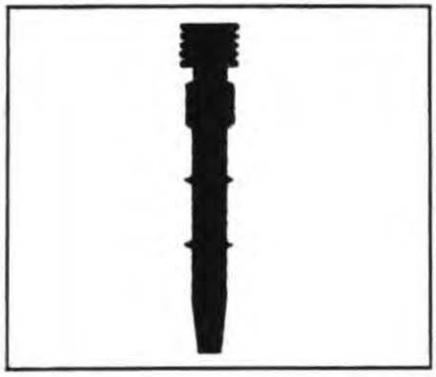
The cam boxes



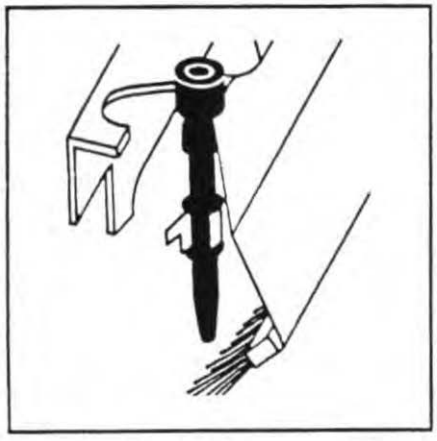
6 The row counter

The ELECTRONIC 8000, 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.

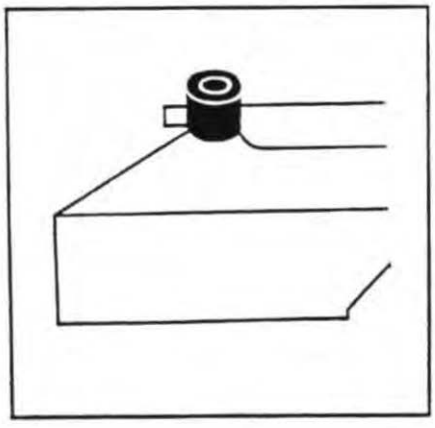
5 The jaws for the feeders



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



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



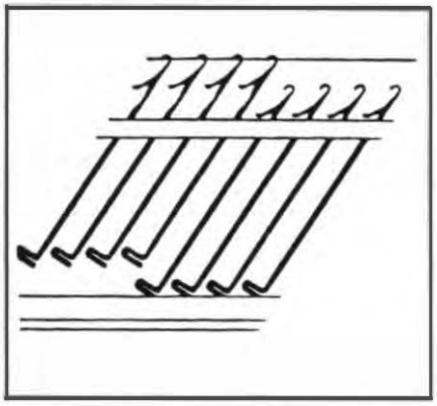
Important: Once the jaw is shut, only the head of the feeder should be visible.

7 The connecting bolt

To separate the locks unplug the connecting cable from the back lock by pressing the trap on the plug.and slide the connecting bolt down.

The needles and jacks

The needle positions



The needles have two positions:

Working position:
The needle heads must be in line with the top edge of the needle bed. In this position the needles are knitting.

Out of working position:
The feet of the needles touch the needle rail. In this position the needles are not working.

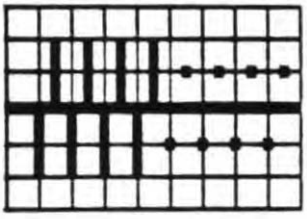
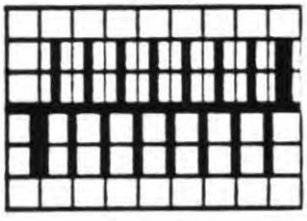


Diagram:
Vertical lines above the horizontal line = needles in working position on back bed.
Vertical lines below the horizontal line = needles in working position on front bed.
■= Needles out of working position.



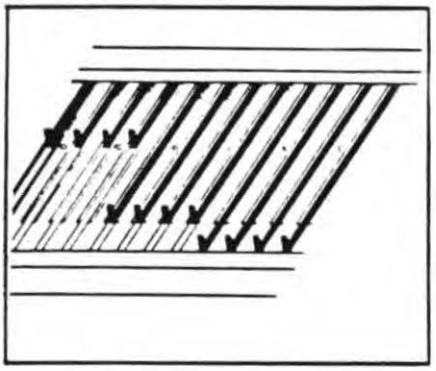
Needle rule:
When knitting on both beds this rule must be observed to ensure your knitting has a neat edge.

Last needle at right = on the back bed

Last needle at left = on the front bed

The needles and jacks

The jack positions



The jacks have three positions:

Working position:
The feet of the jacks are approx. 2,4 cm away from the lower edge of the needle bed.
The jack slider automatically brings the jacks in working position.

Rest position:
The feet of the jacks are approx. 1,1 cm away from the lower edge of the needle bed.
The lock automatically brings the jacks from working position into rest position and the other way round, depending on the programmed pattern.

Out of working position:
In this position the jack feet touch the lower edge of the needle bed. If the jacks are in this position they can not be brought into working position automatically.

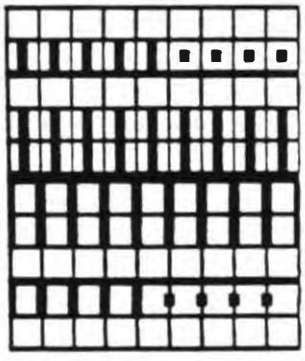
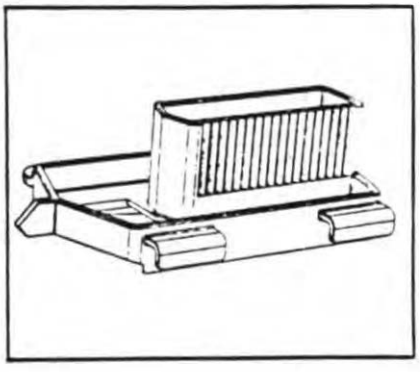
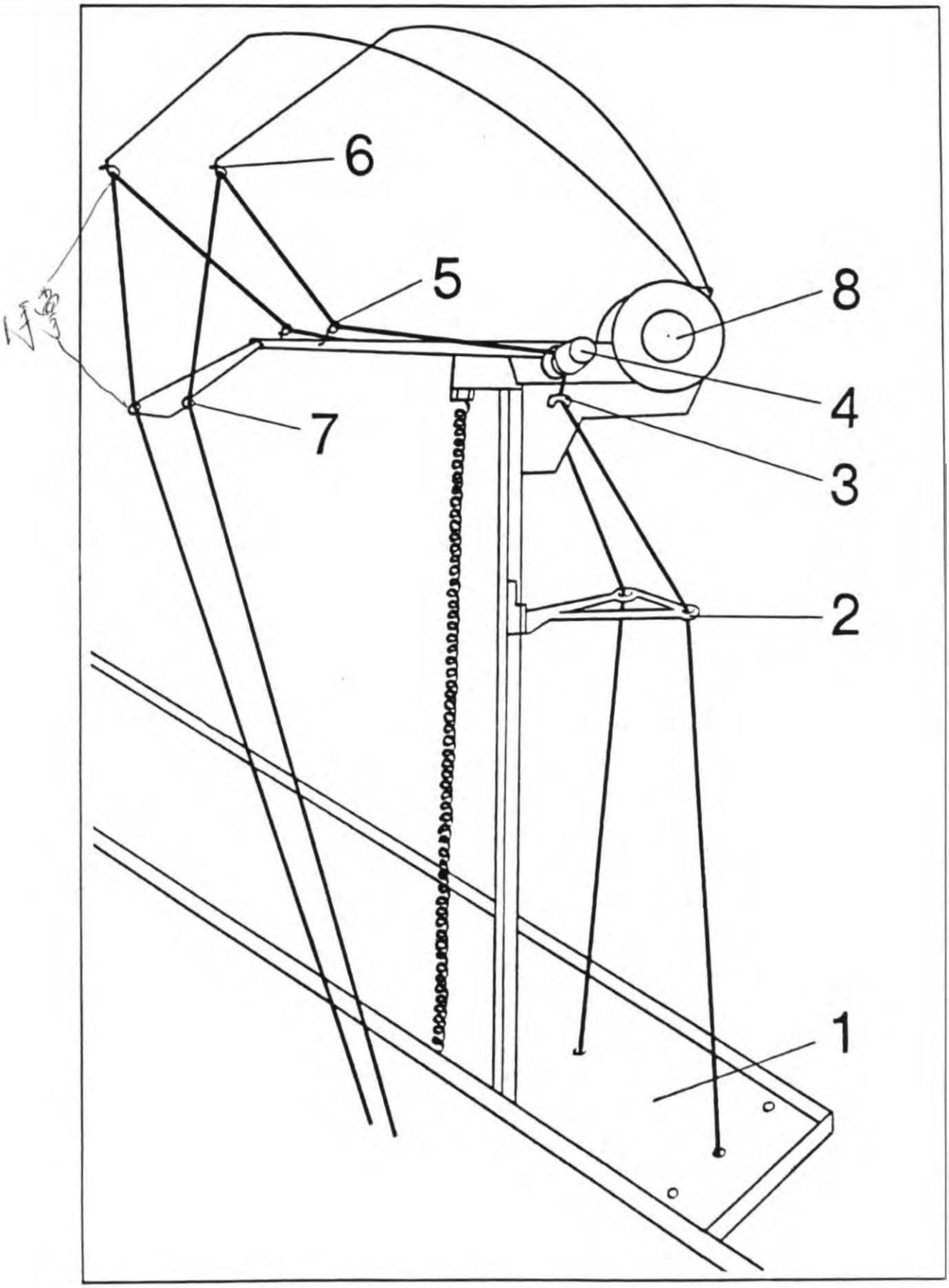


Diagram:
A short vertical bar touching the higher horizontal line = jacks in working position on back bed
A short vertical bar touching the lower horizontal line = jacks in working position on front bed
■ = jacks out of working position.

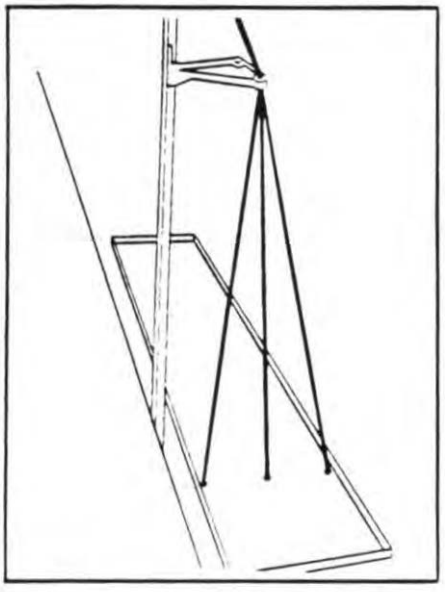


The jack slider
Always use the jack slider to bring needles and jacks into working position. Like that needles and jacks are perfectly set.
Needles and jacks can be damaged, if they are not perfectly set.
The jack slider is put on the right side plate and then moved over the jacks to the left.

The threading up



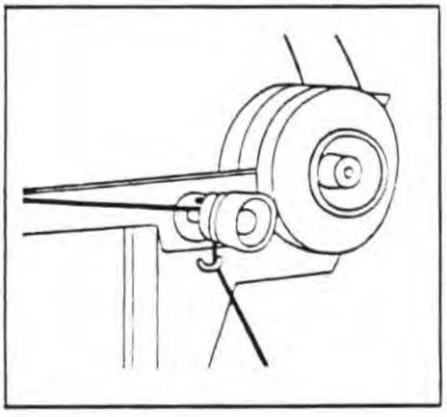
The threading up



1 The yarn table
Behind the machine is a table on which the yarn cones may be placed. This table has 15 eyelets that serve as further yarn guides when the cones are to be placed on the floor. Especially when two or three thin yarns are to be knitted together, it is recommended to lead each yarn through a separate eyelet.

2 The guiding eyelet 2
Guide the yarn that comes from the cone through this eyelet. If you are knitting two or more yarns through one feeder simultaneously, all yarns must come together and be led through this eyelet.

3 The guiding eyelet 3
The yarn must be threaded through this guiding eyelet from below.



4 The yarn tension discs
Lead the yarn between the two tension discs by pulling the outer disc away slightly.
Ensure that the yarn lies under the tappet that protrudes behind. This prevents the yarn from jumping out of the tension discs.

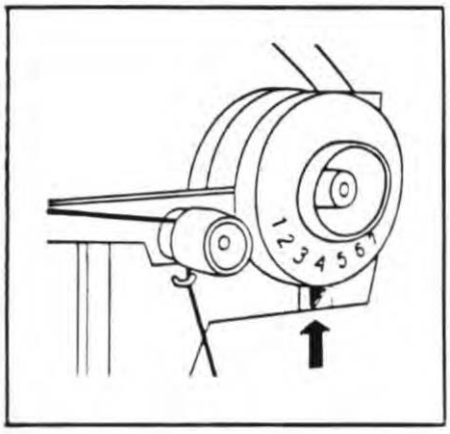
5 The guiding eyelet 5
Guide the yarn through this eyelet.

Do not at this point guide the yarn through eyelet 6; do this at the very end when the yarn has been fastened. This prevents the tensioning arm from accidentally pulling the yarn back.

7 The guiding eyelet 7
Now guide the yarn through this eyelet.

Then lead the yarn through the feeder. Please refer to page 20.

8 Setting of the tension discs and the restraining power



The restraining power can be set in seven steps with knob 8. Step 1 is the weakest setting.

Basic rule: the restraining power and the tension discs are to be set to a medium setting (3 - 4).

If edge loops occur, this can be due to the fact that the restraining power is set too weak to sufficiently pull the yarn back at the end of the knitting row. If this is the case, set the restraining power to a higher setting.

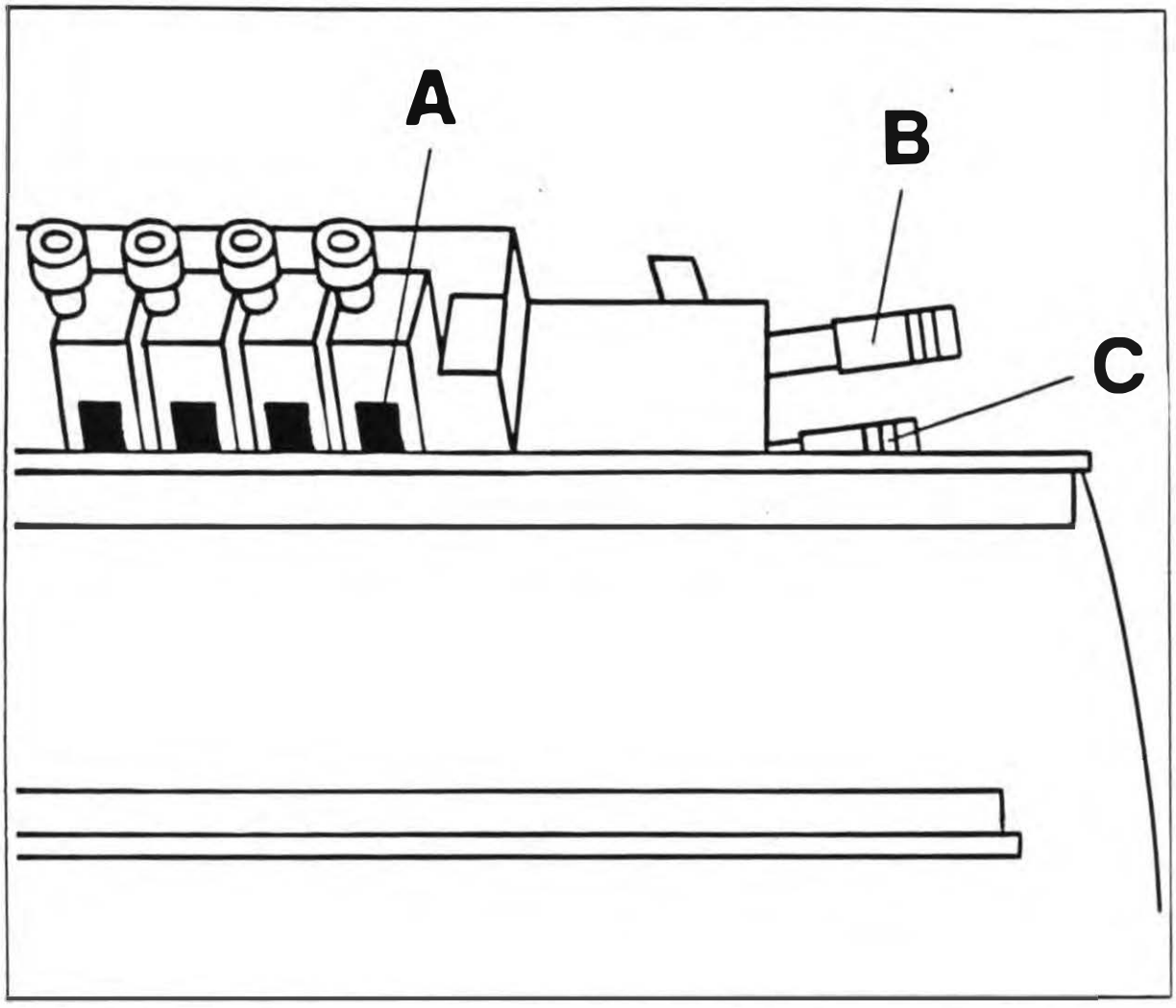
Note: if you set the restraining power to a higher setting, then you must also adjust tension discs 4 to a higher setting. Otherwise the tension arm pulls too much yarn from the cone.

Yarn breakage safety device

The yarn breakage safety device is the protruding part behind the adjusting dial for the restraining power.

When the tensioning arm suddenly swings to the back because the yarn is torn, the tension arm touches the yarn breakage safety device, immediately shutting off the motor.

The color changer



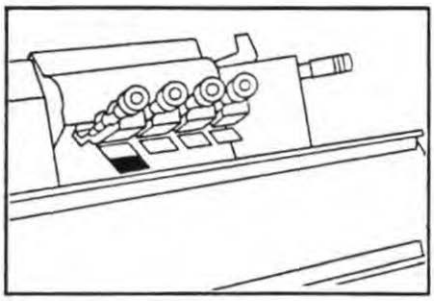
A : four black keys
B : main lever
C : color changer

Threading the color changer

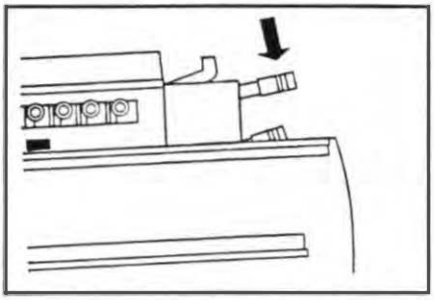
Note. The yarn must be threaded into the feeders in the same order as it is threaded into the yarn tensioner. In other words, the yarn from the first tension arm from the left belongs in the first feeder from the left, etc.

Which color is threaded into which feeder is controlled by the electronic control unit. This sequence is shown when you programme a pattern from the memory or the PC. (Please refer to page 75)

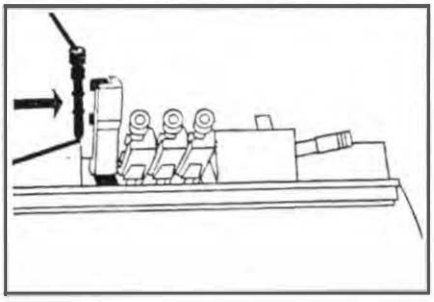
The color changer



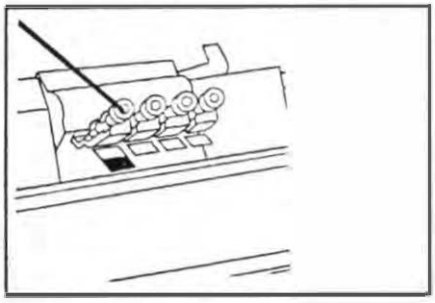
Press the first black key corresponding to the first feeder from the left right down until it clicks into place.



Press the main lever down until the first feeder support from the left swings up.

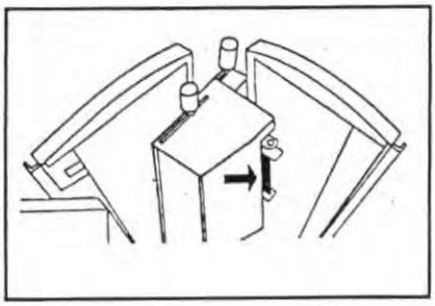


Remove the feeder from its support and thread it with the yarn coming from the first tension arm from the left.
Fit the feeder into its support again, holding the yarn at the same time.
Note: replace feeder into its support with its two rings between the two clamps.



Press the feeder down. Guide the end of the yarn down between the needle beds and fasten it.

Thread the yarn through feeder 2, 3 and 4 in the same manner.



Finally, press discharge flap, the AUTOCOLOR is now in Neutral Position. The discharge flap is underneath the AUTOCOLOR to the back of the small rectangular box.

The color changer

The feeder allocation

The required feeders are allocated by the ELCTRONIC. Basically, the following rules apply:

1-color pattern :	**first feeder from the left**
2-color pattern:	**first and second feeders from the left**
3-color pattern :	**first, second and third feeders from the left**
4-color pattern:	**first, second, third and fourth feeders from the left**

Which color must be threaded into which feeder is displayed, the first time during programming of the pattern (page 75) and a second time just before starting to knit the corresponding pattern sector.

The colors are always knitted in the corresponding order from left to right.

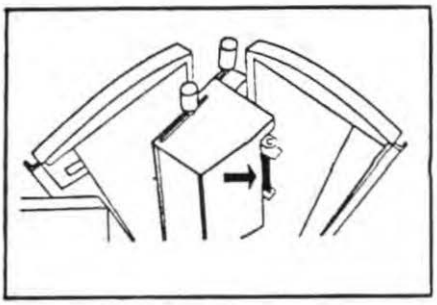
Before beginning, the color changer must be set in such a way as to enable the corresponding feeders to be taken over by the cam box in the proper order.

If you set up the color changer incorrectly so that the cam box does not take over the feeders allocated by the machine, the cam box will stop and an error message will appear (see page 148).

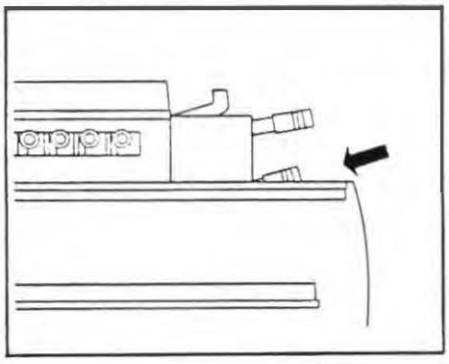
(Under certain circumstances, e.g. when a feeder holder is defective, it might be necessary to change the automatically set feeder allocation, see page 92).

Knitting with one color

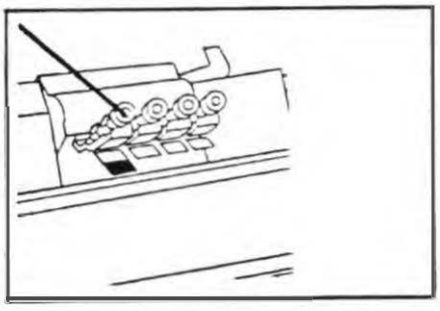
Setting up the color changer when the cam box stops at the left-hand side.



1. Before you set up the color changer anew, you should always set it to the out of working position by pressing the discharge flap under the color changer. This causes all black keys to snap up.
If there remain feeder holders in the up position, push them down manually.



2. Set the color changer (C) to 2.



3. Press down the black key in front of the first feeder from the left until it clicks into position.

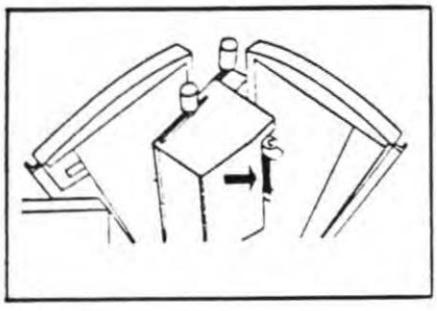
The color changer is now set up for one color knitting. When the cam box moves to the right, it takes over the first feeder.

Note: If a different feeder from the one you want is in the cam box do not put the empty holder down but leave it up, ready to receive the unwanted feeder.

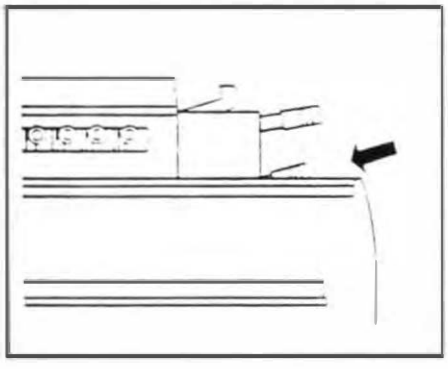
The color changer

Knitting with two, three or four colors

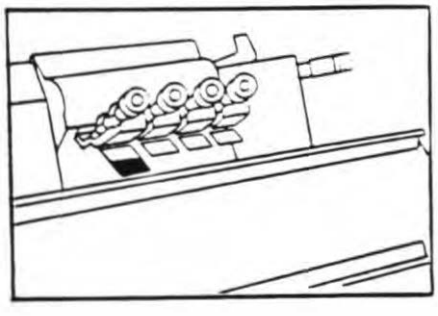
Basically, the procedure always remains the same.
When the cam box stops at left because the color changer needs to be set up, proceed as follows:



1. Set the color changer to the out of work position by pressing the discharge flap under the color changer.



2. Set the color changer (C) to the number corresponding with the number of colors you would like to knit.



3. Beginning from the left, press the black keys in front of the desired feeders simultaneously, until they click into position.

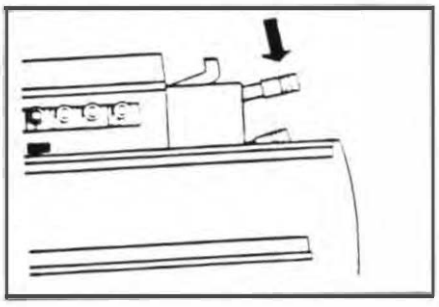
Note: these must be the feeders that are displayed in the color sequence (please refer to page 75).

4. Ensuring that the correct feeder is taken over by the cam box first

When you move the cam box into the color changer, the feeder that is taken over is chosen at random. This process, however, can be simulated with the assistance of the main lever.

Press the lever downwards once. A feeder holder with a feeder then swings up. This is the feeder that would have been taken over if you had moved the cam box into the color changer.

Even if this would have been the correct feeder, you must nonetheless press this feeder down until it clicks into position. **The reason for this is that an empty cam box must never be moved into the color changer when a feeder holder with feeder is in the ready position, i.e. in the up position.**

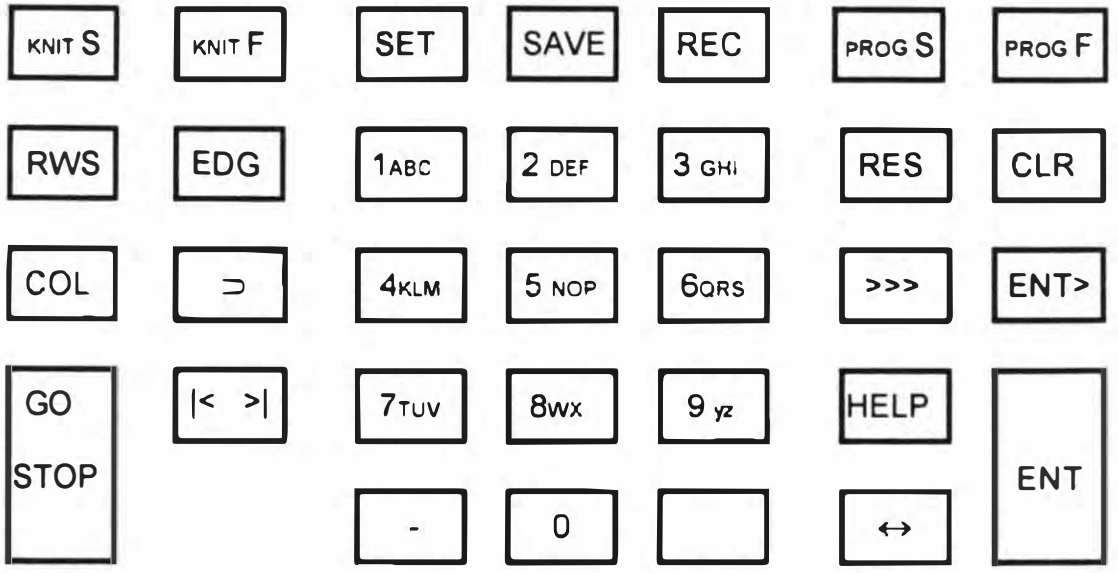


This means that you must repeat the process "first press the main lever down, then press the feeder down that has sprung up" until the last feeder on the right side has sprung up. (Depending on how many colors you are using - 2,3 or 4 colors, this would be the second, third or fourth feeder.)
Likewise, press this feeder down again.

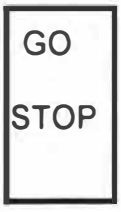
Now you may move the empty cam box to the end stop of the color changer. The correct feeder will be taken over by the cam box and all subsequent color changes will be executed in the correct sequence.

Note: you must press every feeder down individually after it has come into the up position. If you press all feeders down simultaneously, this could lead to irregularities.

The motor



The motor is controlled by the three grey keys in the above illustration. The functions of the keys are as follows:



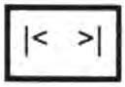
GO/STOP key.
This key is used to start and stop the motor. As soon as you have pressed this key, the cam box begins to move back and forth between the programmed edges as well as, whenever the program calls for it, into the color changer.

Note: once you have switched on the power, you may press the GO/STOP key as soon as the display START POSITION appears. The cam box then automatically moves into the start position and stops.

(However, if the cam box is situated too far to the right when you switch the machine on, it will move into the end stop of the color changer, and must then be pushed slightly to the left by hand.)

If you press the GO/STOP key again before having confirmed the START POSITION with ENT, the cam box moves into the color changer and takes over the first feeder. It then moves back and forth over the complete width of the bed without going into the color changer again.
Attention: if the color changer is not set in a way as to bring the first feeder into the cam box, an error message will appear and after having acknowledged it by pressing ENT, you cannot knit without programme any more.

The motor



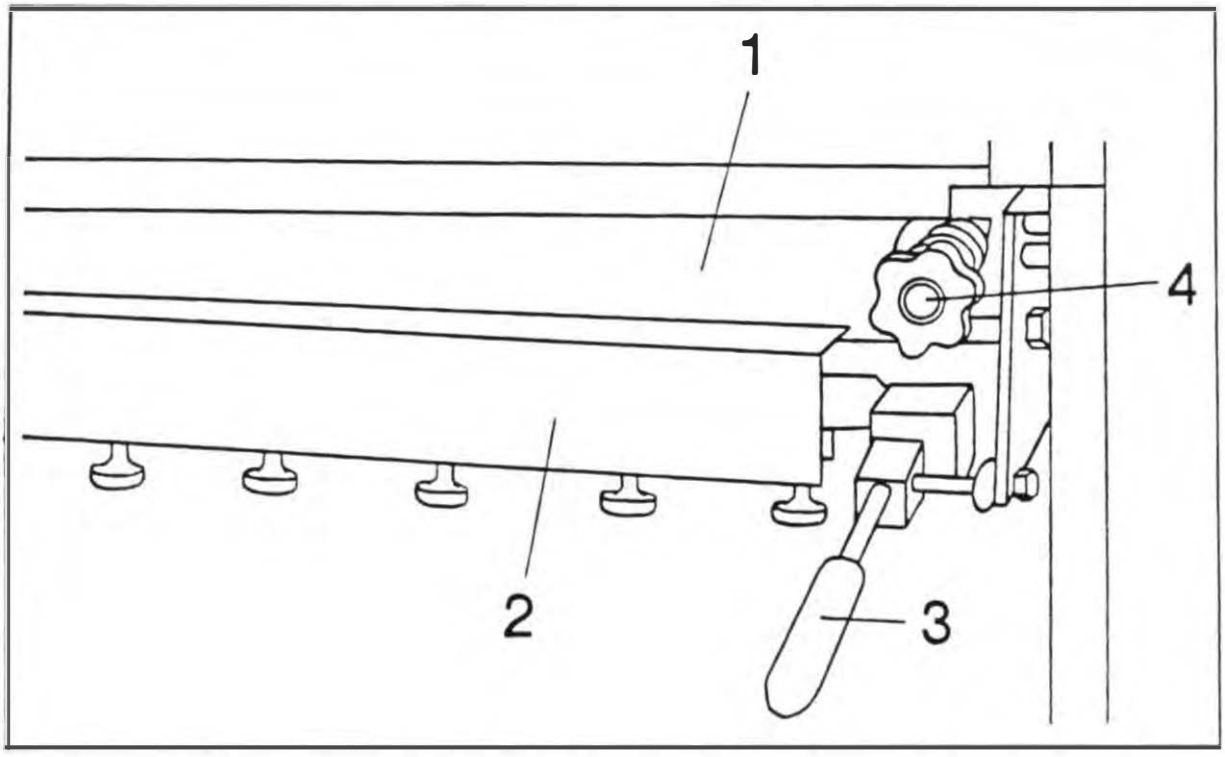
Stop at the end of the row
You may always activate this key while the cam box is moving. It will stop when it reaches the next edge stop. (If the cam box should move to the right into the color changer, it stops before reaching the color changer.)

You may also activate this key when the cam box is not yet moving. If you then press GO/STOP, the cam box will knit one row and then stop.

Change of direction
This key can only be activated when the cam box is not moving. When you press this key, the direction display immediately shows the opposite direction. If you then press the GO/STOP key, the cam box moves in the new direction now being displayed.

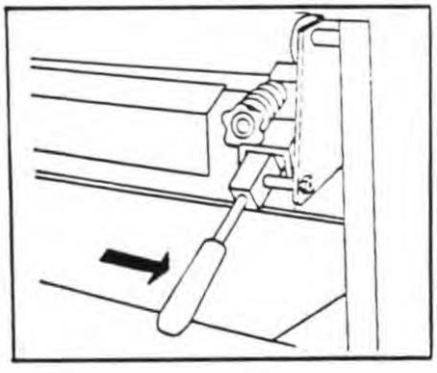
It is necessary to press this key when the error message "MOTOR BLOCKED 3205" appears, because the motor has crashed into one of the end stops due to a wrong manipulation.

The fabric takedown



The most important parts of the fabric takedown are:

1 The takedown roller
2 The cover with the pressure rollers and the screws for the pressure rollers
3 The locking handle
4 The screw for the take-off force



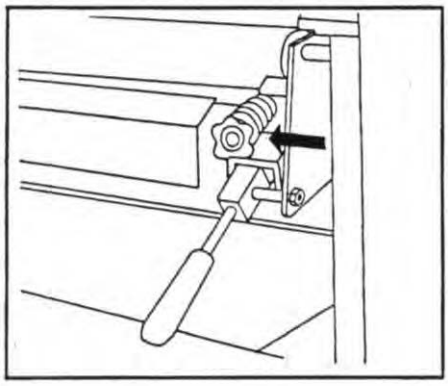
Locking the fabric takedown unit:
Tilt the cover with the pressure rollers towards the upper back and then press the locking handle slightly downwards and to the right until it engages.

Opening the fabric takedown:
Press the locking handle slightly downwards and to the left so that the pressure rollers tilt down.

Before the fabric takedown is able to fulfil its function, a knitted piece must be produced that is sufficiently long to be squeezed between the take-off roller and the pressure roller. Please refer to page 79 for further details.

The fabric takedown

Setting of the fabric takedown



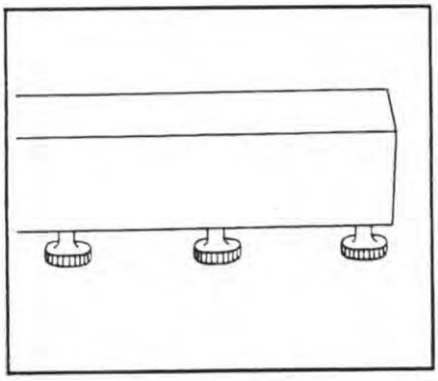
The screw for adjusting the take off force
With this you can adjust the pull-down force on the knitting.
To increase, turn the screw cockwise. The amount of thread showing in the centre can be used as an indication of how much pull-down force has been set.

To start always begin with as little force as possible. If you notice that the stitches are not being knitted to your satisfaction, increase the take-off force.

Basic rule:
The take-off force must be **greater** for a knitting piece which **progresses rapidly** than for a knitting piece which progresses slower.

The take-off force must be **greater** for a **wide** knitting piece than for a narrow knitting piece.

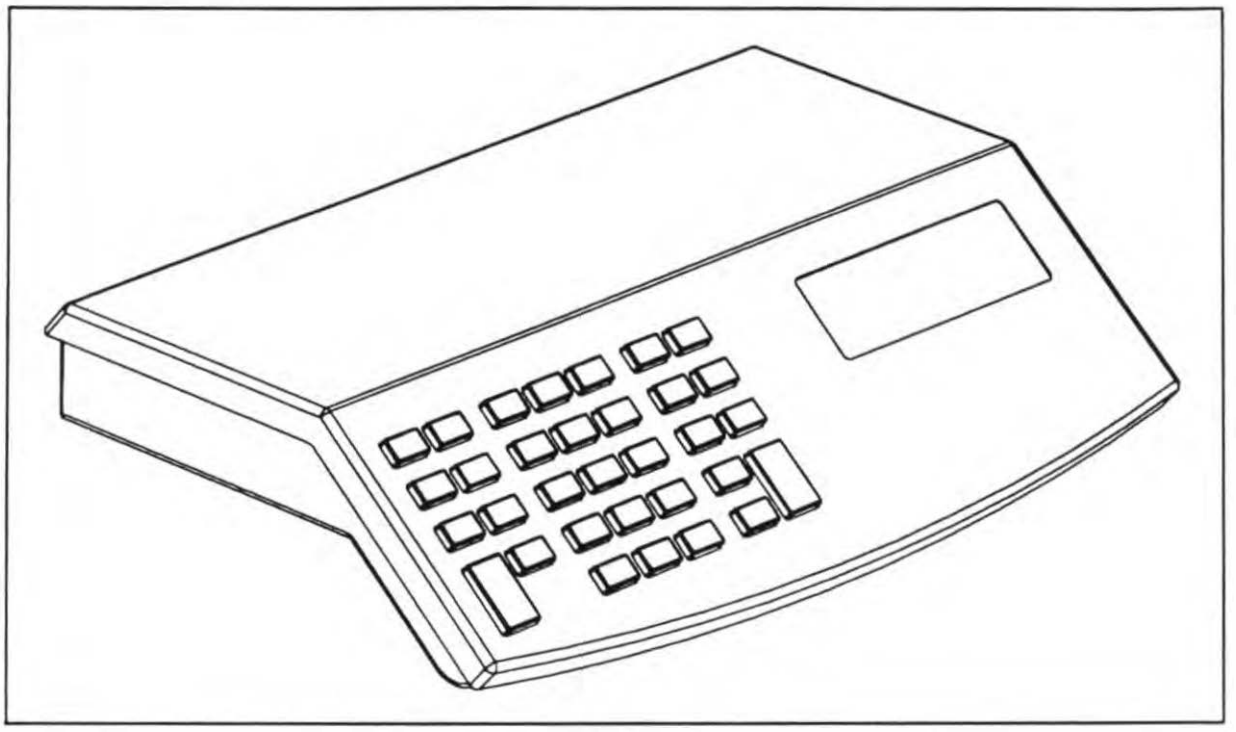
The screws for the pressure rollers



This is to control the pressure where the knitting is pressed against the takedown roller. Turn the screws clockwise to increase the pressure.

Basic rule:
The **greater** the take-off force, the **greater** the pressure must be.

The control unit



The control unit

is used to program the machine. The display also shows all information required during knitting.
The control unit can be swung forward for increased convenience or to make it easier to see the display.

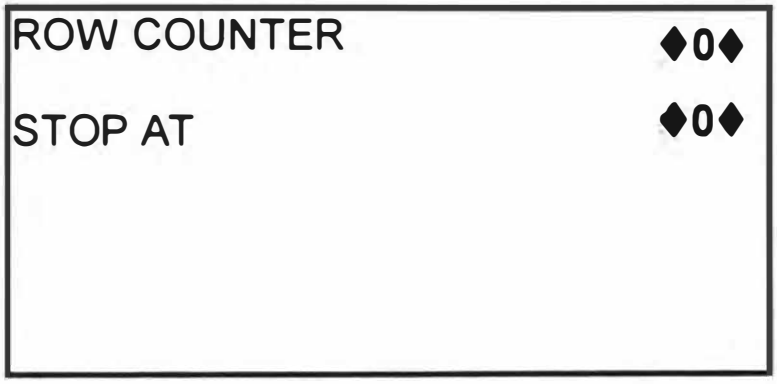
For programming, the control unit and the power pack can be detached from the machine and placed on a table.
To do this, push the control unit approx. 1.5 cm to the right, then remove by pulling towards you.
For more details see p. 78

The display

During knitting, the display shows all necessary information on the current situation of the piece being knitted.

Instructions for the operator might also appear. In such cases the motor will stop to allow these instructions to be carried out.

During programming, messages will appear requiring you to enter a digit before you can continue.

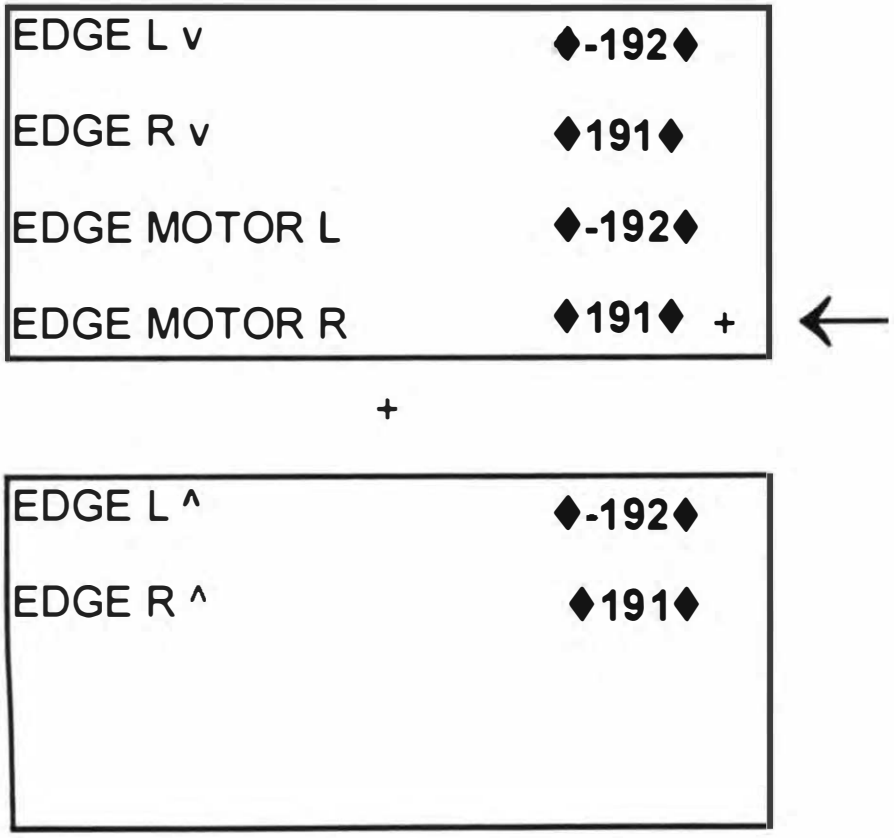


Example of a display with input fields for programming:

The graphics of the instruction manual clearly show the input fields by displaying two black lozenges on a grey background.
The input fields on the display can be identified by a digit or a flashing hyphen whenever this particular input field is activated.
Use the cursor to activate one input field after the other.
Please refer also to page 33.

Correlating displays

Sometimes there is too much information relating to a particular set of input fields to fit on the screen at one time.
In this case the plus sign in the bottom right hand corner of the display indicates there is more.

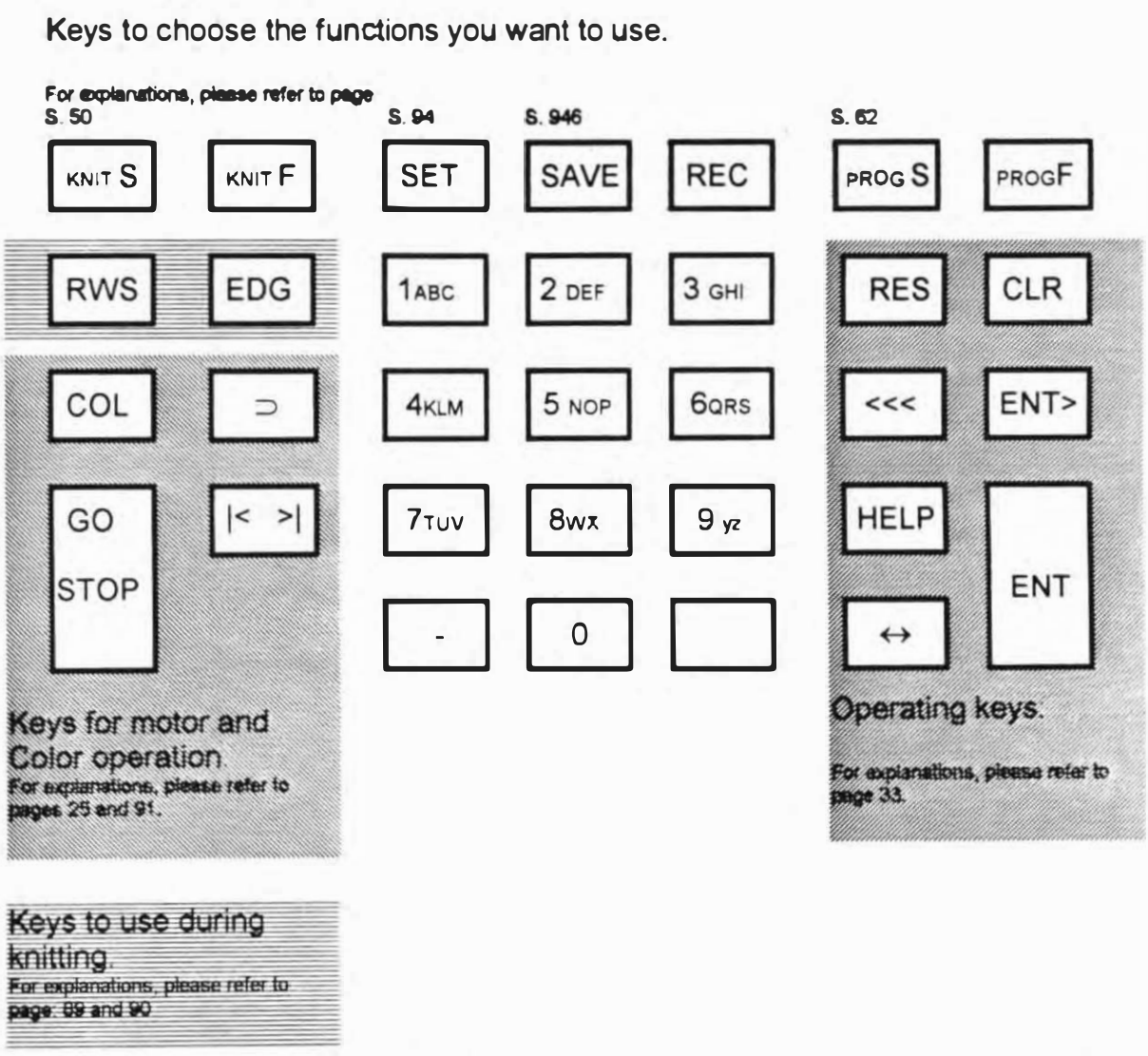


Example of a display group
A 4 line would be too small to fully display the input fields for the edges on the front and back bed and for the motor travel.

The second display is reached by pressing the cursor.

The keyboard

Keys that correspond in function and application have been grouped in various fields. These fields are assigned a different background as seen in the following illustration.



The numbers in the middle of the keyboard are used to program your knitting. Input is limited to numbers 0 to 9 only.
The letters printed on the keys have a mere memory retrieval function.

The keys "KnitF", "REC" and "ProgF" are not yet in use.

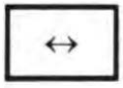
The keyboard

The keys controlling the motor have been previously explained on page 25 ff.

To operate the other parts of the machine, make your self familiar with the functions of the following keys:

ENT

This key is used during programming as well as during knitting.
During programming, use this key to save everything that had been entered into the display or in a group of related displays.
During knitting, press this key to confirm a message received from the ELECTRONIC CONTROL UNIT. The motor is sometimes blocked until ENT is entered. Press ENT to show that you have acknowledged the message.



CURSOR

This key is called cursor. By pressing this key, one input field after the other is activated on the display. This also applies to a group of several correlating displays. As soon as the last input field is activated, the cursor returns to the first field ('home' position).
This key neither makes changes nor saves your entries.

HELP

When you press this key a help menu appears and shows you the numbers you can enter to get additional information about a topic relevant to where you are in the programme.

Use the cursor to bring up the required number and then activate it by pressing ENT.
Instead of using the cursor you can enter the required number with the number pad and press ENT.

After this the next input field, that is possible is displayed.

Help
1 PROGRAMME
2 MOD
5 DEFAULT
8 CONTINUE
9 EXIT

Example of a Help Display

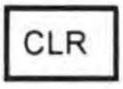
There are also input fields which have no help menu.

ENT>

This key has the same function as the plain ENT key. It is used to save what you have entered in the display.
In contrast to the plain ENT key, however, the display skips to certain fields. This allows a faster programming when you have gained enough experience to know that you do not need the next display.

<<<

The 'Return' key goes back to the previous display without altering or saving anything.
Note: if something has been typed in and you continue with this key, this entry will not be saved!



CLR

This 'clear'-key deletes the current entry. When you see an incorrectly entered digit, use this key to delete it while the attendant input field is still flashing, (i.e. acitvated.)
If you have passed to another input field, use the cursor to reactivate the required input field.

RES

This 'reset'-key allows you to reset all 10 pattern sectors to the default techniques.
(For 'default techniques' please refer to page 37).
Also the knitting width is reset to the specified value and any programmed stop is deleted. The row counter is set to 0.

Program structure

To be able to knit and to program quickly in an uncomplicated manner, the program architecture almost always guarantees direct access to all programming functions and to all knitting functions. This means that there is no defined routine. You can start knitting or programming at any time.

Due to this organisation you need more detailed explanations of three central features in the program structure. These are:

1. The organisation of the work memory

2. The row counter as a central information source

3. The meaning of the knitting instructions

It is important to know the meaning of the information of the row counter and of the knitting instructions before you start knitting.

This is why we explain the basics prior to continuing with a description of how to start the machine and of how to knit.

The 10 pattern sectors

The work memory is subdivided into 10 individual sectors. They are referred to as 'pattern sectors'.

You can activate at any time any pattern sector you want and begin knitting the saved pattern.
There is no routine to follow, which means that you can, for instance, start knitting the pattern saved in sector 5, then change after 10 or 20 or 100 rows to pattern sector 2 and continue knitting the pattern saved in that particular sector. After several rows you can change again to sector 8 or to any other sector.

The same is valid for programming.
You can use a technique at any time in any sector and program the corresponding pattern by overwriting the pattern currently saved there.

It is not necessary to immediately actually knit the pattern programmed, because a pattern programmed in a pattern sector will remain saved in this sector until it is written over by a new technique and a new pattern.

A default technique is stored in each pattern sector.
These are basic techniques which will be repeatedly used for knitting.
When you want to knit something different, simply overwrite this technique by entering a new technique and, if required, with a corresponding pattern. The techniques and patterns which you have programmed yourself, can also be overwritten as desired. You can revoke the basic techniques whenever you want by entering a simple command.

In this manner, each pattern sector contains a programmed pattern ready to be knitted. Even if you have entered no technique yet, you can start knitting one of the basic techniques.

The TECHNIQUES specified in the 10 pattern sectors:

Note: For your own programming, pattern sector 0 is provided for a cast-on , whereas the sectors 1 - 9 allow the programming of any pattern.

Pattern sector 0	Tubular cast-on for 1:1 rib	1
Pattern sector 1	Birdseye double-bed Fairisle, 2 colors	500
Pattern sector 2	Birdseye double-bed Fairisle, 3 colors	501
Pattern sector 3	Birdseye double-bed Fairisle, 4 colors	502
Pattern sector 4	Fisherman's rib	371
Pattern sector 5	Double-bed tuck-stitch pattern	350
Pattern sector 6	Single-bed tuck-stitch pattern	300
Pattern sector 7	Slip-stitch pattern	321
Pattern sector 8	Lacy pattern	460
Pattern sector 9	Transition rows	22

Information from the row counter

The row counter as a central information point

Due to the fact that you always have access to every sector, be it when knitting or when programming, it is particularly important for you to know where you are.

This task is performed by the row counter display.

It not only shows you the row counter reading from the very first row of your knitting, but also the current sector with its stored technique and pattern.

The row counter display is always on during knitting.
When a knitting instruction appears in the display, you can make it disappear by pressing ENT, after which the row counter reading will be displayed again.

The row counter is not automatically set to zero by programming.
Therefore, during knitting you can also reprogram any other sector. Once you have programmed the sector, you will be shown the same row counter reading as before you pressed the key for the programming sector.

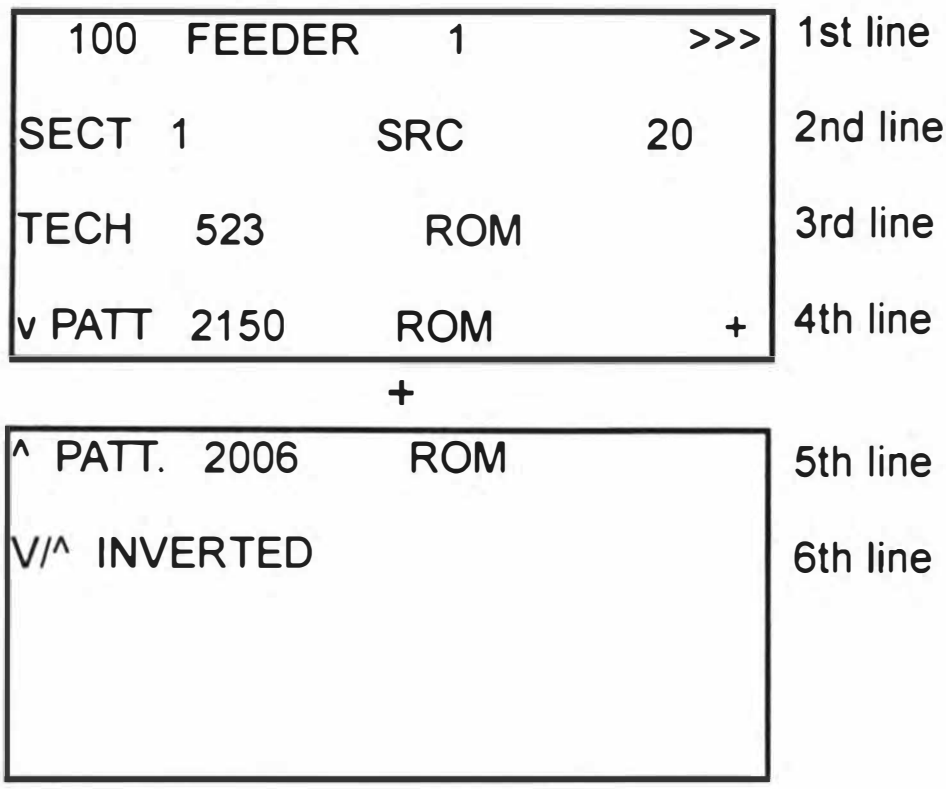
The row counter is not automatically reset to zero unless you knit the zero sector. As such, the zero sector is to be regarded as a special case, because it is assumed that it always stores a cast-on, be it the default cast-on or a cast-on programmed by the user in this sector.

Pressing the RES key will automatically set the row counter reading to zero, together with the pattern sectors which will be reset to the default technique.

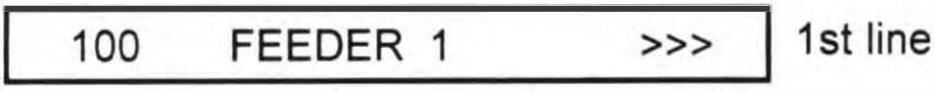
In addition, you can set the row counter to zero at any time using the RWS key. (See page 146)

What does the row counter look like?:

Information from the row counter



The illustration shows the maximum possible number of display lines. Depending on the row counter reading and the current program, not all of these display lines will appear.



The absolute row counter is the first number on the left. It counts the rows from the cast on in the zero sector and continues counting even when changing the pattern sector.

It always shows the rows already knit.

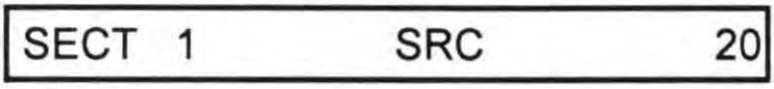
FEEDER 1

The display shows the next feeder to be selected by the cam box, when moving into the color changer.
This display appears only when the last row before the color change is being knit .
Note: When zero appears, this means that the cam box moves into the color changer, releases the current feeder, but does not take a new feeder. It then moves across the needles without feeder.
Note: Always have the color changer appropriately prepared, as described on pages 19 - 24.

Information from the row counter

>>>
The display for the direction of the motor. This display is always on and shows the direction the cam box will go. When the cam box is not moving, the display shows the direction the cam box will go when you press the GO key.

>¦
This display replaces the above display when a "stop at the end of the row" has been entered using the |< >| key or when a stop has been programmed at the corresponding row.



2nd line

SECT 1
This display shows you the pattern sector you are knitting at this moment.

SRC 20
This is the sector row counter reading showing the number of rows of the current pattern sector which have already been knitted.
You cannot alter this row counter reading. Counting starts automatically when you have pressed the "KnitS" key to knit a new pattern sector and when you have executed the two preparation rows.

3rd line

TECH 523
This display shows you the technique you are knitting with in this sector.

ROM
This display shows you the origin of this TECHNIQUE. When programming a pattern sector, please refer to page 65. You will find information on which displays are possible.

Information from the row counter

v PATT. 2150 ROM	4th line

v PATT 2150
This shows you the pattern for the front bed you are currently knitting. (v always means "front bed").

ROM
This display shows the origin of the pattern for the front bed.

The 4th line is not required when you are knitting only a technique without pattern drawing.

^PATT. 2006 ROM	5th line

This line, containing the same information as line 4, refers to the back bed.

The 5th line is not shown when you knit a technique for which you have not entered a pattern drawing for the back bed.

v/^ INVERTED	6th line

This line appears if, when programming, you have inverted what is to be knitted on the front bed with what is to be knitted on the back bed. (Explanations see page 74)

Note : the 4th and 5th line do not take this into account. I.e. the 4th line still shows the pattern you originally programmed for the front bed, but now, that you have inverted the front and back bed actions, will be knitted on the back bed.

Information about the row counter

What does the row counter do when it reaches 9999

The row counter can only count up to 9999 rows.

The motor will automatically stop when the machine has completed the last pattern repeat possible before row 9999.

If you want to continue knitting the same pattern, press ENT.

The absolute row counter and the sector row counter will both be set to 0 and the machine will go on knitting the same pattern as up to now.

That means, the machine remains in the same pattern sector as it was in when it stopped.

The meaning of the knitting instructions

When you start a new piece of knitting and when you change from one pattern sector to another during knitting, knitting instructions will appear on the display which have to be followed in order to obtain the desired pattern. In addition, there are techniques for which further instructions are displayed during knitting, e. g. information on the number of turns of the handle for racking patterns.

Follow these instructions and continue knitting by pressing GO.
If all necessary instructions cannot fit in the display, you will see the "plus" sign in the bottom right corner. In this case, before continuing knitting, please press ENT to be able to see the remaining instructions.

Whenever knitting instructions appear, you can press ENT to see the row counter information before continuing knitting.

The following lists the meaning of all knitting instructions contained:

v	v always means that everything which follows refers to the front cam box
^	^ always means that everything which follows refers to the back cam box
KX LX OX UX SX	These displays can appear in the first line and designate the position of the pattern selector dial and of the N-X lever. Please refer to page 11. (Remember that the pattern selector dial can only be turned when the N-X lever is in the N-position. For knitting, however, it must be in the X-position).
HANDLE UP HANDLE DOWN	This display describes the position of the racking handle, either up or down. For **up** the end needles of both needle beds have to be exactly opposite each other. For **down** the first and last needles of the front bed have to be slightly to the left of the first and last needles of the back bed.

The meaning of the knitting instructions

RACKING >>>
RACKING <<<

This display means that the racking handle must be turned in the direction of the arrow (Arrow to the right = clockwise, arrow to the left = counterclockwise)
Note: The display always refers to the turning direction of the lever, not to the direction to which the needle bed is moved.

RACKING <<< 1

The number in this display indicates the number of handle turns which have to be made. 1/2 means half a handle turn (e.g. from down to up).

WITHOUT YARN

This instruction appears when the zero rows have to be knitted. Move the cam box into the color changer in order to expel the feeder that was in the cam box. To be able to carry out 2 zero rows without feeder, do not take a new feeder into the cam box.
To avoid any other feeder from being taken over by the cam box, set the color changer to the neutral position by pressing the button underneath the color changer.
Please refer to page 19 ff.

NEEDLES AND JACKS ACCORDING TO DIAGRAM

This display appears together with the one mentioned above. It means that, depending on the TECHNIQUE you wish to knit, all or only some needles and jacks have to be brought into work position. Pages 100 to 145 contain a description of all techniques stored permanently in the memory, including the corresponding needle diagrams.

2 ROWS PREV. PATTERN

This display informs you, when changing to a new pattern sector, that another 2 rows of the previous pattern have to be knitted while preparations for the new pattern are already being made. Press GO to continue knitting.

The meaning of the knitting instructions

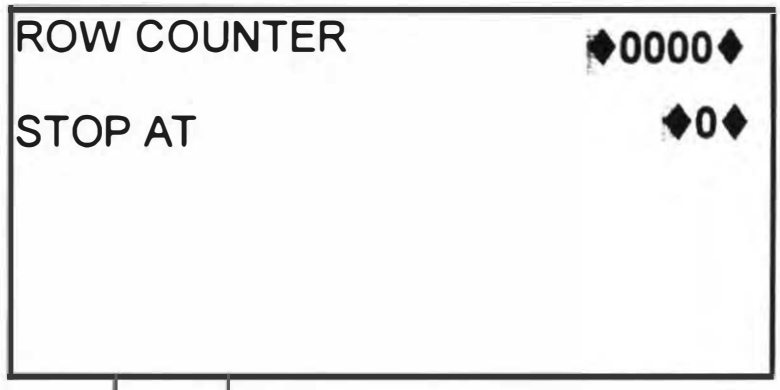
CONTROL STS	This display means: check the stitch size. It appears for cast on rows to remind you that in general you should start with a smaller stitch size and increase to the stitch size which is normal for your material and pattern being knitted.
END CAST ON	This display appears when the cast on row is done. You can then continue knitting in this TECHNIQUE. Please refer also to page 100.
WASTE YARN	This display may appear when changing from one knitted piece to another. Please refer to page 81.

Starting the knitting machine

Having described the basic program structure, there now follows an explanation of the individual work steps from switching on the machine up to starting to knit.

The programming of the pattern sectors will be explained later.

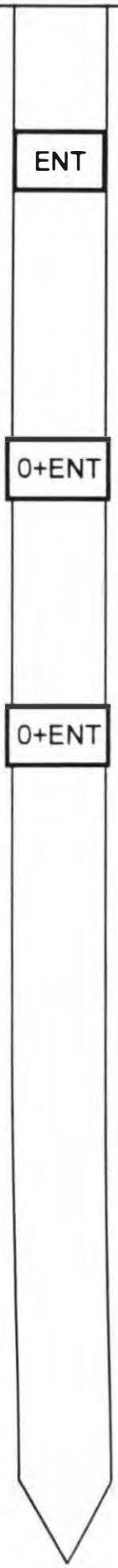
Plug the machine in. The following display will appear:



The display shows the reading of the absolute row counter when you last switched off the machine.

(The 2nd row of the display: "STOP AT" will be explained on page 89).

Starting the knitting machine



In general, at this point you will choose among the following three possibilities:

1. You wish to continue your piece of knitting at the point where you have switched off the machine.

If this is the case, press ENT. The knitting instructions following now are described on the following page.

2. You wish to start at row zero a piece of knitting which you have already programmed.

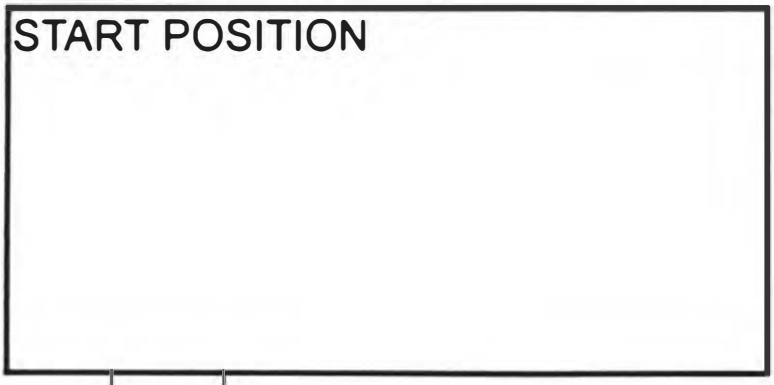
In this case enter a zero at the first input point, then press ENT. The instructions relating to starting a new piece of knitting at the zero row will appear.

3. You wish to program a sector or even an entire piece of knitting.

Also in this case enter a zero at the first input point and then press ENT.
When the next display appears, you can press the "ProgS" key which allows you to reprogram one or several pattern sectors.

(In principle it is possible to press the "ProgS" key at this point. If you do this, enter zero first in any case. Otherwise the operating unit will always calculate the pattern up to the number of rows indicated here, and this takes time depending on the pattern and the number of rows).

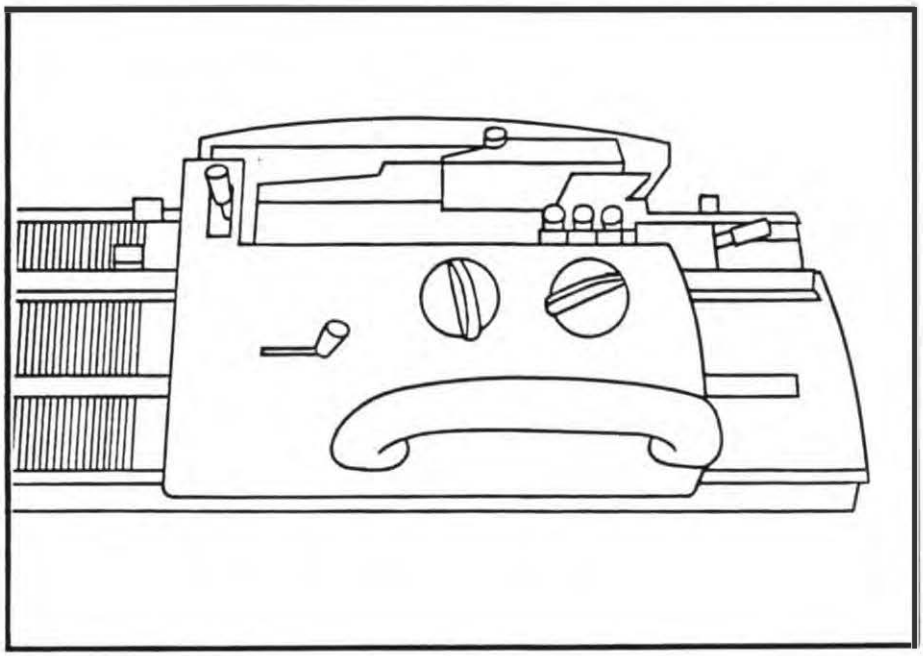
Regardless of whether you have pressed ENT or a number plus ENT, the following display will always appear:



This display asks you to bring the cam box into the START POSITION.

Whenever the machine is switched on, the cam box must be brought into its start position before you can start knitting.

Starting the knitting machine



The cam box is in its start position when it is on the right-hand end plate. When you face the machine, the last needle of the needle bed should be visible on the left-hand side of the cam box.
(Note: the cam box must not be actually in the colour changer on the right-hand side.)

ENT

When you press the GO/STOP key, the cam box will automatically move to its start position and stop there.

Confirm that the cam box is in its start position by pressing the ENT key.

If the cam box is already in the start position, just press

The actual starting process is completed when you confirm the START POSITION by pressing the ENT key.

If you press the GO/STOP key with the cam box in STARTPOSITION, the 1st feeder ready to be taken into the cam box and before you have pressed the ENT key, the cam box will move over the full bed width forward and backward.
If you now bring needles in work position and set the cam box to mechanical knitting functions (N, CX, EX), you can start knitting without having anything programmed. Please refer also to page xxx.

Knitting a pattern sector

KNIT S

Once the cam box is in START POSITION and this position has been acknowledged by pressing the ENTER key, the machine is ready to knit. Now you have direct access to all programming and knitting functions without having to follow any particular order.

(Depending on whether you have entered a zero or any other row counter reading after switching on the machine, the first display might give differing information. In any case you will have access to all knitting and programming functions).

In the following section, we will start by explaining the knitting functions and turn to the programming functions later.

1. Beginning a knitting piece when the row counter reading is zero in the zero pattern sector.

2. Changing to another pattern sector.

3. Programming the pattern sectors.

1. Beginning of a knitting piece when the row counter reading is zero in the zero pattern sector.

There are several ways to get to this point, but please note the following:

If you set the absolute row counter to zero, you are automatically in the pattern sector zero.

Conversely:

If you select the pattern sector zero for knitting, the absolute row counter is automatically set to zero.

Set the absolute row counter to zero

0+ENT

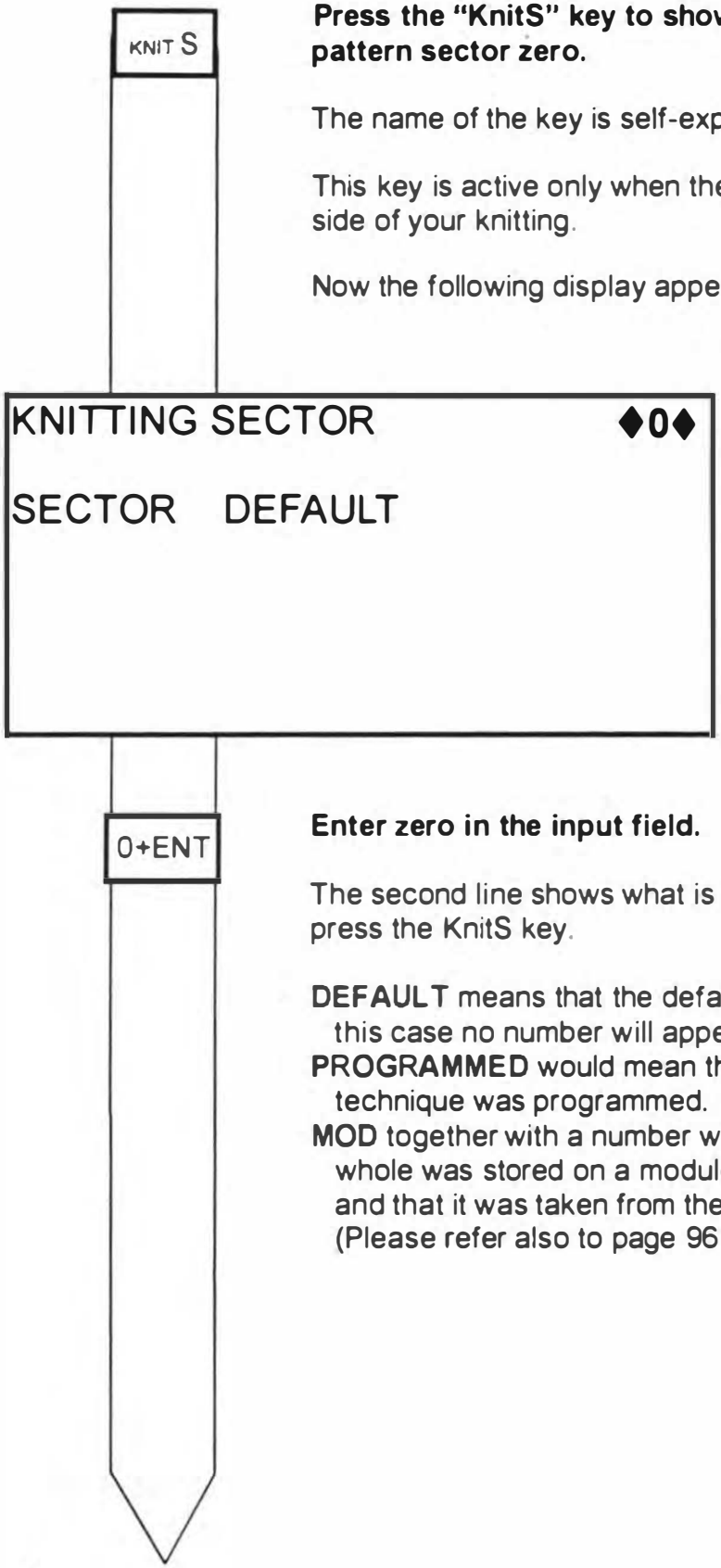
When switching on:
Enter a zero at the first input field and press ENT.

RWS

0+ENT

When knitting or programming:
Press the RWS key.
(With this key you can change the row counter during knitting.)
The display appearing now is the same as when you switch on the machine.
The operating step is the same: enter a zero and press ENT.

Select the zero pattern sector for knitting



Press the "KnitS" key to show that you wish to knit the pattern sector zero.

The name of the key is self-explanatory.

This key is active only when the cam box is at the right-hand side of your knitting.

Now the following display appears:

Enter zero in the input field.

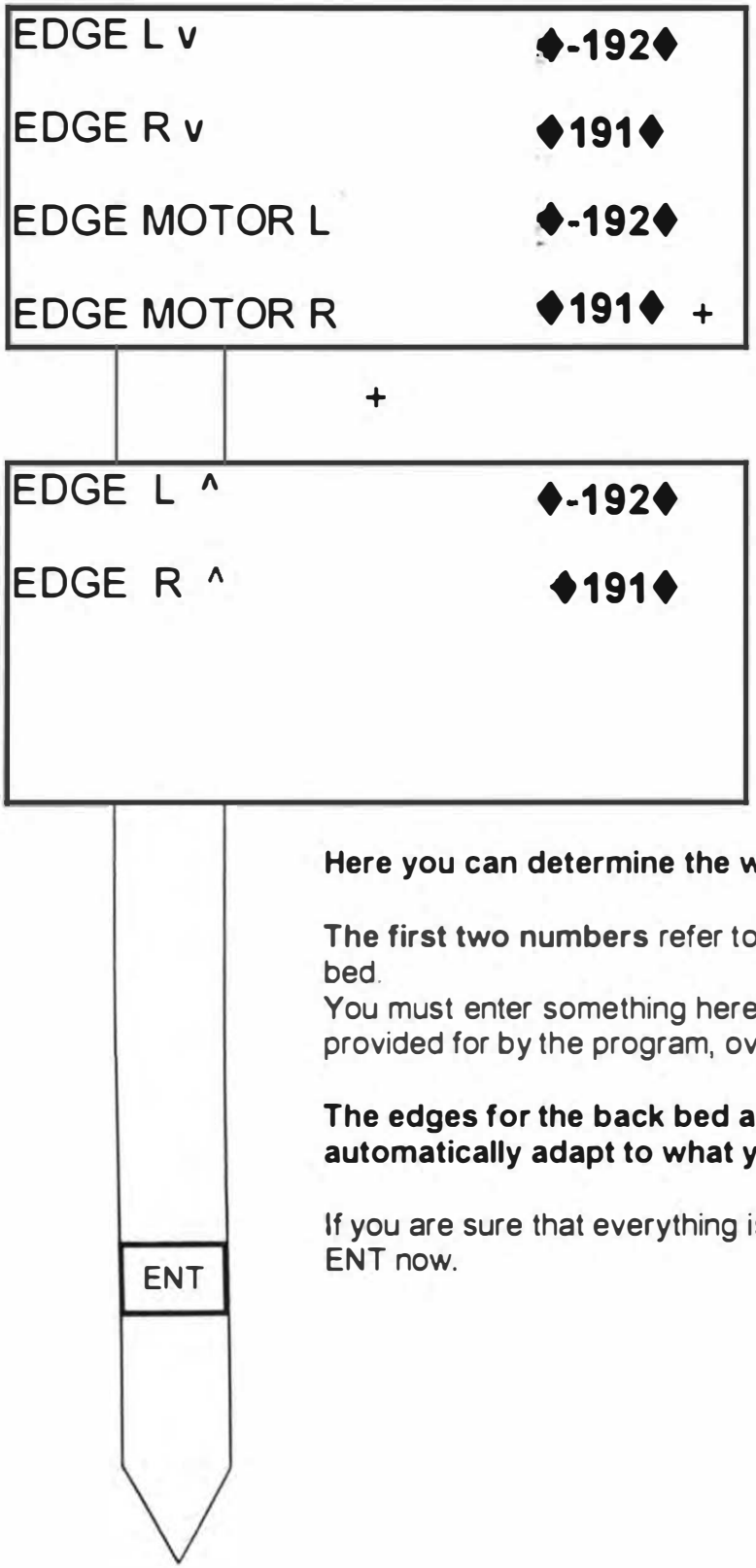
The second line shows what is active at the moment you press the KnitS key.

DEFAULT means that the default cast on is already active. In this case no number will appear.
PROGRAMMED would mean that a different cast on or technique was programmed.
MOD together with a number would mean that the sector as a whole was stored on a module with the specified number and that it was taken from there back into the sector. (Please refer also to page 96 ff.)

Knitting a pattern sector

KNIT S

The program now asks you to enter the knitting width, regardless of whether you have set the absolute row counter to zero or whether you have selected the "knitting pattern sector zero".
If you wish to alter the knitting width during knitting, you can access this display by pressing the EDG key. Please refer also to page 90.



Here you can determine the width you wish to knit.

The first two numbers refer to the knitting width of the front bed.
You must enter something here, unless you want to knit, as provided for by the program, over the full bed width.

The edges for the back bed and for the motor automatically adapt to what you have entered here.

If you are sure that everything is the way you want it, press ENT now.

Please note: a minus preceding a number means that the needle is on the left seen from the middle of the needle bed. If you only want to knit on the right-hand side of the bed, e. g. from needle 10 to needle 100 on the right, then overwrite the number in the first line with 10 and delete the minus sign by pressing the "-" key (= minus).
To reactivate the minus sign, press the minus key again.

In the 3rd and 4th line you can set the length of motor travel. The entry can only exceed the knitting width you entered for the front bed.
This is an advantage if you want the cam box to travel a little further beyond the edge of the knitting than originally programmed.
(If you try to enter a length of motor travel that is smaller than the knitting width, there will be an error message.)

The 5th and 6th line allow you to enter numbers other than those entered in the 1st and 2nd line.

ENT

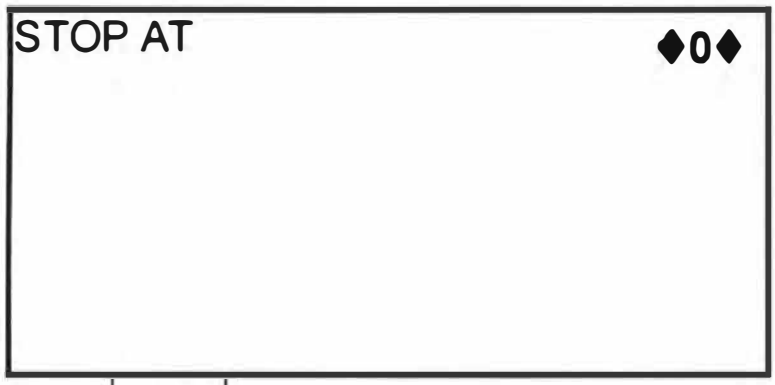
If all input fields have the correct entries, press the ENT key.

(Unless you press ENT>,to skip the STOP AT display).

Knitting a pattern sector

KNIT S

The knitting width display is always followed by the input field for a single stop, regardless of whether your absolute row counter reading is zero or whether you wish to alter the knitting width with the EDGE key. (For the EDGE key see page 90.)



At this point you can program a single stop by entering the absolute row counter at which row the motor should stop.

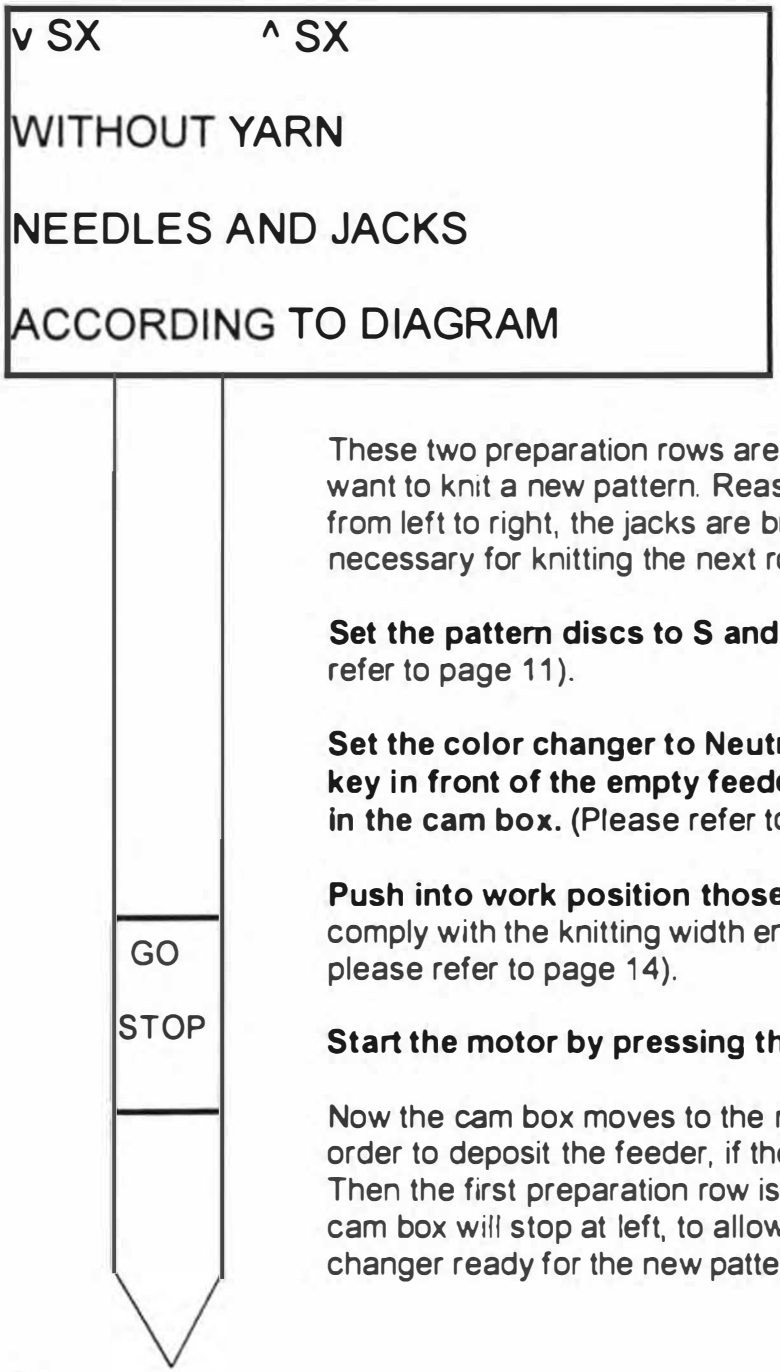
The cam box is stopped once the number of rows entered have been knitted. "PROGRAMMED STOP" will appear on the display.

This function is identical with "STOP AT" which appears in the second line of the first display when you switch on your machine.
It is of no importance where you enter the single stop, whether here or at the first display.

The preparation rows

The following display always appears **after the START POSITION display** i.e. either directly afterwards if you have entered a row number other than zero when switching on the machine,
or after you have entered the knitting width, if your absolute row counter reading is zero.

It also appears if you have altered the knitting row with the RWS key during knitting because you had, for instance, to unravel several rows. Please refer also to page 146.



These two preparation rows are always necessary when you want to knit a new pattern. Reason: as the cam box travels from left to right, the jacks are brought into the position necessary for knitting the next row.

Set the pattern discs to S and the N-X levers to X. (Please refer to page 11).

Set the color changer to Neutral Position, press the black key in front of the empty feeder holder if there is a feeder in the cam box. (Please refer to page 20).

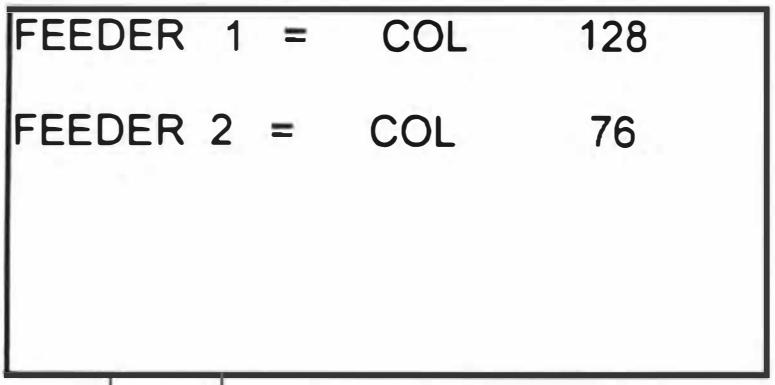
Push into work position those needles and jacks which comply with the knitting width entered. (For work position please refer to page 14).

Start the motor by pressing the GO/STOP key.

Now the cam box moves to the right into the color changer in order to deposit the feeder, if there is one in the cam box. Then the first preparation row is performed after which the cam box will stop at left, to allow you to make the color changer ready for the new pattern.

The color display

The display containing information on how to thread the yarns in the color changer can look like the following example when the information about the colors is available to the ELECTRONIC 8000 :



When there is no information about the colors, (as in plain tuck stitch patterns) the display will only show : FEEDER 1 or in the above example : FEEDER 1 , FEEDER 2, thereby showing you with how many feeders = colors the following pattern will be knitted.

The color changer is set after the first preparation row, when the cam box is at the left-hand edge of the knitting.

How to thread the yarn into the color changer and how to prepare the changer is described on pages 17 to 24.

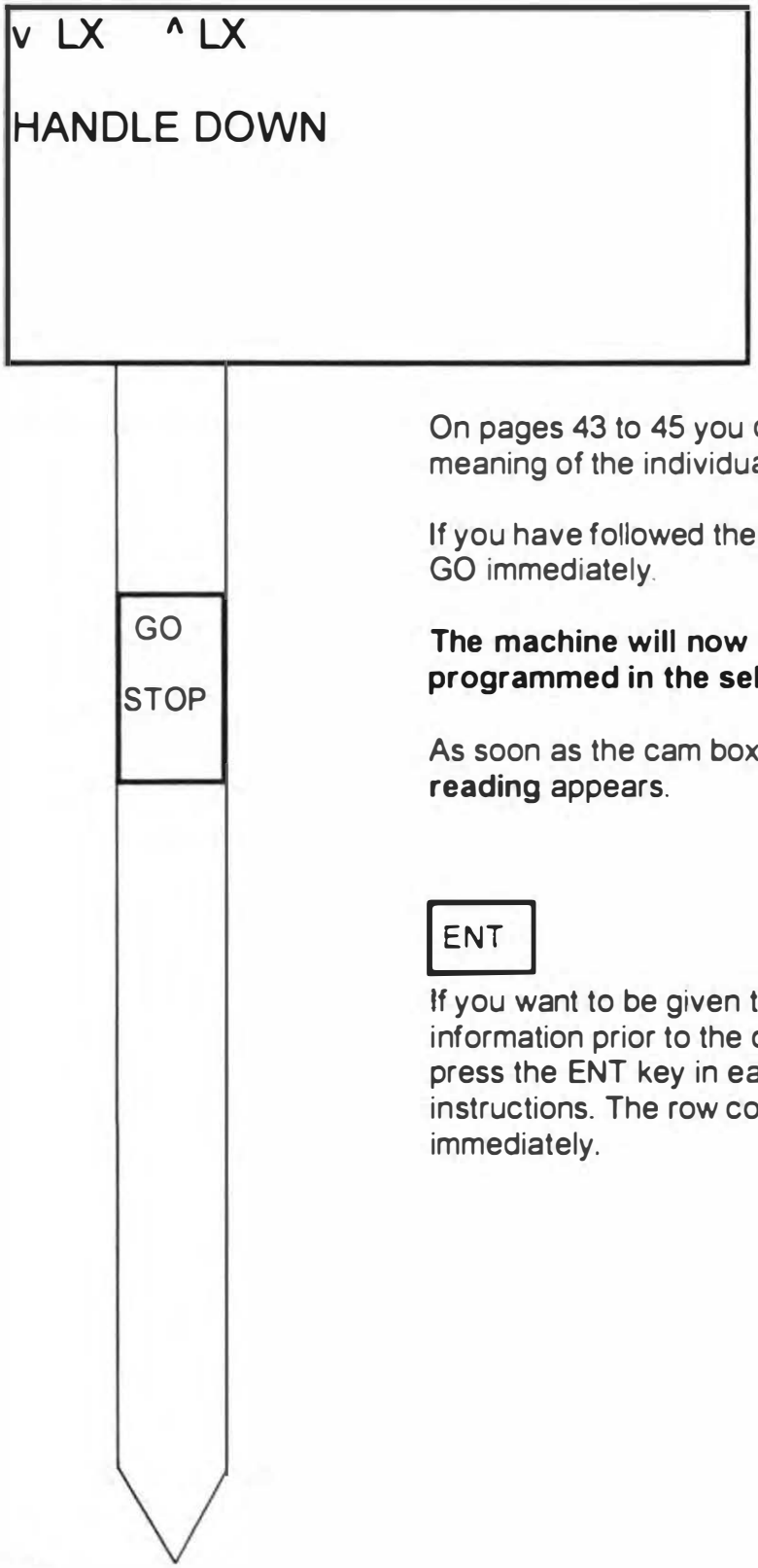
The feeders are numbered from the left to the right.

The color number is the number appearing on the PC in the CREATION 8 software in the COL selection field.

When the yarn is correctly threaded in the color changer and when you are certain that the left-hand feeder is the one which will be taken over first, then
press the GO/STOP key in order to perform the 2nd preparation row.

Cam box setting

After the second preparation row the cam box will stop automatically. The instructions for the cam box setting appear. They could appear as follows:



On pages 43 to 45 you can find explanations of the meaning of the individual displays.

If you have followed these instructions, you can press GO immediately.

The machine will now knit the pattern programmed in the selected sector.

As soon as the cam box moves, the **row counter reading** appears.

ENT

If you want to be given the row counter reading information prior to the cam box moving, you can press the ENT key in each display containing knitting instructions. The row counter reading will appear immediately.

Changing to another pattern sector

You can change from any pattern sector to any other at any time.
The following steps differ slightly from those you have to follow when you start to knit the ZERO PATTERN SECTOR with the row counter reading being zero:

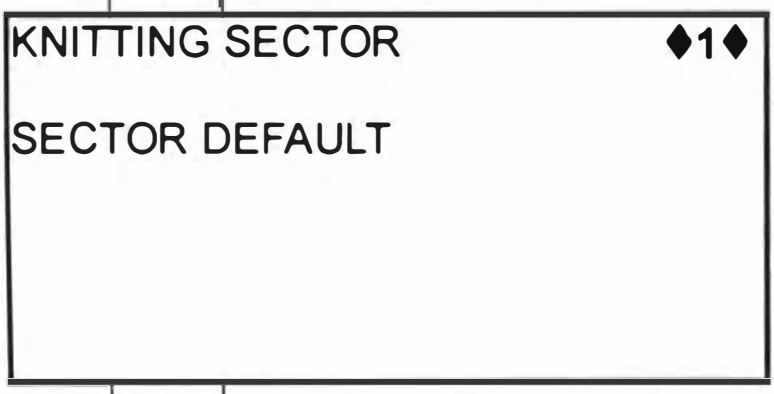
The question asking for the knitting width will not appear, because the program assumes that you have already started your knitting.

The two preparation rows are not knitted with the cam box settings SX/SX. The necessary preparations for the new pattern are made while the two last rows of the previous pattern sector are being knitted. (See page 60 to 61)

KnitS

If you wish to knit any pattern sector, press the "KnitS" key.

The " KNITTING SECTOR" display appears.



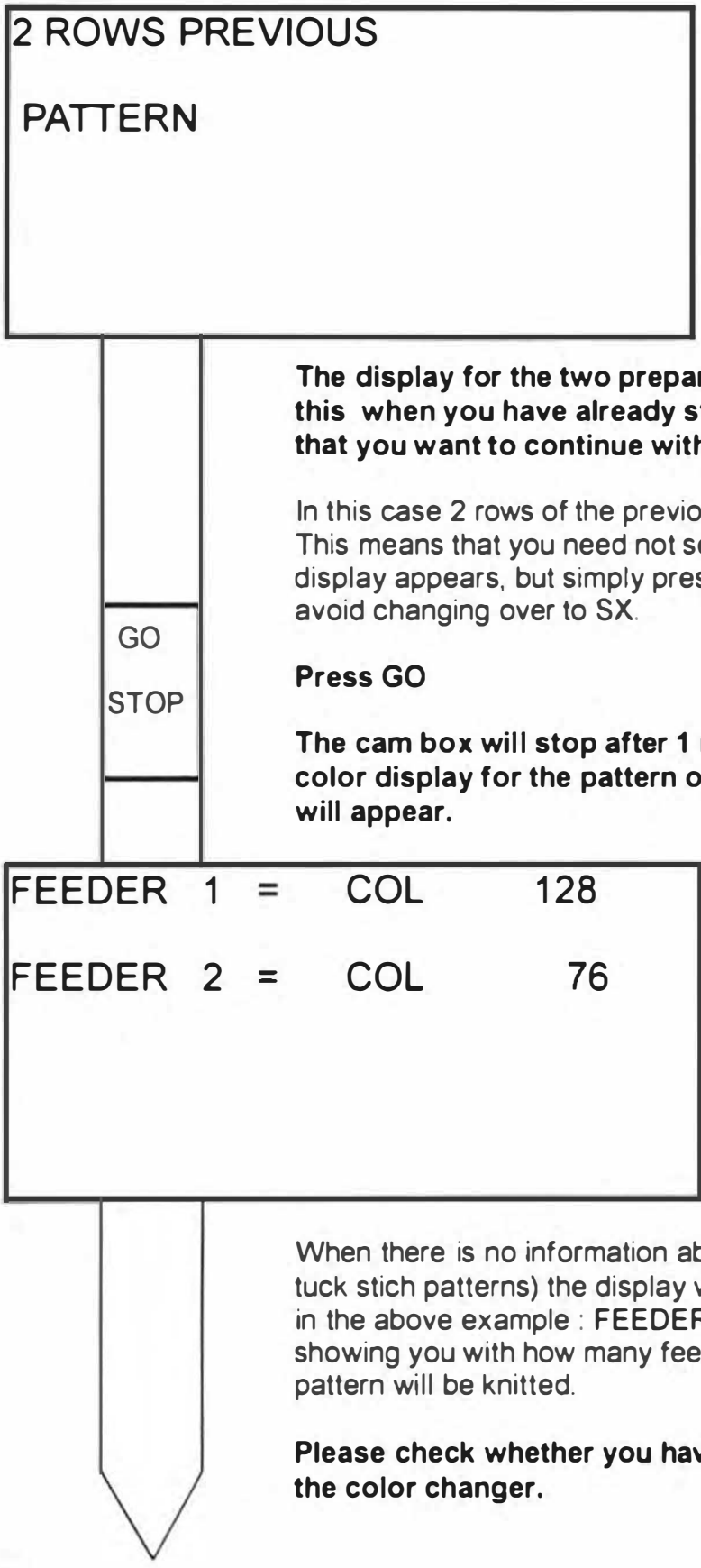
ENT

Enter the number of the sector which you wish to knit.

Press the ENT key.

Knitting a pattern sector

Whenever you have selected a pattern sector from 1 to 9, the following display appears:



The display for the two preparation rows will look like this when you have already started a piece of knitting that you want to continue with another pattern.

In this case 2 rows of the previous pattern will be knitted. This means that you need not set the cam box, when this display appears, but simply press GO. In this manner you avoid changing over to SX.

Press GO

The cam box will stop after 1 row on the left, and the color display for the pattern of the new pattern sector will appear.

When there is no information about the colors, (as in plain tuck stich patterns) the display will only show : FEEDER 1 or in the above example : FEEDER 1 , FEEDER 2, thereby showing you with how many feeders (= colors) the following pattern will be knitted.

Please check whether you have to rethread and prepare the color changer.

In certain cases, when the new pattern has less colors than the previous pattern, it might be that you can only prepare the color changer two rows later.
Please refer to "Preparation of the color changer" on page 20.

GO
STOP

When the color changer is ready,

press GO

to have the last row of the previous pattern knitted.

Then the cam box setting for the new pattern sector will appear.

v LX ^ LX

HANDLE DOWN

NEEDLES AND JACKS

ACCORDING TO DIAGRAM

GO
STOP

Follow the instructions in the display and press GO/STOP to knit the new pattern.

The following rule can be derived from the above description

To be able to knit pattern sector 1 to 9, press the "KnitS" key two rows before the desired pattern change.

If you forget to press the "KnitS" key two rows in advance, proceed according to the description given for the pattern sector zero on page 56.

(I.e. bring the color changer to the neutral position, press the COL key and enter zero according to page 91, set cam box to SX/SX and carry out 2 rows as zero rows.

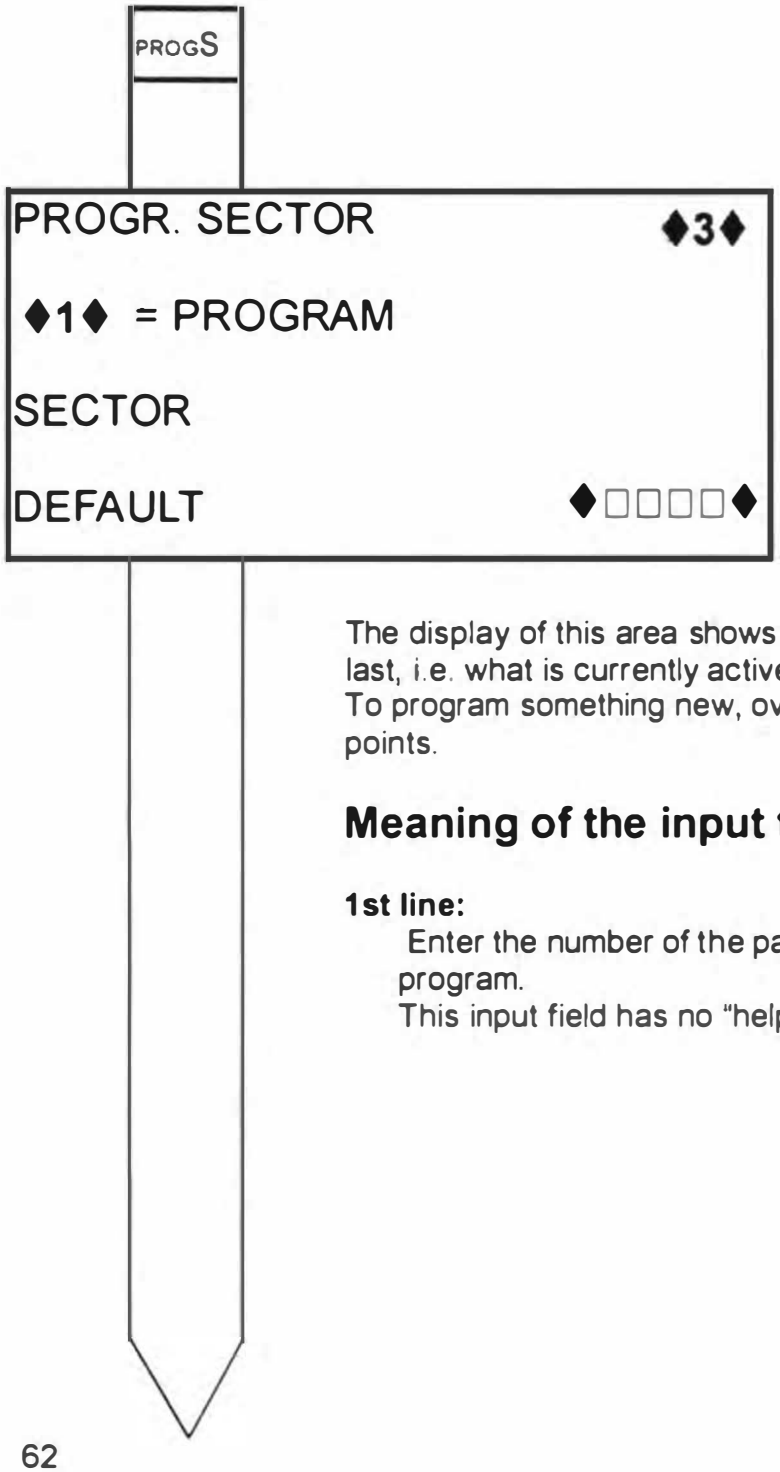
Programming a pattern sector

PROGS

If you do not want to knit one of the default techniques but wish to program the pattern and the technique yourself for a particular pattern sector, press the ProgS key.

Here you can also reload a pattern sector, which you have previously stored on the module .

The key is active only when the cam box is on the right-hand side of the knitting.



The display of this area shows you what was programmed last, i.e. what is currently active.
To program something new, overwrite at the individual input points.

Meaning of the input fields:

1st line:

Enter the number of the pattern sector which you want to program.
This input field has no "help" menu.

2nd line

Help
1 PROGRAMM.
2 MOD
5 DEFAULT
8 CONTINUE
9 EXIT

Press help key to see available options:

1 = you can proceed with your own programming, i.e. you enter the number of the desired technique and, if necessary, also the number of one or two patterns.

ENT

This is the default feature, I. e. when you have entered the number of the desired pattern sector, only press ENT if you wish to program the sector yourself.

Continue reading on page 65.

2 = MOD means that you wish to load a complete pattern sector which you have stored on the module. Please also read information on page 64.

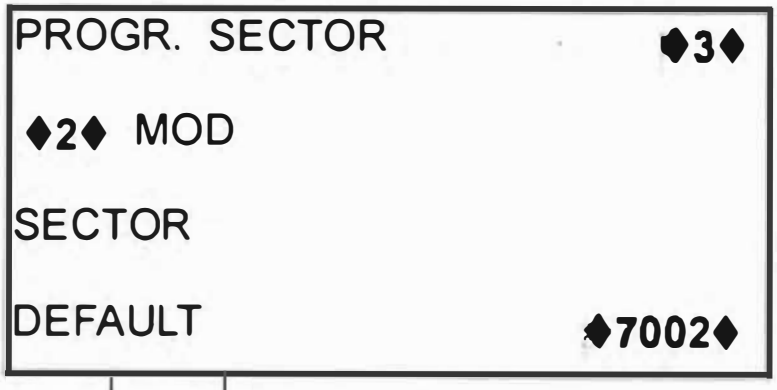
5 = Default means that you wish to update the technique entered as a default feature for this sector. (The technique for the particular sector can be taken from page 37).

If you then press ENT you return to the point where you have pressed the ProgS key.

8 = continue means that you want to see this and all further attendant displays without altering them. Please note: if you have entered something new at an input field and then select 8, you will receive a error message, telling you that your entry will not be saved.

9 = You leave this area and return to the row information.

Loading the complete sector from the memory



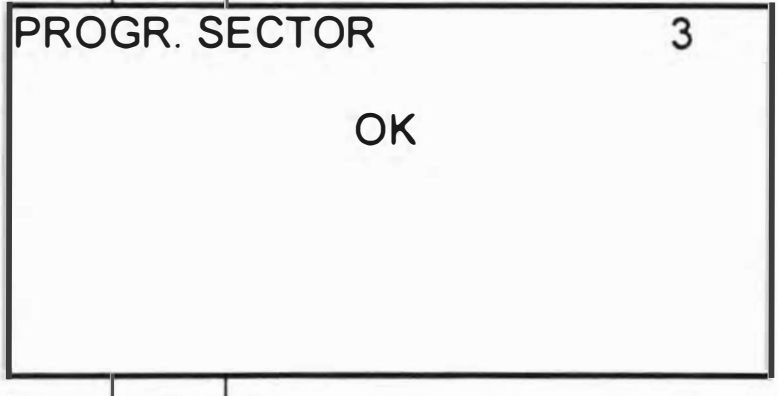
4th line

Help
The numbers of the sectors, that have been saved.

ENT

If you have loaded a complete sector when you first worked with this sector you can see here its origin and its number.

If you selected MOD at the previous input field, **enter the number of the complete sector** which you want to load.
Once you have pressed ENT, the following display will appear:



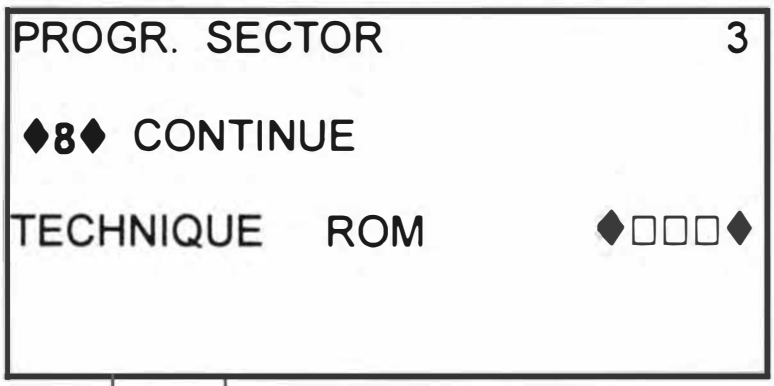
ENT

This display tells you that the pattern sector has been loaded as a whole. It will disappear after 2 seconds. Following this you return to the point where you have pressed the "ProgS" key.

Press ENT if you do not want to wait for 2 seconds.

The technique

If you selected "programming" on the previous display, the following display appears:



1st line:

This line shows the pattern sector you are currently programming.

2nd line:

Help
2 MOD
3 ROM
8 CONTINUE
9 EXIT

At this point, enter the origin of the technique which you want to program.

2 = MOD, i.e. the technique is in the MODULE.

3 = ROM, I. e. the technique is in the ROM (the main memory, where all techniques and patterns that come with the machine are stored).

The technique

3rd line

This line shows you which technique has been loaded and the origin.

If you wish to use a different technique, enter **the technique number**. However, first enter the number for the origin of this technique at the first input field beforehand.

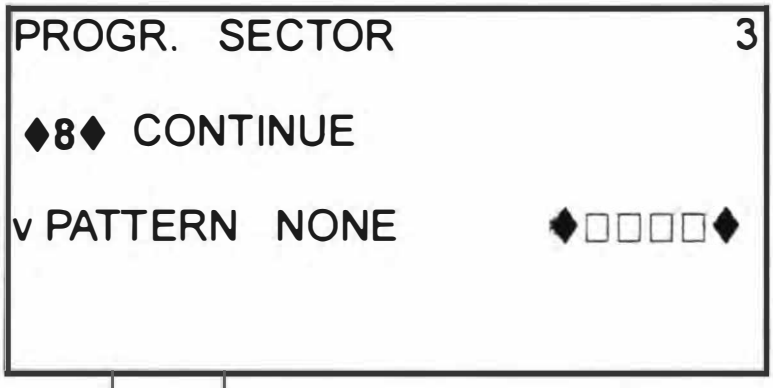
Note: This process does not only overwrite and, thereby, cancel the technique, but all patterns which were programmed in this sector, will also be deleted.

ENT

Then press ENT.

If this technique can be used to knit a pattern, the following display will appear. If not, the "change v/^" display will appear. Please refer to page 74.

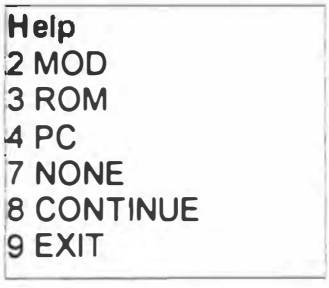
Front bed pattern



1st line:

This line shows the pattern sector you are currently programming.

2nd line



Indicate the origin of the pattern which you wish to program.

2 = MOD, i.e. the pattern is in the MODULE.

3 = ROM, i.e. the pattern is in the ROM.

4 = PC, i.e. the pattern is to be transmitted from the PC.

Front bed pattern

3rd line

Help if you have selected ROM:
All the numbers of the available patterns

ENT

If you wish to program a pattern, first enter the number of the pattern origin in the previous input field followed by the number of the pattern in this input field.

If your pattern comes from the PC, the number of the pattern can only be from 3000 to 6999. (It does not have to be the same number as in the PC.)

After ENTthe following display will appear:

ON THE PC

SELECT

"KNIT A PATTERN"

When the PC is ready, it will tell you, to press ENT on the ELECTRONIC 8000.

ENT

Do so and then press a random key on the PC.

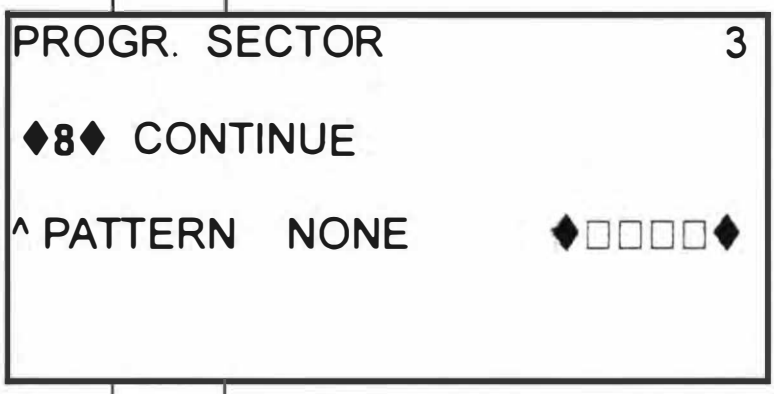
The display will tell you, that the pattern is being transferred.

When the transmission is completed, the next display appears.

(Remember to plug the cable that comes from the PC into the middle socket of the control unit.)

Back bed pattern

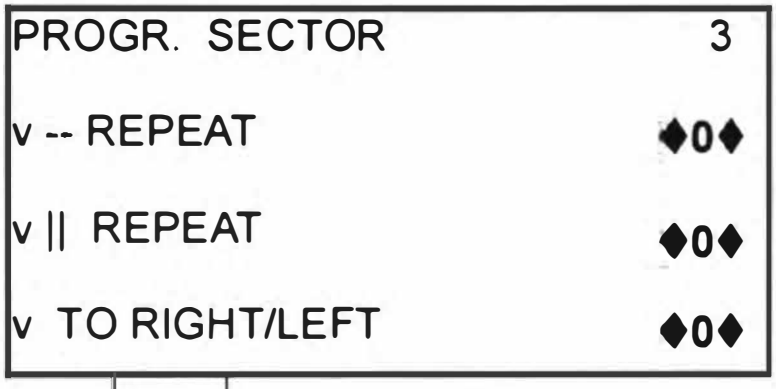
If the technique programmed allows the insertion of a pattern for the back bed also, the following display will appear:



All further steps are identical to those described on pages 67 and 68 for the front bed pattern.

How to alter the pattern

If the programmed technique allows the pattern to be repeated at different distances and its centerline to be shifted, the following display relating to the front bed pattern will appear.



1st line:

This line shows you the pattern sector you are currently programming.

2nd line:

Here you can enter whether your pattern **is to be continuously repeated horizontally**. In this case 0 is correct.

If your pattern is to **repeat horizontally at a certain distance**, please enter the number of needles covering the spacing.

If you wish the pattern to appear **only once on the full width of your knitting**, delete the zero, being the default value, by pressing the "CLR" key

3rd line

This line allows you to enter whether the pattern **is to be continuously repeated vertically**, or only in certain distances.

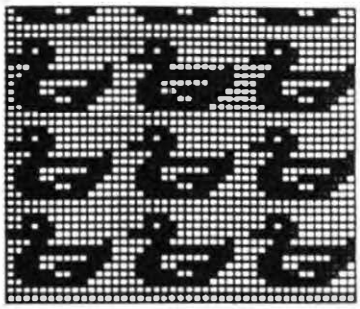
Proceed in the same manner as described for the **horizontal repeat.**
Here the distance is indicated in squares of the pattern drawing or in pixels of the PC display.

Programming a pattern sector

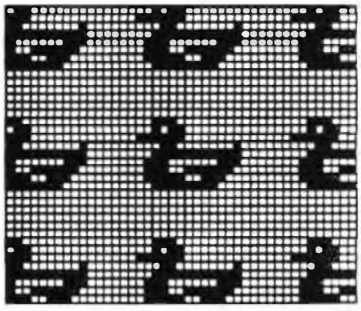
PROG S

Examples of how to enter pattern repeats

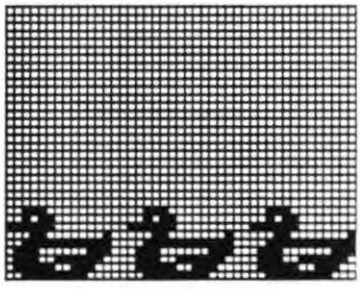
v -- REPEAT	♦0♦
v || REPEAT	♦0♦



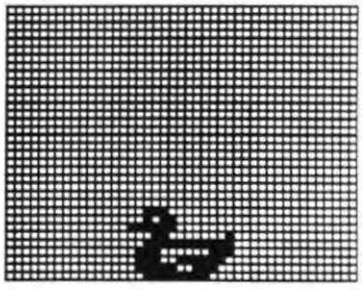
v -- REPEAT	♦4♦
v || REPEAT	♦4♦



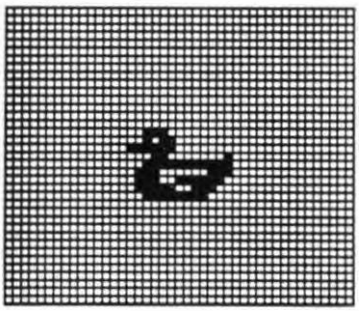
v -- REPEAT	♦0♦
v || REPEAT	♦ ♦



v -- REPEAT	♦ ♦
v || REPEAT	♦ ♦



Programming of a placed motif

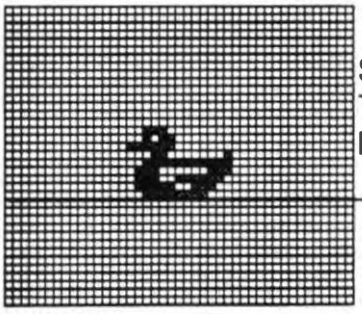


If the pattern repeat must correspond to the motif as shown in the adjoining illustration, i.e. a solid-colored background appears not only above and to the left and right of the motif, but also below it, then proceed as follows:

Programme the same technique without the pattern drawing in another pattern sector.

Knit this pattern sector up to the point at which you would like to have the motif begin. (Note: make sure that you start knitting using the same color sequence that your motif requires).

Change to the pattern sector, in which this motif has been programmed, by pressing "KnitS".



Sector 2
Technique 500
Pattern 2129

Sector 1
Technique 500

How to alter the pattern

4th line

If you leave the zero, the centre line of your pattern coincides exactly **with the middle of the needle bed.**

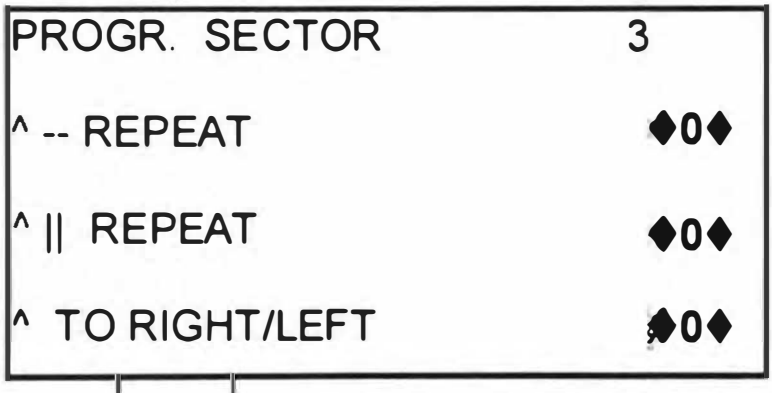
If your pattern has an odd number of horizontal squares, 1 square more is knitted at the right-hand side of the centerline.

Here you can enter **the number of needles by which the centerline of your pattern will be shifted to the right or to the left on the needle bed.**

Enter a number only when you wish to shift to the right-hand side.

Enter the number and the minus (-) sign when you wish to shift to the left-hand side.

ENT

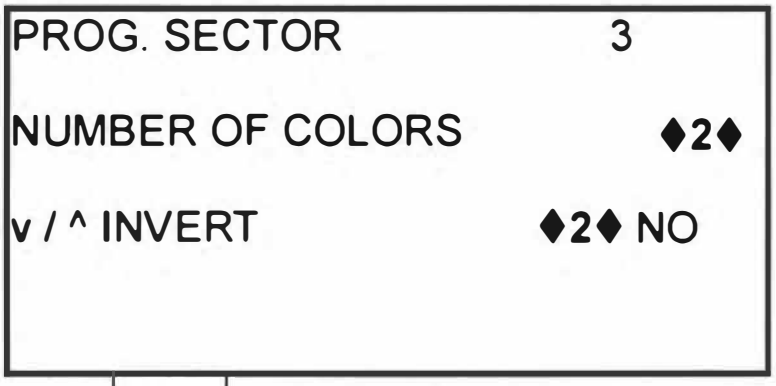


This display refers to **the alteration of the pattern for the back bed** and only appears when a pattern has been programmed for the back bed.
Proceed in the same manner as described under 'How to alter a pattern' for the front bed.

ENT

Inverting front to back

This question appears for each technique, even if it is a single-bed technique, or if you knit without any pattern.



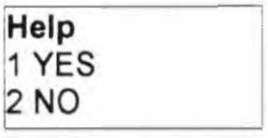
1st line:

This line shows you the pattern sector you are currently programming.

2nd line

This line only appears if you have programmed one of the techniques , which allow you to enter whether you want to knit a 2, 3 or 4 color fairisle.

3rd line



This line allows you to enter if what is to be knitted on the front bed should be knitted on the back bed and vice versa.

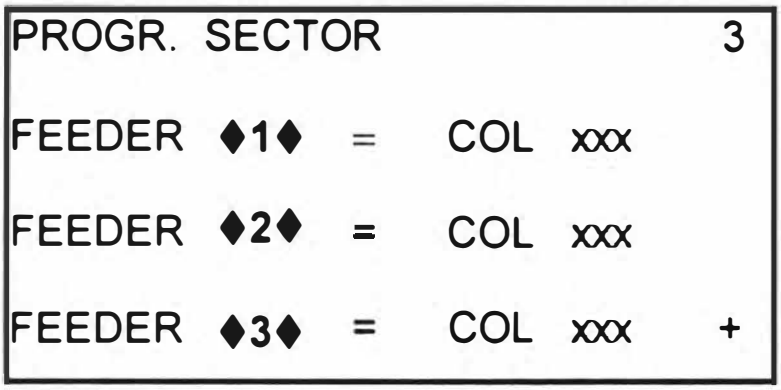
For **single bed patterns** you can decide at this point whether you wish to knit on the front bed (this being the default feature for every single bed technique) or on the back bed.

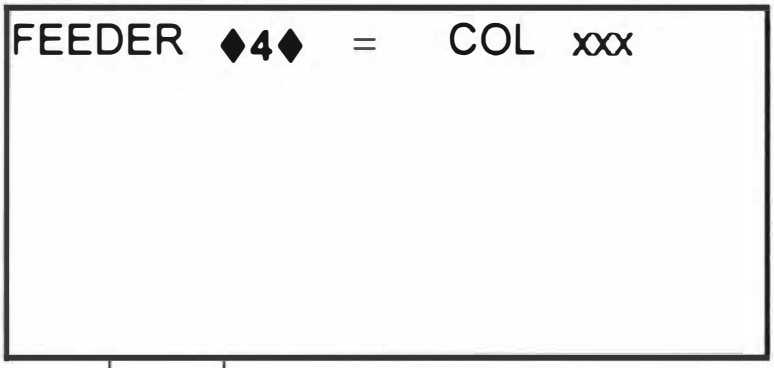
For **fairisle patterns** the actual image is usually knitted on the front bed so that the rear face of the knitting is created on the back bed. You can reverse this.

A **tuck** usually appears on the back bed, but this can also be changed, allowing you to knit tucks and fairisle patterns in the same piece of knitting without transferring stitches.

The color sequence

This display appears only for patterns that have been transferred from the PC .
On this display you can see how many colors appear in the pattern drawing but you cannot see for how many colors the technique is meant.





1st line:

This line shows you the pattern sector the color sequencerefers to.

2nd to 5th line:

These lines show you the sequence of colors to follow when you knit your pattern, to make sure that the color distribution on your knitting coincides precisely with that on your PC screen.

The numbers displayed in the "COL" icon of CREATION 8 replace the XXX.
If you knit patterns stored on the module, the color designation for the patterns are in the attendant pattern documentation.

This order can be changed here without any change to the aspect of your pattern drawing, by overwriting the numbers in the input fields.
Note: Never use the same number twice, i.e. if you overwrite a 1 with a 3, you have to overwrite a 3 with a 1.
If you press ENT here, you are led to the last display of the "Programming a pattern sector", page 77.

Reasons for a color sequence change

Adaptation to a previous piece of knitting:

You start your knitting with a one-color welt and have threaded this color into the first feeder. However, here this color is not displayed as first color but as third color.
In such a case we recommend to overwrite the 1 with the 3 and the 3 with the 1.

Note: Pay particular attention to the color sequence when knitting :

Fairisle patterns which do not repeat continuously throughout the entire surface.

If you wish to take advantage of the possibility of repeating your pattern in certain spacings, the program allows you to control the color appearing between the patterns.

All TECHNIQUES are designed so that the first color will always appear between the motifs.

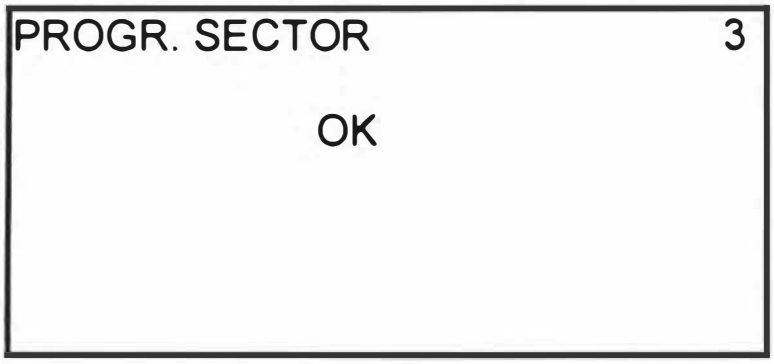
Due to the fact that the program cannot distinguish between the background color and the trimming color, it might be that the first color is not the color which you wish to use as background color.
In this case change the color sequence so that the background color is displayed as the first color.

How does the ELECTRONIC determine, which is the color sequence?
The program "reads" the pattern drawing starting at the bottom left corner and goes on to read from left to right the first row of squares.
The first color, that the program "sees" appears as the first color in the color sequence and so on.
Therefore it is possible that a color appears as the first color though you dont see this color as your background color.

Programming a pattern sector

PROGS

When you agree with the color sequence, press ENT. The last display of the "Programming a pattern sector" section will appear.



If an error occurred during programming, an error message will appear at this point. Confirm this message by pressing ENT. Please also refer to page 146 ff.

The "OK" display will disappear after 2 seconds and be replaced by the one which was active when you pressed the ProgS key.

Programming, when the control unit is not attached to the knitting machine.

This might be necessary, when you want to transfer a pattern from a PC, that is not near the knitting machine.

At the control unit unplug the cable that goes to the motor and unplug the transformer from the mains. Bring the control unit together with the transformer to where you want to program.

Plug the cable of the transformer to the mains.
The first display will be the same as when you start the machine with the control unit attatched to it.

Now you can press the key

PROGS

ProgS

Program as usual.

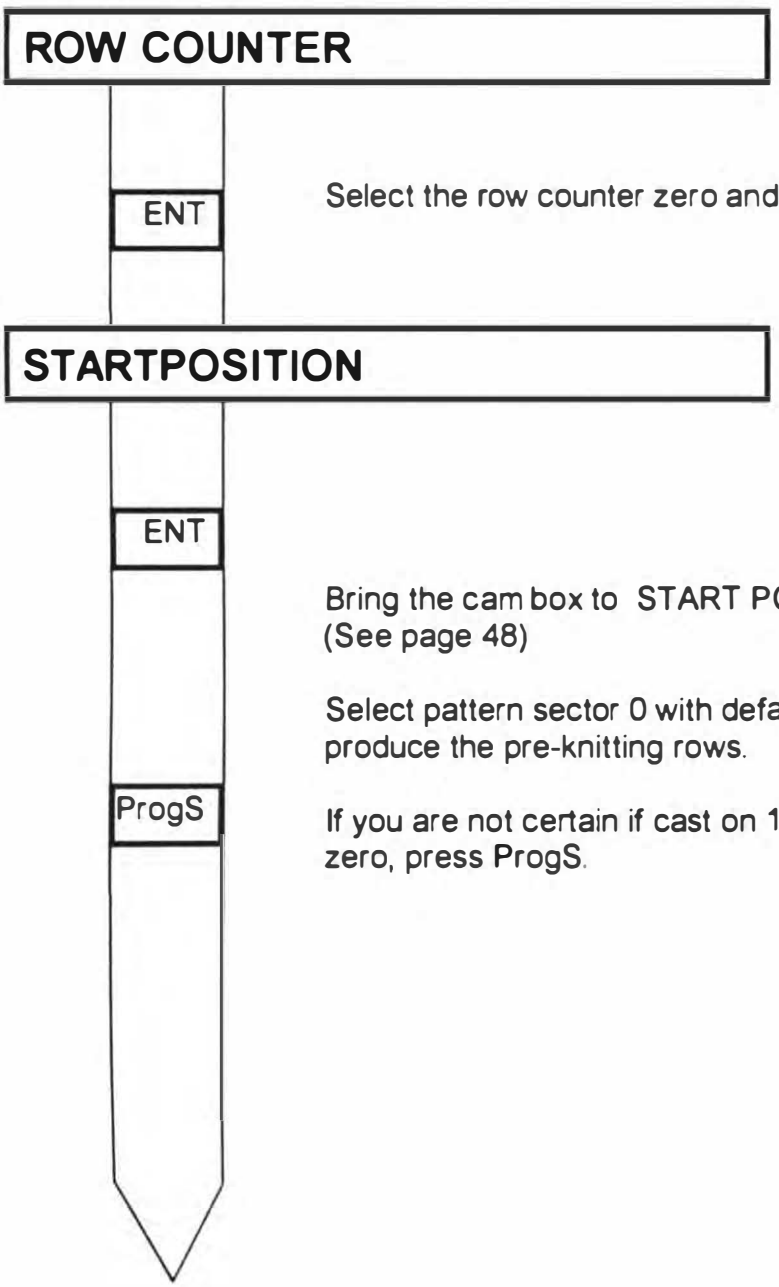
The only difference will be, that when you have finshed programming there will be no useful row information.
It will always be **0 ??** and **SECTOR 0**

The pre-knitting rows.

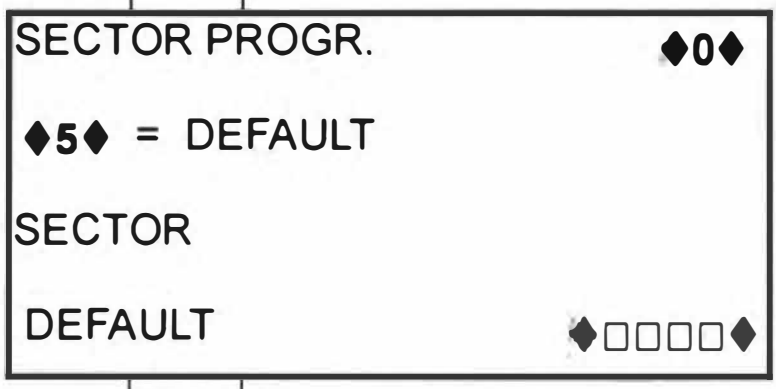
Before the fabric takedown is able to work, a sufficient number of rows must be knitted to allow knitting to be squeezed between the rolls of the takedown.

These rows are designated as the pre-knitting rows.
Since these pre-knitting rows cannot be used as part of the main knitting, they can be knitted from waste yarn.

The cast on 1, loaded as default in pattern sector 0, is well suited for the pre-knitting rows.
When starting the knitting machine, proceed as follows:



The auxiliary rows



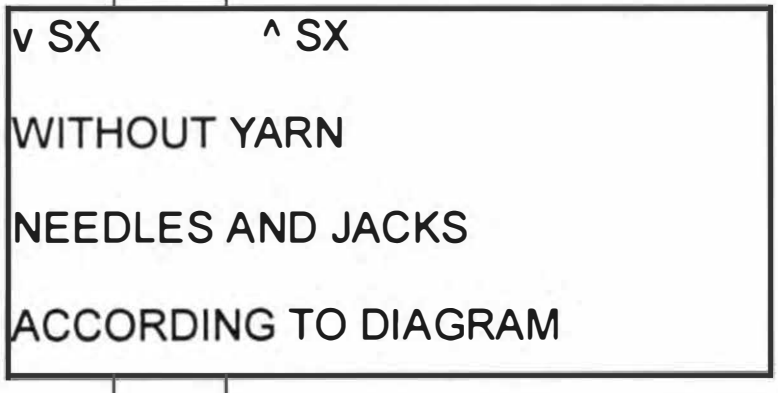
Enter zero in the first input field.

Enter 5 for " default" in the second input field.

ENT

Press ENT.

Now first the inquiry for the knitting width appears and then the display for the two preparation rows.



Follow the instructions and continue knitting 1:1 after END CAST ON has been displayed.

It is most important that you use the strippers for the pre-knitting rows. (Refer to page 11)

It is recommended to use a large stitch size so that the knitting increases faster and less material is used.
At approximately 200 rows the knitting should be long enough to squeeze it between the takedown roller and the pressure rollers. (See page 27).

Recommendation: when about half of the pre-knitting rows have been knitted, release the stitches from the front bed and unravel. This will allow you to attain to the desired length faster while at the same time requiring less material.

The transition rows

The transition rows are necessary in the following situation:
You have completed a piece of knitting and would like to start a new piece with a cast on without having to repeat the pre-knitting rows.

With the assistance of the transition rows, the two pieces of knitting can remain connected, so that the rollers ensure continuous takedown. Only when the new knitting is long enough can the two pieces be separated from one another by cutting the last transition row at the edge and pulling out the yarn from this row.

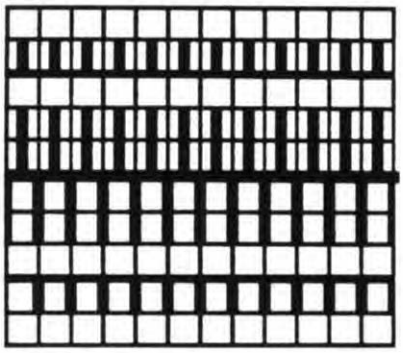
There are pre-programmed knitting TECHNIQUES for these transition rows.

The easiest case is when you use the same needles for the cast on of the new knitting as you used for the end of the previous knitting .

(Example: the previous knitting was completed with double bed fairisle with all needles and the new knitting begins with a cast on for K/K, likewise with all needles.)

Transition rows: when the end of the previous knitting and the cast on are knitted with the same needles.

30



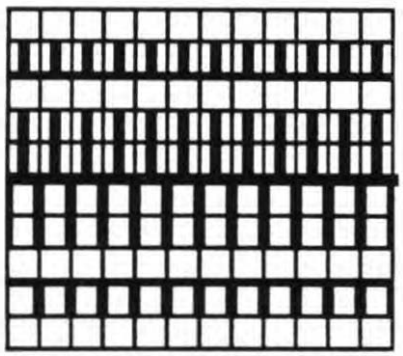
Knit as follows:

4 rows with feeder 1, all needles front and back
1 row with feeder 4, stitches only on front bed
1 row with feeder 4, stitches only on back bed

The last two rows are knitted with feeder 4 in order to give you the possibility (if you are not knitting a 4-color fairisle) to thread in a separation yarn there. In order to separate both knittings from one another, this separation yarn will later be removed.

After completing the 6 rows immediately begin the cast on for the new knitting.
(In case you have forgotten to press 2 rows before the "KnitS" key, you do not need to set the cam box to SX for the preparation rows. Technique 30 is programmed in such a way that the cam box will automatically move over the needles without selection.)

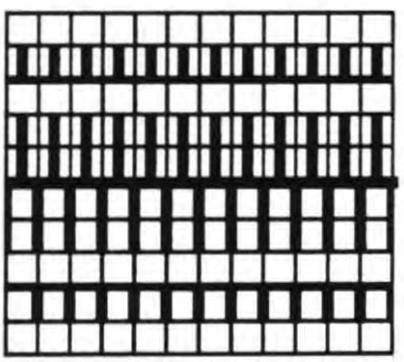
Transition rows, when the end of the knitting and the cast on are knitted with the same needles. 31



In contrast to technique 30, all stitches are knitted front and back for 6 rows.

This technique offers more security so that the plain rows at the end of the knitting do not unravel when the knitting is being processed further.

Transition rows, when the end of the knitting and the cast on are knitted with the same needles. 32



In contrast to technique 30, all stitches are knitted front and back for 8 rows.

This technique offers optimum security for very smooth material where stitches easily unravel.

The auxiliary rows

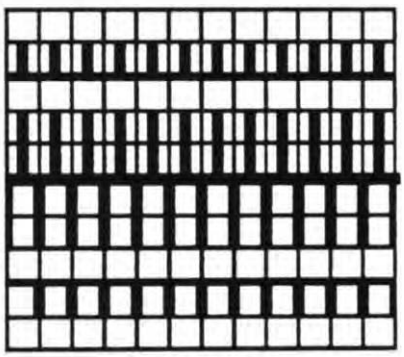
Transition rows for cast ons that are not knitted with all needles.

When you have completed a double bed fairisle knitting with all needles and you would like to begin a new knitting with a cast on for 1:1, you cannot simply release the stitches not needed for the cast on. This would lead to dropped stitches in the previous knitting. To avoid this, use following techniques.

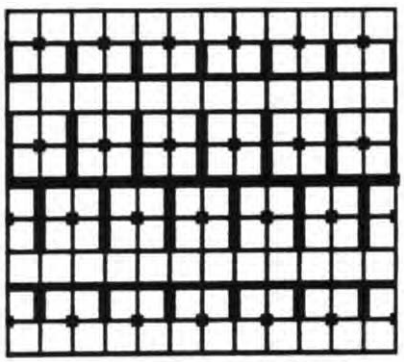
Transition rows before cast on 1 for 1:1

20

All needles and jacks will remain in working position.



The cast on will be made only on these needles.



Knits with feeder 4 as follows:

2 rows all stitches front and back
4 rows only stitches on front bed
2 rows all stitches front and back
4 rows only stitches on front bed
2 rows all stitches front and back

2 rows without yarn, this releases the stitches on the front bed.

2 rows all stitches on back bed
only every second stitch on front bed
4 rows stitches only on back bed
2 rows all stitches on back bed
only every second stitch on front bed
4 rows stitches only on back bed
2 rows all stitches on back bed
only every second stitch on front bed

2 rows without yarn, this releases the stitches on the back bed.

If you have pressed "KnitS" 2 rows in advance, the needles of the back bed are also pre-selected for 1:1. (In case you have forgotten to press 2R before the "KnitS" key, you do not need to set the cam box to SX for the preparation rows. Technique 20 is programmed in a way that the cam box will automatically move over the needles without selection.)

Transition rows before cast on 1 for 1:1

21

In contrast to technique 20, only 6 rows each are knitted on one bed.

This reduces the probability of a dropped stitch occurring in the finished knitting.

Transition rows before cast on 1 for 1:1

22

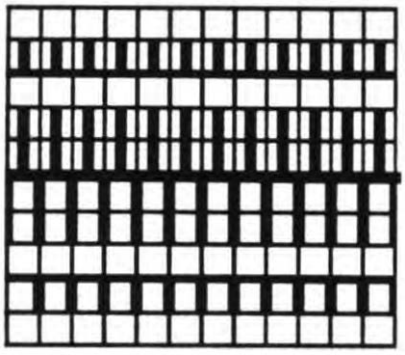
In contrast to technique 20, not only two, but three times four rows are knitted on every bed.

This technique offers optimum security and is especially suited for smooth materials.

Transition rows before cast on 4 for 2:1

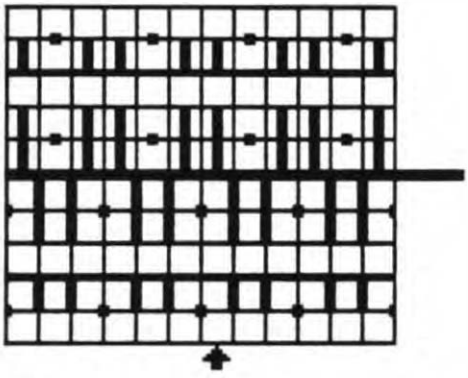
23

All needles and jacks will remain in working position.



These transition rows are knitted exactly as in technique 20 except that, at the end, the needles are set for 2:1.

The cast on will be made only on these needles.



Transition rows before cast on 4 for 2:1

2

This technique corresponds to technique 21 except that, at the end, the needles are set for 2:1.

Transition rows before cast on 4 for 2:1

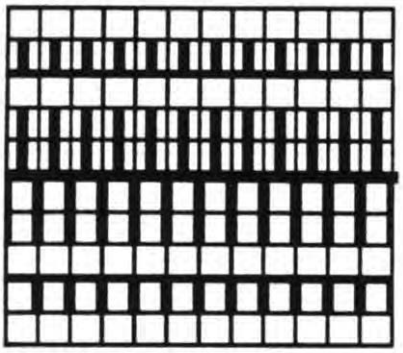
25

This technique corresponds to technique 22 except that, at the end, the needles are set for 2:1.

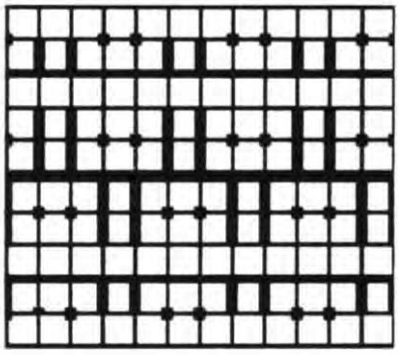
Transition rows before cast on 5 for 2:2

26

All needles and jacks will remain in working position.



The cast on will be made only on these needles.



These transition rows are knitted exactly as in technique 20 except that, at the end, the needles are set for 2:2.

Transition rows before cast on 5 for 2:2

27

This technique corresponds to technique 21 except that, at the end, the needles are set for 2:2.

Transition rows before cast on 5 for 2:2

28

This technique corresponds to technique 22 except that, at the end, the needles are set for 2:2.

To release the knitting

If you do not want to have a piece of knitting in the machine, you can release the stitches as follows:

Stop the cam box at the right hand edge of the knitting.

Press the COL key.

Enter a zero at the first input field .

Press the ENT key.

Confirm the security inquiry with 1 = yes.

Set the color changer to the neutral position. See page 20.

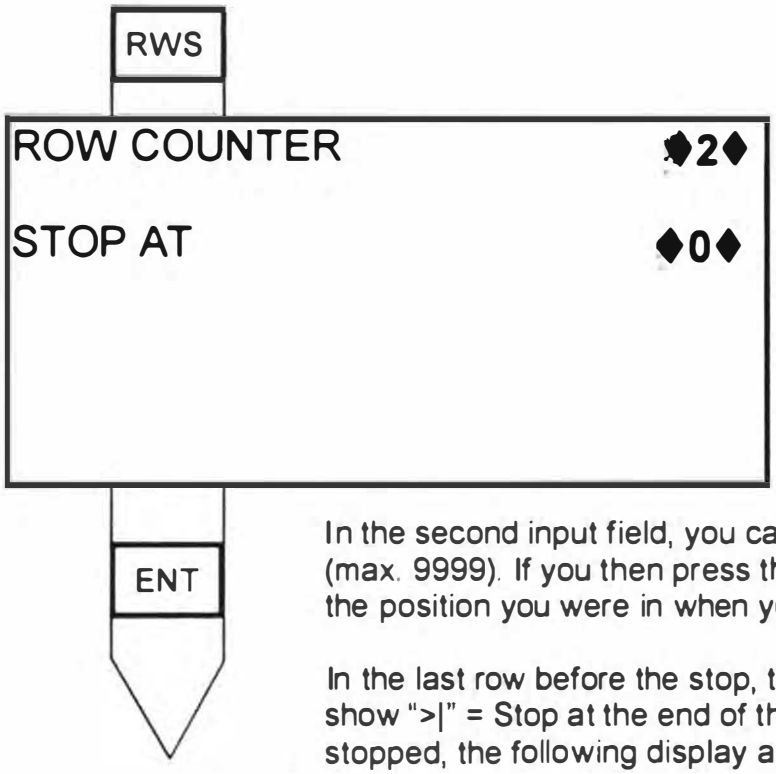
If you are knitting a fairisle pattern or another pattern which does not always select all needles, push the **N-X** lever at the back and at the front to **N**.

Press the GO/STOP key.

The cam box now moves to the colour changer, releases the feeder that was in the cam box, and moves over the needle bed without a feeder. This causes all stitches to be released.

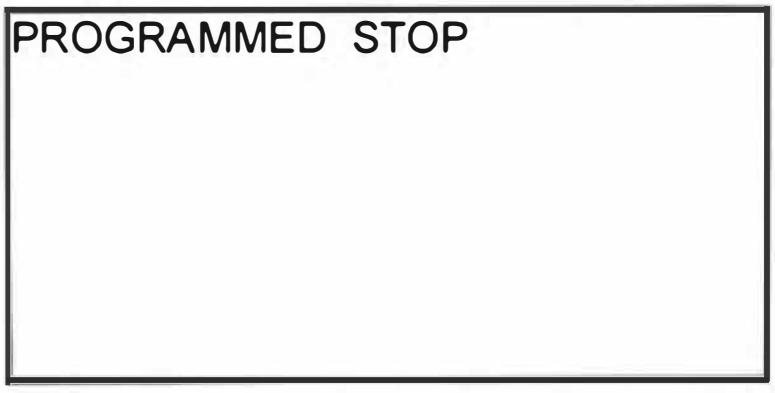
Programming a single stop

If you would like to program a single stop during knitting, press the RWS key and move the cursor to the second input field.



In the second input field, you can type a random row number (max. 9999). If you then press the ENT key, you are back to the position you were in when you pressed the RWS button.

In the last row before the stop, the row counter display will show ">|" = Stop at the end of the row. When the cam box has stopped, the following display appears:

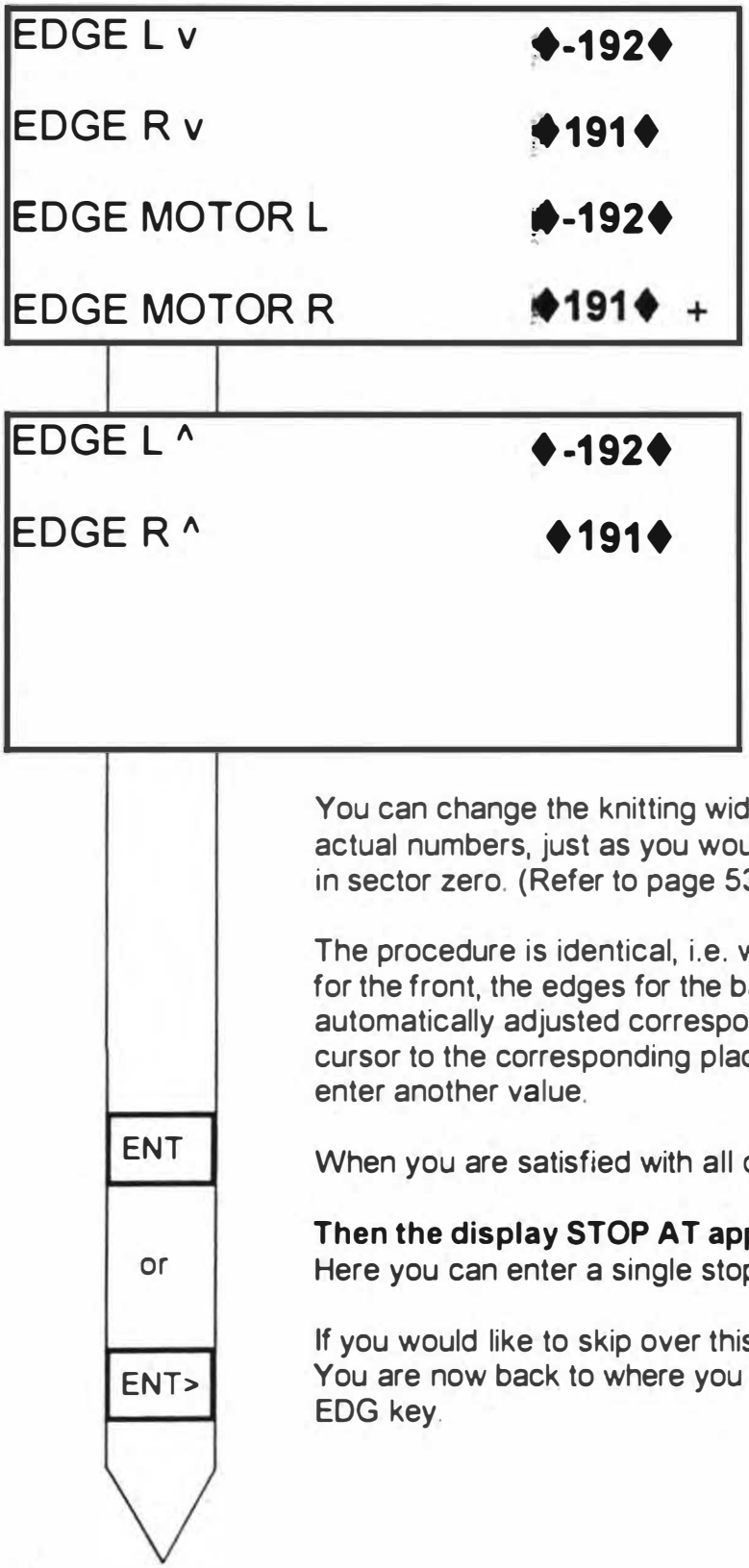


This stop can also take place in a different pattern sector as the one in which the programming of the stop is taking place.

Once the stop has been executed, you can enter a further stop.
You can, however, never enter more than one stop at a time.

Changing the knitting width

If, during knitting, you would like to change the knitting width or the travel of the motor, you can do this by pressing the EDG key. This key is only active when the motor is not running.



You can change the knitting width here by overwriting the actual numbers, just as you would when beginning a knitting in sector zero. (Refer to page 53)

The procedure is identical, i.e. when you change the edges for the front, the edges for the back and for the motor are automatically adjusted correspondingly. If you move the cursor to the corresponding place of entry, you may, however, enter another value.

When you are satisfied with all displayed values, press ENT.

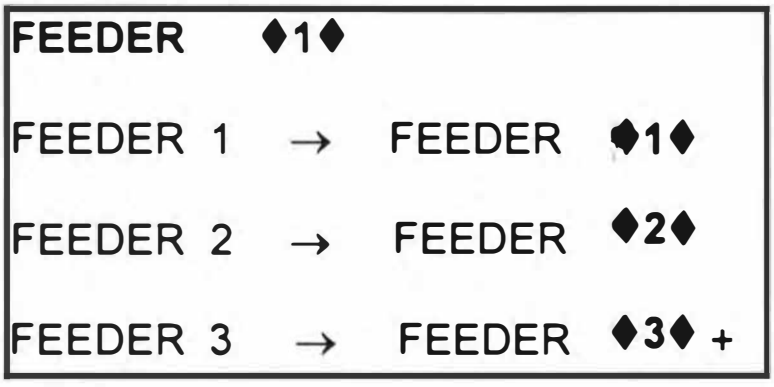
Then the display STOP AT appears.
Here you can enter a single stop as described on page 89.

If you would like to skip over this display, press the ENT> key. You are now back to where you were when you pressed the EDG key.

The one time feeder change

If you press the COL key, the display appears that allows you to take a feeder of your choice (that has not been allocated by the technique) once only into the cam box.

COL



First Line: one time feeder change

Here the feeder that is just knitting is displayed. If you would like to move into COLOR once in order to bring another feeder (that has not been allocated by the technique) into the cam box, overwrite this displayed number with the number of the feeder you would like to move into the cam box.
Note: Of course you must bring the corresponding feeder in the color changer into the ready position. For further information, see page 19 ff.

The selected feeder now remains in the cam box until the technique calls for a color change.
(i.e. with a fairisle pattern with color change every second row, the selected feeder remains in the cam box for only two rows.)

At the next color change, the corresponding feeder is chosen according to the program.
Note: here again you must make sure to first bring the color changer into the ready position. For further information, see page 19 ff.

(The other lines in this display refer to the allocation of feeder functions described on the next page)

Allocation of feeder functions

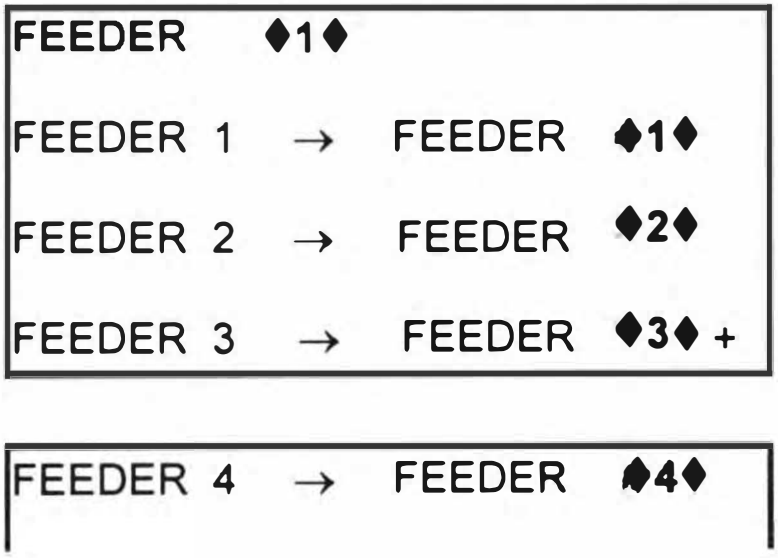
In the techniques is programmed which feeder is to be used for which row.(See also page 21) This makes it possible to control, that there is always the right feeder in the carriage.
The general rule is the following:

1 color techniques are knit with feeder number 1
2 color techniques are knit with feeders number 1 + 2
3 color techniques are knit with feeders number 1, 2 + 3
4 color techniques are knit with feeders number 1, 2, 3 + 4

The feeders are numbered starting from the left.

Should one of the feeders be inoperative for some reason, instead of being unable to knit the chosen technique you can change the feeder allocation as follows:

If you work normally with all feeders the display is the following:



It is possible to block one or more of the feeders :
When the corresponding input field is activated press

CLR

CLR

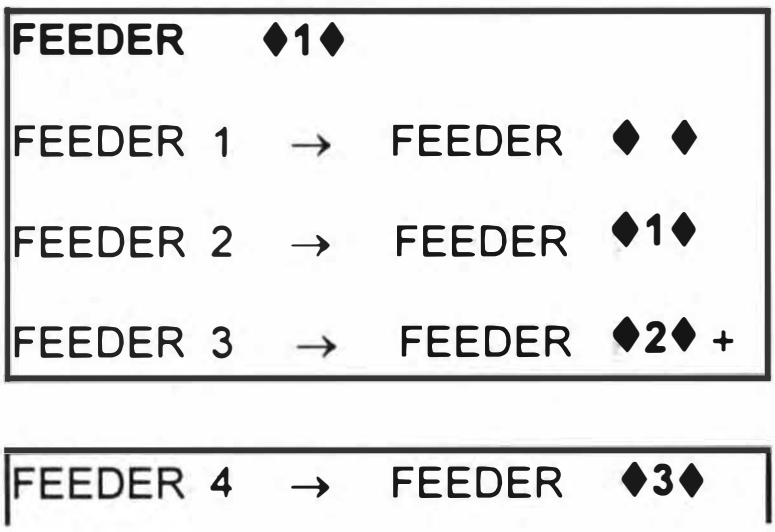
Now this feeder cannot be used anymore until you type again the original number in the now empty input field.

Note : If the blocked feeder is not number 4 it is necessary to change the allocation of the feeder functions, to make the best possible use of the remaining feeders.

Example:

Feeder 1 is out of order and has to be blocked.
Therefore:
feeder 2 has to take over the functions of feeder 1
feeder 3 has to take over the functions of feeder 2
feeder 4 has to take over the functions of feeder 3.

Enter the following
input field 1 press key CLR
input field 2 enter 1
input field 3 enter 2
input field 4 enter 3



This way you can still knit up to 3 color techniques.

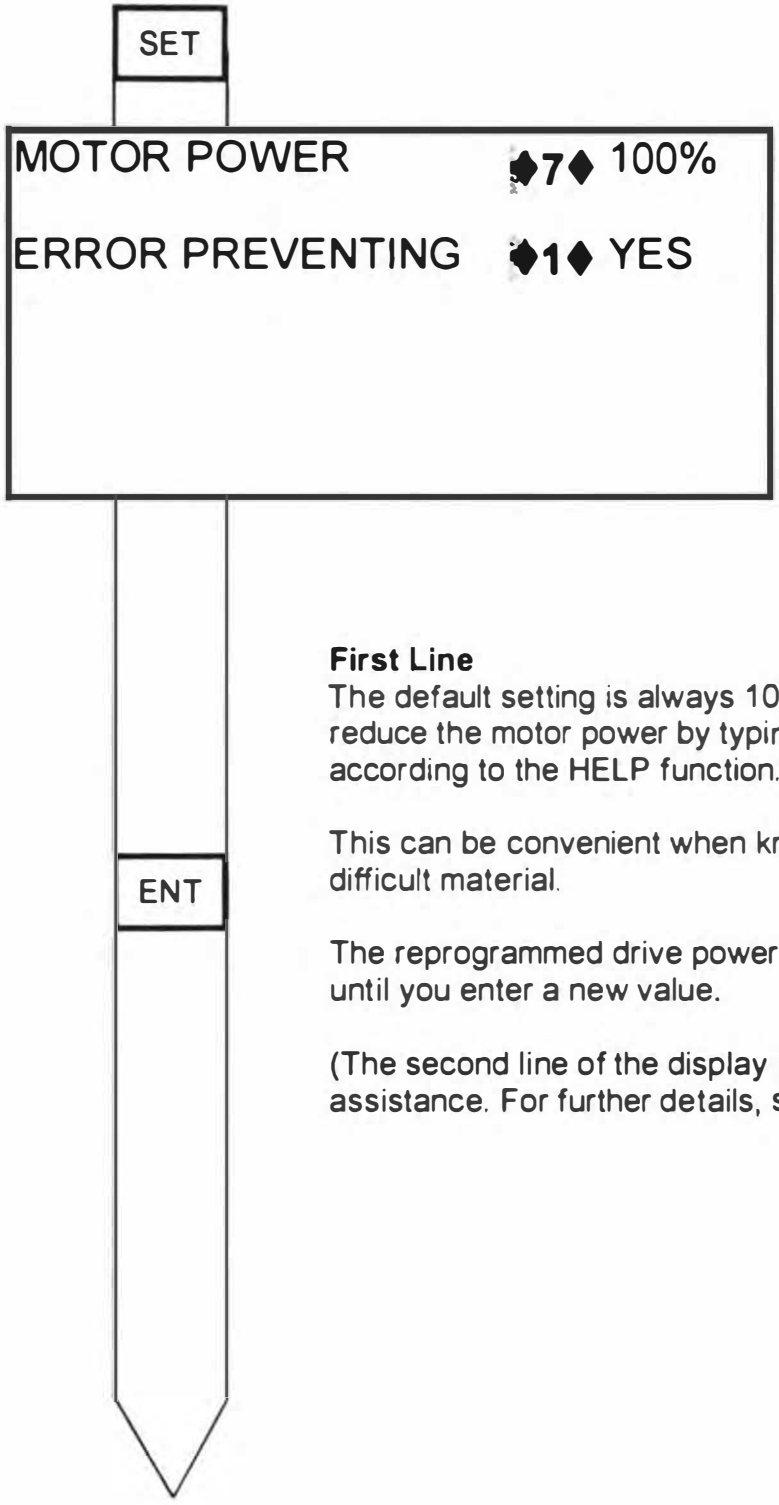
Note:

2-color patterns can be knitted with the following feeders:
1 + 2
2 + 3
3 + 4
1 + 4

3-color patterns can be knitted with the following feeders:
1 + 2 + 3
2 + 3 + 4

Changing the drive power

The drive power of the motor can be changed. This could be necessary if you are knitting with especially difficult materials.
Press the SET key.



Help 1. line
3. 60 %
4. 70 %
5. 80 %
6. 90 %
7. 100 %

First Line
The default setting is always 100%. You can, however, reduce the motor power by typing in a different value according to the HELP function.

This can be convenient when knitting with an especially difficult material.

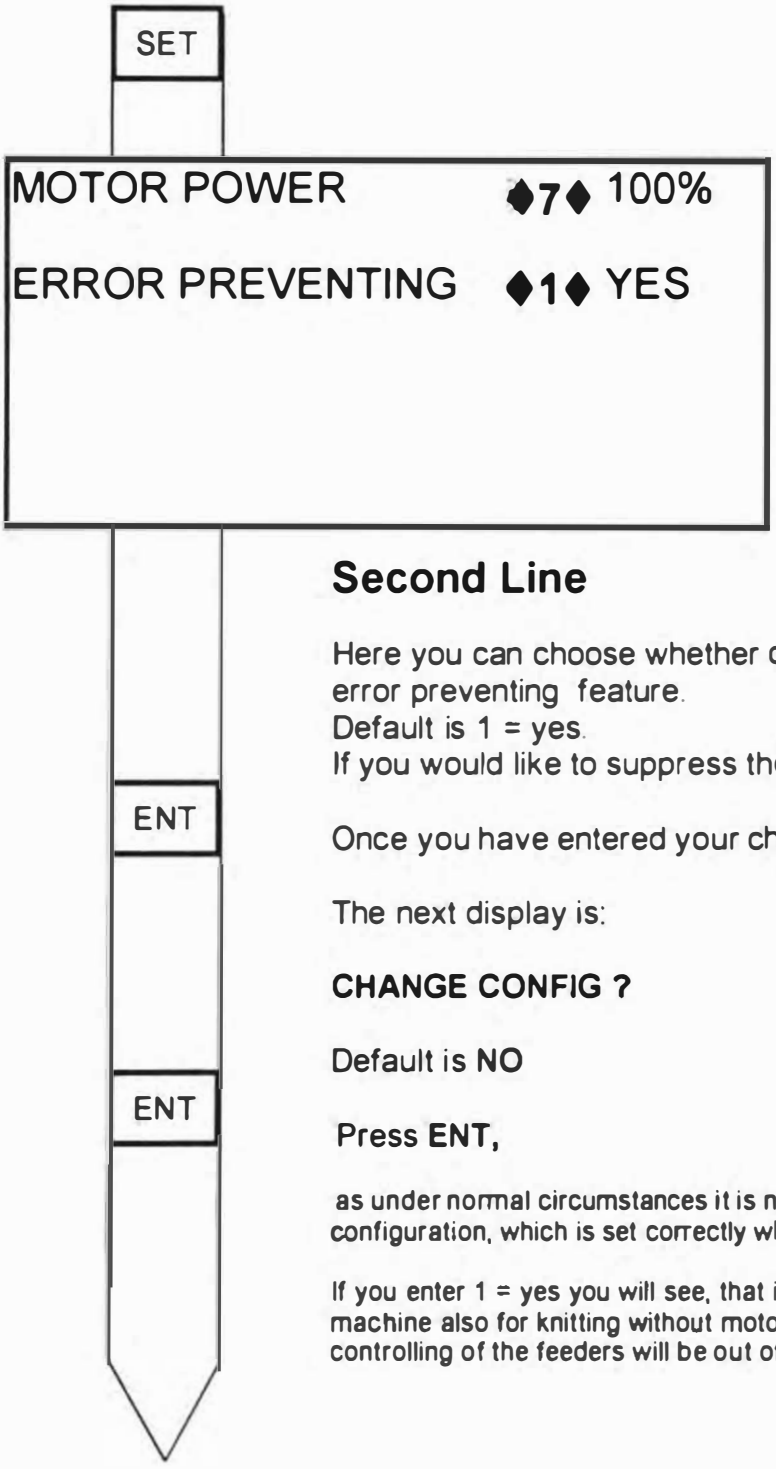
The reprogrammed drive power remains at the new setting until you enter a new value.

(The second line of the display is relevant to the operator assistance. For further details, see next page)

Changing the error preventing

When the error preventing is activated, which is the default setting, you may continue only when you have viewed all co-related displays.
In addition, the cursor does not automatically jump to the next input field after having entered a value in a display with multiple input fields.
This is designed to help novice operators avoid mistakes.

If you would like to suppress the error preventing feature, press the SET key.



Second Line

Here you can choose whether or not you would prefer the error preventing feature.
Default is 1 = yes.
If you would like to suppress the error preventing, enter a 2.

Once you have entered your choice, press the **ENT** key.

The next display is:

CHANGE CONFIG ?

Default is **NO**

Press **ENT,**

as under normal circumstances it is never necessary to change the configuration, which is set correctly when the machine leaves the factory.

If you enter 1 = yes you will see, that it is possible to configurate the machine also for knitting without motor drive. Attention, in that case the controlling of the feeders will be out of function as well.

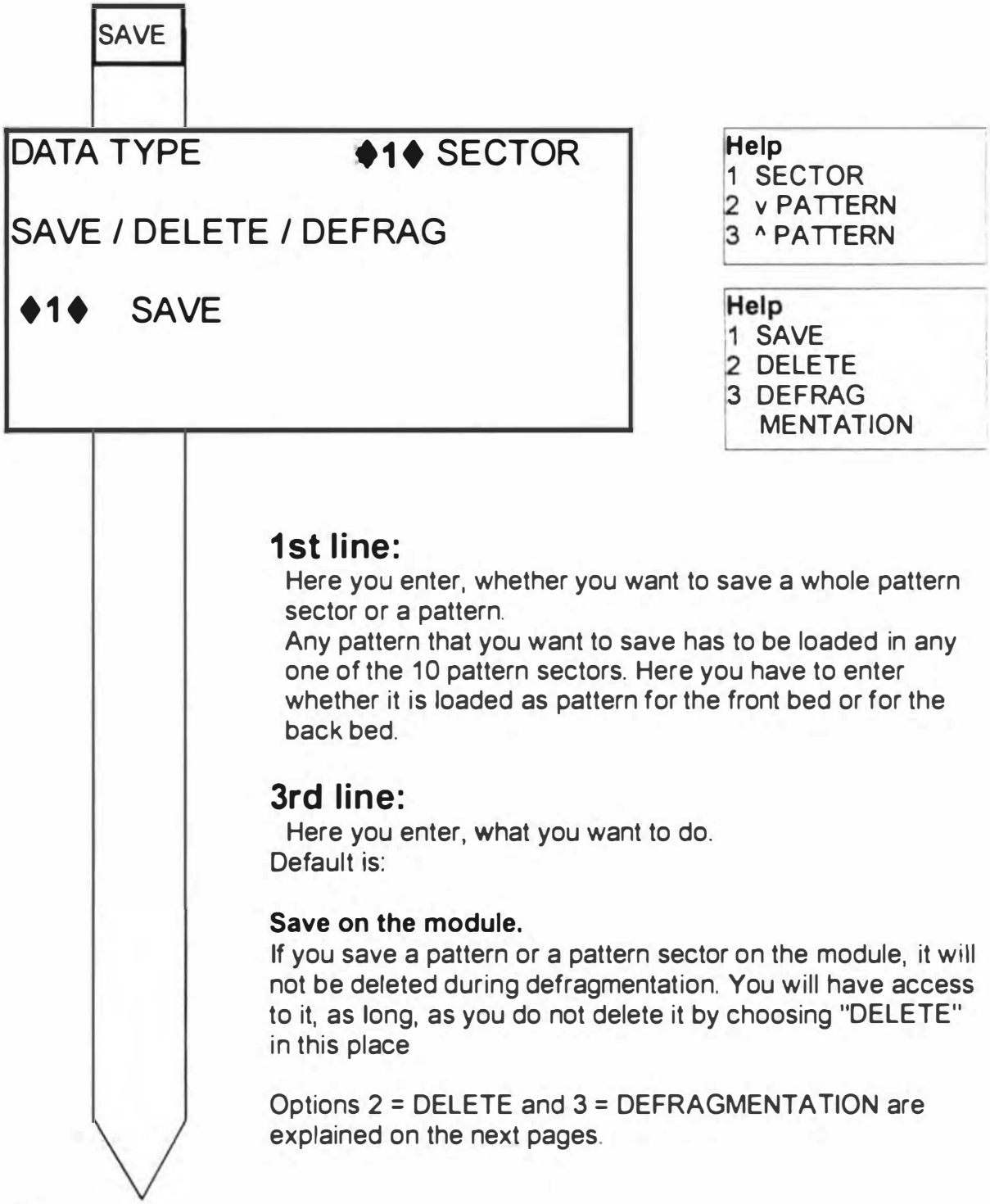
Save

SAVE

It is possible to save a pattern or a whole pattern sector on the module.

This can be useful, if you want to use a pattern or a pattern sector on a knitting machine in a place where no PC is available, as the module can be read by any other machine of the same type and configuation.
Spare modules to be used in this way are available as optional extras.

Press the key SAVE.



1st line:

Here you enter, whether you want to save a whole pattern sector or a pattern.
Any pattern that you want to save has to be loaded in any one of the 10 pattern sectors. Here you have to enter whether it is loaded as pattern for the front bed or for the back bed.

3rd line:

Here you enter, what you want to do.
Default is:

Save on the module.
If you save a pattern or a pattern sector on the module, it will not be deleted during defragmentation. You will have access to it, as long, as you do not delete it by choosing "DELETE" in this place

Options 2 = DELETE and 3 = DEFRAGMENTATION are explained on the next pages.

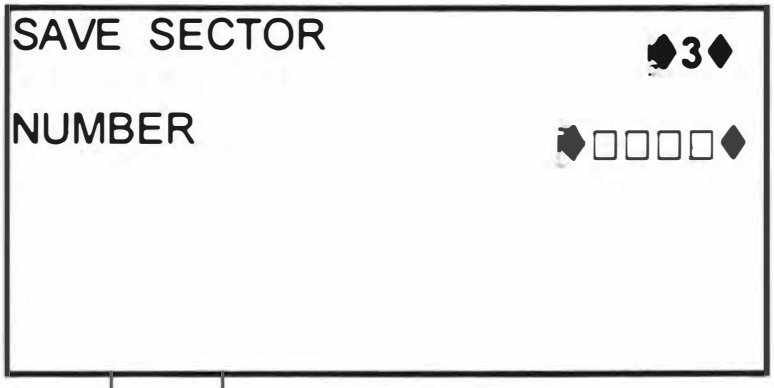
Save

SAVE

If you have entered

DATA TYPE 1 = SECTOR SAVE = 1

the following display appears:



1st line:

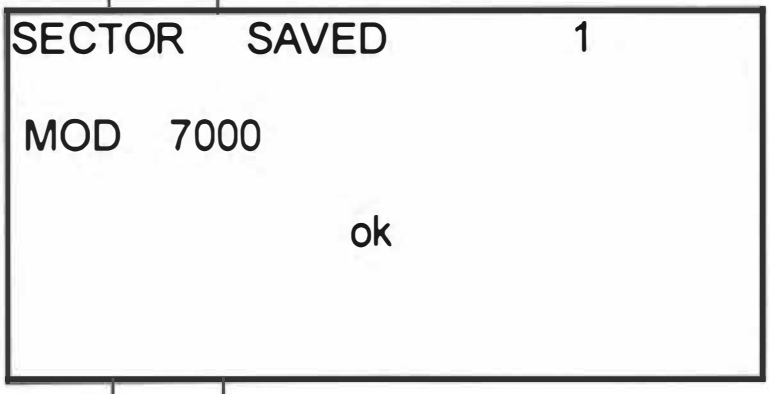
Here you enter which pattern sector you want to save.

2nd line:

Here you enter the number you want to give to the pattern sector, that you are saving.
For pattern sectors you can only use the following numbers:

7000 to 7999

If you use the same number twice, the question will appear asking whether you want to overwrite this number. Otherwise the display will appear:



In place of 7000 will appear the number you gave to the sector.

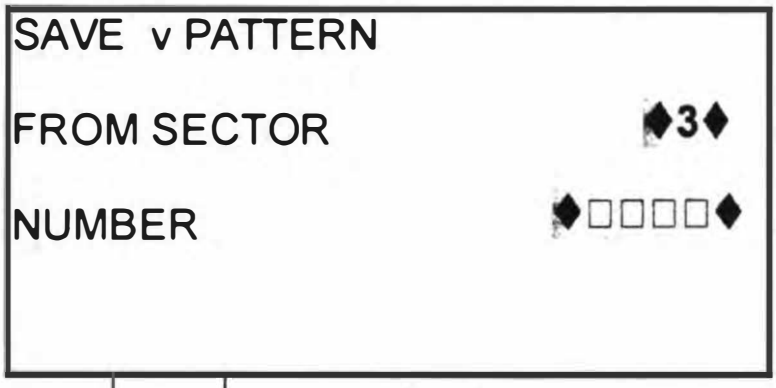
Save

SAVE

If you have entered

DATA TYPE 2 = v PATTERN SAVE = 1

the following display will appeare:



1st line

Here you see whether the pattern you want to save, is actually in a pattern sector as pattern for the front bed (or, if ^ appears, for the back bed)

2nd line:

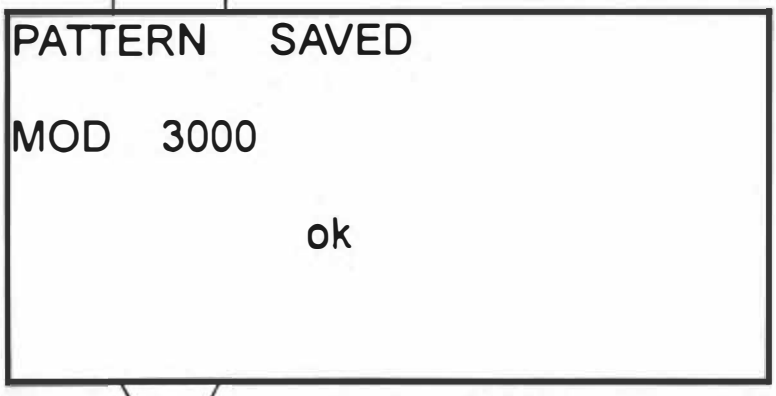
Here you enter in which pattern sector the pattern you want to save is actually loaded.

3rd line:

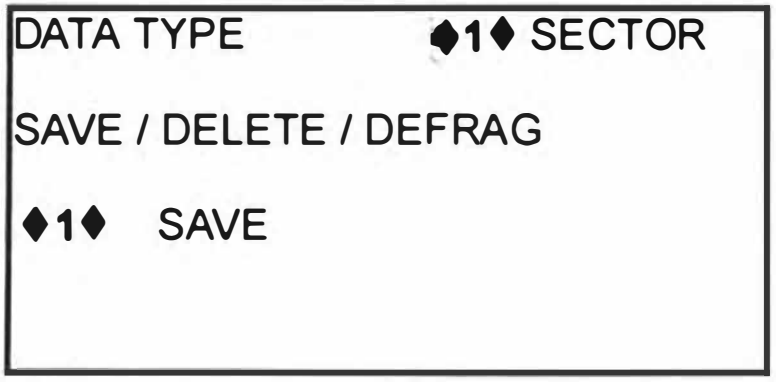
Here you enter the number you want to give to the pattern, that you are saving.
For patterns you can only use the following numbers:

3000 to 6999

If you use the same number twice, the question will appear wether you want to overwrite ths number.
Otherwise the display will appear:



In place of 3000 will appear the number you gave to the pattern.



2nd line:
2 = DELETE

Here you can delete a pattern or a pattern sector, that you have saved previously.
Note : this is only possible, if it is not activated in any of the 10 sectors.
Only when you delete the data first, can you free up the memory space it occupies by defragmenting the module.

3 = DEFRAGMENTATION

When you delete a pattern or a pattern sector, you no longer have access to this data, but it remains in the memory and occupies space.
The same goes for techniques and patterns that have once been programmed in a pattern sector and later overwritten by other data.
Therefore a time will come, when there does not remain enough space in the memory.

When this happens, the memory will be defragmented automatically, which can take up to 5 minutes.

The following message will appear:

Defragmentation going on

This means that all the data that remains in the memory, but that is no longer accessible will definitely be deleted.

By entering

3 = DEFRAGMENTATION

you choose for yourself a convenient moment for defragmentation.

The knitting techniques

On the following pages you will find the needle diagrams and lock settings for all knitting techniques that are stored in the memory.

When you use techniques that do not knit with all the needles you can see here which are the needles that will work and which needles will not work.

The middle of the needle bed will be indicated by an arrow ↑ .

These diagrams do not mean that you actually have to push the corresponding needles and pushers in the out of working position. The needles and pushers can remain in the working position but there will be no stitches on these needles.

The mechanical lock settings

There are three lock settings that are purely mechanical. This means you can knit with these lock settings, when you have switched on the electricity, before having aknowledged the START POSITION by pressing ENT.

You can knit without power if you move the locks by hand over the needle beds. You only have to bring the needles in working position.
When you knit with the mechanical lock settings, the position of the pushers is not relevant.

Lock settings	Needle bed	From right to left	From left to right
N Stocking stitch / K/K	front back	**Stitch** **Stitch**	**Stitch** **Stitch**
CX Tubular	front back	**Stitch** **No stitch**	**No stitch** **Stitch**
EX Fisherman's rib	front back	**Stitch** **Tuck stitch**	**Tuck stitch** **Stitch**
GX Free move	front back	**No stitch** **No stitch**	**No stitch** **No stitch**

The electronic lock settings

These lock settings are used, when you knit a programmed pattern.
Only these lock settings will apear on the display.

Lock setting	Direction	Pushers up	Pushers down
KX	both	**Stitch**	**Tuck stitch**
LX	both	**Stitch**	**Slip stitch**
0X	ri → le front le → ri back	**Stitch**	**Tuck stitch**
UX	ri → le front back le → ri front back	**Stitch** **Stitch** **Stitch** **Stitch**	**Slip stitch** **Tuck stitch** **Tuck stitch** **Slip stitch**
SX	both	**No stitch**	**No stitch**

Allmost all techniques allow a pattern drawing for the front and for the back bed.
Equally allmost all techniques can be knitted without pattern drawing.

All exceptions to this rule are mentioned in the following descriptions.

In the following descriptions it often says "knits 2 rows per square" or "knits 4 rows per square of the pattern drawing". In this context the word "square" refers to a horizontal row of squares in the pattern drawing as illustrated in the pattern book or to a horizontal row of pixels on the PC screen.

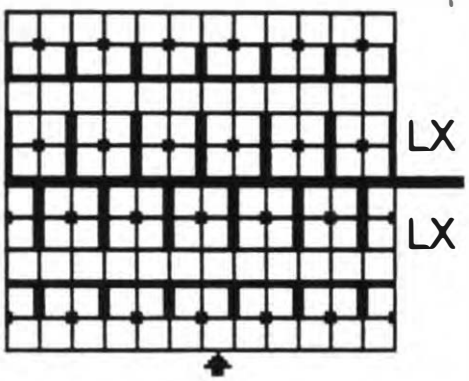
The casting on

After a cast-on you can continue to knit the same technique.

There will be a message that tells you when the cast-on is completed. Now you can change to another pattern sector.

Tubular cast-on for 1:1 rib

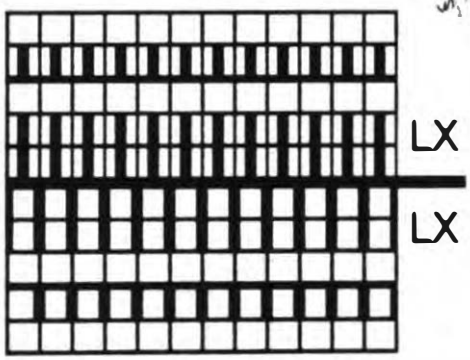
1



1 row on both beds
1 row on back bed
1 row on front bed
1 rows on both beds
END CAST ON

Tubular cast-on for Knit / Knit

2

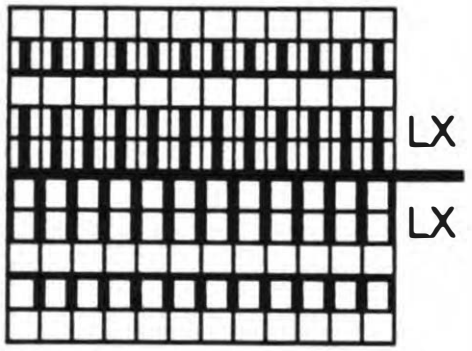


1 row on both beds
1 row on back bed
1 row on front bed
1 row on both beds
END CAST ON

The casting on

Cast-on with racking for Knit / Knit

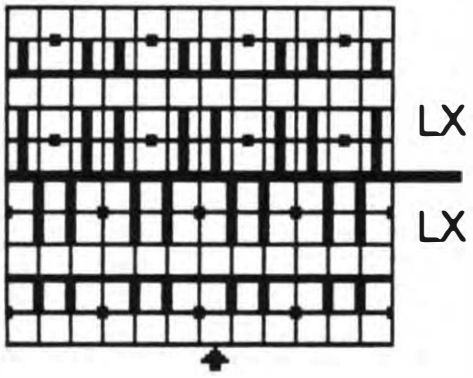
3



One turn of the handle to the left
1 row on both beds
One turn of the handle to the right
1row on both beds
END CAST ON

Tubular cast-on for 2:1 rib

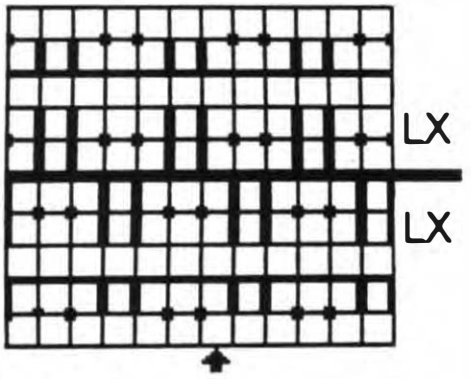
4



One turn of the handle to the left
1 row on both beds
1 row on back bed
1 row on front bed
One turn of the handle to the right
1row on both beds
END CAST ON

Tubular cast-on for 2:2 rib

5

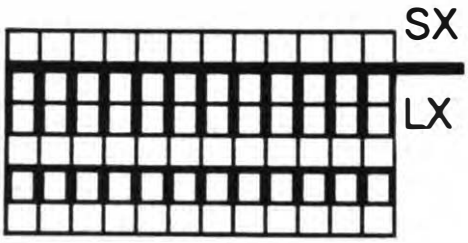


1 1/2 turn of the handle to the left
1 row on both beds
1 row on back bed
1 row on front bed
1 turn of the handle to the right
1row on both beds
1/2 turn of the handle to the right
END CAST ON

The casting on

Cast on in 4 rows for stocking stitch

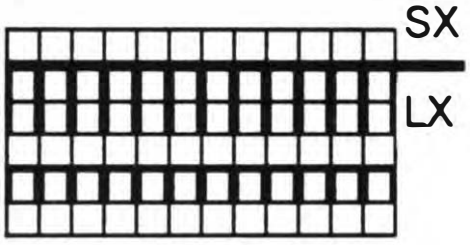
6



4 rows pushers in 1:1
END CAST ON

Cast on in 6 rows for stocking stitch

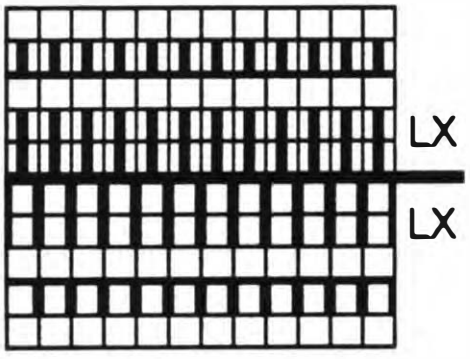
7



6 rows pushers in 1:1
END CAST ON

Closed edge cast-on for tubular

8

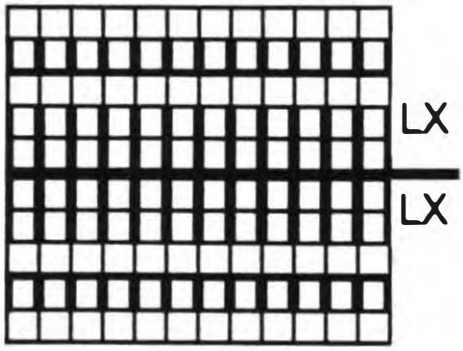


1 row on both beds
1 row on back bed
1 row on front bed
1 row on back bed
1/2 turn of the racking handle to the left
END CAST ON

The casting on

Open-edge cast-on in 8 rows for tubular

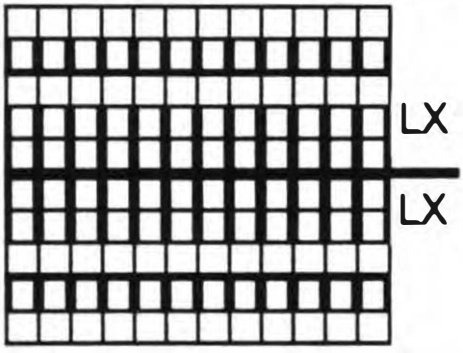
9



8 R rows tubular with pushers in 1:1
END CAST ON

Open-edge cast-on in 12 rows for tubular

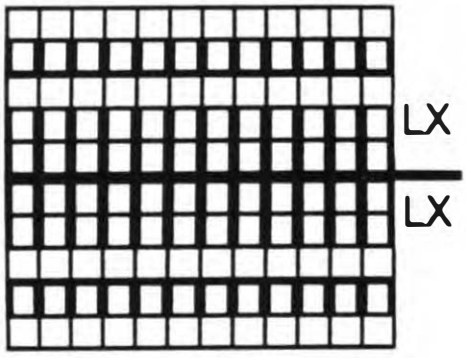
10



12 rows tubular with pushers in 1:1
END CAST ON

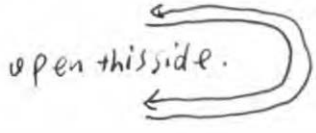
Open-edge cast-on in 8 rows for half tubular open at right

11



8 rows pushers in 1:1
END CAST ON

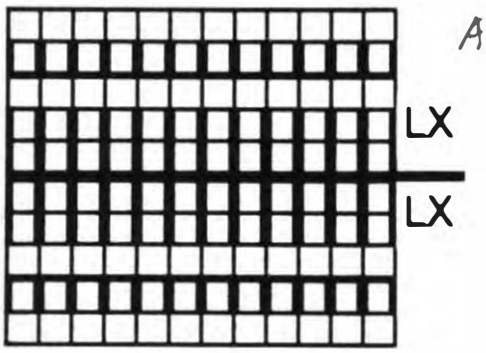
With this cast-on you cannot continue to knit in this technique. After the dispay END CAST ON you have to change to another pattern sector, where half tubular, open at right (= 108) is programmed.



The casting on

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

12

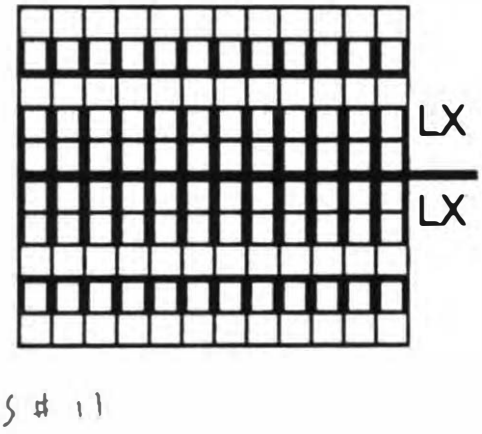


12 rows pushers in 1:1
END CAST ON

With this cast-on you cannot continue to knit in this technique.
After the dispay END CAST ON you have to change to another pattern sector, where half tubular, open at right = 108 is programmed.

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

13

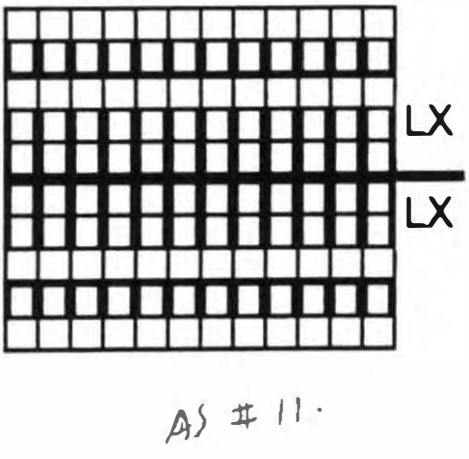


8 rows pushers in 1:1
END CAST ON

With this cast-on you cannot continue to knit in this technique.
After the dispay END CAST ON you have to change to another pattern sector, where half tubular, open at left = 109 is programmed.

Open-edge cat-on in 12 rows for half tubular open at left

14



12 rows pushers in 1:1
END CAST ON

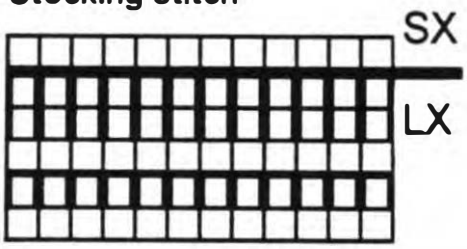
With this cast-on you cannot continue to knit in this technique.
After the dispay END CAST ON you have to change to another pattern sector, where half tubular, open at left = 109 is programmed.

The techniques 20 - 32 are techniques for auxilliary rows that are explained on pages 81 - 86.

The basic knitting techniques cannot be knitted with pattern drawings.

Stocking stitch

100

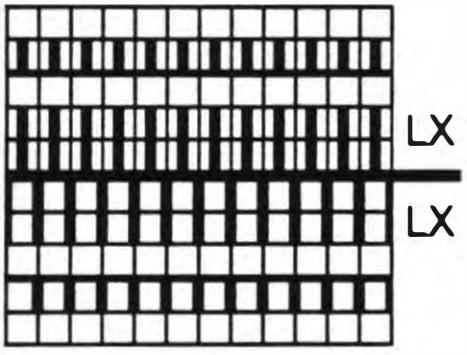


Knits stitches on all needles and pushers in working position.
For stocking stitch with stripes see techniques 301 - 315.

Can be knitted with mechanical lock setting **N**.

Knit / Knit

102

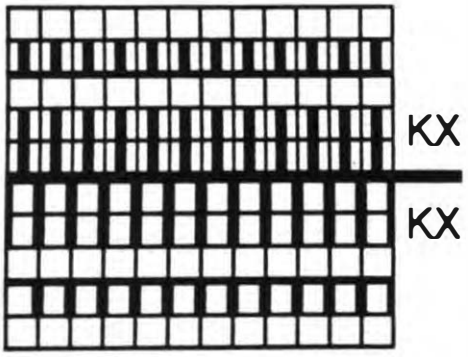


Knits stitches on all needles and pushers in working position.
For Knit/Knit with stripes see techniques 351 - 365.

Can be knitted with mechanical lock setting **N**.

Fisherman's rib uni

104



Knits right to left
stitches on front bed
tucks on back bed.
Knits left to right
tucks on front bed
stitches on back bed.

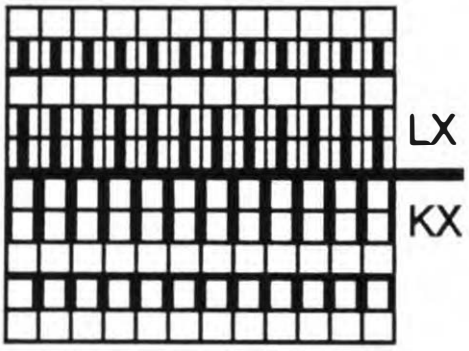
For Fisherman's rib with stripes see techniques 351 - 365, but set lock to EX / EX.

Can be knitted with mechanical lock setting EX.

The basic knitting techniques

Half Fishermans's rib, purl stitch appears on back bed

105



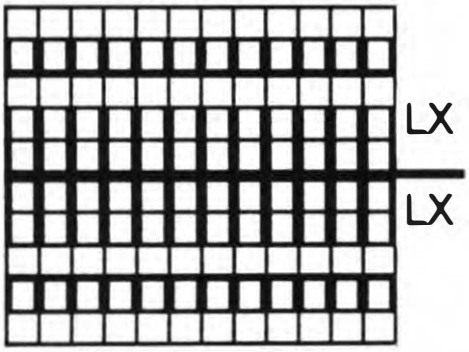
Knits right to left
stitches on front and back
Knits left to right
tucks on front bed
stitches on back bed.

For half Fisherman's rib with stripes see techniques 351 - 365, but set lock to EX / N.

Can be knitted with mechanical lock setting front EX, back N.

Tubular

107



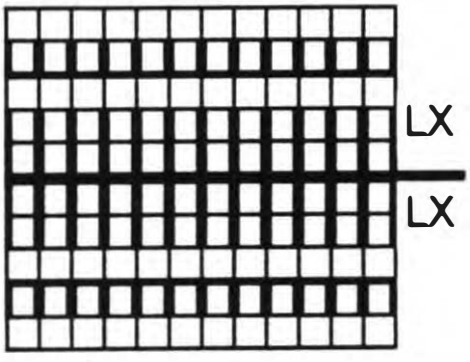
Knits right to left
on front bed
left to right
on back bed

for tubular with stripes see techniques 331 - 345.

Can be knitted with mechanical lock setting CX / CX.

Half tubular, open at right

108

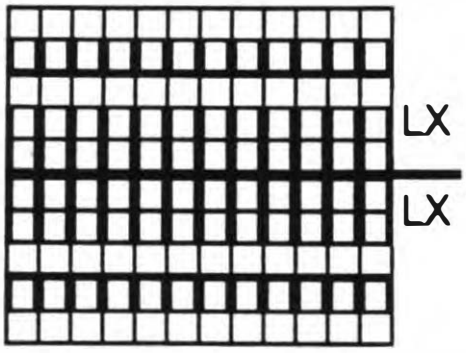


Knits first 1 row on front bed,
then repeats
2 rows on back bed
2 rows on front bed

Cannot be knitted automatically with mechanical lock setting.

Half tubular, open at left

109

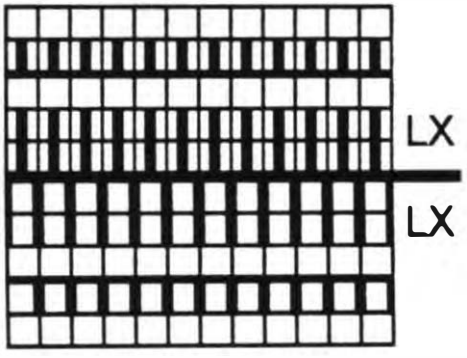


Knits
2 rows on front bed
2 rows on back bed

Cannot be knitted automatically with mechanical lock setting.

Fairisle, plain

115



Knits on back bed every 2nd needle in every 2nd row.
Knits on front bed
2 rows all stitches
2 rows no stitches.

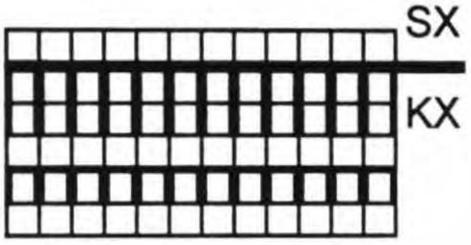
Cannot be knitted with mechanical lock setting.

Tuck stitch patterns, single bed

All single bed techniques knit without pattern stocking stitch .
In the pattern drawings for tuck stitch patterns the color 0 = black has to appear where a tuck stitch is to be knitted.
Tuck stitch patterns can be knitted with pattern drawings for slip stitch patterns as well, but never with pattern drawings for fairisle.
Note : for single-bed tuck stitch patterns there can never be two black squares next to each other.
Never attempt to knit more than 3 - 4 tucks on one needle.

Single-bed tuck stitch pattern, plain

300



Knits stitches / tucks

Knits 2 rows per square of the pattern drawing

Color stripes for stocking stitch
tuck-stitch and slip-stich patterns
The same technique as 300 can be knitted with different stripes. According to the width of the stripes the technique has a different number.
For slip-stitch patterns set the lock not to KX but to LX. See technique 321.

2 rows color 1
2 rows color 2 — **301**

2 rows color 1
4 rows color 2 — **302**

2 rows color 1
6 rows color 2 — **303**

2 rows color 1
8 rows color 2 — **304**

2 rows color 1
10 rows color 2 — **305**

4 rows color 1
4 rows color 2 — **306**

4 rows color 1
6 rows color 2 — **307**

4 rows color 1
8 rows color 2 — **308**

4 rows color 1
10 rows color 2 — **309**

6 rows color 1
6 rows color 2 — **310**

6 rows color 1
8 rows color 2 — **311**

6 rows color 1
10 rows color 2 — **312**

8 rows color 1
8 rows color 2 — **313**

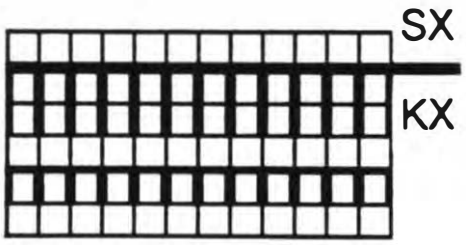
8 rows color 1
10 rows color 2 — **314**

10 rows color 1
10 rows color 2 — **315**

Tuck stitch patterns, single bed

Single-bed stuck stitch pattern, plain

316

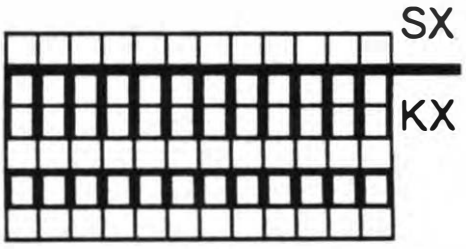


Knits stitches / tucks

Knits 1 row per square of the pattern drawing

Single-bed tuck stitch pattern, plain

317

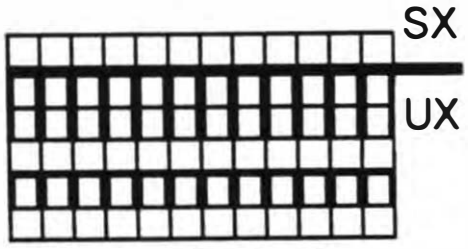


Knits
right to left stitches
left to right stitches / tucks

Knits 2 rows per square of the pattern drawing

Single-bed tuck stitch pattern, plain

318



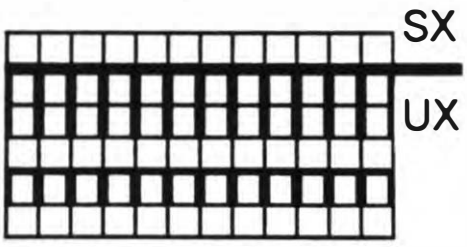
Knits
right to left stitches / slips
left to right stitches / tucks

Knits 2 rows per square of the pattern drawing

Tuck stitch patterns, single bed

Single-bed tuck stitch pattern in two colors

319



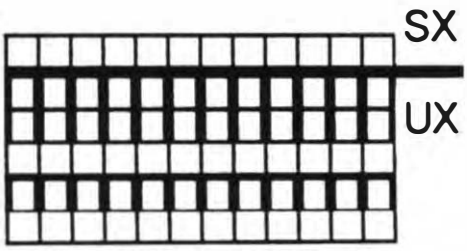
Knits
right to left stitches / slips
left to right stitches / tucks

Knits 2 rows per square of the pattern drawing

2 rows color 1
2 rows color 2

Single-bed tuck stitch pattern, plain

320



Knits
right to left stitches / slips
left to right stitches / tucks

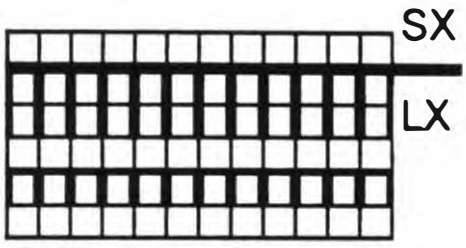
Knits 1 row per square of the pattern drawing

Slip stitch patterns, single bed

In the pattern drawing for slip stitch patterns the color 255 = slip stitch has to appear where a slip stitch is to be knitted.
Note: there should never be too many squares col 255 next to each other.

Slip stitch patterns can be knitted with pattern drawings for tuck stitch patterns but never with pattern drawings for fairisle.
Slip stitch patterns can be knitted with the same stripes as tuck-stitch patterns 301 - 315. Set the lock not, as indicated on the display to KX but to LX for slip stitch.

Slip stitch pattern, plain

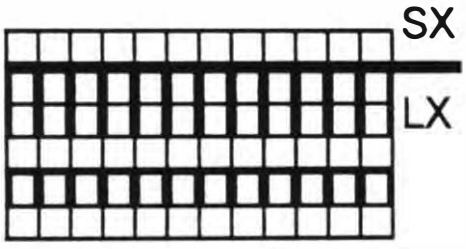


Knits
stitches / slips

Knits 2 rows per square of the pattern drawing

321

Slip stitch pattern in two colors



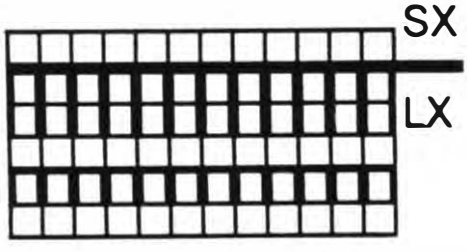
Knits
stitches / slips

Knits 2 rows per square of the pattern drawing

2 rows color 1
2 rows color 2

322

Slip stitch pattern, plain



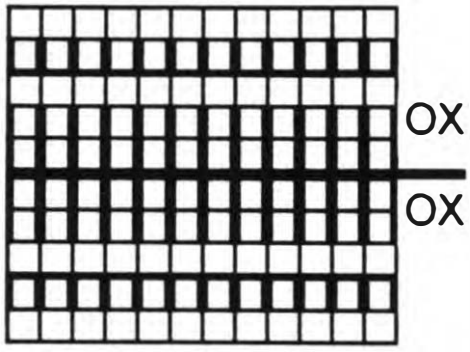
Knits
stitches / slips

Knits 1 row per square of the pattern drawing

323

Tubular tuck stitch patterns

Tubular tuck stich pattern



Knits
on front bed right to left
stitches / tucks
on back bed left to right
stitches / tucks

Knits 1 row per square of
the pattern drawing

Knits without pattern
drawing tubular stocking
stitch.

330

Stripes for tubular stocking stitch,
tubular tuck stitch or tubular slip stitch.
The same technique as 330 can be knitted with different stripes. According to the width of the stripes the technique has a different number.
Note : t means tubular = 1 row on the front bed and 1 row on the back bed.
For slip stitch tubular set the lock not to OX but to LX. See technique 346.

1 t color 1
1 t color 2 **331**

1 t color 1
2 t color 2 **332**

1 t color 1
3 t color 2 **333**

1 t color 1
4 t color 2 **334**

1 t color 1
5 t color 2 **335**

2 t color 1
2 t color 2 **336**

2 t color 1
3 t color 2 **337**

2 t color 1
4 t color 2 **338**

2 t color 1
5 t color 2 **339**

3 t color 1
3 t color 2 **340**

3 t color 1
4 t color 2 **341**

3 t color 1
5 t color 2 **342**

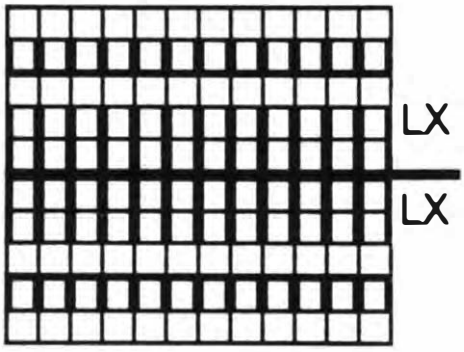
4 t color 1
4 t color 2 **343**

4 t color 1
5 t color 2 **344**

5 t color 1
5 t color 2 **345**

Slip stitch pattern, tubular

Slip stitch pattern, tubular



Knits
front right to left
stitches / slips
back left to right
stitches / slips

Knits 1 row per square of
the pattern drawing

Without pattern drawing
knits tubular stocking stitch.

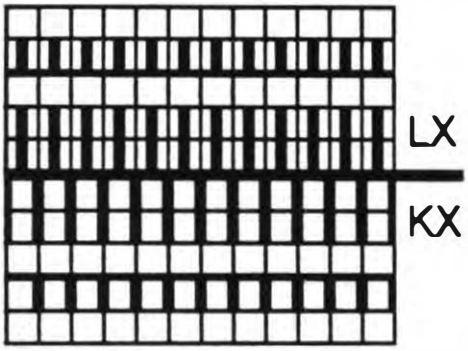
346

Slip stitch patterns can be knitted with the same stripes as tuck-stitch patterns 331 - 345. Set the lock not, as indicated on the display to OX / OX but to LX / LX for slip stitch.

Tuck stitch patterns, double bed

All double-bed tuck stitch pattern that can be knitted with pattern drawings knit Knit/Knit without pattern drawing.
If there is no pattern drawing for the back bed, all stitches will knit on the back bed.

Tuck-stitch pattern, double-bed



350

Knits
on front be stitches / tucks
on back bed stitches / slips

Knits 2 rows per square of the pattern drawing

Stripes for Knit/Knit
double-bed tuck and slip stitch patterns
The same technique as 350 can be knitted with different stripes. According to the width of the stripes the technique has a different number.
For patterns with different lock settings, set lock according to diagram not according to display.

2 rows color 1
2 rows color 2 **351**

2 rows color 1
4 rows color 2 **352**

2 rows color 1
6 rows color 2 **353**

2 rows color 1
8 rows color 2 **354**

2 rows color 1
10 rows color 2 **355**

4 rows color 1
4 rows color 2 **356**

4 rows color 1
6 rows color 2 **357**

4 rows color 1
8 rows color 2 **358**

4 rows color 1
10 rows color 2 **359**

6 rows color 1
6 rows color 2 **360**

6 rows color 1
8 rows color 2 **361**

6 rows color 1
10 rows color 2 **362**

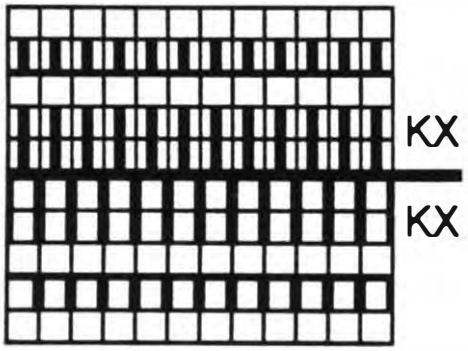
8 rows color 1
8 rows color 2 **363**

8 rows color 1
10 rows color 2 **364**

10 rows color 1
10 rows color 2 **365**

Tuck stitch patterns, double bed

Tuck stitch pattern, double bed

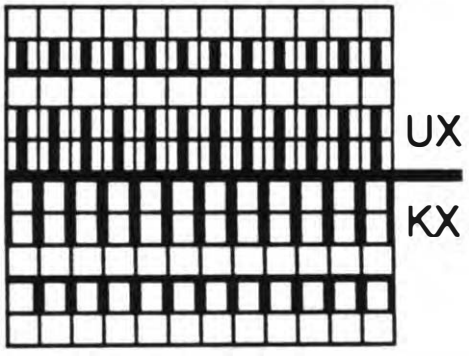


366

Knits
stitches / tucks

Knits 2 rows per square in
the pattern drawing

Tuck stitch pattern double bed

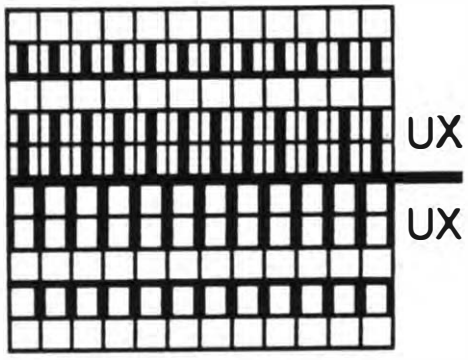


367

Knits
right to left
on front bed stitches / tucks
on back bed stitches / tucks
left to right
on front bed stitches / tucks
on back bed stitches / slips

Knits 2 rows per square in
the pattern drawing

Tuck stitch pattern, double bed



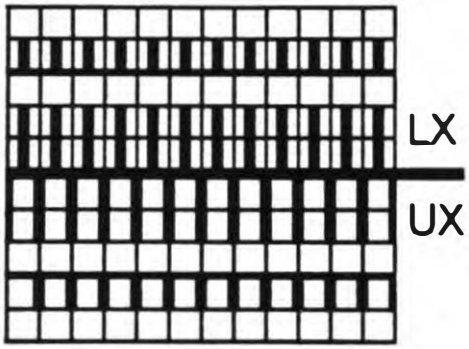
368

Knits
right to left
on front bed stitches / slips
on back bed stitches / tucks
left to right
onf front bed stitches / tucks
on back bed stitches / slips

Knits 2 rows per square in the
pattern drawing

Tuck stitch patterns, double bed

Tuck stitch pattern, double bed

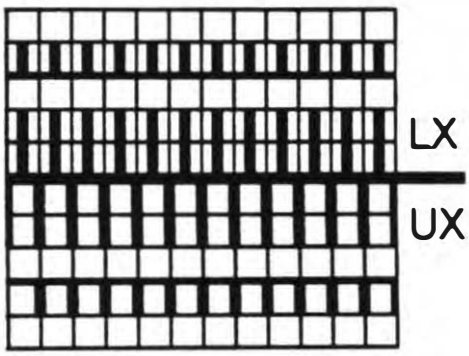


369

Knits
right to left front and back
stitches / slips
left to right
on front bed stitches / tucks
on back bed stitches / slips

Knits 2 rows per square in the pattern drawing

Tuck stitch pattern, double bed



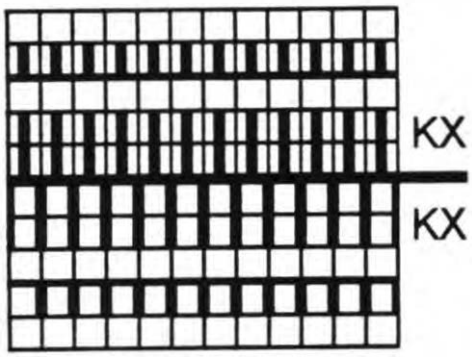
370

Knits
right to left
on front bed stiches /slips
on back bed no stitches
left to right
on front bed stitches / tucks
on back bed stitsche / slips

Knits 2 rows per square in the pattern drawing

Without pattern drawing knits
Fisherman's rib

Tuck stitch pattern, double bed



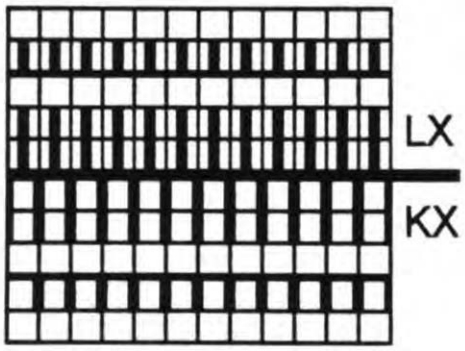
371

Knits
right to left
on front bed stitches only
on back bed stitches / tucks
left to right
on front bed stitches / tucks
on back bed stitches only

Knits 1 row per square of the pattern drawing

Tuck stitch patterns, double bed

Tuck stitch pattern, double bed



372

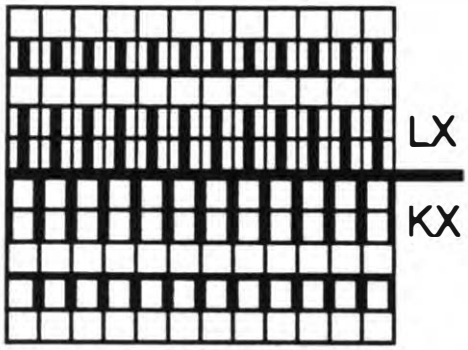
Knits
right to left
on front bed stitches only
on back bed stitches / slips
left to right
on front bed stitches / tucks
on back bed stitches / slips

Knits 2 rows per square in the pattern drawing

Without pattern drawing knits half Fisherman's rib

Tuck stitch patterns, double bed

Tuck stitch pattern, double bed



373

Knits
on front bed stitches / tucks
on back bed stitches / slips

Knits 1 row per square of the pattern drawing

Stripes for Knit/Knit
double-bed tuck and slip stitch patterns

The same technique as 373 can be knitted with different stripes. According to the width of the stripes the technique has a different number.
For patterns with different lock settings, set lock according to diagram not according to display.

2 rows color 1
2 rows color 2 **374**

2 rows color 1
4 rows color 2 **375**

2 rows color 1
6 rows color 2 **376**

2 rows color 1
8 rows color 2 **377**

2 rows color 1
10 rows color 2 **378**

4 rows color 1
4 rows color 2 **379**

4 rows color 1
6 rows color 2 **380**

4 rows color 1
8 rows color 2 **381**

4 rows color 1
10 rows color 2 **382**

6 rows color 1
6 rows color 2 **383**

6 rows color 1
8 rows color 2 **384**

6 rows color 1
10 rows color 2 **385**

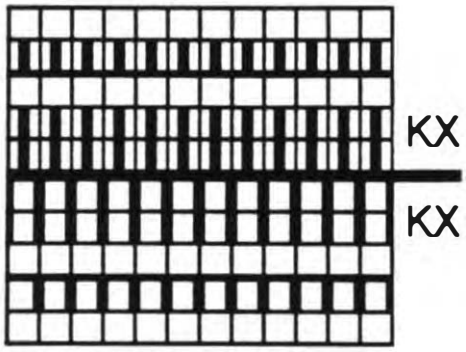
8 rows color 1
8 rows color 2 **386**

8 rows color 1
10 rows color 2 **387**

10 rows color 1
10 rows color 2 **388**

Tuck stitch patterns, double bed

Tuck stitch pattern, double bed



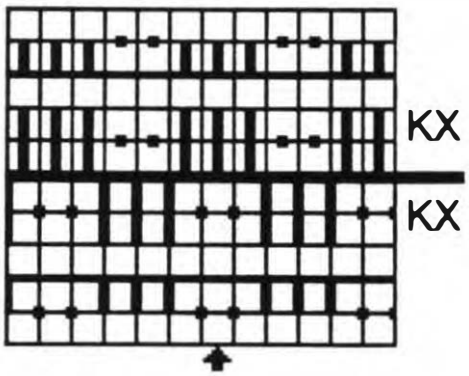
389

Knits
stitches / tucks

Knits 1 row per square of
the pattern drawing

Tuck stitch patterns, double bed

Lacy tuck stitch pattern

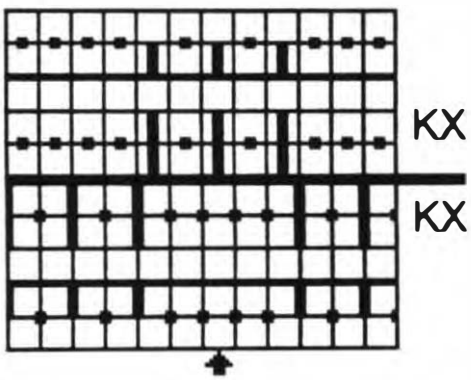


Knits
stitches / tucks

Cannot be knitted
with pattern drawing

390

Lacy tuck stitch pattern



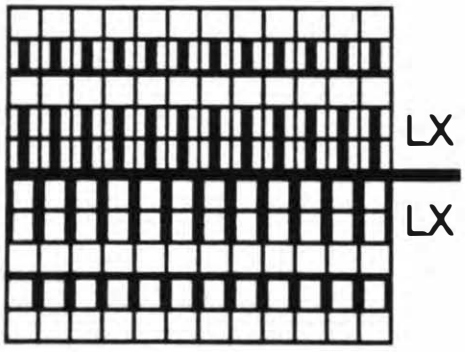
Knits
stitches / tucks

Cannot be knitted with
pattern drawing

391

Pintuck patterns

Pintuck pattern

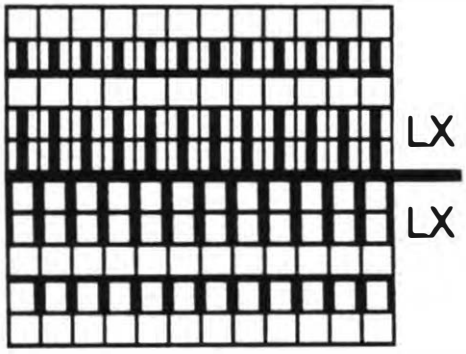


392

Knits
stitches / slips

Knits 2 rows per square of
the pattern drawing

Pintuck pattern

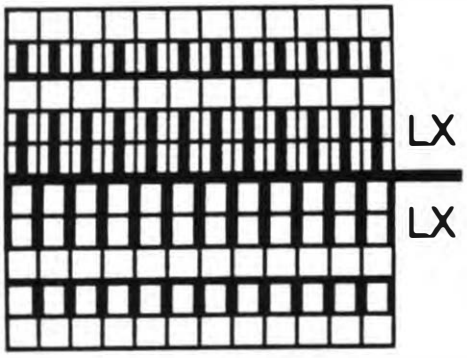


393

Knits
right to left front and back
stitches / slips
left to right
on front bed no stitches
on back bed stitches / slips

Knits 2 rows per square of the
pattern drawing

Pintuck pattern



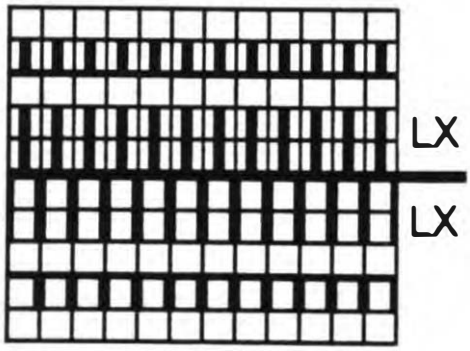
394

Knits
stitches / slips

Knits 1 row per square of
the pattern drawing

Racking patterns

Racking pattern



Knits
stitches / slips

Racking every 2 rows
one turn of the handle

Knits 2 rows per square of the pattern drawing

Without pattern drawing knits
Knit/Knit with racking

According to how many times you turn the handle in the same direction the number of the technique is different.

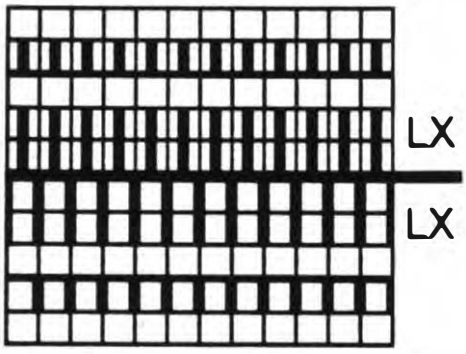
Note : For all racking patterns always start with needle beds in the normal position. The knitting will start with only half as many rackings to the left as indicated below.
(Example: technique 405 starts with 3 rackings to the left and continues then with 6 rackings to the right.)

Note: If you do not knit with all the needles on either one of the needle beds, there cannot be any stitches on those needles that do not knit.

1time turn to left and knit 2 rows 1time turn to right and knit 2 rows	**400**	6 times turn to left and knit 2 rows 6 times turn to right and knit 2 rows	**405**
2 times turn to left and knit 2 rows 2 times turn to right and knit 2 rows	**401**	7 times turn to left and knit 2 rows 7 times turn to right and knit 2 rows	**406**
3 times turn to left and knit 2 rows 3 times turn to right and knit 2 rows	**402**	8 times turn to left and knit 2 rows 8 times turn to right and knit 2 rows	**407**
4 times turn to left and knit 2 rows 4 times turn to right and knit 2 rows	**403**	9 times turn to left and knit 2 rows 9 times turn to right and knit 2 rows	**408**
5 times turn to left and knit 2 rows 5 times turn to right and knit 2 rows	**404**	10 times turn to left and knit 2 rows 10 times turn to right and knit 2 rows	**409**

Racking pattern

Racking pattern



Knits stitches / slips

Racking alternately to left and to right.

Knits 2 rows per square of the pattern drawing

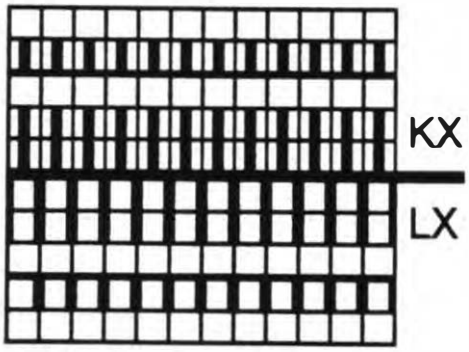
Without pattern drawing knits Knit/Knit with racking

Techniques 410 to 414 only indicate racking to right or to left, as they can be used for patterns with several turns of the handle at a time.
According to how many rows are knitted between each racking the number of the technique is different.

turn to left and knit 1 row turn to right and knit 1 row	**410**
turn to left and knit 4 rows turn to right and knit 4 rows	**411**
turn to left and knit 6 rows turn to right and knit 6 rows	**412**
turn to left and knit 8 rows. turn to right and knit 8 rows	**413**
turn to left and knit 10 rows turn to right and knit 10 rows	**414**

Racking patterns

Racking pattern with long stitch on front bed



Knits right to left
on front bed stitches / slips
on back bed stitches / tucks
left to right
on front bed no stitches
on back bed stitches / tucks

Racking every 2 rows
one turn of the handle

Knits 2 rows per square of the pattern drawing

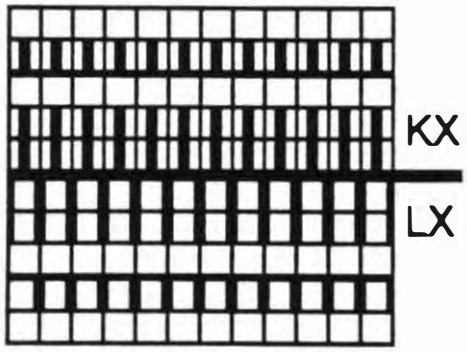
Without pattern drawing knits
long stitch on front bed with racking

According to how many times you turn the handle in the same direction the number of the technique is different.

1time turn to left and knit 2 rows. 1time turn to right and knit 2 rows	**415**	6 times turn to left and knit 2 rows 6 times turn to right and knit 2 rows	**420**
2 times turn to left and knit 2 rows 2 times turn to right and knit 2 rows	**416**	7 times turn to left and knit 2 rows 7 times turn to right and knit 2 rows	**421**
3 times turn to left and knit 2 rows 3 times turn to right and knit 2 rows	**417**	8 times turn to left and knit 2 rows 8 times turn to right and knit 2 rows	**422**
4 times turn to left and knit 2 rows 4 times turn to right and knit 2 rows	**418**	9 times turn to left and knit 2 rows 9 times turn to right and knit 2 rows	**423**
5 times turn to left and knit 2 rows 5 times turn to right and knit 2 rows	**419**	10 times turn to left and knit 2 rows 10 times turn to right and knit 2 rows	**424**

Racking pattern

Racking pattern with long stitch on front bed



Knits right to left
on front bed stitches / slips
on back bed stitches / tucks
left to right
on front bed no stitches
on back bed stitches / tucks

Racking alternately to left and to right

Knits 2 rows per square of the pattern drawing

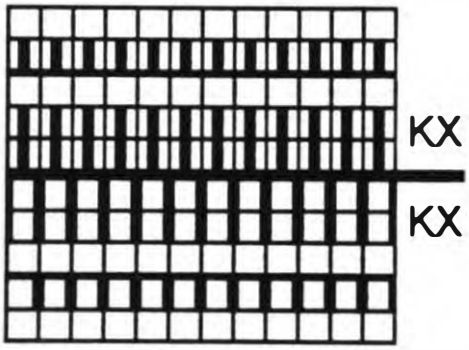
Without pattern drawing knits
long stitch on front bed with racking

Techniques 426 to 429 only indicate racking to right or to left, as they can be used for patterns with several turns of the handle at a time.
According to how many rows are knitted between each racking the number of the technique is different.

turn to left and knit 4 rows. turn to right and knit 4 rows	**426**
turn to left and knit 6 rows. turn to right and knit 6 rows	**427**
turn to left and knit 8 rows. turn to right and knit 8 rows	**428**
turn to left and knit 10 rows. turn to right and knit 10 rows	**429**

Racking patterns

Racking patterns with tucks



Knits right to left
stitches / tucks on both beds
left to right
on front bed stitches / tucks
on back bed stitches only

Racking every 2 rows
one turn of the handle

Knits 2 rows per square of the
pattern drawing

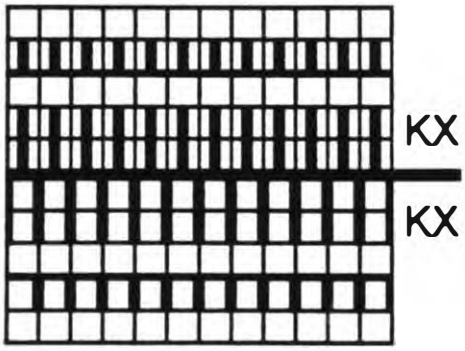
Without pattern drawing knits
half Fishermans rib with racking

According to how many times you turn the handle in the same direction the number of the technique is different.

1time turn to left and knit 2 rows. 1time turn to right and knit 2 rows	**430**	6 times turn to left and knit 2 rows 6 times turn to right and knit 2 rows	**435**
2 times turn to left and knit 2 rows 2 times turn to right and knit 2 rows	**431**	7 times turn to left and knit 2 rows 7 times turn to right and knit 2 rows	**436**
3 times turn to left and knit 2 rows 3 times turn to right and knit 2 rows	**432**	8 times turn to left and knit 2 rows 8 times turn to right and knit 2 rows	**437**
4 times turn to left and knit 2 rows 4 times turn to right and knit 2 rows	**433**	9 times turn to left and knit 2 rows 9 times turn to right and knit 2 rows	**438**
5 times turn to left and knit 2 rows 5 times turn to right and knit 2 rows	**434**	10 times turn to left and knit 2 rows 10 times turn to right and knit 2 rows	**439**

Racking pattern

Racking pattern with tucks



Knits right to left
stitches / tucks
left to right
on front bed stitches / tucks
on back bed stitches only

Racking alternately
to left and to right

Knits 2 rows per square of the pattern drawing

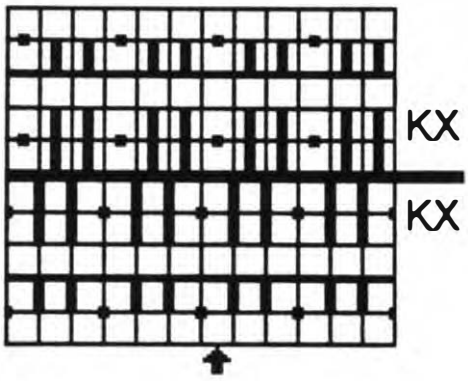
Without pattern drawing knits half Fishermans rib with racking

Techniques 440 to 444 only indicate racking to right or to left, as they can be used for patterns with several turns of the handle at a time.
According to how many rows are knitted between each racking the number of the technique is different.

turn to left and knit 1 row. turn to right and knit 1 row.	**440**
turn to left and knit 4 rows. turn to right and knit 4 rows	**441**
turn to left and knit 6 rows. turn to right and knit 6 rows	**442**
turn to left and knit 8 rows. turn to right and knit 8 rows	**443**
turn to left and knit 10 rows. turn to right and knit 10 rows	**444**

Racking pattern

Tuck stitch pattern with racking

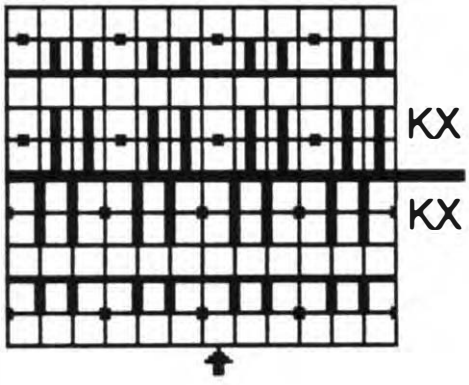


445

Knits
stitches / tucks

Cannot be knitted with a pattern drawing.

Tuck stitch pattern with racking, two colors



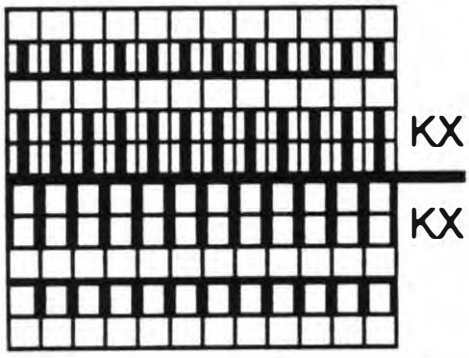
446

Knits
stitches / tucks

Color change:
4 rows col 1
2 rows col 2

Cannot be knitted with a pattern drawing

Zig-zag pattern



447

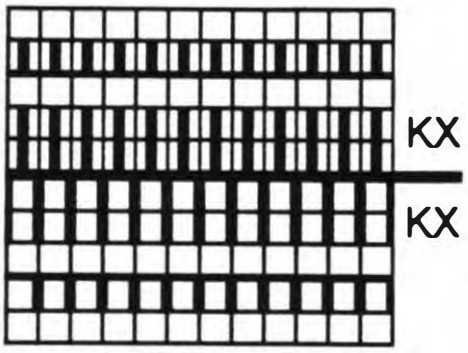
Knits
stitches / tucks

Knits 1 row per square of the pattern drawing.

Can only be knitted with the following pattern drawings:
v2096 and ^2097
or
v2098 and ^2099

Racking pattern

Racking pattern



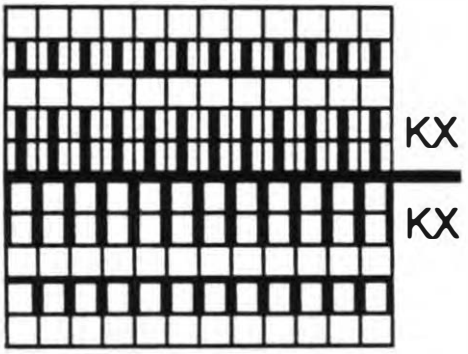
448

Knits
stitches / tucks

Racking
1 turn to left
knits 2 rows
1 turn to right
knits 2 rows

Knits 1 row per square of
the pattern drawing.

Racking pattern



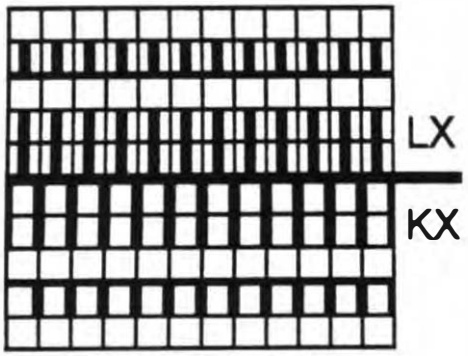
449

Knits
stitches / tucks

Racking:
2 times: knit 2 rows and
then turn to left
2 times: knit 2 rows and
then turn to right

Knits 1 row per square of
the pattern drawing.

Special racking pattern



453

Knits
on front bed stitches / tucks
on back bed stitches / slips

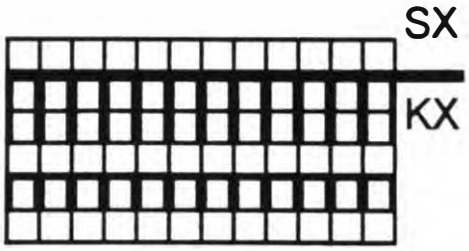
Racking:
2 times knit 4 rows and
then turn to left
2 times knit 4 rows and
then turn to right

Knits 1 row per square of
the pattern drawing.

Fairisle for special pattern drawings

Fairisle with tucks for special pattern drawings

450



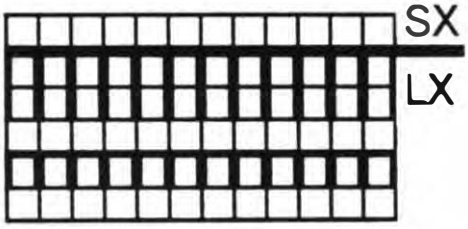
Knits stitches / tucks

2 rows color 1
2 rows color 2

Knits 2 rows per square of the pattern drawing

Fairisle for special pattern drawings

451



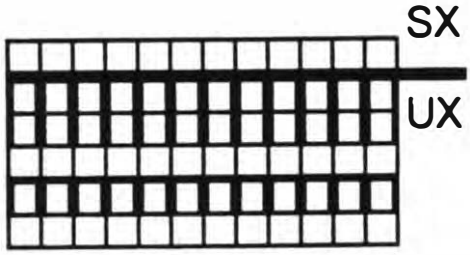
Knits stitches / slips

2 rows color 1
2 rows color 2

Knits 2 rows per square of the pattern drawing

Fairisle with tucks for special pattern drawings

452



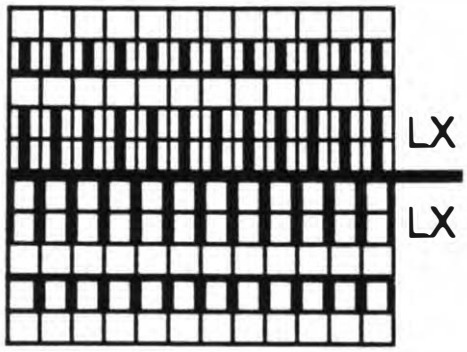
Knits right to left stitches / slips
left to right stitches / tucks

2 rows color 1
2 rows color 2

Knist 2 rows per square of the pattern drawing.

Lacy patterns

Lacy patterns



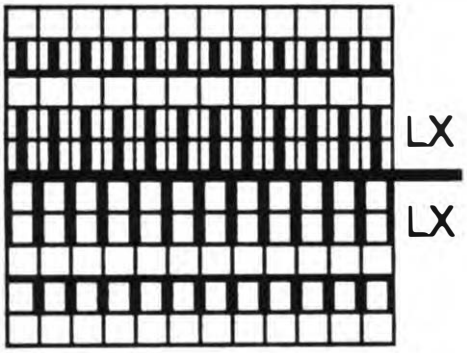
460

Knits
2 rows with yarn
on back bed both rows
on front bed right to left only
2 rows without yarn
to drop the stitches of the front bed.

Knits 4 rows per square of the pattern drawing.

Attention : at the beginning there have to be stitches on the back bed only.

Lacy patterns



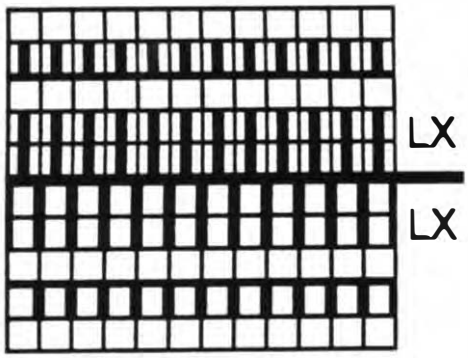
461

Knits
2 rows with yarn
on back bed both rows
on front bed right to left only
2 rows without yarn
to drop the stitches of the front bed.

Knits 2 rows per square of the pattern drawing.

Attention : at the beginning there have to be stitches on the back bed only.

Lacy patterns



462

Knits
2 rows with yarn
2 rows without yarn
to drop the stitches of the front bed.

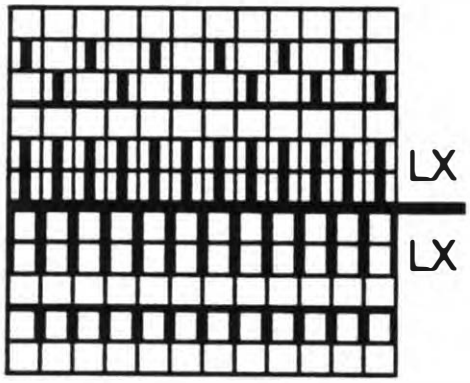
Knits 1 row per square of the pattern drawing.

Attention : at the beginning there have to be stitches on the back bed only.

Fairisle

Birdseye double-bed Fairisle, 2 colors

500



Knits
stitches / slips

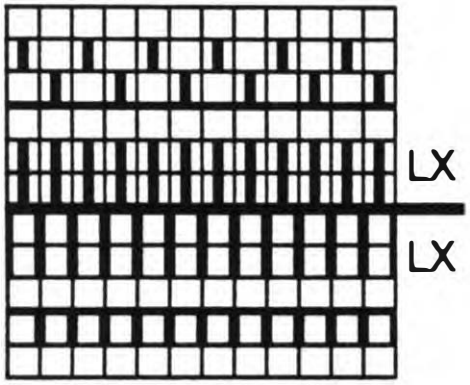
The stitches on the back bed are knitted alternately on every other needle.

No pattern drawing for back bed possible.

Knits 4 rows per square of the pattern drawing.

Birdseye double-bed Fairisle, 3 colors

501



Knits
stitches / slips

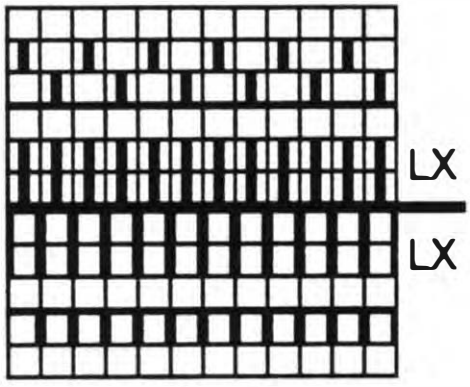
The stitches on the back bed are knitted alternately on every other needle.

No pattern drawing for back bed possible.

Knits 6 rows per square of the pattern drawing.

Birdseye double-bed Fairisle, 4 colors

502



Knits
stitches / slips

The stitches on the back bed are knitted alternately on every other needle.

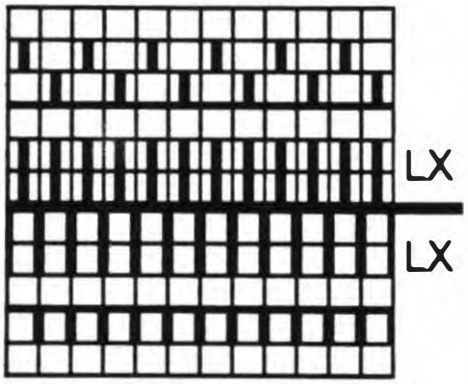
No pattern drawing for back bed possible.

Knits 8 rows per square of the pattern drawing.

Fairisle

Double-bed Fairisle with long stitch, 2 colors

505



Knits
right to left stitches / slips
left to right
on front bed no stitches
on back bed stitches / slips

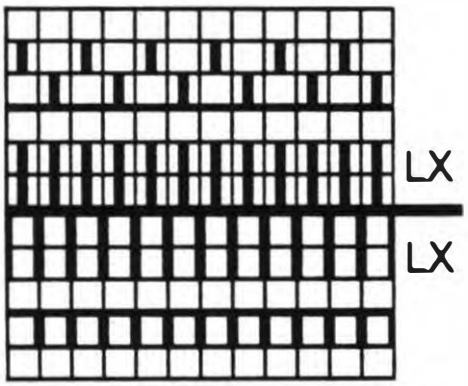
The stitches on the back bed are knitted alternately on every other needle.

No pattern drawing for back bed possible.

Knits 4 rows per square of the pattern drawing.

Double-bed Fairisle with long stitch, 3 colors

506



Knits
right to left stitches / slips
left to right
on front bed no stitches
on back bed stitches / slips

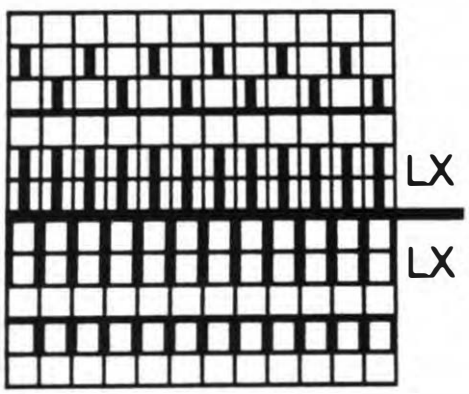
The stitches on the back bed are knitted alternately on every other needle.

No pattern drawing for back bed possible.

Knits 6 rows per square of the pattern drawing.

Double-bed Fairisle with long stitch, 4 colors

507



Knits
right to left stitches / slips
left to right
on front bed no stitches
on back bed stitches / slips

The stitches on the back bed are knitted alternately on every other needle.

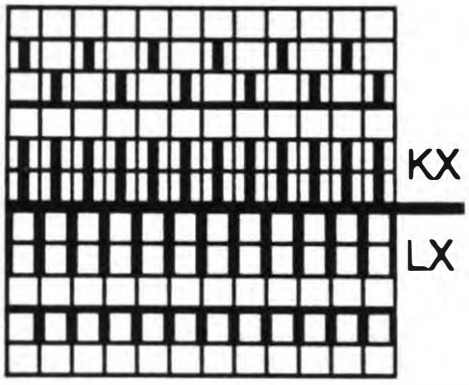
No pattern drawing for back bed possible.

Knits 8 rows per square of the pattern drawing.

Fairisle

Double-bed Fairisle with tuck stitches on back bed, 2 colors

510



Knits
on back bed stitches / tucks
on front bed stitches / slips

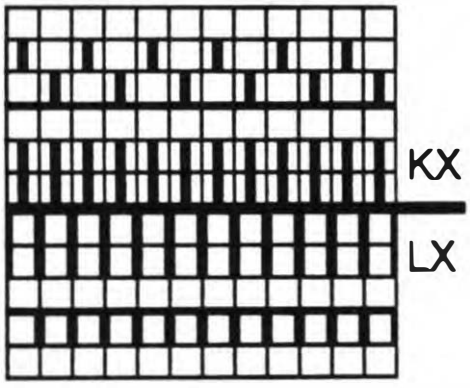
The tuck stitches on the back bed are knitted alternately on every other needle.

No pattern drawing for back bed possible.

Knits 4 rows per square of the pattern drawing.

Double-bed Fairisle with tuck stitches on back bed, 3 colors

511



Knits
on back bed stitches / tucks
on front bed stitches / slips

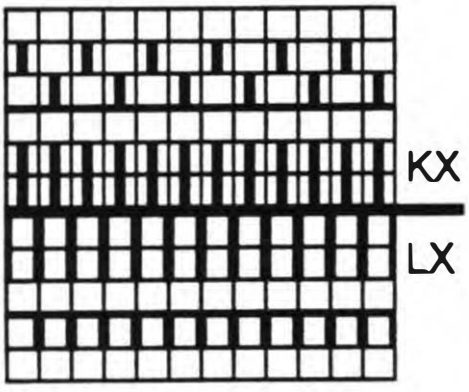
The tuck stitches on the back bed are knitted alternately on every other needle.

No pattern drawing for back bed possible.

Knits 6 rows per square of the pattern drawing.

Double-bed Fairisle with tuck stitches on back bed, 4 colors

512



Knits
on back bed stitches / tucks
on front bed stitches / slips

The tuck stitches on the back bed are knitted alternately on every other needle.

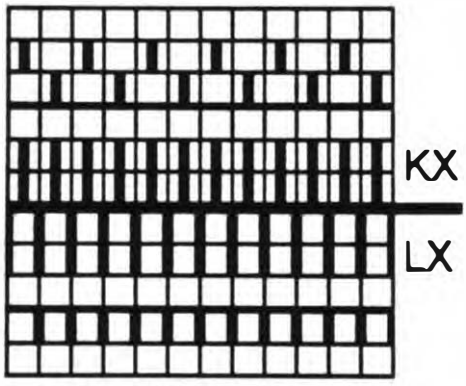
No pattern drawing for back bed possible.

Knits 8 rows per square of the pattern drawing.

Fairisle

Double-bed Fairisle with tuck stitches on back bed, 2 colors

515



Knits right to left
on back bed stitches / tucks
on front bed stitches / slips
left to right
on back bed stitches only
on front bed stiches / slips

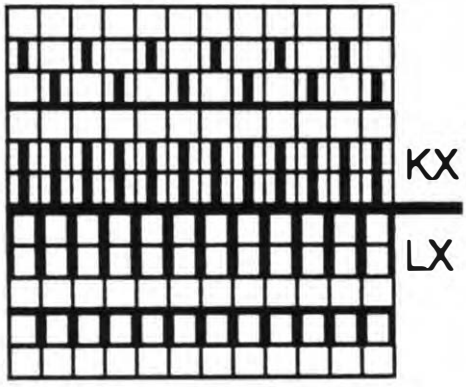
Tuck stitches on the back bed are knitted every 2nd row on the same needles.

No pattern drawing for back bed possible.

Knits 4 rows per square of the pattern drawing.

Double-bed Fairisle with tuck stitches on back bed, 3 colors

516



Knits right to left
on back bed stitches / tucks
on front bed stitches / slips
left to right
on back bed stitches only
on front bed stiches / slips

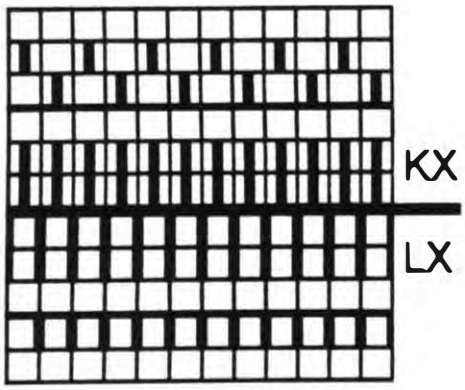
Tuck stitches on the back bed are knitted every 2nd row on the same needles.

No pattern drawing for back bed possible.

Knits 6 rows per square of the pattern drawing.

Double-bed Fairisle with tuck stitches on back bed, 4 colors

517



Knits right to left
on back bed stitches / tucks
on front bed stitches / slips
left to right
on back bed stitches only
on front bed stiches / slips

Tuck stitches on the back bed are knitted every 2nd row on the same needles.

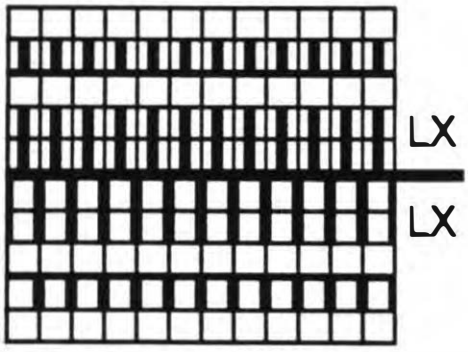
No pattern drawing for back bed possible.

Knits 8 rows per square of the pattern drawing.

Fairisle

Fairisle, knits all stitches on back bed, 2 colors

520



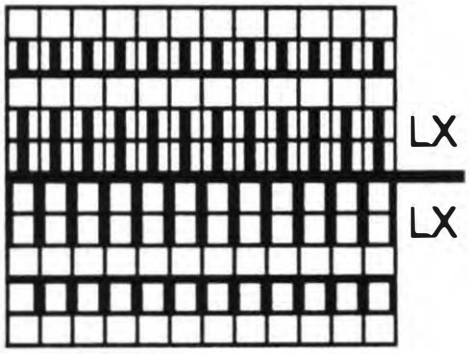
Knits
on front bed stitches / slips
on back bed all sttiches

No pattern drawing for back bed possible

Knits 4 rows per square of the pattern drawing.

Fairisle, knits all stitches on back bed, 2 colors

521



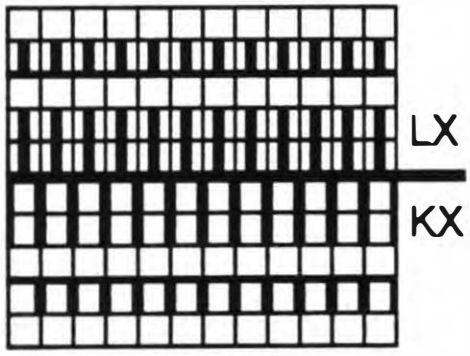
Knits on front bed
right to left stitches / slips
left to right no stitches
on back bed
all stitches

No pattern drawing for back bed possible

Knits 4 rows per square of the pattern drawing.

Fairisle, knits all stitches on back bed, 2 colors

522



Knits
on front bed stitches / tucks
on back bed all stitches

No pattern drawing for back bed possible

Knits 4 rows per square of the pattern drawing.

Fairisle

For the following techniques **523 - 528** and **543 - 544** you find the note

"can be knitted as 2-, 3- or 4-color fairisle".

If you programme one of these techniques the question "how many colors" will appear on the display.

For the techniques 523 - 537 you find the note :

" knits on back bed 1 row per square of the pattern drawing".

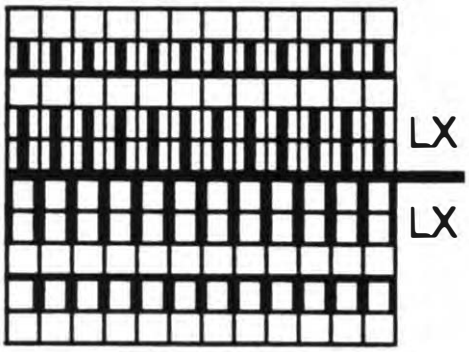
In this case the pattern drawing for the back bed is drawn with a color and the color for "no stitch" = 255. With such a pattern drawing, you can determine exactly which needle on the back bed will knit at which moment.
With each of those techniques the pattern drawings are indicated, that can be used for the back bed.

None of these techniques can be knitted without pattern drawing for the back bed.

Fairisle

Fairisle with pattern drawings on front and back bed.
Can be knitted as 2-, 3- and 4-color Fairisle

523



Knits
stitches / slips

Knits with
2 colors = 4 rows per square
3 colors = 6 rows per square
4 colors = 8 rows per square

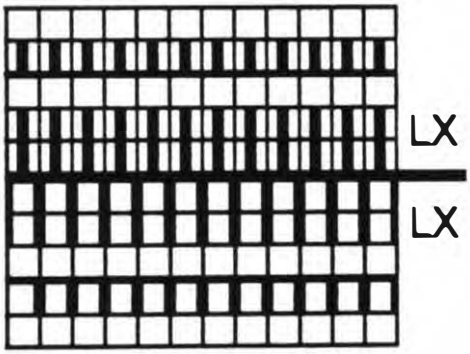
Knits on back bed 1 row per square of the pattern drawing.

Can only be knitted with pattern drawing on back bed.

The following pattern drawings can be used for back bed:
2-color : 2069, 2070, 2071, 2072, 2073, 2074, 2075
3-color :2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076
4-color : 2069, 2070, 2071, 2072, 2074, 2075, 2076

Fairisle with long stitch on front bed and pattern drawings on front and back bed.
Can be knitted as 2-, 3- and 4-color Fairisle

524



Knits
right to left stitches / slips
left to right
on front bed no stitches
on back bed stitches / slips
Knits with
2 colors = 4 rows per square
3 colors = 6 rows per square
4 colors = 8 rows per square

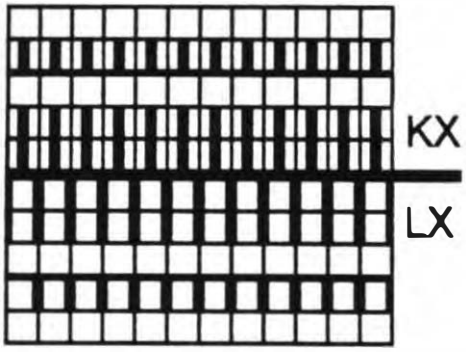
Knits on back bed 1 row per square of the pattern drawing.

Can only be knitted with pattern drawing on back bed.

The following pattern drawings can be used for back bed:
2-color : 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076
3-color : 2069, 2070, 2071, 2072, 2073, 2074, 2076
4-color : 2069

Fairisle with tuck stitches on back bed and pattern drawings on front and back bed.
Can be knitted as 2-, 3- and 4-color Fairisle

525



Knits
on front bed stitches / slips
on back bed stitches / tucks

Knits with
2 colors = 4 rows per square
3 colors = 6 rows per square
4 colors = 8 rows per square

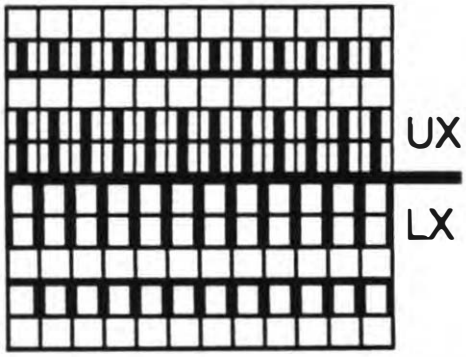
Knits on back bed 1 row per square of the pattern drawing.

Can only be knitted with pattern drawing on back bed.

The following pattern drawings can be used for back bed:
2-color : 2070, 2071, 2072, 2073, 2076
3-color : 2069, 2070, 2071, 2073, 2074, 2075, 2076
4-color : 2070, 2071, 2072, 2073, 2074, 2076

Fairisle with pattern drawings on front and back bed.
Can be knitted as 2-, 3- and 4-color Fairisle

526



Knits right to left
on front bed stitches / slips
on back bed stitches / tucks
left to right stitches / slips

Knits with
2 colors = 4 rows per square
3 colors = 6 rows per square
4 colors = 8 rows per square

Knits on back bed 1 row per square of the pattern drawing.

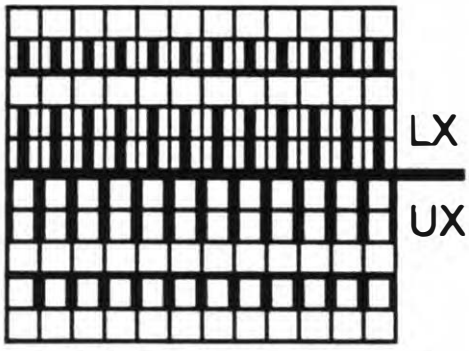
Can only be knitted with pattern drawing on back bed.

The following pattern drawings can be used for back bed:
2-color : 2069, 2070, 2071, 2072, 2073, 2074, 2076
3-color : 2069, 2070, 2071, 2072, 2073, 2074, 2076
4-color : 2069, 2070, 2071, 2072, 2073, 2074, 2076

Fairisle

Fairisle with tucks on front bed and pattern drawing on front bed, 2-colors.

528



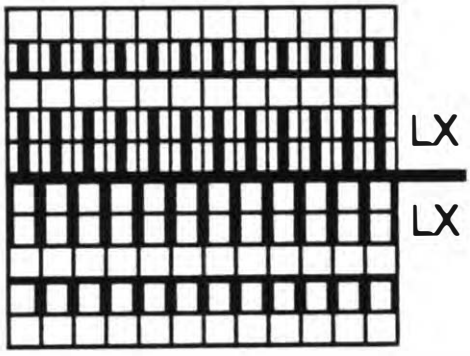
Knits
on back bed stitches only
on front bed right to left
stitches / slips
left to right
stitches / tucks

Knits
4 rows per square

Cannot be knitted with pattern drawing on back bed.

Fairisle with pattern drawing on front and back bed, 2-colors

529



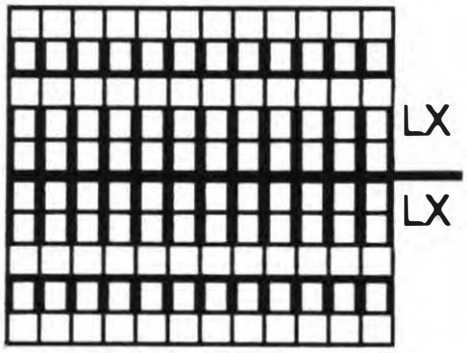
Knits stitches / slips

Knits for front and back bed 4 rows per square of the pattern drawing.

Attention : the pattern drawings for front and back bed have to have the same colors.

Fairisle

Fairisle reversible, 2-colors



540

Knits
stitches / slips

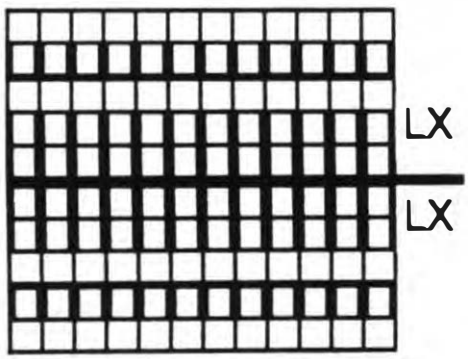
Knits 1 row of squares as follows:

	front:	back:
2 rows	color 1	color 1 where color 2 appears in the pattern drawing.
2 rows	color 2	color 2 where color 1 appears in the pattern drawing.

There is only one pattern drawing that is programmed for the front bed. The same pattern drawing is used for the back bed.

Cannot be knitted without pattern drawing.

Fairisle reversible, 3-colors



541

Knits
stitches / slips

Knits 1 row of squares as follows:

	front:	back:
2 rows	color 1	color 1 where color 2 appears in the pattern drawing.
2 rows	color 2	color 2 where color 3 appears in the pattern drawing.
2 rows	color 3	color 3 where color 1 appears in the pattern drawing.

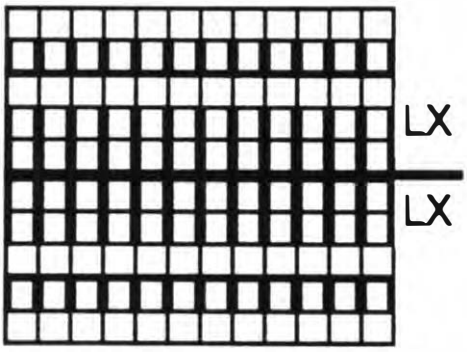
There is only one pattern drawing that is programmed for the front bed. The same pattern drawing is used for the back bed.

Cannot be knitted without pattern drawing.

Disposition of the colors:

3 3 3 1 1 1 2 2 2
1 1 1 2 2 2 3 3 3

Fairisle reversible, 4-colors



Disposition of the colors:

4 4 4 1 1 1 2 2 2 3 3 3
1 1 1 2 2 2 3 3 3 4 4 4

542

Knits
stitches / slips

Knits 1 row of squares as follows:

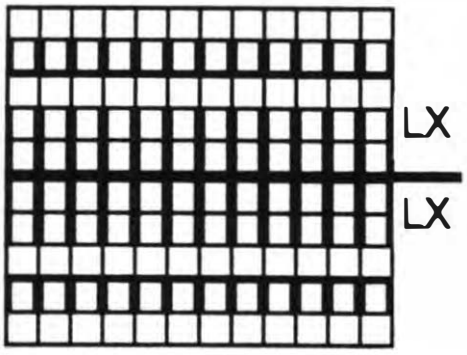
	front:	back:
2 rows	color 1	color 1 where color 2 appears in the pattern drawing.
2 rows	color 2	color 2 where color 3 appears in the pattern drawing.
2 rows	color 3	color 3 where color 4 appears in the pattern drawing.
2 rows	color 4	color 4 where color 1 appears in the pattern drawing.

There is only one pattern drawing that is programmed for the front bed. The same pattern drawing is used for the back bed.

Cannot be knitted without pattern drawing.

Tubular Fairisle
Can be knitted as 2-, 3- and 4-color Fairisle

543



Knits
right to left on front bed
stitches / slips
left to right on back bed
stitches / slips

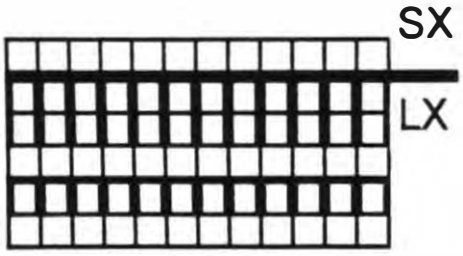
2 colors = 2 rows on front and 2 rows on back bed per square of the pattern drawing.

3 and 4 colors accordingly more rows.

Cannot be knitted without pattern drawings.
Attention : the pattern drawings for front and back bed have to have the same colors.

Single-bed Fairisle
Can be knitted al 2-, 3- and 4- color Fairisle

544



Knit
stitches / slips

Knits with
2 colors = 4 rows per square
3 colors = 6 rows per square
4 colors = 8 rows per square

Cannot be knitted without pattern drawing.

Error messages

RWS

Error messages can appear during knitting as well as during programming. There is always a text and a four digit number. In many cases the text will be self explanatory. However you will find below a more explicit explanation of most of the error numbers that can appear.

Generally every error message has to be aknowledged by pressing ENT.

Should a number appear which is not in the following list and which has no text, then first unplug and plug in again the plug at the back of the operating unit and the mains plug . If the same error message still appears, contact the nearest service center and indicate which number has appeared.

Unravelling rows

There are error messages where

"UNRAVEL 1 ROW" or **"UNRAVEL 2 ROWS"**

will appear after having acknowledged them by pressing ENT.

Note: release the fabric tacke dorn while unravelling.

After having unravelled the indicated number of rows, you will have to set the row counter back to the row where you start knitting again.

Press the key

RWS

type the number of the row, where you want to go on knitting.

RWS

Note: you can only enter a even number.

That means after unravelling rows you can start to knit again only when the carriage is at the right edge of the knitting.

You can enter also a row number which is higher than the position of your row counter at the moment. This can be useful, if you want to skip part of a pattern, or if you want to start knitting in the middle of a pattern.

After pressing ENT the indications for the two rows with lock setting SX/SX will appear.

1173, 2173

WRONG CAM BOX POSITION

This appears when you have changed the knitting width and the cam box is now in a position on the needle bed, where you want to knit.
After ENT push the cam box to the STARTPOSITION.

1191, 2191

POSITION ERROR

In this case the cam box has lost its position in relation to the needle bed.
Make sure that there is no lint in the slotted rail or somewhere on the underside of the lock.
This message can also appear when you have moved the cam box too quickly by hand.
If after cleaning it reappears, it might indicate that the electronic of the lock is defective. In that case call your next service center.

1192, 2192

START POSITION WRONG

You have acknowledged the START POSITION at a moment when the cam box was not in the start position.
Move the cam box to the start position and start again.

1206, 2206

WRONG DIRECTION

You have moved the cam box in the direction which is not the one that appears on the display.
If you want to move the cam box in the opposite direction to the one indicated, always first press the key "opposite direction". (See page 26)
After this message you have to move the cam box to the START POSITION.

2173 see 1173

2191 see 1191

2192 see 1192

2206 see 1206

Error messages

3122	The machine cannot be started, as one of the tension arms touches the yarn breakage device. Bring the tension arm into a position where it does not happen and start again.
3123	The GO/STOP key is jammed in the position where it is down. Free the key and start again.
3124, 3125, 3126	The slider that fixes the cam box to the motor cannot be directly opposite one of the edge stops.
3135	The switch of the motor is in the "off" position. Set it to "ON" and re-start.
3200	**YARN BREAK** Fix the yarn again and thread up properly. Make sure that the tension arm does not touch the yarn breakage device.
3203	**OVERHEAT** The motor is overheated. Wait until it has sufficiently cooled down.
3205	**MOTOR BLOCKED** This message appears when the motor is blocked on a part of the needle bed, where the cam box should be knitting. Set everything in order and continue. If you have to push the cam box in the wrong direction to free it, do not forget to press the "change direction" key first. Here might appear the message "unravel 1 row" or "unravel 2 rows". In that case do not forget to set the row counter back. (See page 144)
3207	**FEEDER ERROR** This message appears when the cam box has been in the color changer and has taken the wrong feeder (i.e. not the one demanded by the technique) or no feeder, when there should be one, or vice versa. Press ENT and automatically the direction of the cam box points again to the color changer. Set the color changer in a way that the cam box will take over the correct feeder.

Error messages

4020, 4021

TECHNIQUE INVALID

The programme cannot read the technique any more. Try unplugging the plug from the operating unit and plug it in again. Then programme the sector again with the same technique. If this does not work contact the nearest service center and indicate the number that has been displayed.

4023, 4026

v PATTERN

The pattern for the front bed has more colors per row of squares than can be knitted with the chosen technique. It may also mean that the pattern is larger that what can be knitted on your machine.
If the pattern has not too many colors check if no feeder has been blocked by pressing the COL key. (See page 92)

4024, 4026

^PATTERN

The same as 4023 but in relation to the pattern of the back bed.

4026

TOO MANY COLORS

See 4023

4027, 4033

FEEDERS BLOCKED

One or more feeders have been blocked (by using the COL key, see page 92). Therefore there are no more enough feeders available to knit the programmed technique.

4030

NO DATA

The operating unit does not have access to the necessary data any more. It might be that you are knitting too quickly and the operating unit cannot complete the necessary calculation.
Knit more slowly or set the length of the motor travel wider. (See page 54)

4031

TOO MANY COL CHANGES

In all 10 pattern sectors together too many color changes occur (Maximum 255). Set one or more pattern sectors to default.

Error messages

4032

PATTERN ERRONEOUS

This appears when transferring a pattern from the PC. Check whether the connecting cable is properly plugged in and whether the pattern on the PC is still all right. To find out if the problem concerns all transfers generally try transferring another pattern. In that case contact your nearest service center.

4033

FEEDERS BLOCKED

See 4027

4050

COLOR ERROR

When changing the color sequence (page 75) or when changing the feeder allocation (page 92) you have tried to enter the same feeder number twice.

4051, 4054

WRONG NUMBER

You have tried to enter a number that is not possible for this input field. If the display is 4051 press the HELP key to see what is available.

4052

NO ENTRY

You have cleared the number on an input field by pressing the CLR key and you have forgotten to enter another number into this input field.

4054

WRONG NUMBER

See 4051

4055

PATTERN IS ACTIVE

You cannot delete this pattern, as it is still programmed in one of the 10 pattern sectors. (See page 99)

4058

NO ORIGIN

You have entered the number of a technique or a pattern but you have forgotten to enter its origine in the previous input field.

Error messages

4059

NR NOT EXISTING

There are no numbers existing that could be displayed for this HELP function.

4060

v EDGES

The numbers that you have entered for the knitting width on the front bed are not possible, alter them.

4061

^ EDGES

The numbers you have entered for the knitting width on the back bed are nor possible, alter them.

4062, 4063, 4064

EDGES MOTOR

You have tried to enter a length of the motor travel that is shorter than your knitting width.

4065

RC NOT VALID

When changing the row counter you can only enter even numbers.

4066

KEY NOT ACTIVE

When the cam box is in this position the key you pressed is not active.

4067

SAVE ERROR

Nothing has been saved. The reason might be that the module is not properly in place.

4068, 4069, 4072

DATA NOT EXISTING

You have tried to save, to program or to delete a technique or a pattern whose number does not exist at the indicated origin.

Error messages

4080, 4081, 4082, 4083

MODULE ERROR

The defragmentation has not been possible. Unplug the plug from the operating unit and plug it in again.
If the same error message appears again, replace your module by another.

4123

NOT ENOUGH SPACE

There is not enough space left in the module for the pattern you want to programme or to save. Delete some patterns and defragment the module. (See page 99)

4140

NO DATA TRANSFERRED

The E 8000 has not received any data from the PC. Have you pressed a random key on the PC ? If yes check whether the connecting cable is plugged in properly.

4173

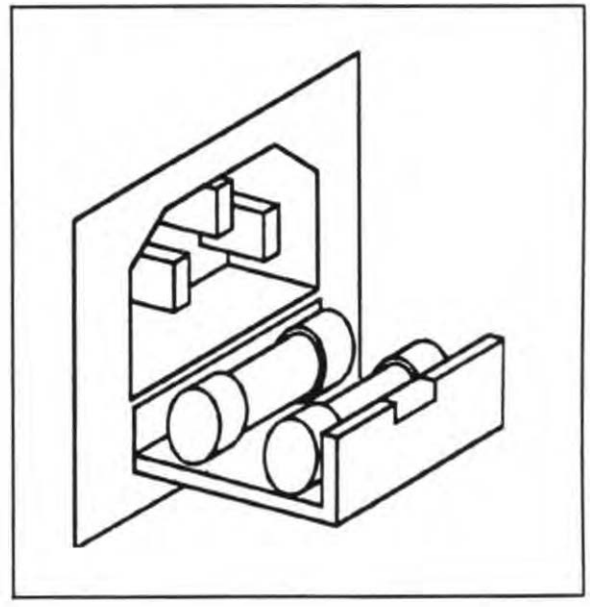
WRONG CAM BOX POS.

The carriage was still moving while you pressed a key that is not active in this situation.

4181

CHECK MOTOR

The motor is switched off or the cable of the motor is not plugged in.
If this is not the case the fuse might be broken. Unplug the cable goint to the mains. There you will find a small drawer, that can be pulled out. Nearer to the motor is the active fuse, that might be broken. Nearer to you is a reserve fuse. Push it sideways out of its holding and put it in the place of the broken fuse.



Annex 1 : Pattern data

Patterns with asterisks in the pattern book

Explanations for the patterns that are marked by an asterisk in the pattern book.

Pattern drawings

The pattern drawings of all the patterns that are stored in the ROM.

The measurements
In brackets are the measurements of each pattern : the first number is the width the second the height in squares.

The color sequence
If you load a pattern from the ROM the color numbers from CREATION 8 will not appear (See page 75) In their place will always appear the color numbers 1, 2, 3 and 4.
Which color actually has to be threaded into which feeder is indicated on the following pages for each pattern drawing.

Pattern drawings for tuck and slip stitch patterns
Note : as there are special colors for tucks (Black = 0) and for slips (white = 255) not all pattern drawings can be used for any kind of pattern.
Tuck- and slip stitch patterns can be knitted only with pattern drawings where the tuck or the slip color appears.
(A technique for tuck stitches will knit a tuck where the tuck color (= 0) or where the slip color (= 255) appears.
A technique for slip stitches will knit a slip stitch where the tuck color (= 0) or where the slip color (= 255) appears.)

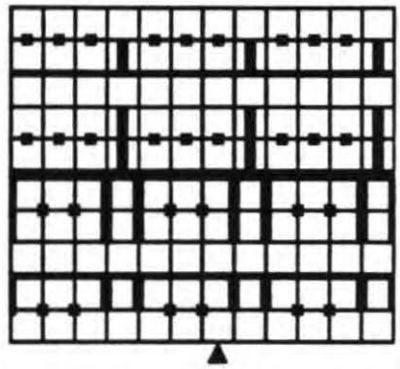
Pattern drawings for fairisle
These are drawings where several different colors can appear in one line of squares. If you try to knit such a pattern drawing with a technique for tuck or slip stitch an error message will appear.

Annex 1 : Pattern data

For the patterns marked by an asterisk in the pattern book, the following explanations have to be considered.

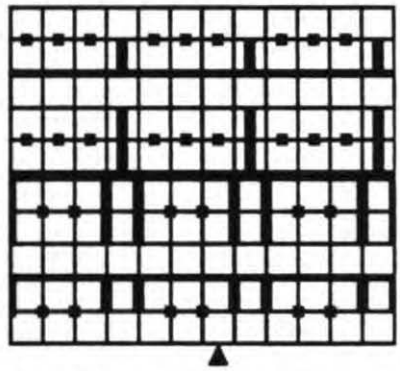
Page 26 **356 / 2030 ***

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



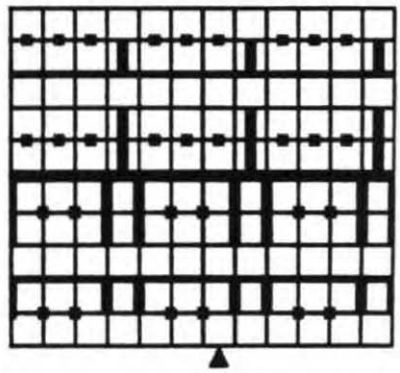
Page 26 **350 / 2030***

For this pattern stitches are only on the needles shown in the diagram.Put empty needles and corresponding jacks in out of work position.



Page 27 **352 / 2030 ***

For this pattern stitches are only on the needles shown in the diagram.Put empty needles and corresponding jacks in out of work position.



Annex 1 : Pattern data

Page 37 **462 / 2066 ***

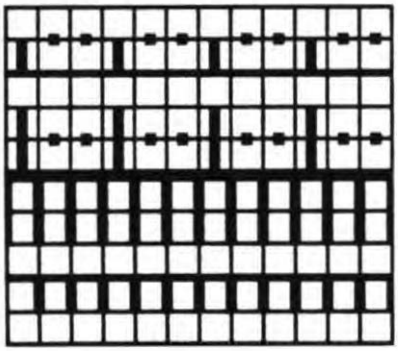
For this pattern it is possible to have no stitches on the back bed needles opposite the front bed needles without stitches being dropped. (13 to 14 and 20 to 26 at right and -7 to -13 and -19 to -20 to the left etc.)
In that case put the relevant needles and corresponding jacks on the back bed in out of work position.

Page 39 **462 / 2268 ***

For this pattern it is possible to have no stitches on the back bed needles opposite the front bed needles without stitches being dropped. (-2 to 3 and 13 to 17 etc.)
In that case put the relevant needles and corresponding jacks on the back bed in out of work position.

Page 41 **542 / 2286 ***

For this pattern on the back bed stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



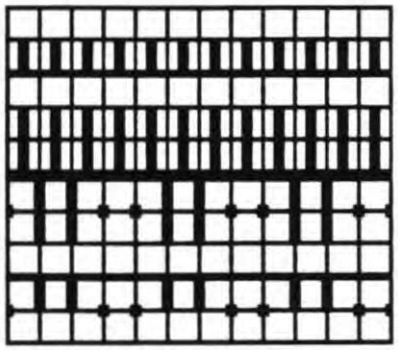
Page 88, 89 **521***

For summer Fairisle, before starting to knit the pattern all stitches have to be on the needles of the back bed.
At the end of the pattern, all stitches of the front bed have to be released. Unravel them by pulling the knitting vigorously. The unraveled stitches will give the "see through" effect of these patterns.

Annex 1 : Pattern data

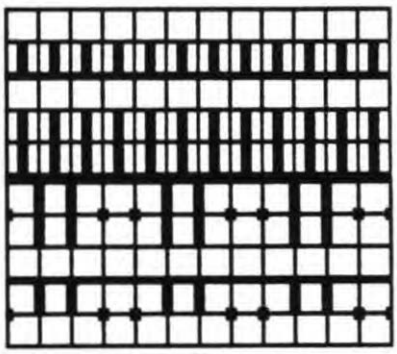
Page 90 448 / 2000 *

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



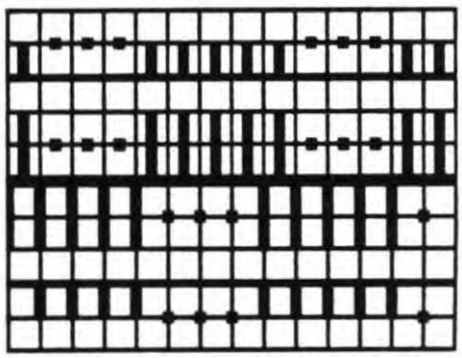
Page 90 430 *

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 90 400 *

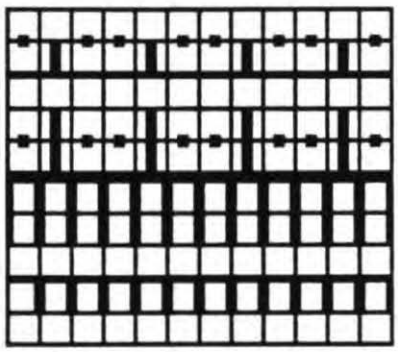
For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Annex 1 : Pattern data

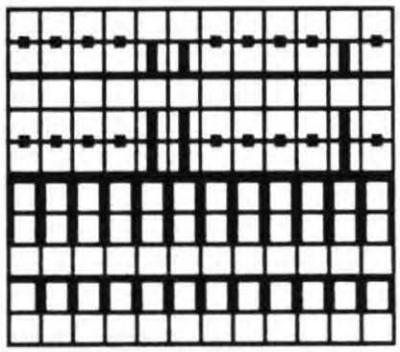
Page 91 **430 ***

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



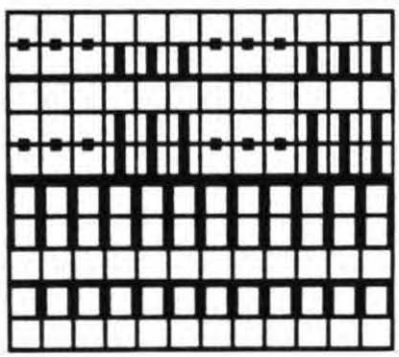
Page 91 **435 * / 2000**

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 91 **431 ***

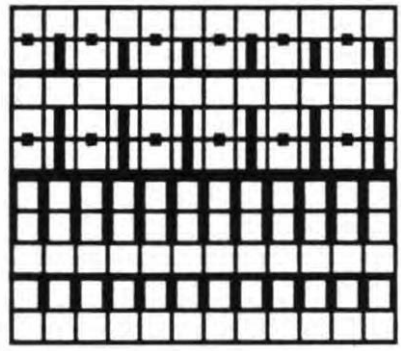
For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Annex 1 : Pattern data

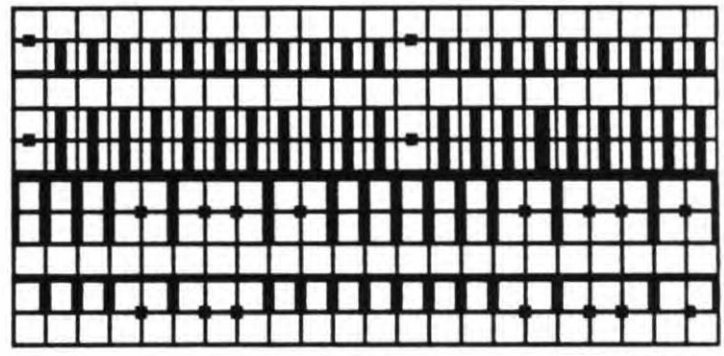
Page 91 **431 *** (bottom)

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 92 **405 ***

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 92 **408 ***

For this pattern there are stitches only on some needles of the front bed. (On the illustrated example there are 10 needles empty, 2 with stitches, 3 empty, 4 with, 3 empty, 6 with, 3 empty, 4 with, 3 empty, 2 with, etc.)
Put empty needles and corresponding jacks in out of work position.

Page 92 **409 ***

For this pattern there are stitches only on some needles of the front bed. (On the illustrated example there are 16 needles empty, 5 with stitches, 4 empty, 4 with, 3 empty, 3 with, 2 empty, 2 with, 1 empty, 1 with, etc.)
Put empty needles and corresponding jacks in out of work position.

Annex 1 : Pattern data

Page 92 412 / 2093

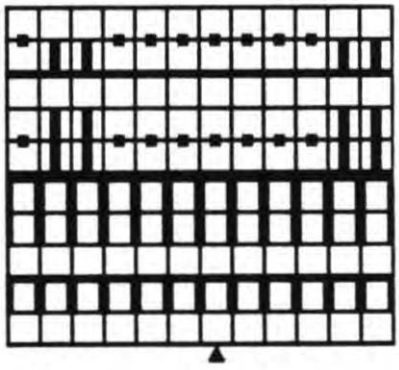
Each time the display shows " turn handle " (to right or left) make 4 turns of the handle.

Page 92 430 / ^ 2080

Attention : load pattern 2080 for back bed, not for front bed.
On back bed put needles -3 to 4 in out of work position. Leave to both sides 3 needles in work position, put again 7 needles in out of work position etc.

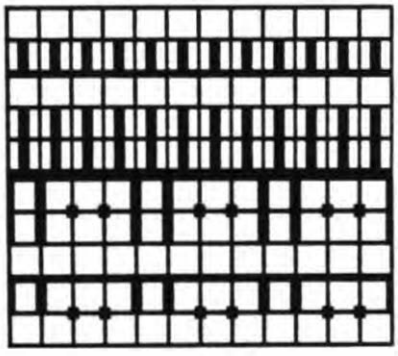
Page 93 453 / 2041 *

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 93 448 2000 *

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



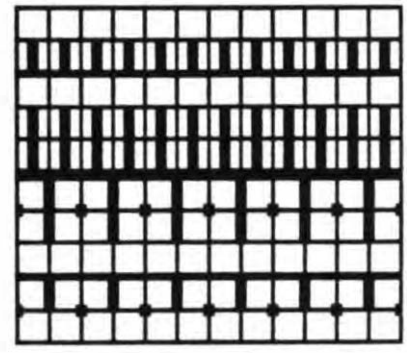
Annex 1 : Pattern data

Page 94 **413 / 2094 ***

Each time the display shows " turn handle " (to right or left) make 4 turns of the handle.

Page 94 **430 ***

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 95 **407 ***

For this pattern there are stitches only on some needles of the front bed. (On the illustrated example there are 13 needles empty, 1 with stitch, 1 empty, 1 with, 1 empty, 1with, etc.)
Put empty needles and corresponding jacks in out of work position.

Page 95 **409 ***

For this pattern where there are stitches on the front bed the opposite needles on the back bed are empty and where the needles of the front bed are empty on the opposite needles of the back bed there are stitches.
(On the illustrated example on the front bed are 5 needles empty and 14 needles with stitches, opposite on the back bed are 6 needles with stitches and 13 needles are empty)
Put the empty needles and v^corresponding jacks in out of work position.

Page 95 **404 ***

For this pattern there are stitches only on some needles of the front bed. (On the illustrated example there are 5 needles empty, 1 with stitch, 1 empty, 4 with, 1 empty, 1with, etc.)
Put empty needles and corresponding jacks in out of work position.

Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)

2000 (2 x 2)

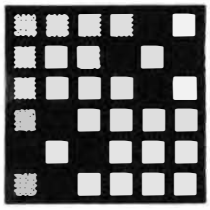
2001 (2 x 4)

2002 (2 x 4)

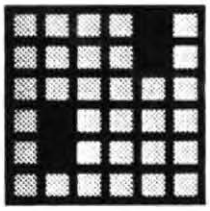
2003 (2 x 4)

2004 (2 x 4)

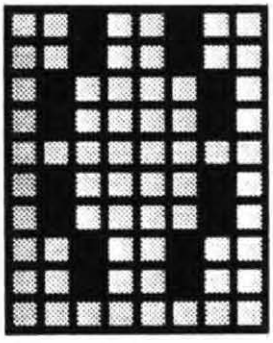
2005 (2 x 8)



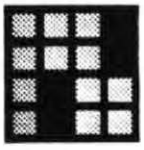
2006 (6 x 6)



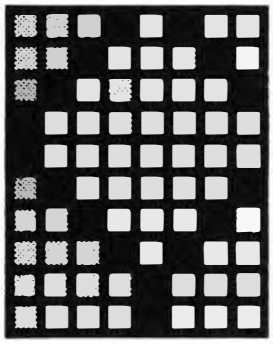
2007 (6 x 6)



2008 (8 x 10)



2009 (4 x 4)

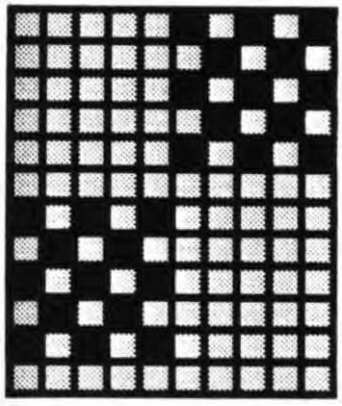


2010 (8 x 10)

Annex 1 : Pattern data

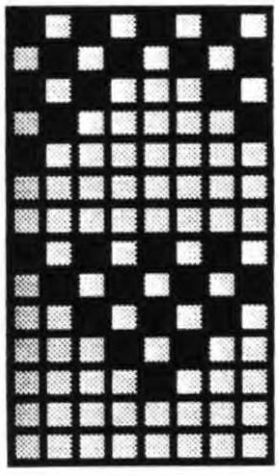
Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)

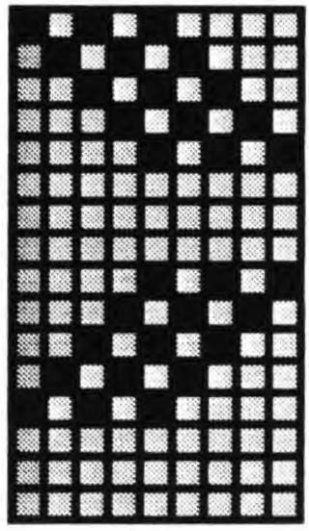


2011 (10 x 12)

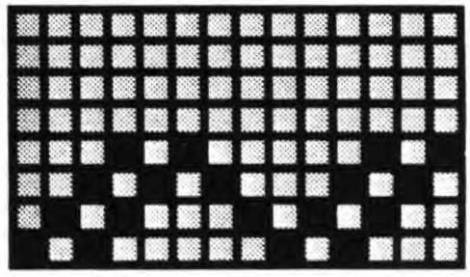
2012 (2 x 12)



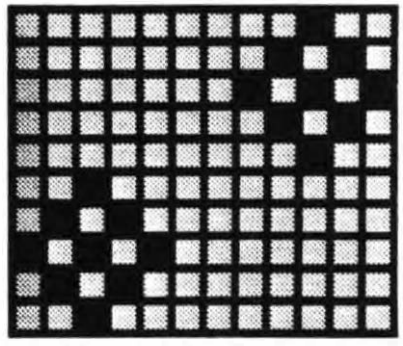
2013 (8 x 14)



2014 (9 x 16)



2015 (14 x 8)

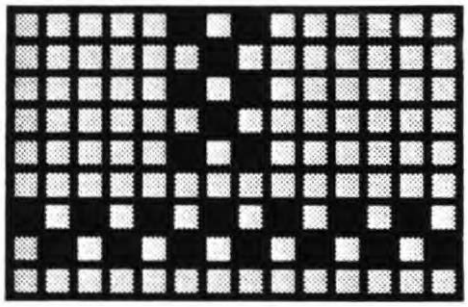


2016 (12 x 10)

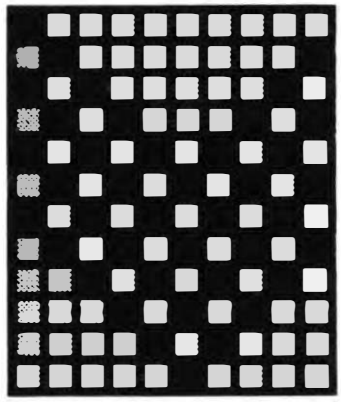
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

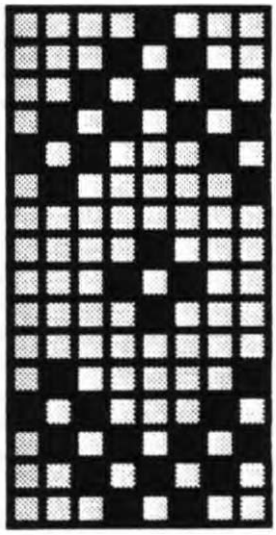
with tuck color (black = 0)



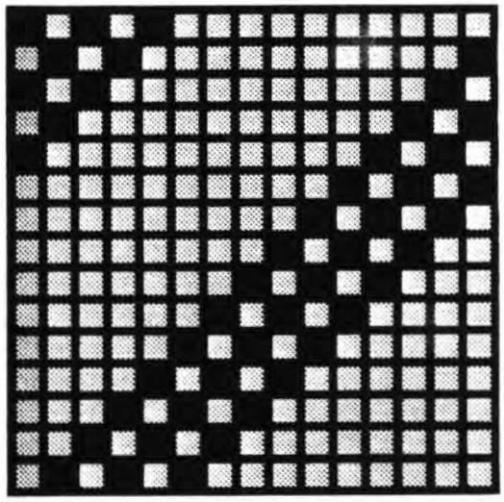
2017 (14 x 9)



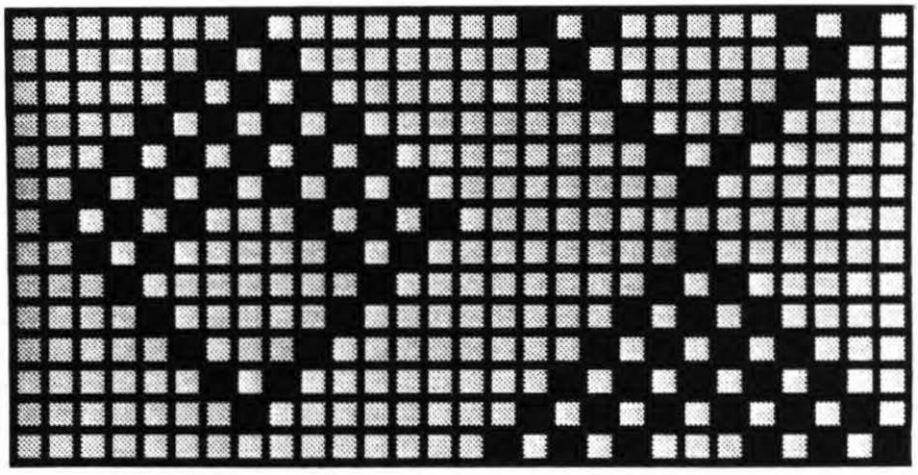
2019 (10 x 12)



2018 (8 x 16)



2020 (15 x 15)

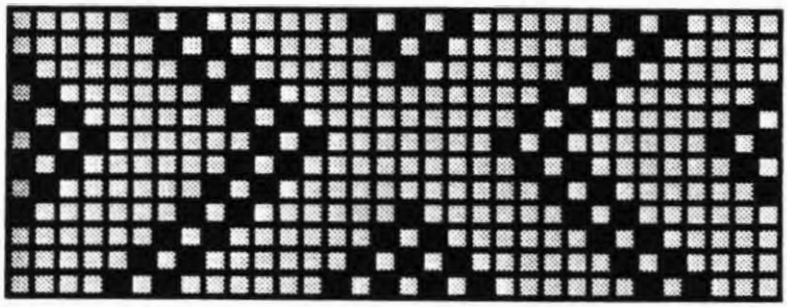


2021 (28 x 14)

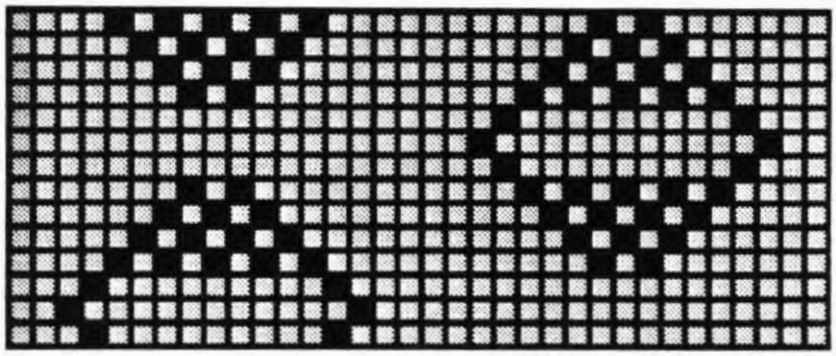
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

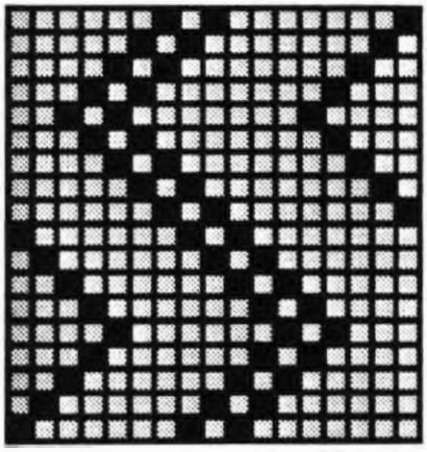
with tuck color (black = 0)



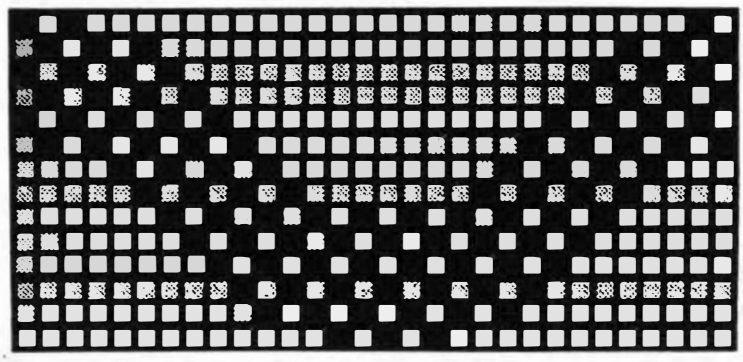
2022 (32 x 12)



2023 (34x 14)



2024 (17 x 18)

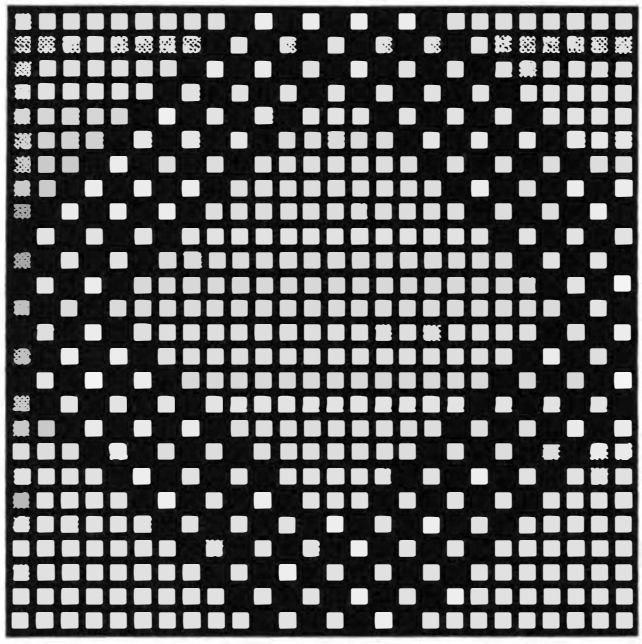


2025 (30 x 14)

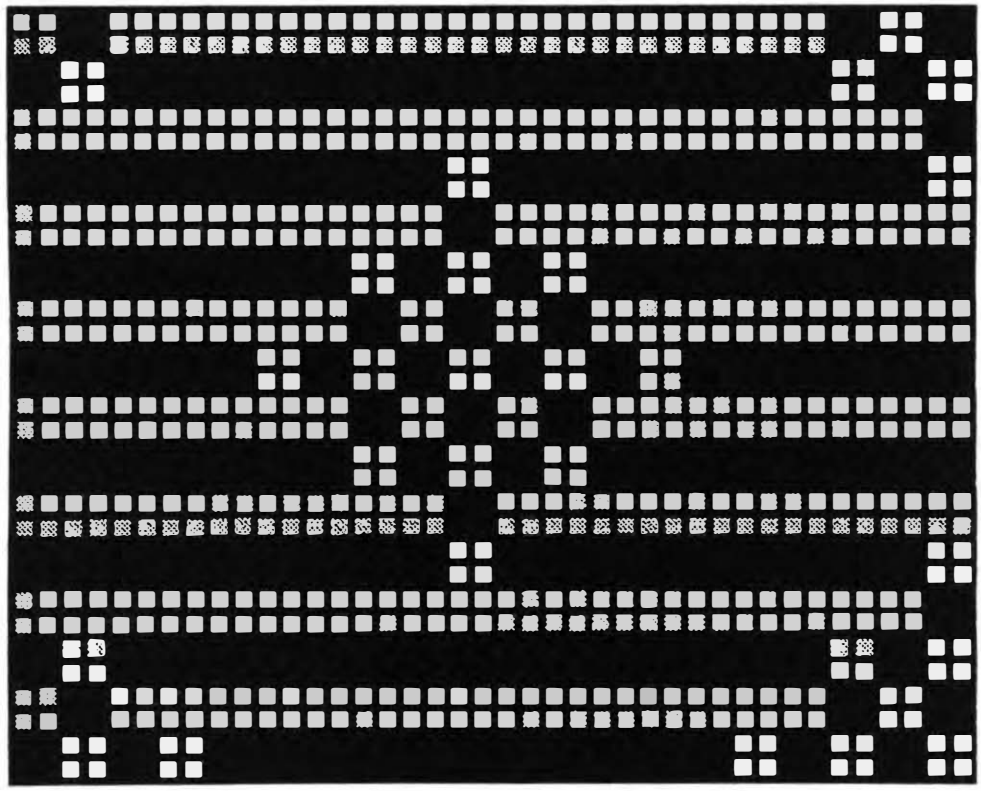
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)



2026 (26 x 26)

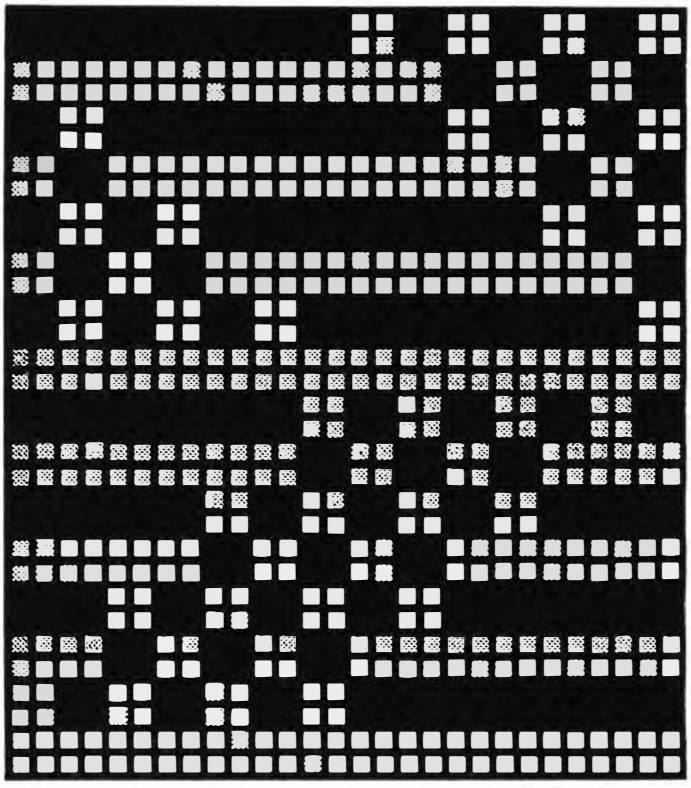


2027 (40 x 32)

Annex 1 : Pattern data

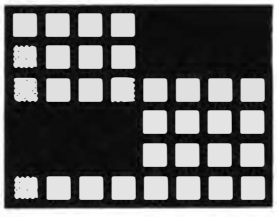
Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)



2028 (28 x 32)

2029 (95 x 4)



2030 (8 x 6)

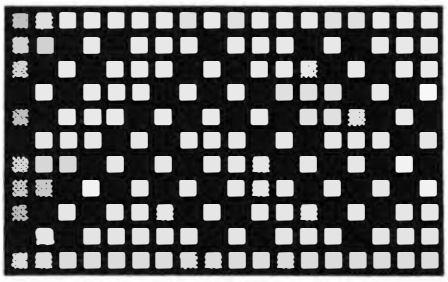
2031 (2 x 6)

2032 (4 x 4)

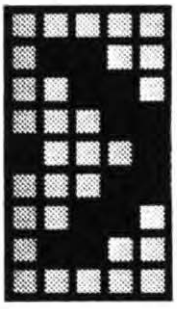
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

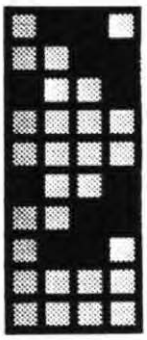
with tuck color (black = 0)



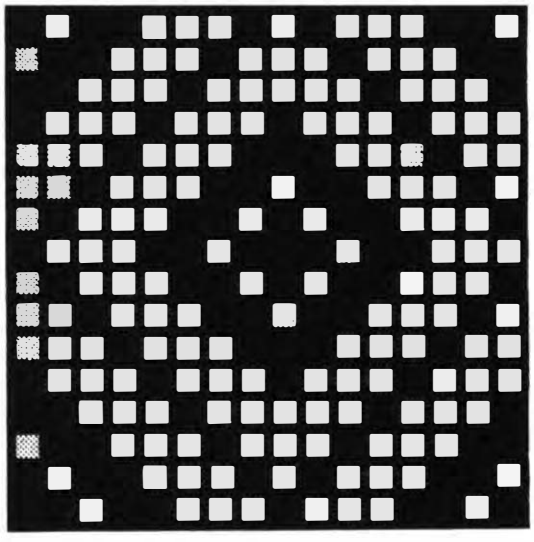
2033 (18 x 11)



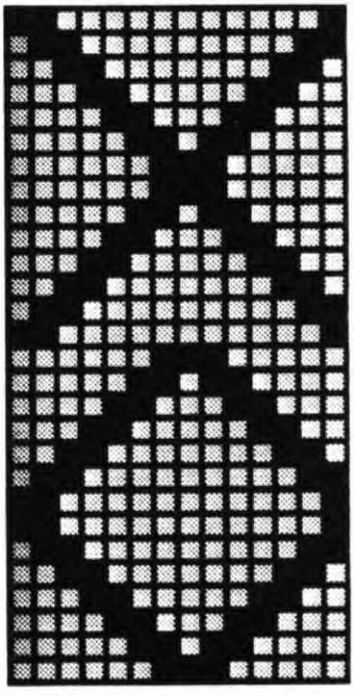
2036 (5 x 9)



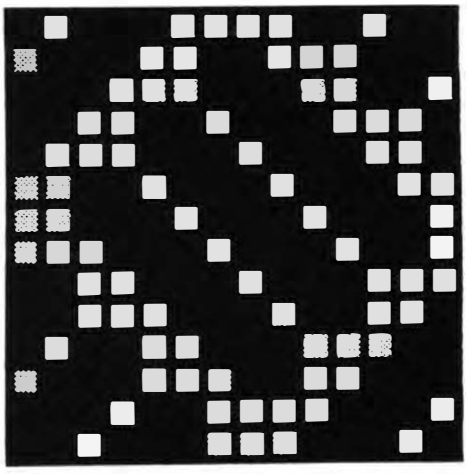
2037 (4 x 10)



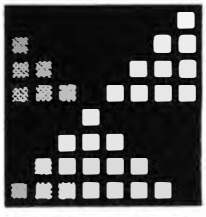
2034 (16 x 16)



2038 (14 x 28)



2035 (14 x 14)

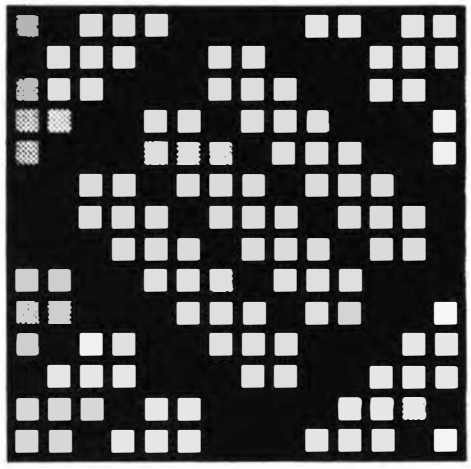


2039 (8 x 8)

Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)



2040 (14 x 14)

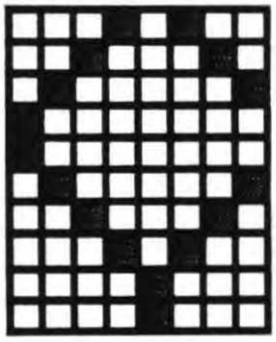
2041 (3 x 4)

Annex 1 : Pattern data

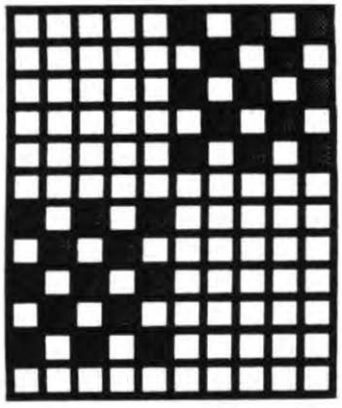
Pattern drawings for lacy patterns

with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.

2042 (6 x 6)

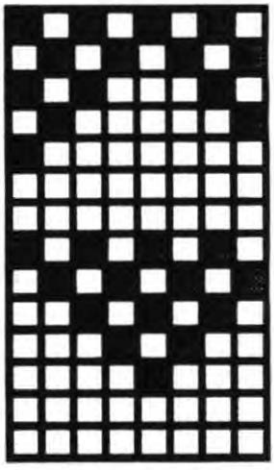


2043 (8 x 10)

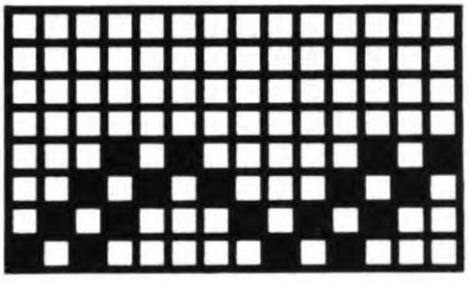


2044 (10 x 12)

2045 (2 x 12)



2046 (8 x 14)

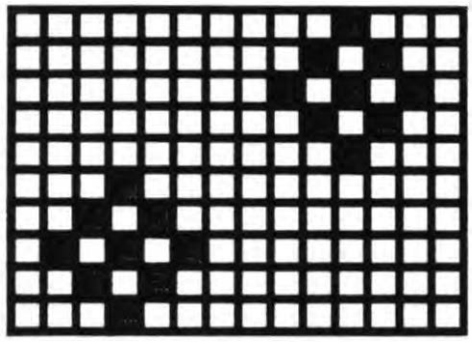


2047 (14 x 8)

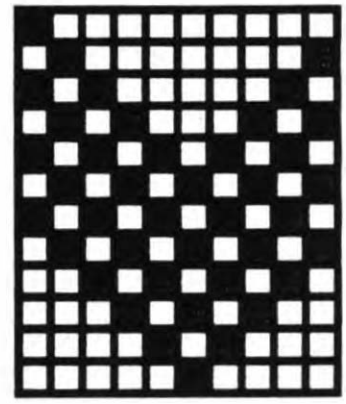
Annex 1 : Pattern data

Pattern drawings for lacy patterns

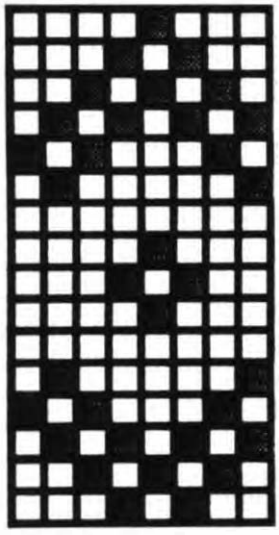
with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



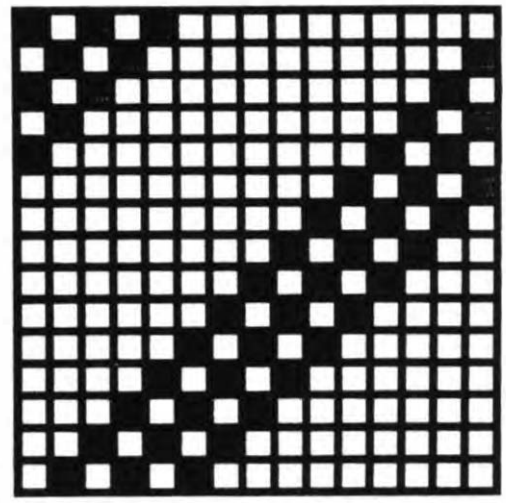
2048 (14 x 10)



2050 (10 x 12)



2049 (8 x 16)

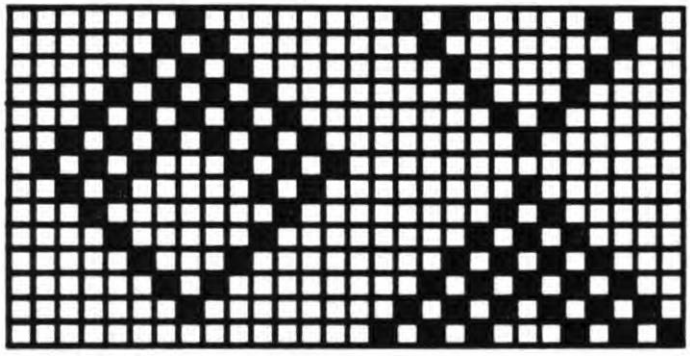


2051 (15 x 15)

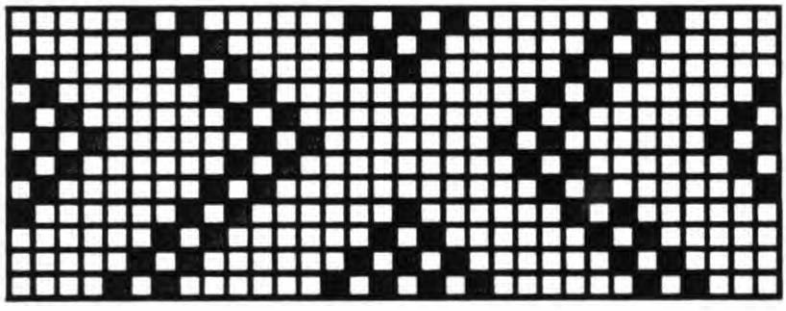
Annex 1 : Pattern data

Pattern drawings for lacy patterns

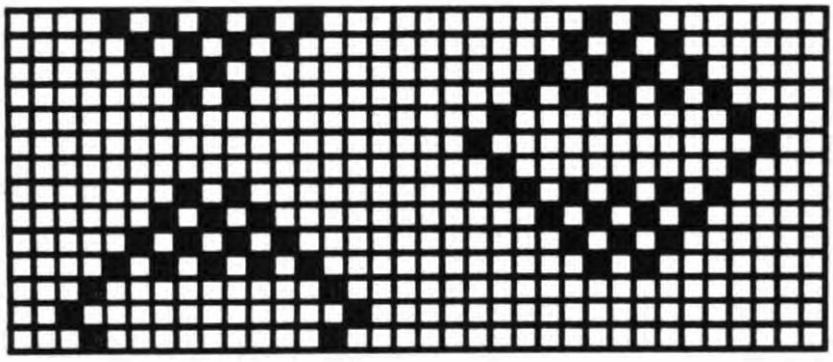
with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



2052 (28 x 14)



2053 (32 x 12)

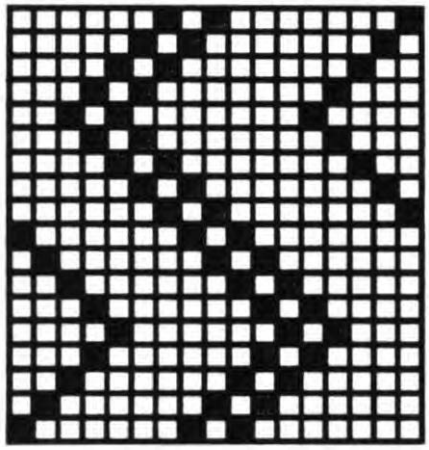


2054 (34 x 14)

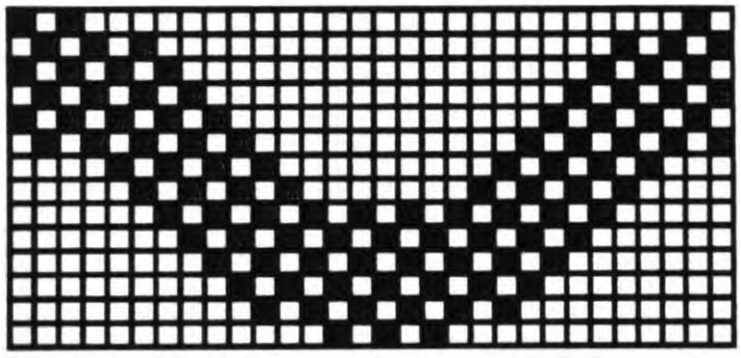
Annex 1 : Pattern data

Pattern drawings for lacy patterns

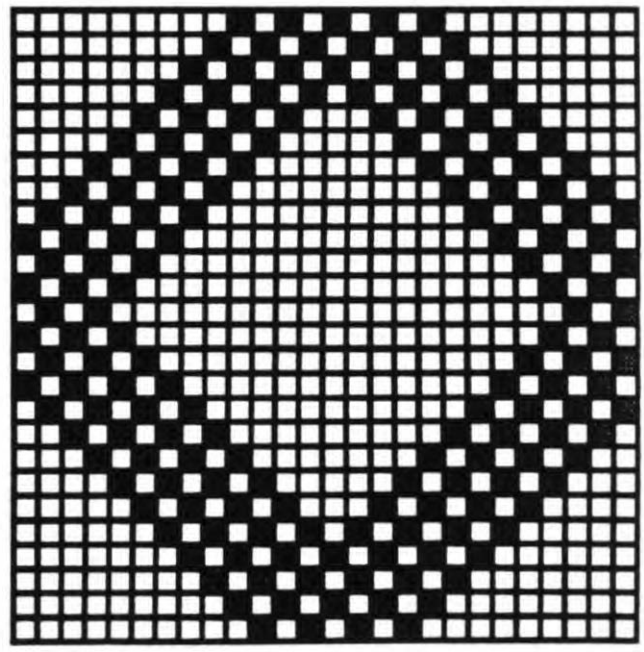
with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



2055 (17 x 18)



2056 (30 x 14)

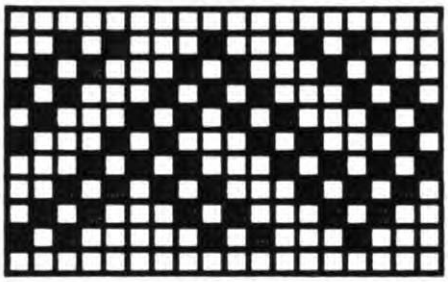


2057 (26 x 26)

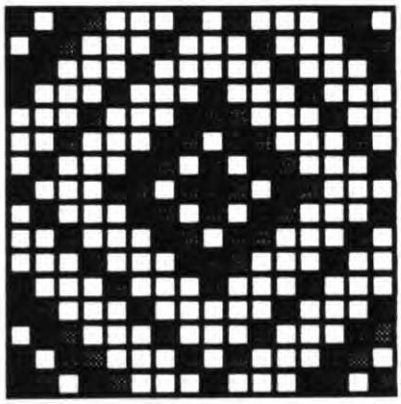
Annex 1 : Pattern data

Pattern drawings for lacy patterns

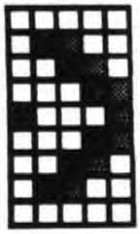
with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



2058 (18 x 11)

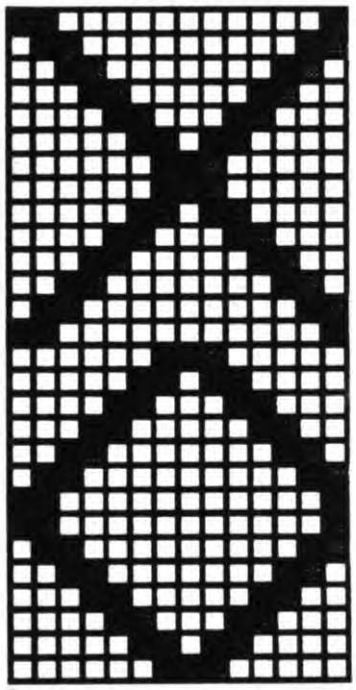


2059 (16 x 16)

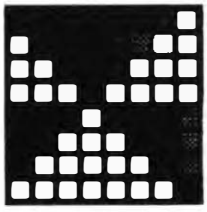


2060 (5 x 9)

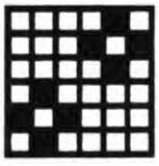
2061 (4 x 10)



2062 (14 x 28)



2063 (8 x 8)

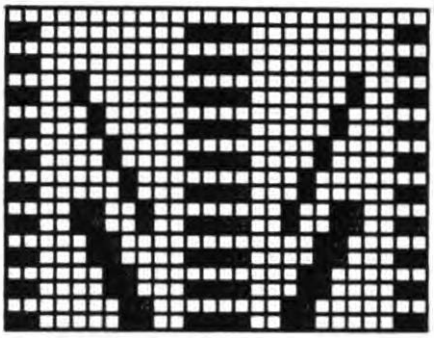


2064 (6 x 6)

Annex 1 : Pattern data

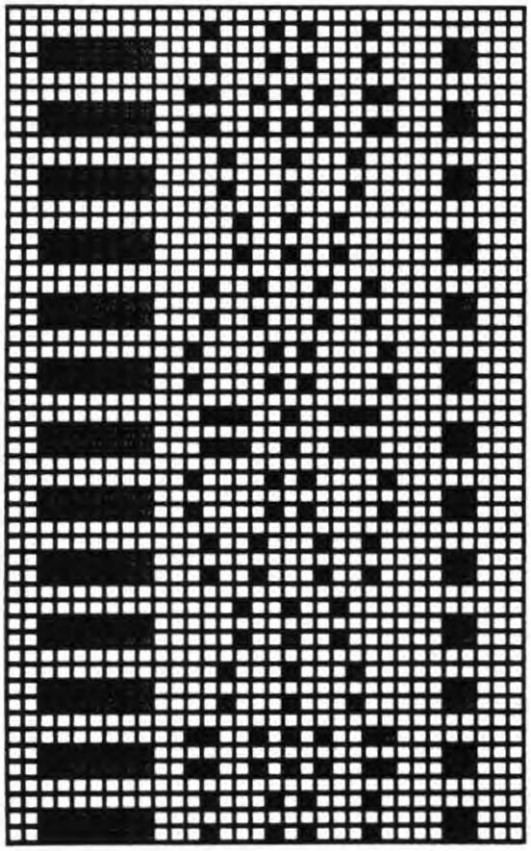
Pattern drawings for lacy patterns

with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



2065 (26 x 20)

2067 (17 x 30)



2066 (32 x 52)

2068 (14 x 4)

Annex 1 : Pattern data

Pattern drawings for the reverse side of Fairisle patterns

with slip stitch color (white squares in the below pattern drawings = 255)

2069 (2 x 4)

2070 (2 x 4)

2071 (2 x 4)

2072 (2 x 8)

2073 (3 x 3)

2074 (4 x 4)

2075 (4 x 4)

2076 (3 x 6)

2077 (2 x 4)

2078 (3 x 3)

Annex 1 : Pattern data

Pattern drawings for racking patterns and pin tucks

with slip stitch color (white squares in the below pattern drawings = 255)

2080 (2 x 1)

2081 (4 x 1)

2082 (6 x 1)

2083 (4 x 1)

2084 (8 x 1)

2085 (15 x 1)

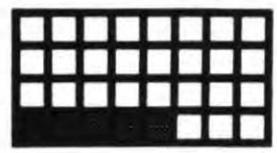
2086 (19 x 1)

2087 (19 x 1)

2088 (13 x 1)

2089 (8 x 1)

2093 (8 x 3)



2094 (8 x 4)

Annex 1 : Pattern data

Pattern drawings for racking patterns and pin tucks

with slip stitch color (white squares in the below pattern drawings = 255)

2095 (1 x 4)

2096 (1 x 32)

2097 (1 x 32)

2098 (1 x 18)

2099 (1 x 18)

Error messages

4032

PATTERN ERRONEOUS

This appears when transferring a pattern from the PC. Check whether the connecting cable is properly plugged in and whether the pattern on the PC is still all right.
To find out if the problem concerns all transfers generally try transferring another pattern. In that case contact your nearest service center.

4033

FEEDERS BLOCKED

See 4027

4050

COLOR ERROR

When changing the color sequence (page 75) or when changing the feeder allocation (page 92) you have tried to enter the same feeder number twice.

4051, 4054

WRONG NUMBER

You have tried to enter a number that is not possible for this input field. If the display is 4051 press the HELP key to see what is available.

4052

NO ENTRY

You have cleared the number on an input field by pressing the CLR key and you have forgotten to enter another number into this input field.

4054

WRONG NUMBER

See 4051

4055

PATTERN IS ACTIVE

You cannot delete this pattern, as it is still programmed in one of the 10 pattern sectors. (See page 99)

4058

NO ORIGIN

You have entered the number of a technique or a pattern but you have forgotten to enter its origine in the previous input field.

Error messages

4059

NR NOT EXISTING

There are no numbers existing that could be displayed for this HELP function.

4060

v EDGES

The numbers that you have entered for the knitting width on the front bed are not possible, alter them.

4061

^ EDGES

The numbers you have entered for the knitting width on the back bed are nor possible, alter them.

4062, 4063, 4064

EDGES MOTOR

You have tried to enter a length of the motor travel that is shorter than your knitting width.

4065

RC NOT VALID

When changing the row counter you can only enter even numbers.

4066

KEY NOT ACTIVE

When the cam box is in this position the key you pressed is not active.

4067

SAVE ERROR

Nothing has been saved. The reason might be that the module is not properly in place.

4068, 4069, 4072

DATA NOT EXISTING

You have tried to save, to program or to delete a technique or a pattern whose number does not exist at the indicated origin.

Error messages

4080, 4081, 4082, 4083

MODULE ERROR

The defragmentation has not been possible. Unplug the plug from the operating unit and plug it in again.
If the same error message appears again, replace your module by another.

4123

NOT ENOUGH SPACE

There is not enough space left in the module for the pattern you want to programme or to save. Delete some patterns and defragment the module. (See page 99)

4140

NO DATA TRANSFERRED

The E 8000 has not received any data from the PC. Have you pressed a random key on the PC ? If yes check whether the connecting cable is plugged in properly.

4173

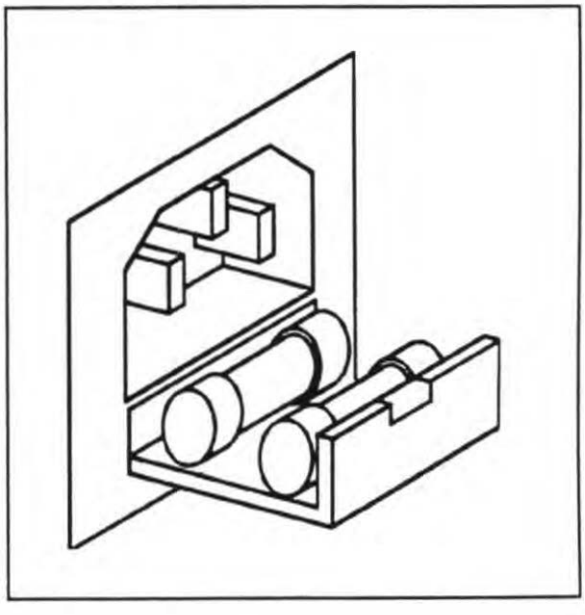
WRONG CAM BOX POS.

The carriage was still moving while you pressed a key that is not active in this situation.

4181

CHECK MOTOR

The motor is switched off or the cable of the motor is not plugged in.
If this is not the case the fuse might be broken. Unplug the cable goint to the mains. There you will find a small drawer, that can be pulled out. Nearer to the motor is the active fuse, that might be broken. Nearer to you is a reserve fuse. Push it sideways out of its holding and put it in the place of the broken fuse.



Annex 1 : Pattern data

Patterns with asterisks in the pattern book

Explanations for the patterns that are marked by an asterisk in the pattern book.

Pattern drawings

The pattern drawings of all the patterns that are stored in the ROM.

The measurements
In brackets are the measurements of each pattern : the first number is the width the second the height in squares.

The color sequence
If you load a pattern from the ROM the color numbers from CREATION 8 will not appear (See page 75) In their place will always appear the color numbers 1, 2, 3 and 4.
Which color actually has to be threaded into which feeder is indicated on the following pages for each pattern drawing.

Pattern drawings for tuck and slip stitch patterns
Note : as there are special colors for tucks (Black = 0) and for slips (white = 255) not all pattern drawings can be used for any kind of pattern.
Tuck- and slip stitch patterns can be knitted only with pattern drawings where the tuck or the slip color appears.
(A technique for tuck stitches will knit a tuck where the tuck color (= 0) or where the slip color (= 255) appears.
A technique for slip stitches will knit a slip stitch where the tuck color (= 0) or where the slip color (= 255) appears.)

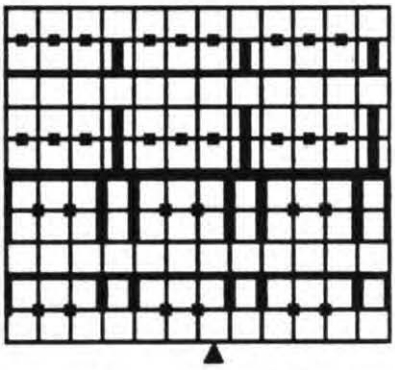
Pattern drawings for fairisle
These are drawings where several different colors can appear in one line of squares. If you try to knit such a pattern drawing with a technique for tuck or slip stitch an error message will appear.

Annex 1 : Pattern data

For the patterns marked by an asterisk in the pattern book, the following explanations have to be considered.

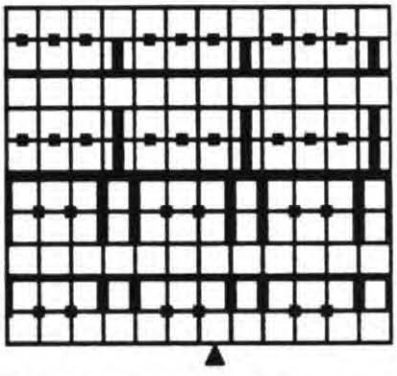
Page 26 **356 / 2030 ***

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



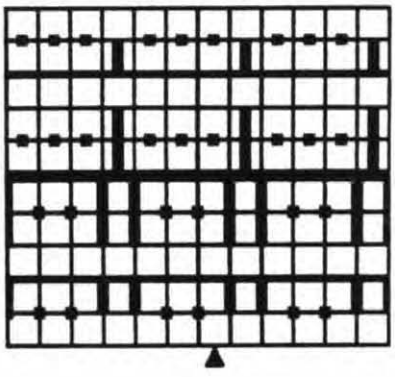
Page 26 **350 / 2030***

For this pattern stitches are only on the needles shown in the diagram.Put empty needles and corresponding jacks in out of work position.



Page 27 **352 / 2030 ***

For this pattern stitches are only on the needles shown in the diagram.Put empty needles and corresponding jacks in out of work position.



Annex 1 : Pattern data

Page 37 **462 / 2066 ***

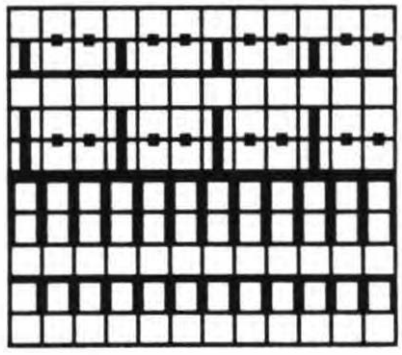
For this pattern it is possible to have no stitches on the back bed needles opposite the front bed needles without stitches being dropped. (13 to 14 and 20 to 26 at right and -7 to -13 and -19 to -20 to the left etc.)
In that case put the relevant needles and corresponding jacks on the back bed in out of work position.

Page 39 **462 / 2268 ***

For this pattern it is possible to have no stitches on the back bed needles opposite the front bed needles without stitches being dropped. (-2 to 3 and 13 to 17 etc.)
In that case put the relevant needles and corresponding jacks on the back bed in out of work position.

Page 41 **542 / 2286 ***

For this pattern on the back bed stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



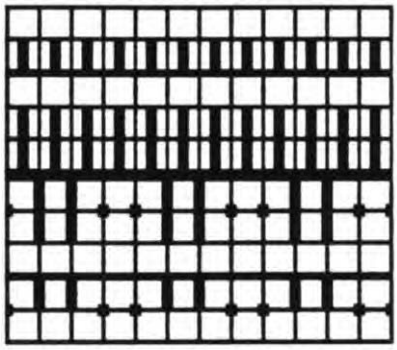
Page 88, 89 **521***

For summer Fairisle, before starting to knit the pattern all stitches have to be on the needles of the back bed.
At the end of the pattern, all stitches of the front bed have to be released. Unravel them by pulling the knitting vigorously. The unraveled stitches will give the "see through" effect of these patterns.

Annex 1 : Pattern data

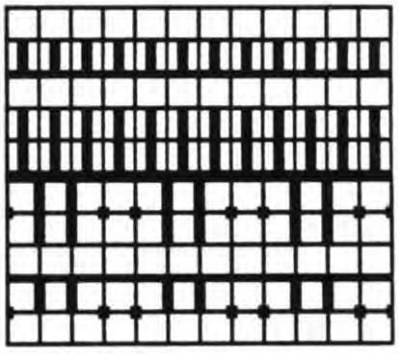
Page 90 448 / 2000 *

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



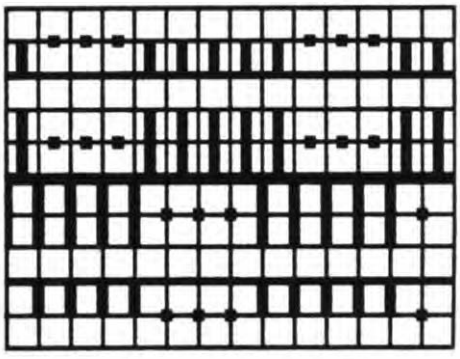
Page 90 430 *

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 90 400 *

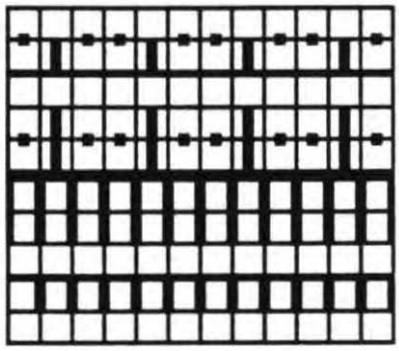
For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Annex 1 : Pattern data

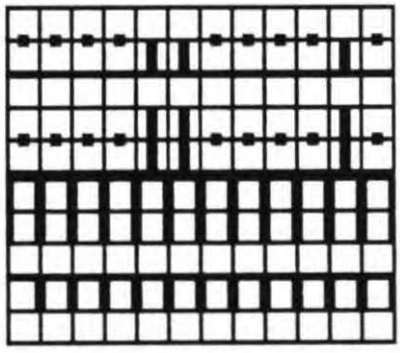
Page 91 **430 ***

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



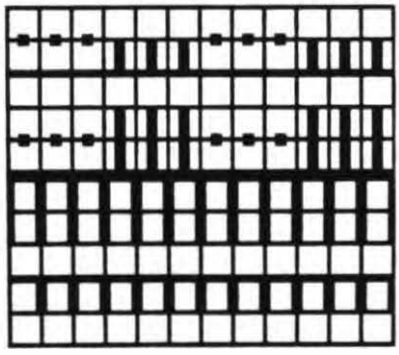
Page 91 **435 * / 2000**

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 91 **431 ***

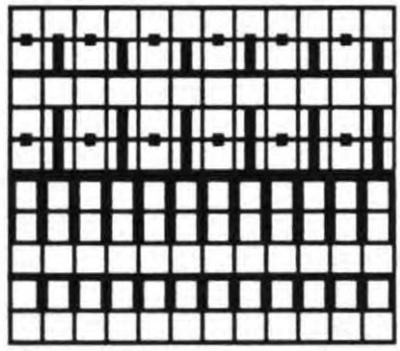
For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Annex 1 : Pattern data

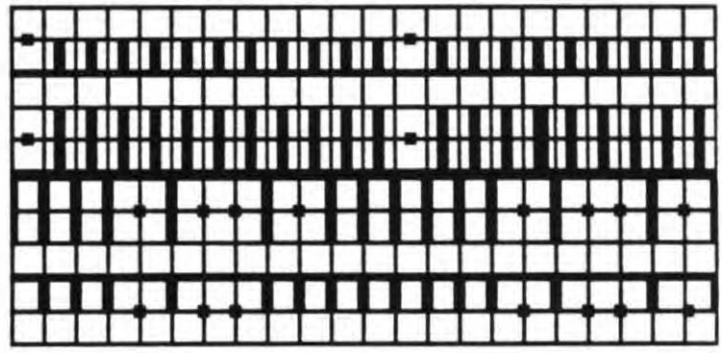
Page 91 **431 *** (bottom)

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 92 **405 ***

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 92 **408 ***

For this pattern there are stitches only on some needles of the front bed. (On the illustrated example there are 10 needles empty, 2 with stitches, 3 empty, 4 with, 3 empty, 6 with, 3 empty, 4 with, 3 empty, 2 with, etc.)
Put empty needles and corresponding jacks in out of work position.

Page 92 **409 ***

For this pattern there are stitches only on some needles of the front bed. (On the illustrated example there are 16 needles empty, 5 with stitches, 4 empty, 4 with, 3 empty, 3 with, 2 empty, 2 with, 1 empty, 1 with, etc.)
Put empty needles and corresponding jacks in out of work position.

Annex 1 : Pattern data

Page 92 412 / 2093

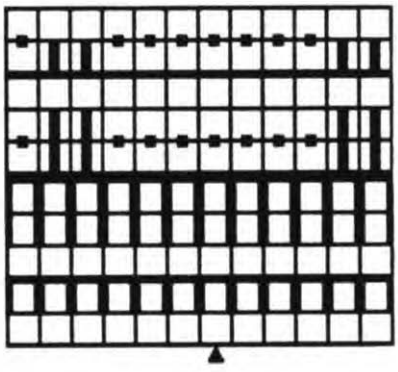
Each time the display shows " turn handle " (to right or left) make 4 turns of the handle.

Page 92 430 / ^ 2080

Attention : load pattern 2080 for back bed, not for front bed.
On back bed put needles -3 to 4 in out of work position. Leave to both sides 3 needles in work position, put again 7 needles in out of work position etc.

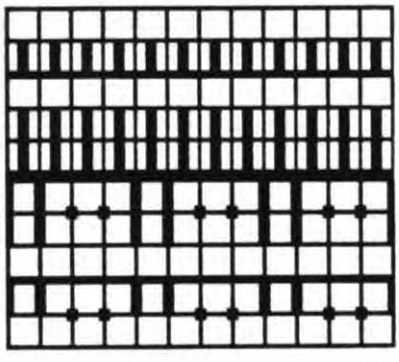
Page 93 453 / 2041 *

For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 93 448 2000 *

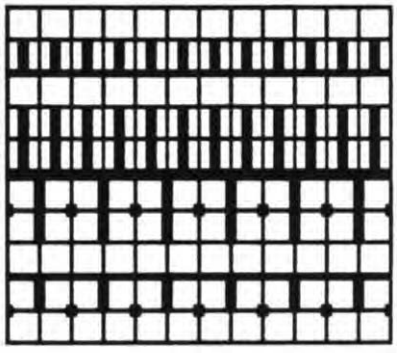
For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Annex 1 : Pattern data

Page 94 **413 / 2094 *** Each time the display shows " turn handle " (to right or left) make 4 turns of the handle.

Page 94 **430 *** For this pattern stitches are only on the needles shown in the diagram. Put empty needles and corresponding jacks in out of work position.



Page 95 **407 *** For this pattern there are stitches only on some needles of the front bed. (On the illustrated example there are 13 needles empty, 1 with stitch, 1 empty, 1 with, 1 empty, 1with, etc.)
Put empty needles and corresponding jacks in out of work position.

Page 95 **409 *** For this pattern where there are stitches on the front bed the opposite needles on the back bed are empty and where the needles of the front bed are empty on the opposite needles of the back bed there are stitches.
(On the illustrated example on the front bed are 5 needles empty and 14 needles with stitches, opposite on the back bed are 6 needles with stitches and 13 needles are empty)
Put the empty needles and v^corresponding jacks in out of work position.

Page 95 **404 *** For this pattern there are stitches only on some needles of the front bed. (On the illustrated example there are 5 needles empty, 1 with stitch, 1 empty, 4 with, 1 empty, 1with, etc.)
Put empty needles and corresponding jacks in out of work position.

Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)

2000 (2 x 2)

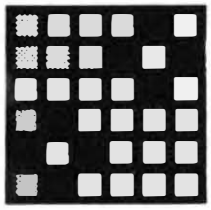
2001 (2 x 4)

2002 (2 x 4)

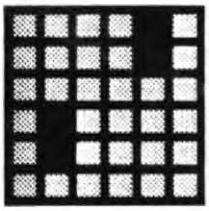
2003 (2 x 4)

2004 (2 x 4)

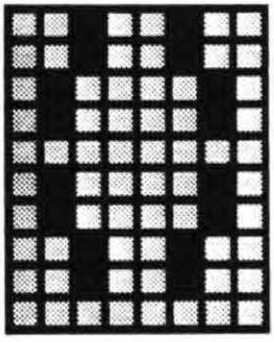
2005 (2 x 8)



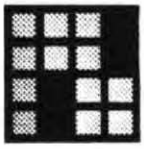
2006 (6 x 6)



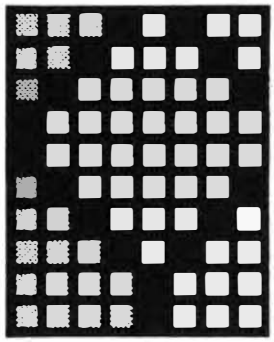
2007 (6 x 6)



2008 (8 x 10)



2009 (4 x 4)

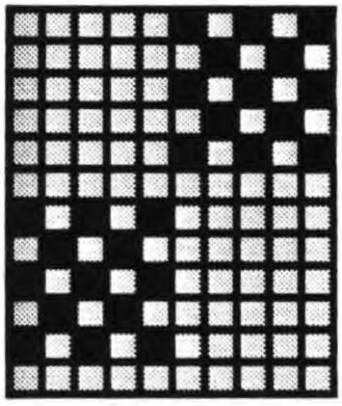


2010 (8 x 10)

Annex 1 : Pattern data

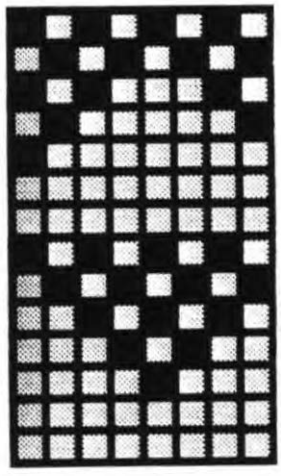
Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)

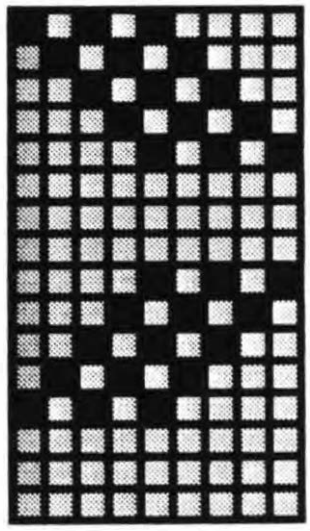


2011 (10 x 12)

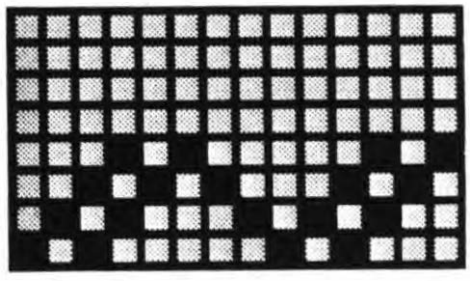
2012 (2 x 12)



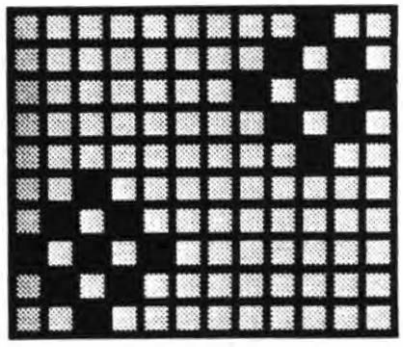
2013 (8 x 14)



2014 (9 x 16)



2015 (14 x 8)

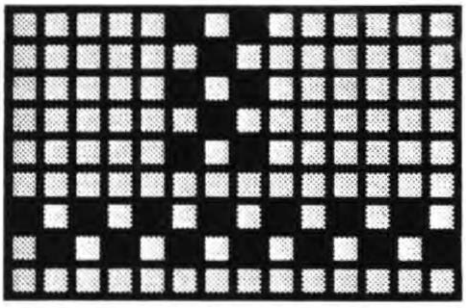


2016 (12 x 10)

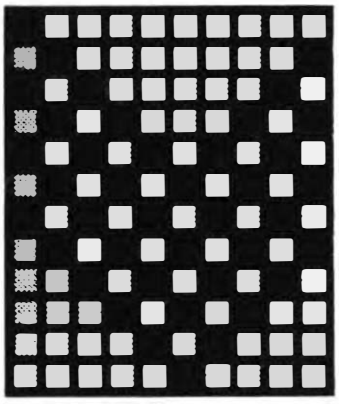
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

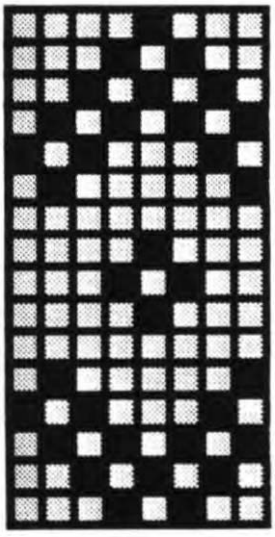
with tuck color (black = 0)



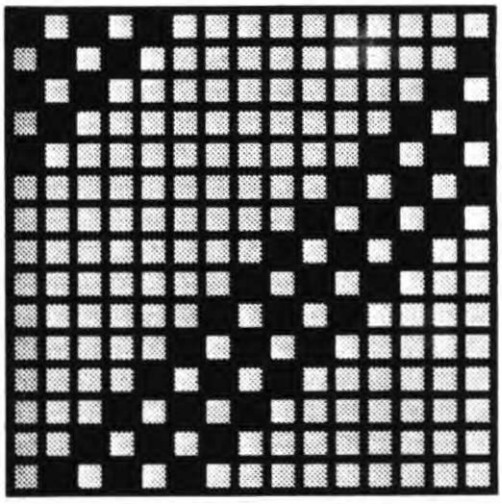
2017 (14 x 9)



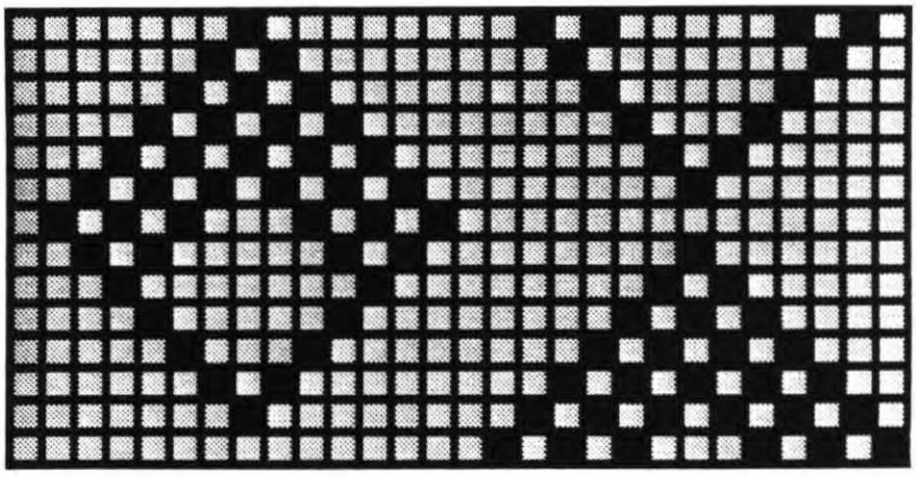
2019 (10 x 12)



2018 (8 x 16)



2020 (15 x 15)

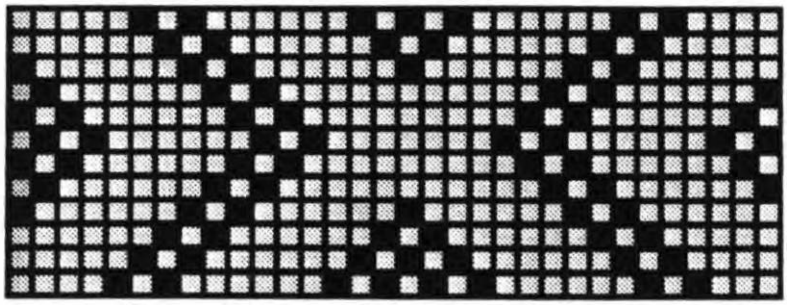


2021 (28 x 14)

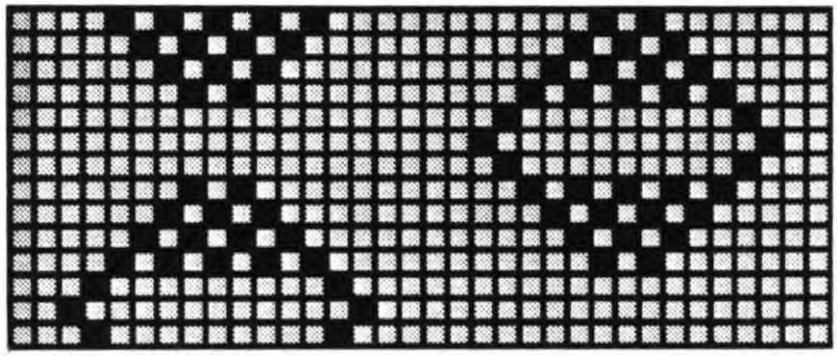
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

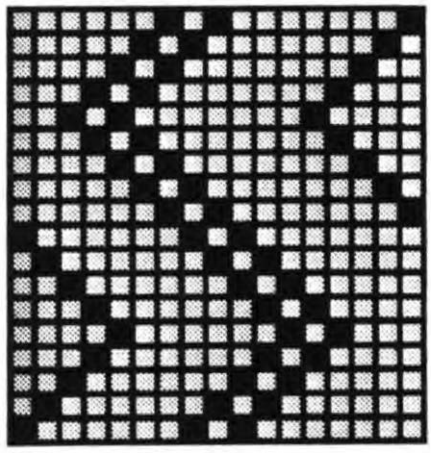
with tuck color (black = 0)



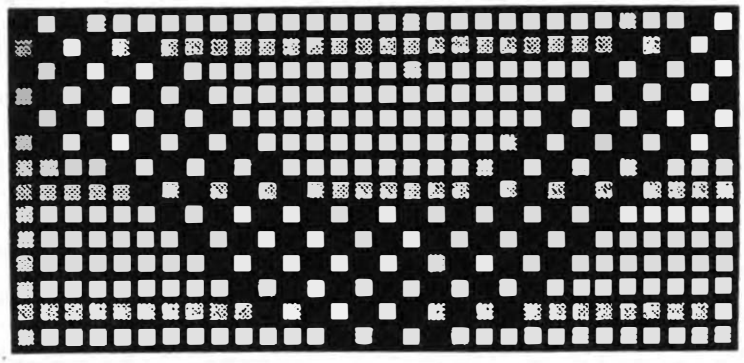
2022 (32 x 12)



2023 (34x 14)



2024 (17 x 18)

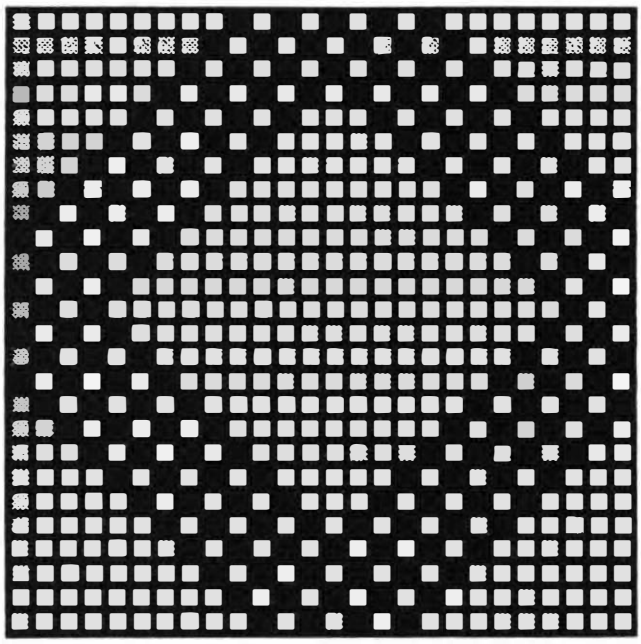


2025 (30 x 14)

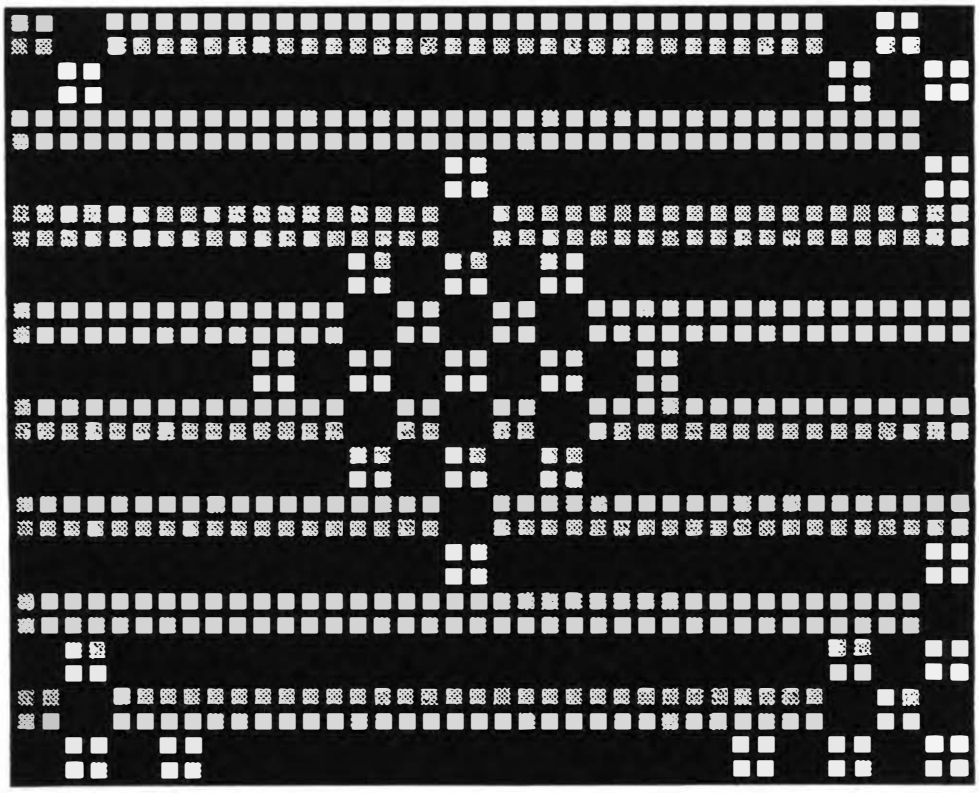
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)



2026 (26 x 26)

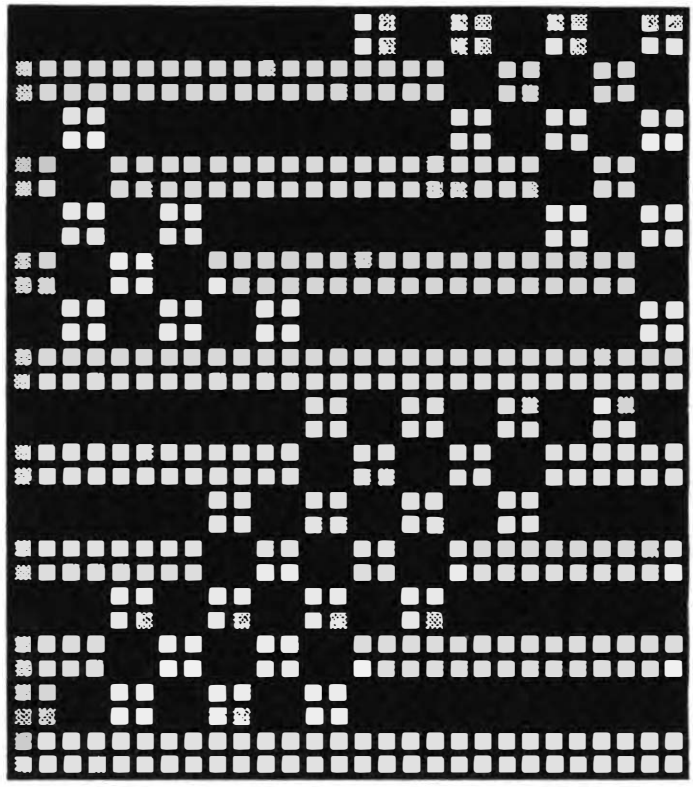


2027 (40 x 32)

Annex 1 : Pattern data

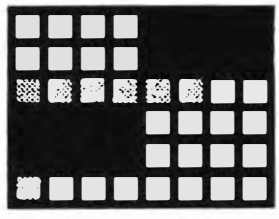
Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)



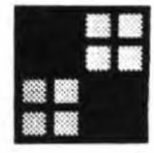
2028 (28 x 32)

2029 (95 x 4)



2030 (8 x 6)

2031 (2 x 6)

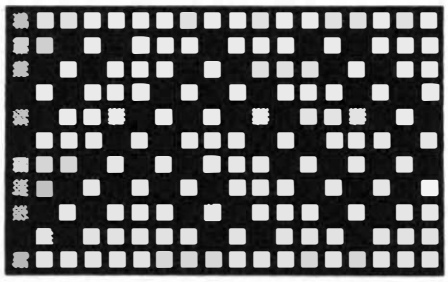


2032 (4 x 4)

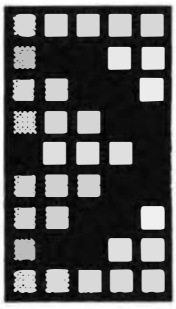
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

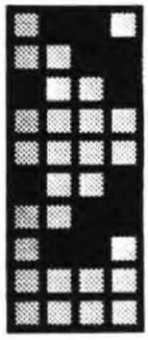
with tuck color (black = 0)



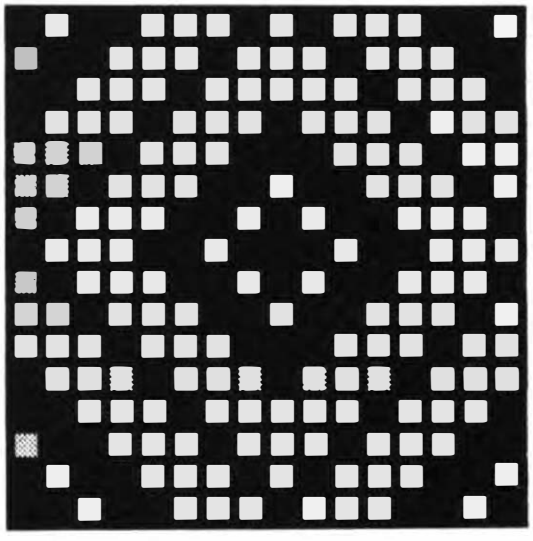
2033 (18 x 11)



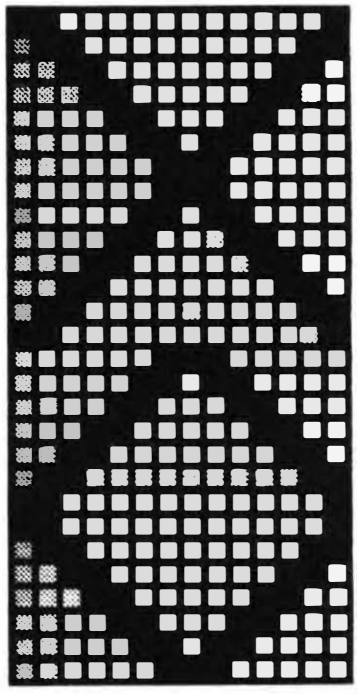
2036 (5 x 9)



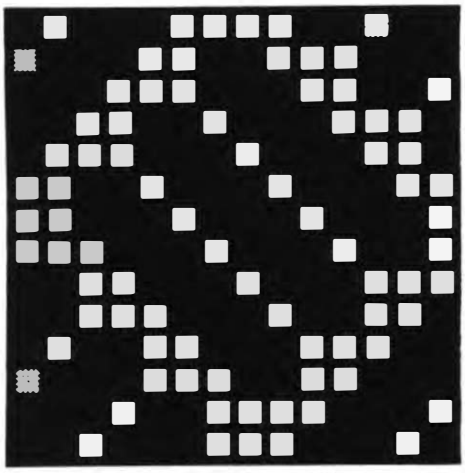
2037 (4 x 10)



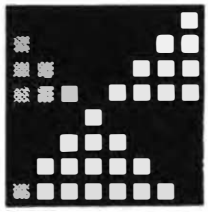
2034 (16 x 16)



2038 (14 x 28)



2035 (14 x 14)

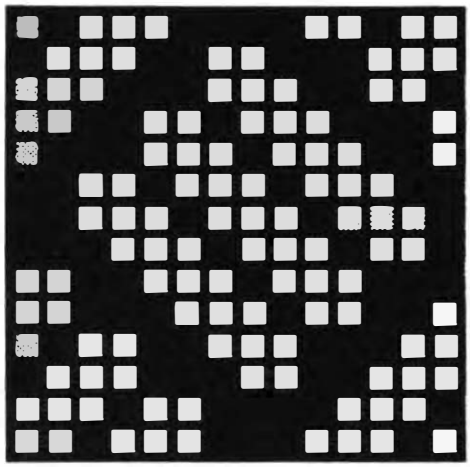


2039 (8 x 8)

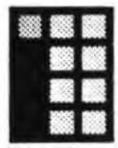
Annex 1 : Pattern data

Pattern drawings for tuck and slip stitch patterns

with tuck color (black = 0)



2040 (14 x 14)

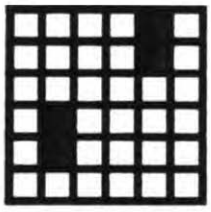


2041 (3 x 4)

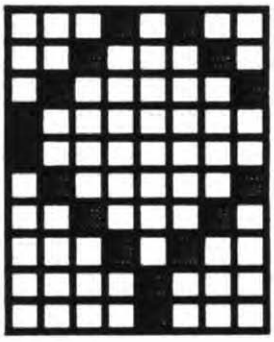
Annex 1 : Pattern data

Pattern drawings for lacy patterns

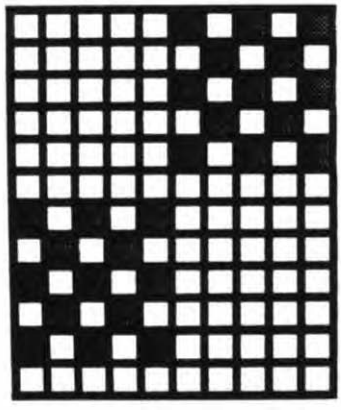
with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



2042 (6 x 6)

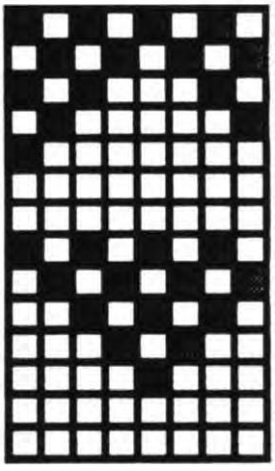


2043 (8 x 10)

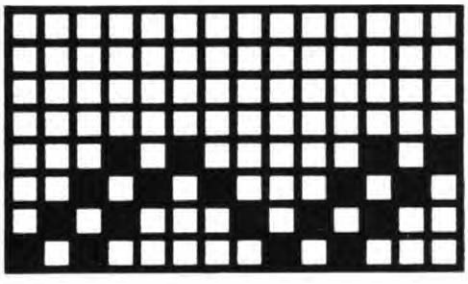


2044 (10 x 12)

2045 (2 x 12)



2046 (8 x 14)

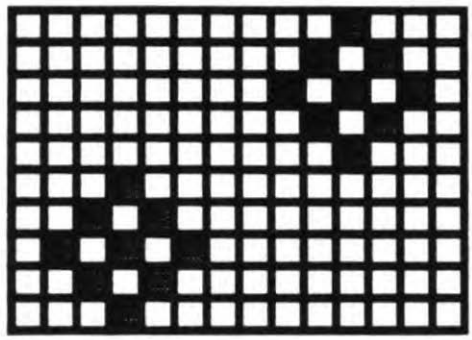


2047 (14 x 8)

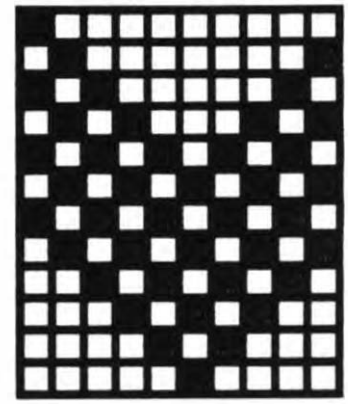
Annex 1 : Pattern data

Pattern drawings for lacy patterns

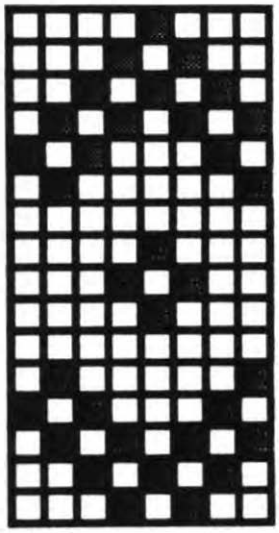
with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



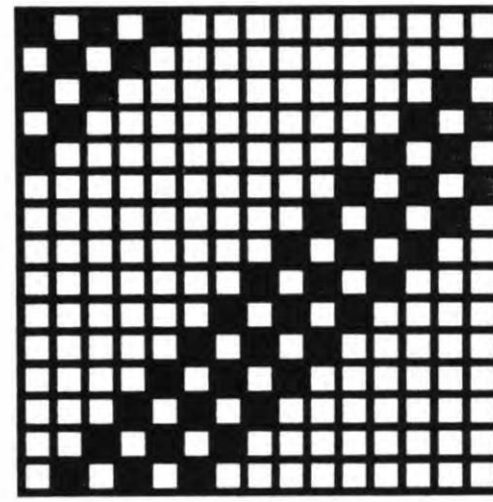
2048 (14 x 10)



2050 (10 x 12)



2049 (8 x 16)

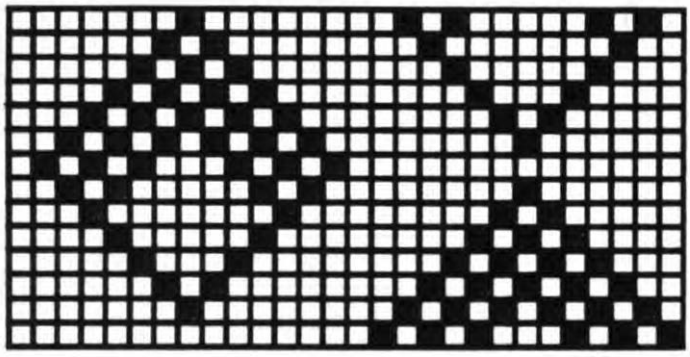


2051 (15 x 15)

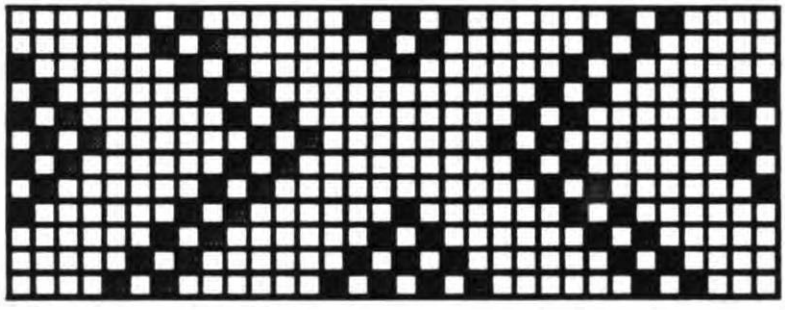
Annex 1 : Pattern data

Pattern drawings for lacy patterns

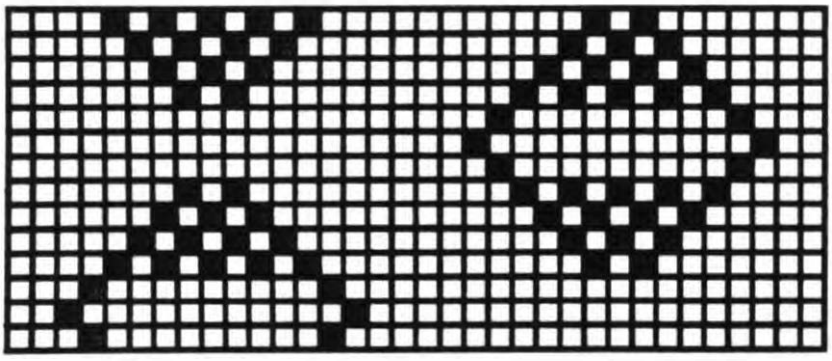
with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



2052 (28 x 14)



2053 (32 x 12)

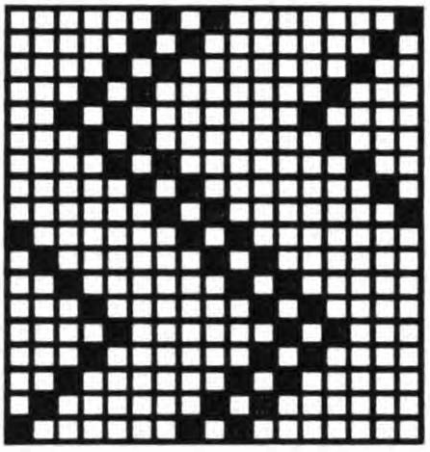


2054 (34 x 14)

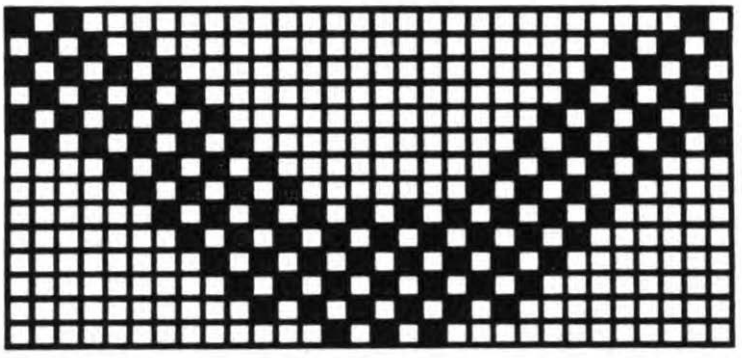
Annex 1 : Pattern data

Pattern drawings for lacy patterns

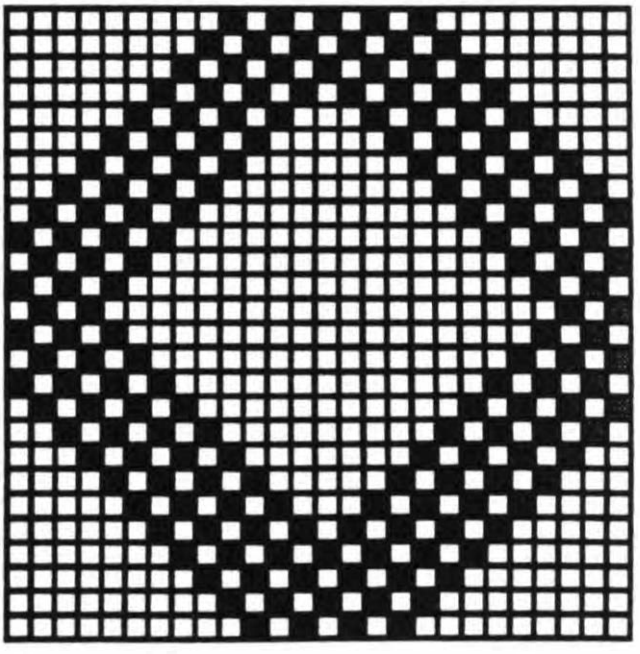
with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



2055 (17 x 18)



2056 (30 x 14)

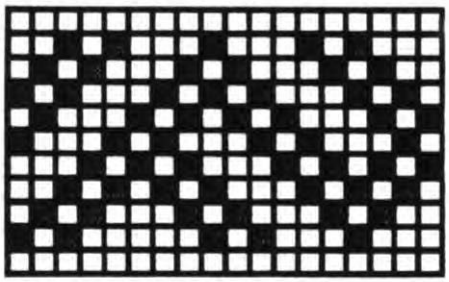


2057 (26 x 26)

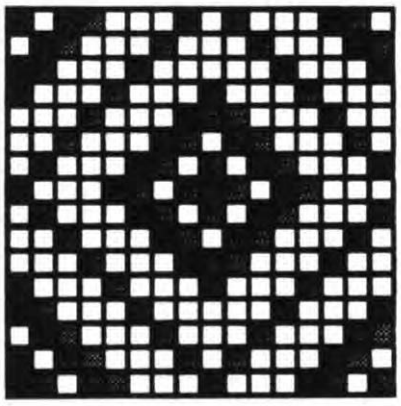
Annex 1 : Pattern data

Pattern drawings for lacy patterns

with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch pattems.



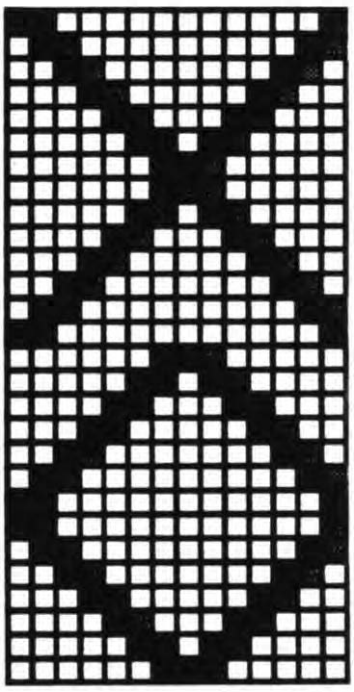
2058 (18 x 11)



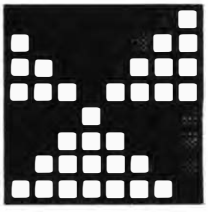
2059 (16 x 16)

2060 (5 x 9)

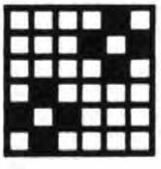
2061 (4 x 10)



2062 (14 x 28)



2063 (8 x 8)

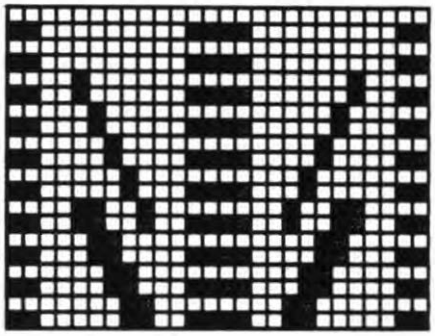


2064 (6 x 6)

Annex 1 : Pattern data

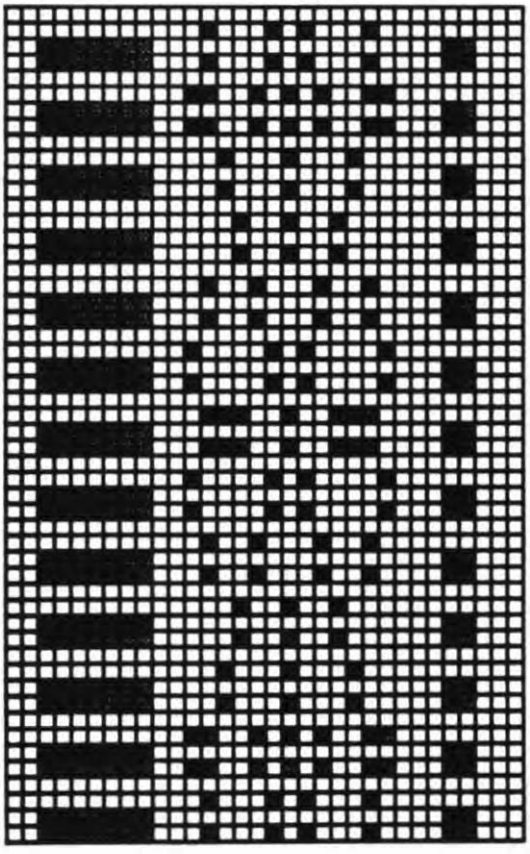
Pattern drawings for lacy patterns

with slip stitch color (white squares in the below pattern drawings = 255)
Not suitable for tuck and slip stitch patterns.



2065 (26 x 20)

2067 (17 x 30)



2066 (32 x 52)

2068 (14 x 4)

Annex 1 : Pattern data

Pattern drawings for the reverse side of Fairisle patterns

with slip stitch color (white squares in the below pattern drawings = 255)

2069 (2 x 4)

2070 (2 x 4)

2071 (2 x 4)

2072 (2 x 8)

2073 (3 x 3)

2074 (4 x 4)

2075 (4 x 4)

2076 (3 x 6)

2077 (2 x 4)

2078 (3 x 3)

Annex 1 : Pattern data

Pattern drawings for racking patterns and pin tucks

with slip stitch color (white squares in the below pattern drawings = 255)

2080 (2 x 1)

2081 (4 x 1)

2082 (6 x 1)

2083 (4 x 1)

2084 (8 x 1)

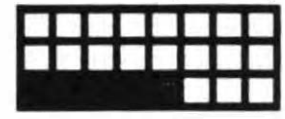
2085 (15 x 1)

2086 (19 x 1)

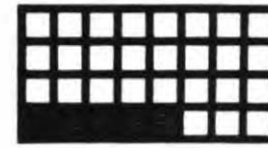
2087 (19 x 1)

2088 (13 x 1)

2089 (8 x 1)



2093 (8 x 3)



2094 (8 x 4)

Annex 1 : Pattern data

Pattern drawings for racking patterns and pin tucks

with slip stitch color (white squares in the below pattern drawings = 255)

2095 (1 x 4)

2096 (1 x 32)

2097 (1 x 32)

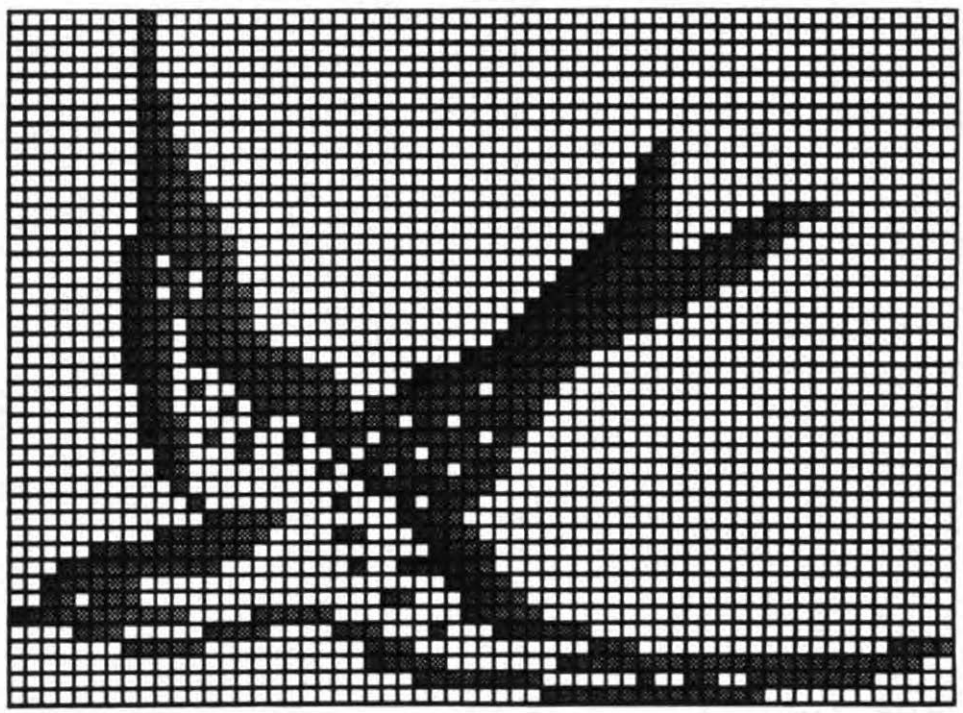
2098 (1 x 18)

2099 (1 x 18)

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

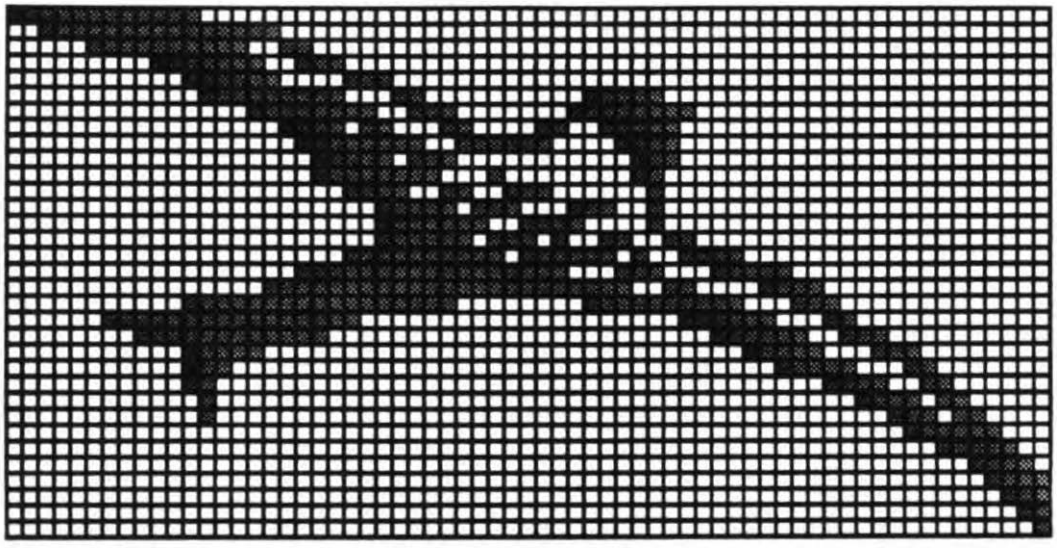
2100 (205 x 149) col 1 = white
col 2 = black



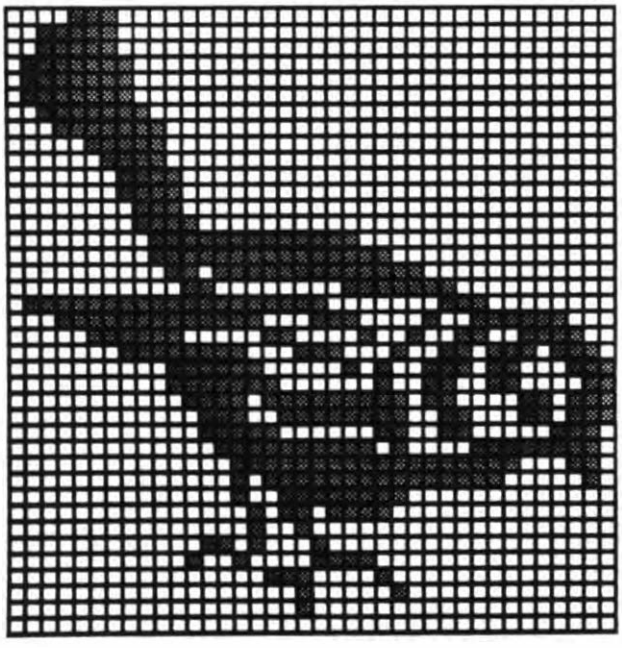
2101 (59 x 43) col 1 = blue
col 2 = white

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns



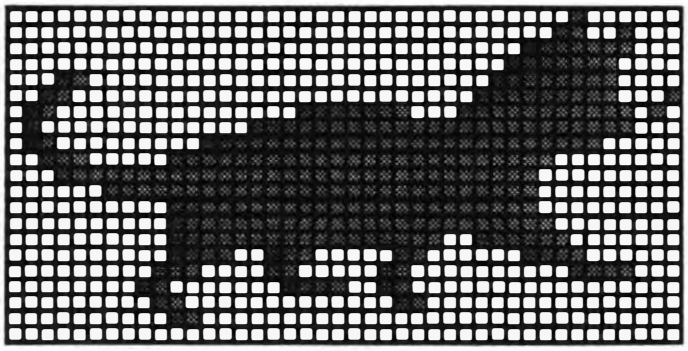
2102 (65 x 33)
col 1 = blue
col 2 = black



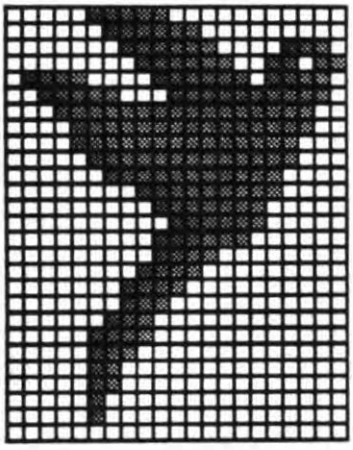
2103 (38 x 39)
col 1 = blue
col 2 = light blue

Annex 1 : Pattern data

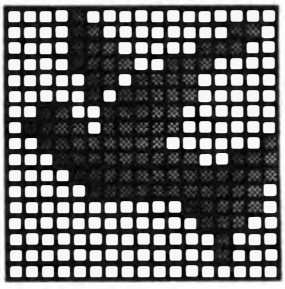
Pattern drawings for Fairisle patterns



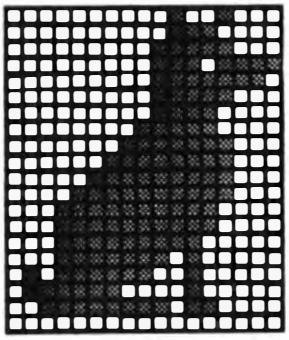
2104 (42 x 21)
col 1 = lilac
col 2 = green



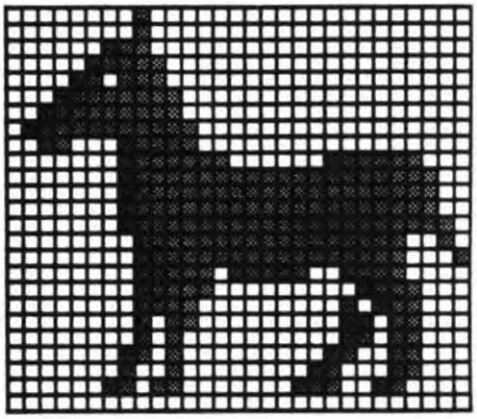
2105 (21 x 27)
col 1 = yellow
col 2 = green



2107 (17 x 17)
col 1 = yellow
col 2 = lilac



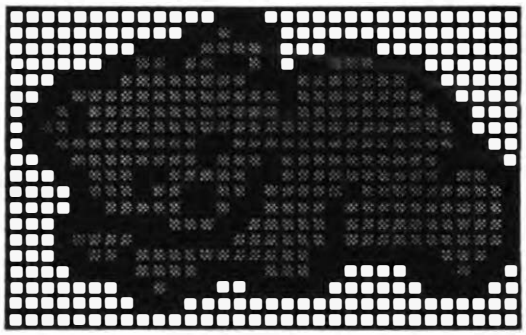
2106 (17 x 20)
col 1 = green
col 2 = white



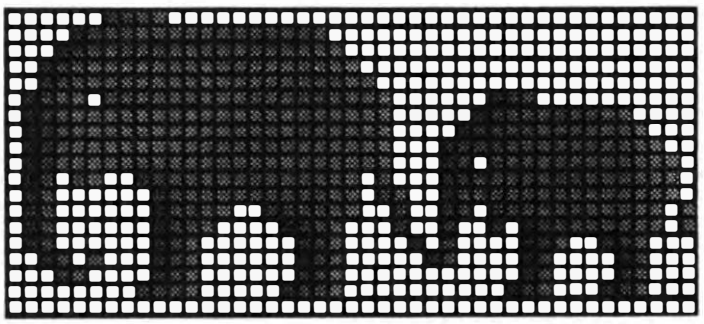
2108 (29 x 25)
col 1= lilac
col 2 = yellow

Annex 1 : Pattern data

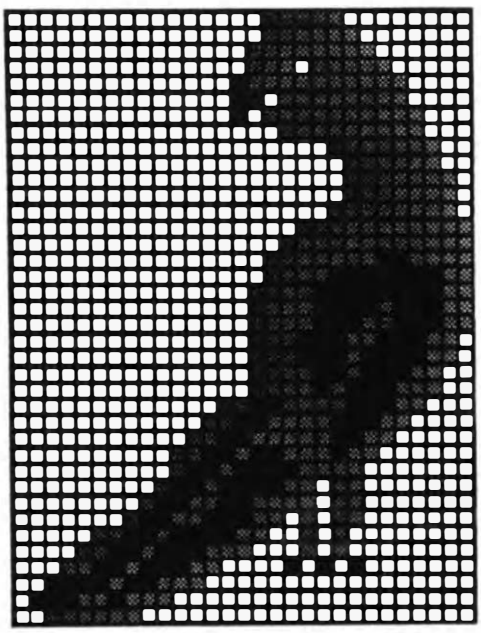
Pattern drawings for Fairisle patterns



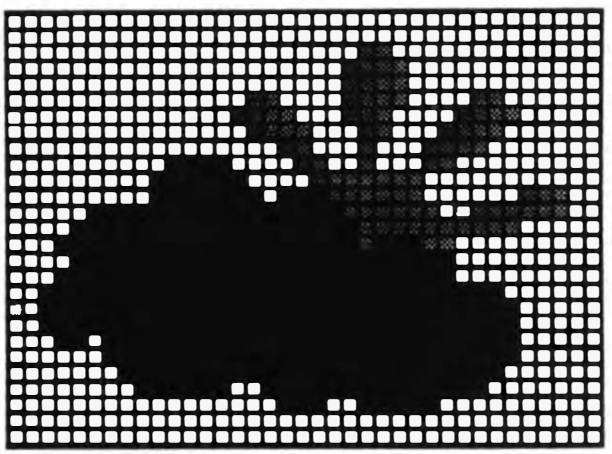
2109 (32 x 20)
col 1 = blue
col 2 = black
col 3 = white



2110 (43 x 19)
col 1 = pink
col 2 = lilac



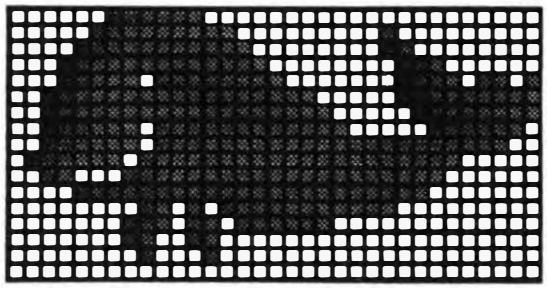
2111 (29 x 38)
col 1 = green
col 2 = blue
col 3 = yellow



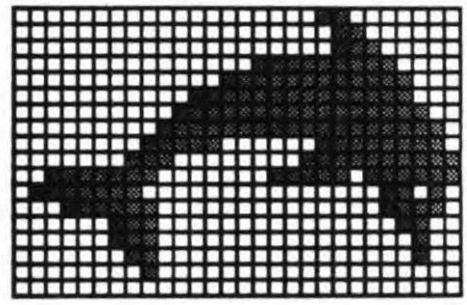
2112 (37 x 27)
col 1 = blue
col 2 = white
col 3 = yellow

Annex 1 : Pattern data

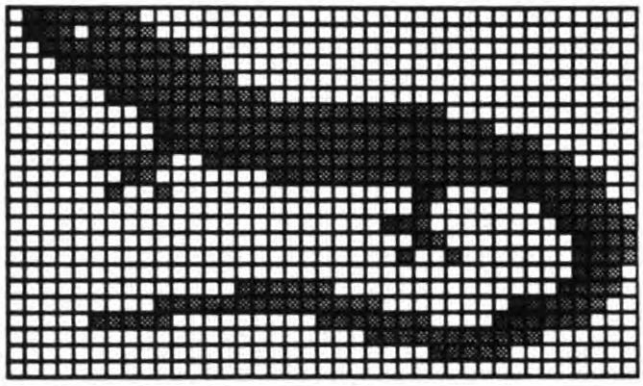
Pattern drawings for Fairisle patterns



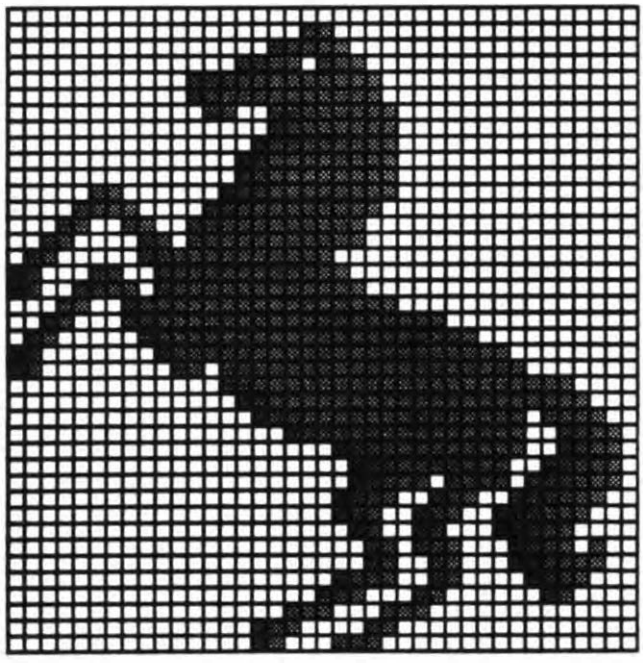
2113 (33 x 17)
col 1 = green
col 2 = lilac



2114 (28 x 18)
col 1 = blue
col 2 = white



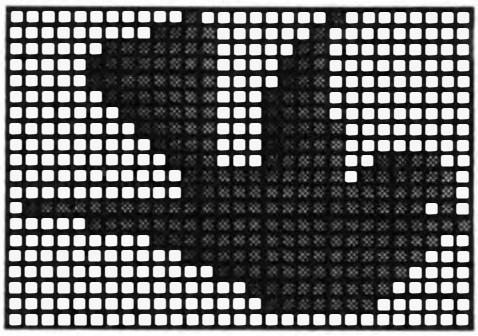
2115 (39 x 23)
col 1 = blue
col 2 = yellow



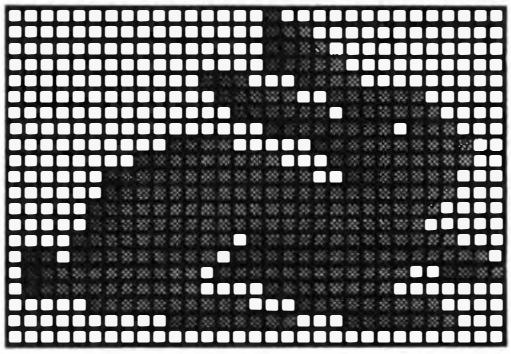
2116 (39 x 40)
col 1 = green
col 2 = white

Annex 1 : Pattern data

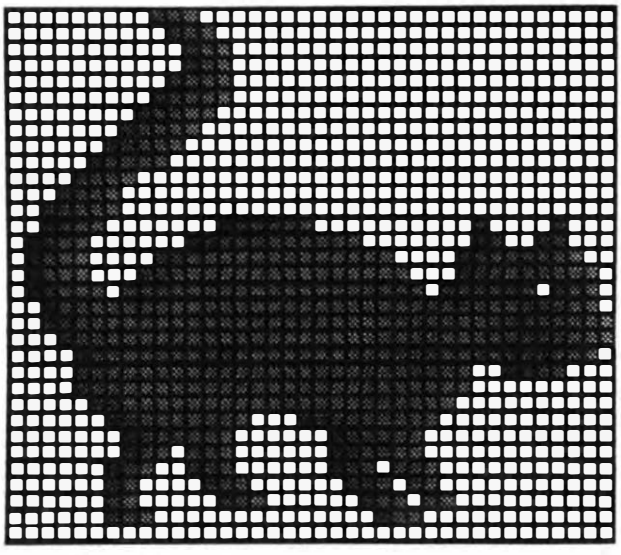
Pattern drawings for Fairisle patterns



2117 (29 x 20)
col 1 = pink
col 2 = white



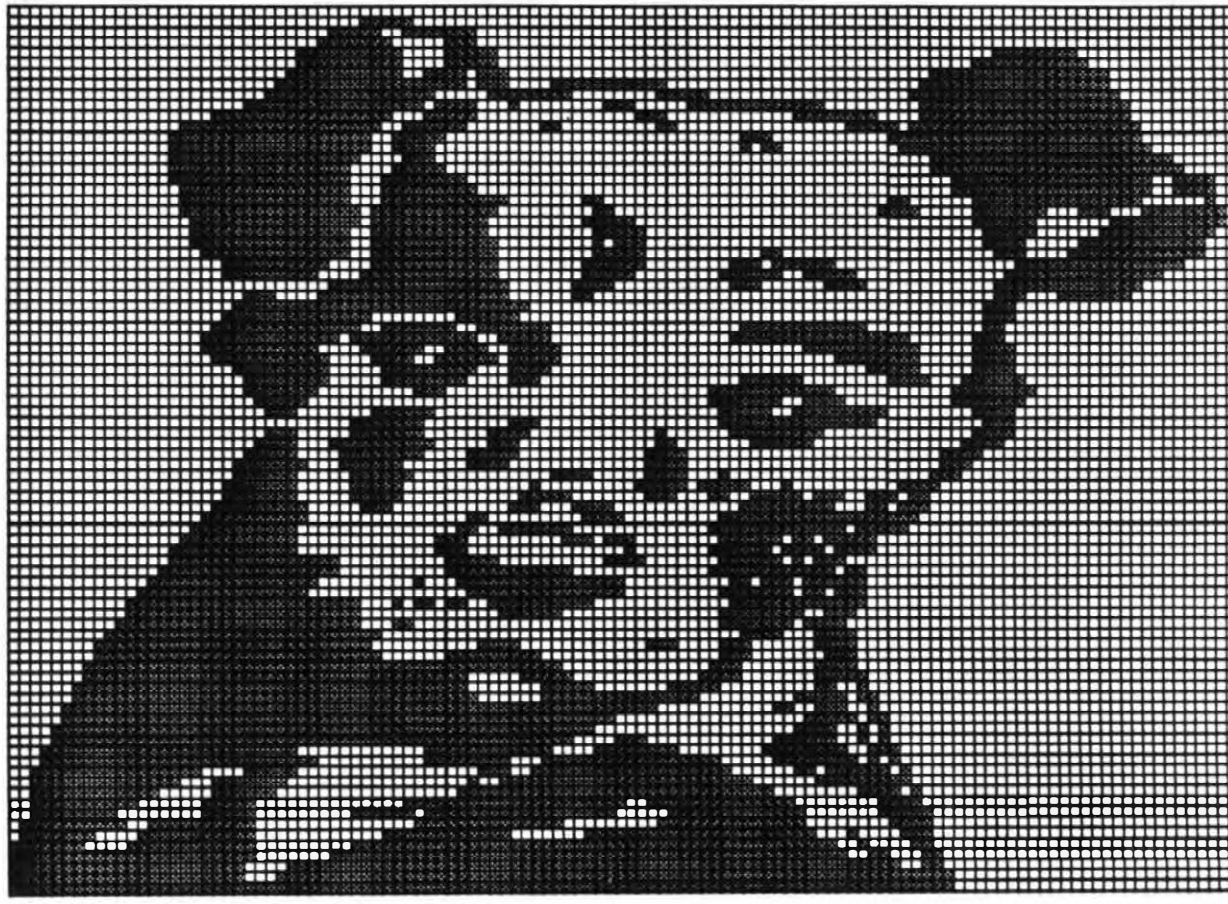
2118 (31 x 21)
col 1 = white
col 2 = green



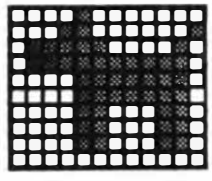
2119 (38 x 33)
col 1 = lilac
col 2 = black

Annex 1 : Pattern data

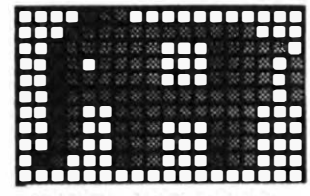
Pattern drawings for Fairisle patterns



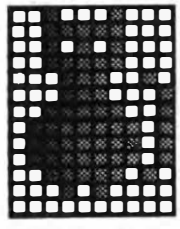
2120 (116 x 84) col 1 = black
col 2 = white



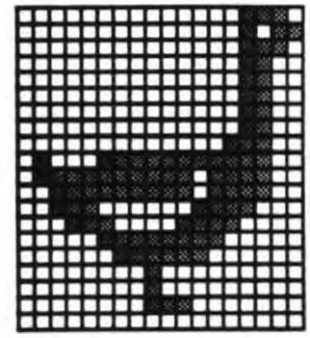
2121 (12 x10)
col 1 = pink
col 2 = green



2123 (18 x 11)
col 1 = green
col 2 = lilac



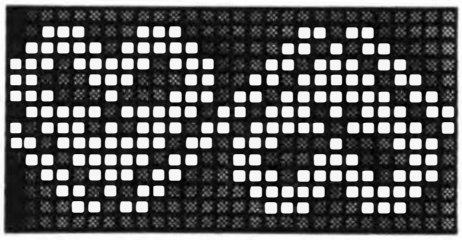
2122 (10 x 13)
col 1 = blue
col 2 = white



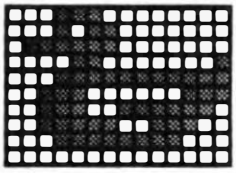
2124 (18 x 20)
col 1 = blue
col 2 = yellow

Annex 1 : Pattern data

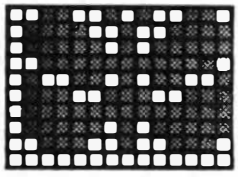
Pattern drawings for Fairisle patterns



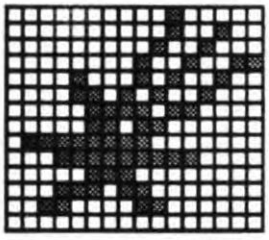
2125 (28 x 14)
col 1 = white
col 2 = lilac



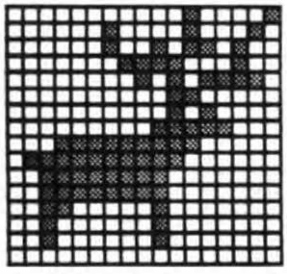
2129 (14 x 10)
col 1 = pink
col 2 = blue



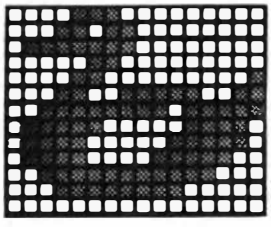
2126 (14 x 10)
col 1 = lilac
col 2 = green



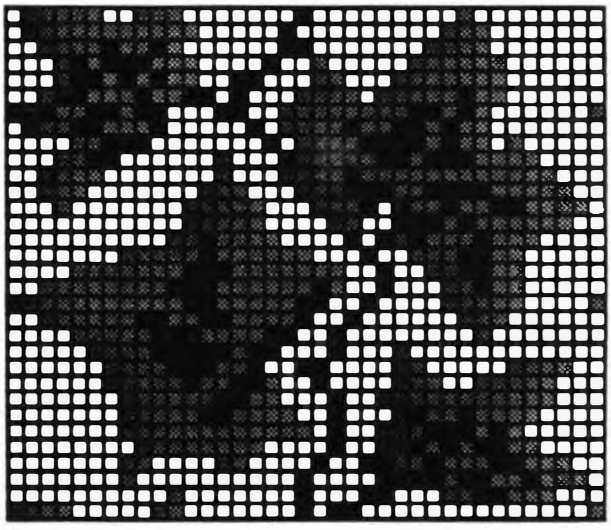
2130 (16 x 14)
col 1 = green
col 2 = lilac



2127 (17 x 16)
col 1 = yellow
col 2 = white



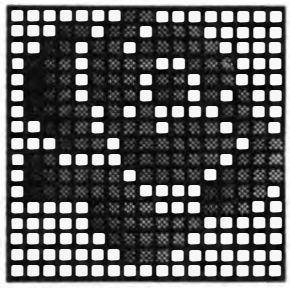
2128 (16 x 13)
col 1 = blue
col 2 = pink



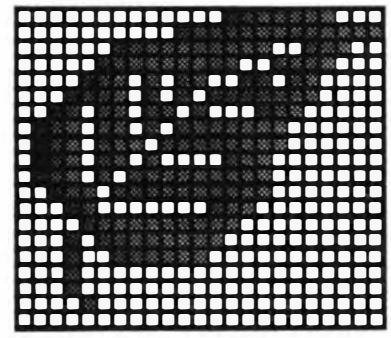
2131 (37 x 32)
col 1 = green
col 2 = white
col 3 = black

Annex 1 : Pattern data

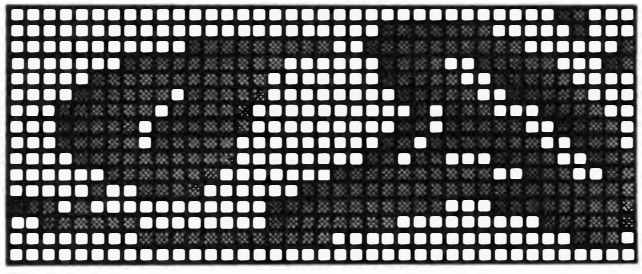
Pattern drawings for Fairisle patterns



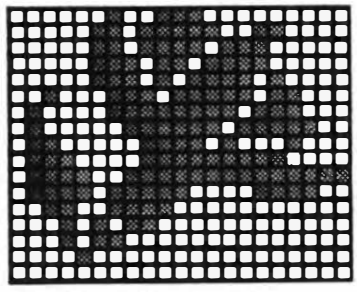
2132 (17 x 17)
col 1 = dark red
col 2 = pink



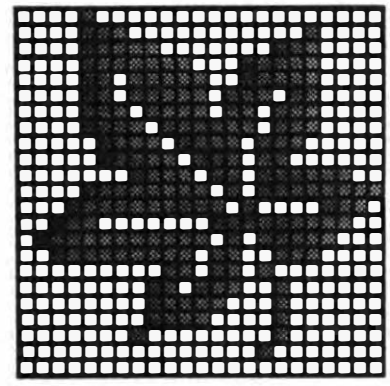
2135 (23 x 20)
col 1 = purple
col 2 = yellow



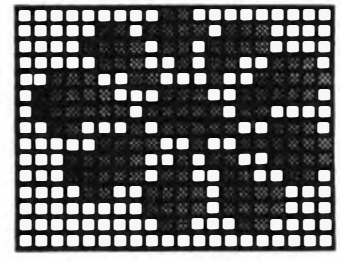
2133 (39 x 16)
col 1 = pink
col 2 = dark red



2134 (21 x 17)
col 1 = purple
col 2 = pink



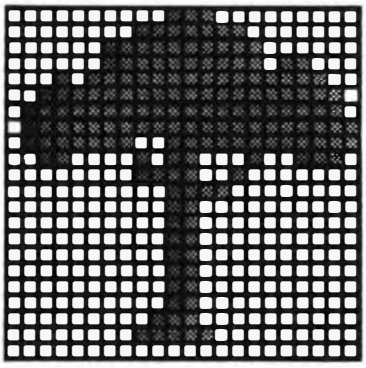
2136 (23 x 23)
col 1 = green
col 2 = purple



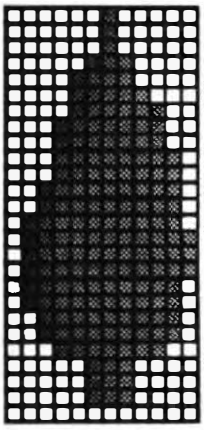
2137 (20 x 15)
col 1 = yellow
col 2 = purple

Annex 1 : Pattern data

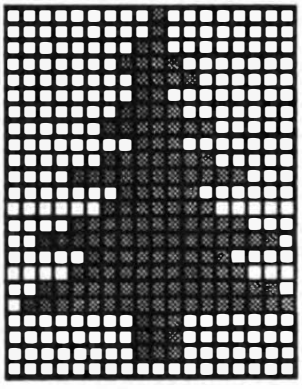
Pattern drawings for Fairisle patterns



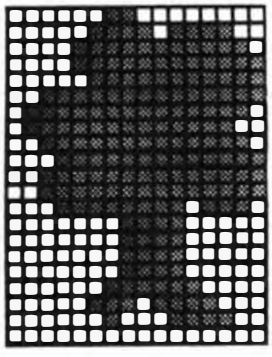
2138 (22 x 22)
col 1 = pink
col 2 = blue



2141 (12 x 26)
col 1 = lilac
col 2 = green



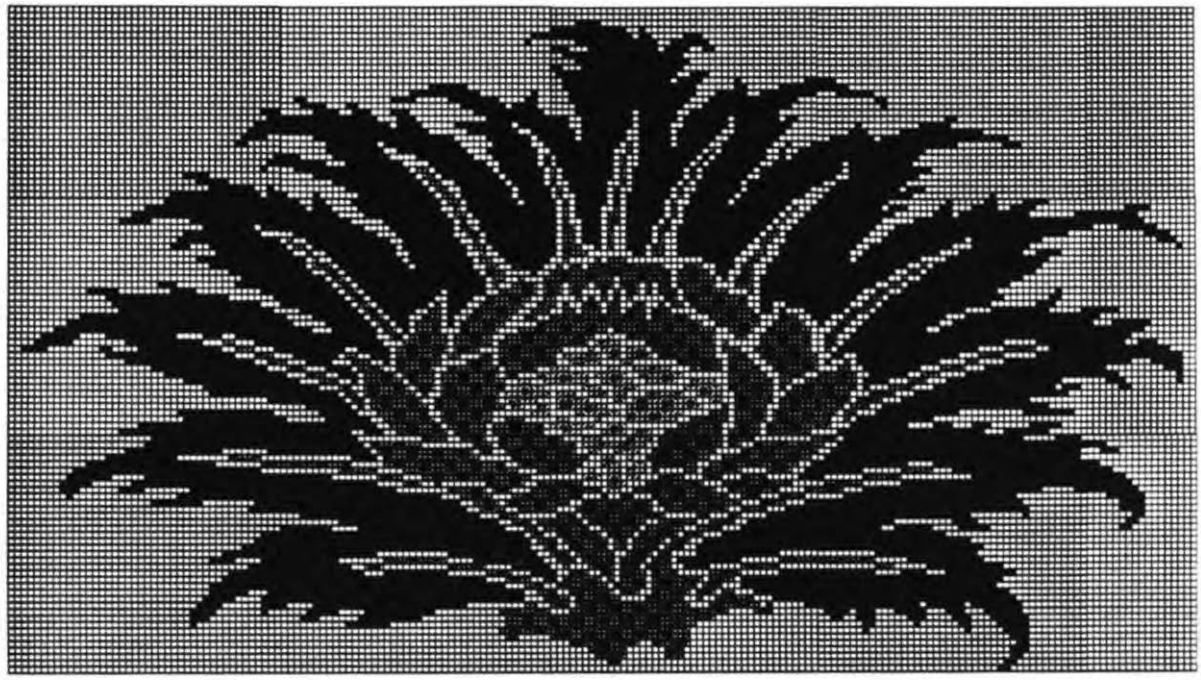
2139 (18 x 23)
col 1 = dark green
col 2 = green



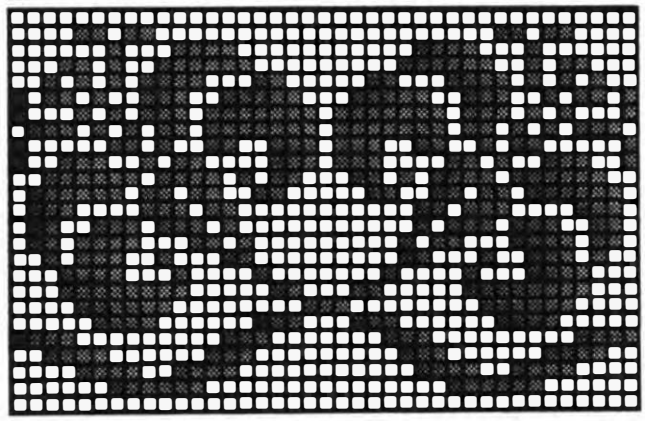
2140 (16 x 21)
col 1 = pink
col 2 = dark red

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns



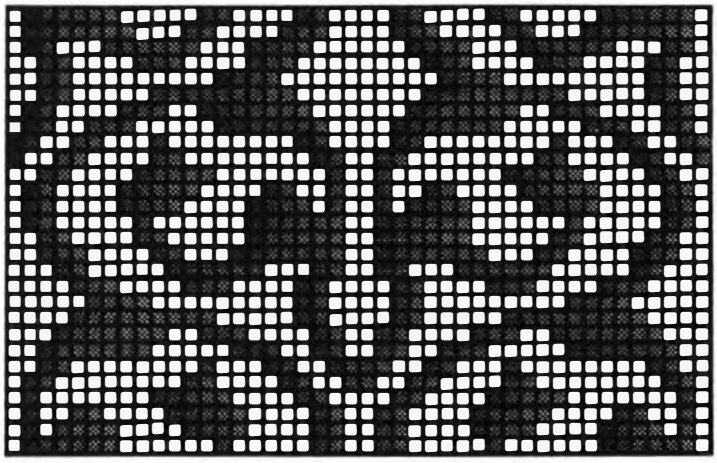
2142 (185 x 104)
col 1 = black
col 2 = pink
col 3 = violet
col 4 = green



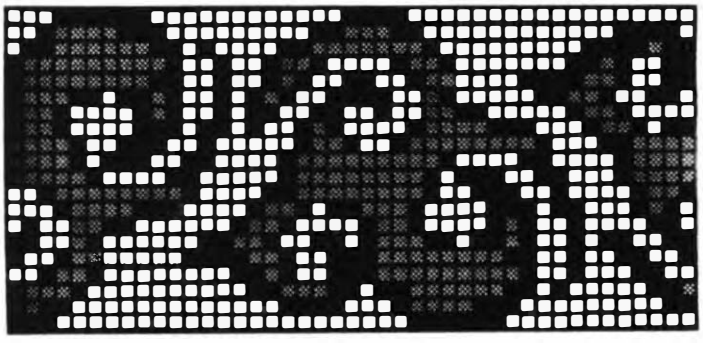
2143 (39 x 25)
col 1 = lilac
col 2 = pink

Annex 1 : Pattern data

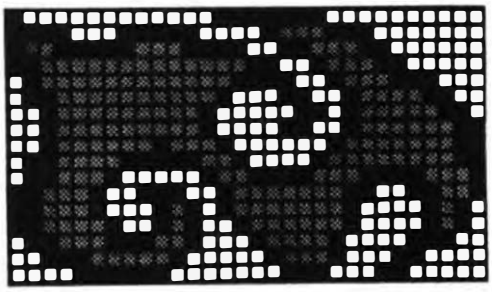
Pattern drawings for Fairisle patterns



2144 (44 x 28)
col 1 = pink
col 2 = red



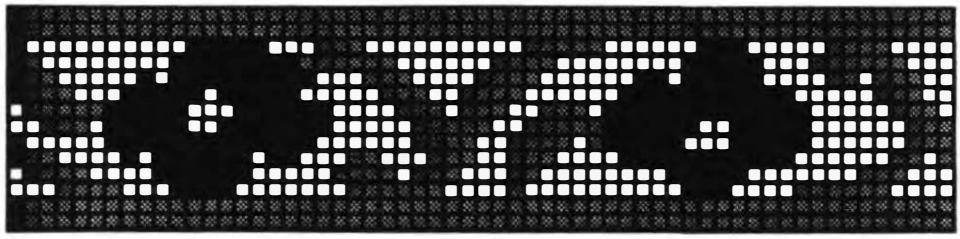
2145 (43 x 20)
col 1 = black
col 2 = green
col 3 = lilac



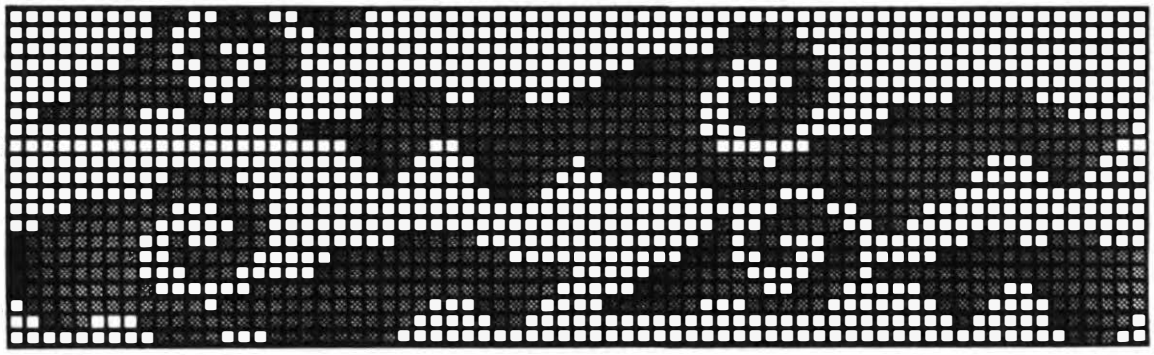
2146 (30 x 17)
col 1 = green
col 2 = black
col 3 = dark green

Annex 1 : Pattern data

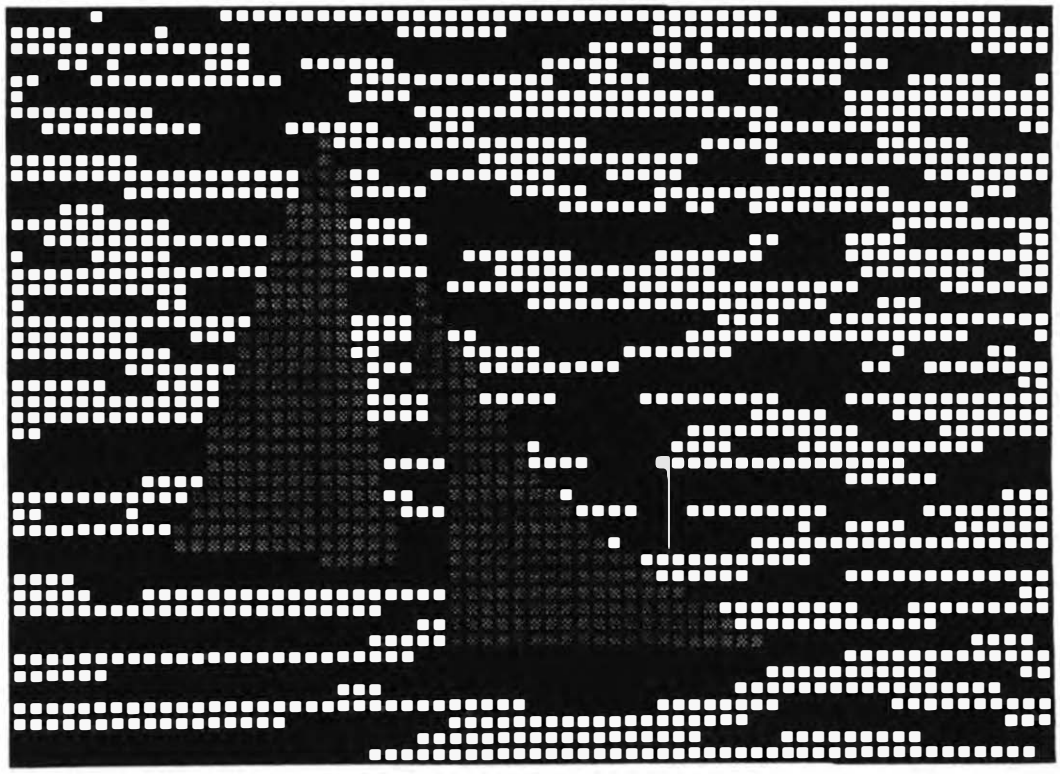
Pattern drawings for Fairisle patterns



2147 (59 x 14)
col 1 = blue
col 2 = white
col 3 = pink



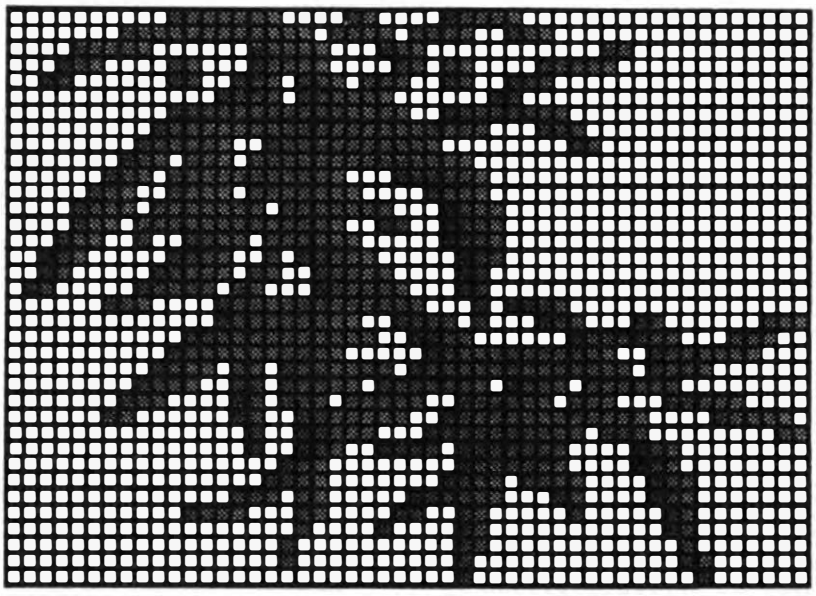
2148 (71 x 21)
col 1 = blue
col 2 = white



2149 (65 x 47)
col 1 = dark blue
col 2 = light blue
col 3 = white

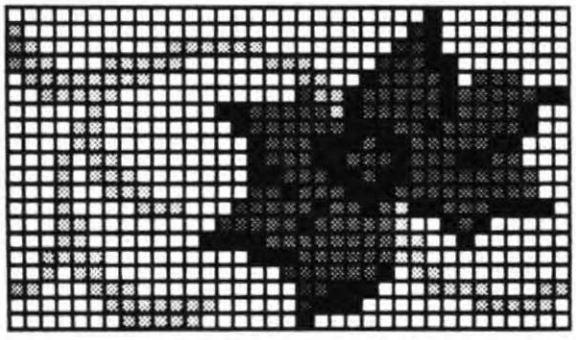
Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

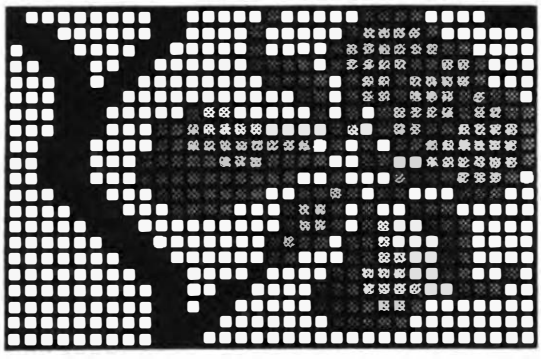


2150 (50 x 36)

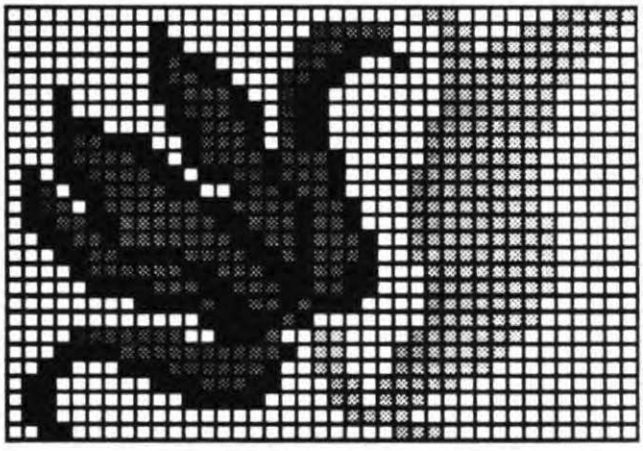
col 1 = white
col 2 = green



2151 (35 x 20)
col 1 = white
col 2 = green
col 3 = dark blue
col 4 = light blue



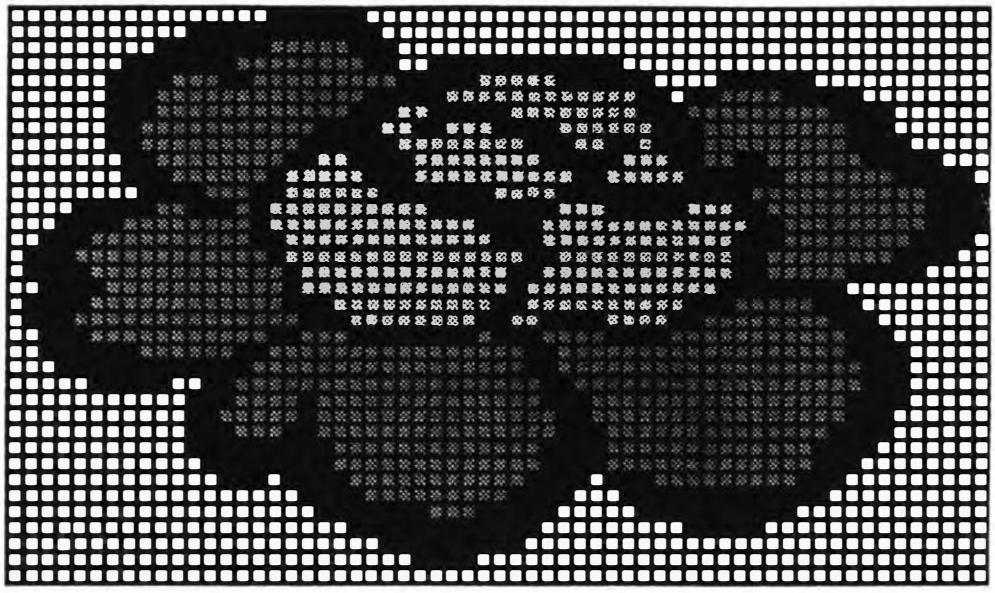
2152 (33 x 21)
col 1 = white
col 2 = green
col 3 = dark lilac
col 4 = light lilac



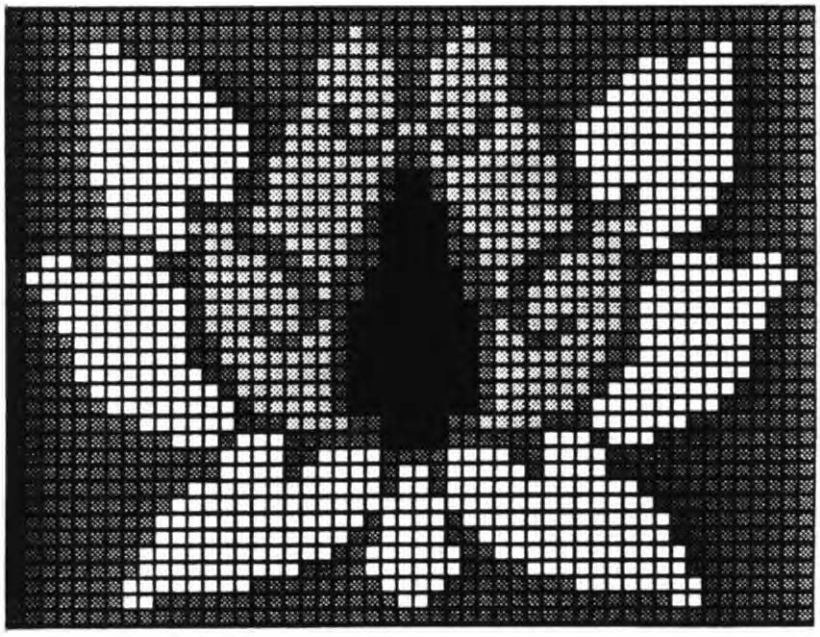
2153 (38 x 27)
col 1 = light yellow
col 2 = red
col 3 = green
col 4 = yellow

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns



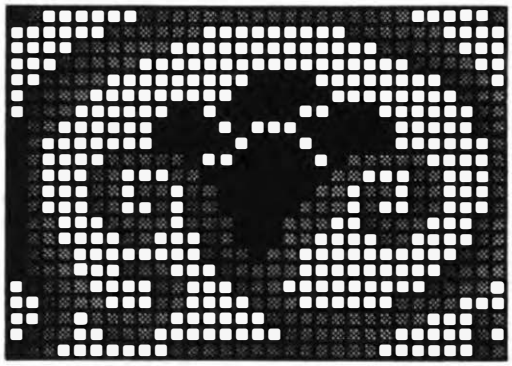
2154 (60 x 35)
col 1 = lilac
col 2 = dark blue
col 3 = medium pink
col 4 = light pink



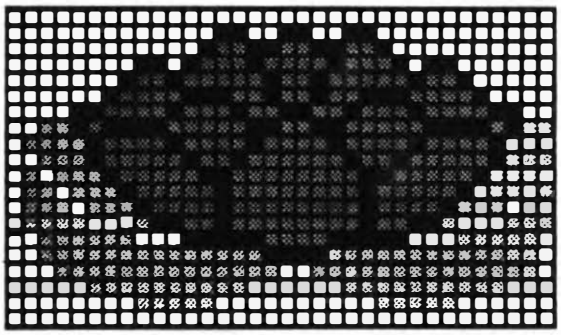
2155 (50 x 38)
col 1 = lilac
col 2 = green
col 3 = red
col 4 = light lilac

Annex 1 : Pattern data

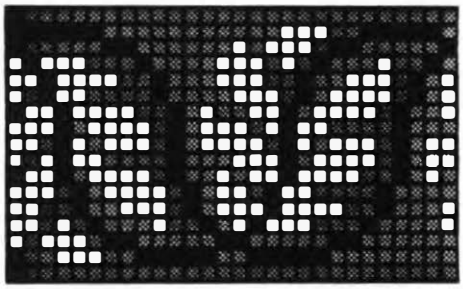
Pattern drawings for Fairisle patterns



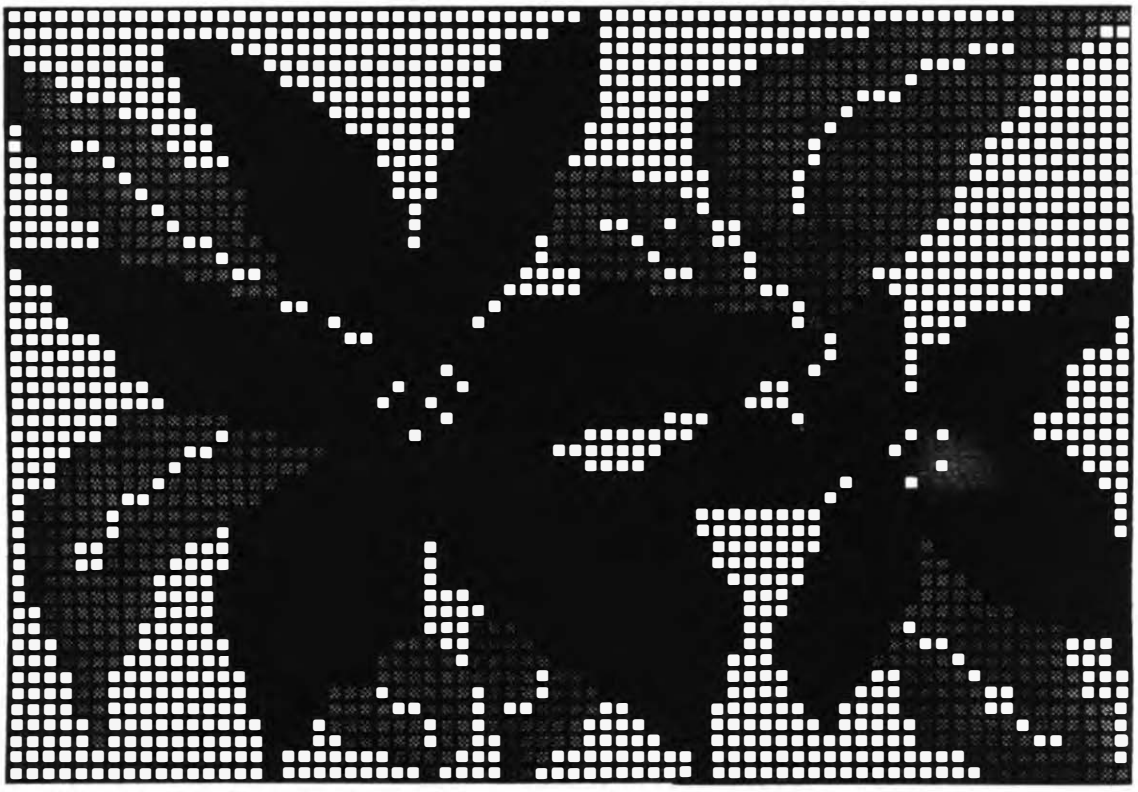
2156 (31 x 22)
col 1 = green
col 2 = pink
col 3 = lilac



2158 (34 x 20)
col 1 = light green
col 2 = dark green
col 3 = dark pink
col 4 = light pink



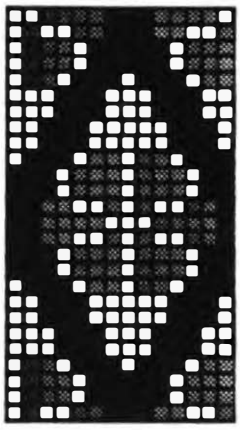
2157 (28 x 17)
col 1 = white
col 2 = green
col 3 = black



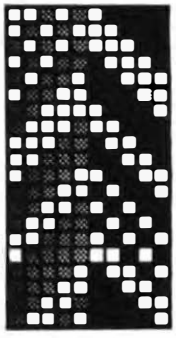
2159 (70 x 48)
col 1= white
col 2 = violet
col 3 = green

Annex 1 : Pattern data

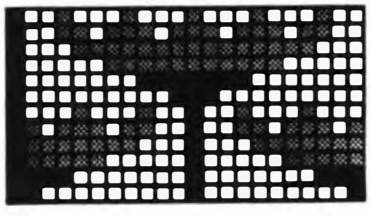
Pattern drawings for Fairisle patterns



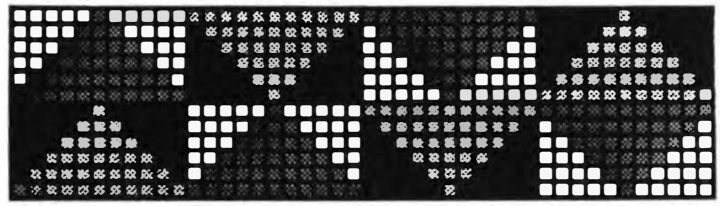
2160 (14 x 26)
col 1= white
col 2 = pink
col 3 = grey



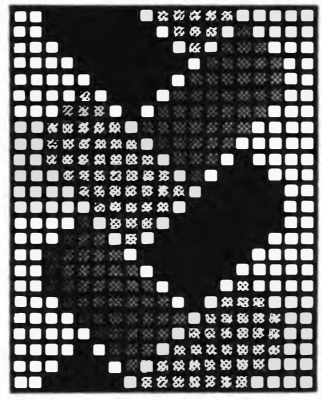
2161 (10 x 20)
col 1= beige
col 2 = white
col 3 = pink



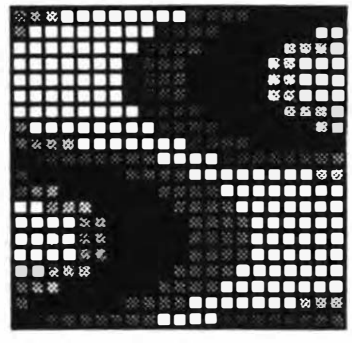
2162 (22 x 12)
col 1= green
col 2 = white
col 3 = pink



2163 (44 x 12)
col 1= lilac
col 2 = white
col 3 = green
col 4 = pink



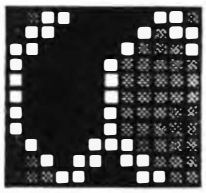
2164 (19 x 24)
col 1= white
col 2 = yellow
col 3 = green
col 4 = lilac



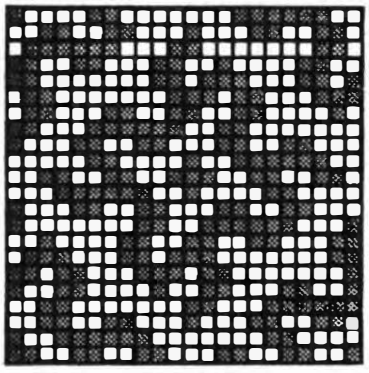
2165 (21 x 20)
col 1= violet
col 2 = white
col 3 = pink
col 4 = blue

Annex 1 : Pattern data

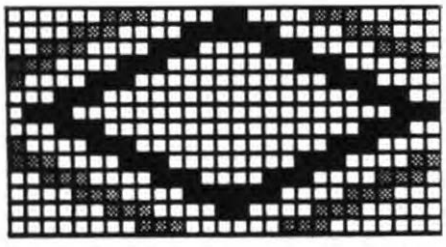
Pattern drawings for Fairisle patterns



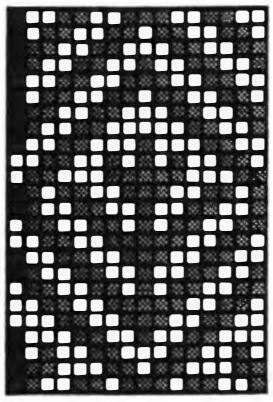
2166 (12 x 11)
col 1= pink
col 2 = green
col 3 = bordeaux



2167 (22 x 22)
col 1= violet
col 2 = lilac

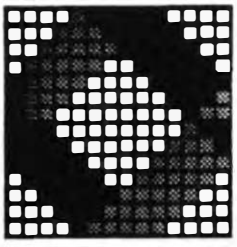


2168 (27 x 14)
col 1= lilac
col 2 = pink
col 3 = violet



2169 (16 x 24)
col 1= blue
col 2 = white

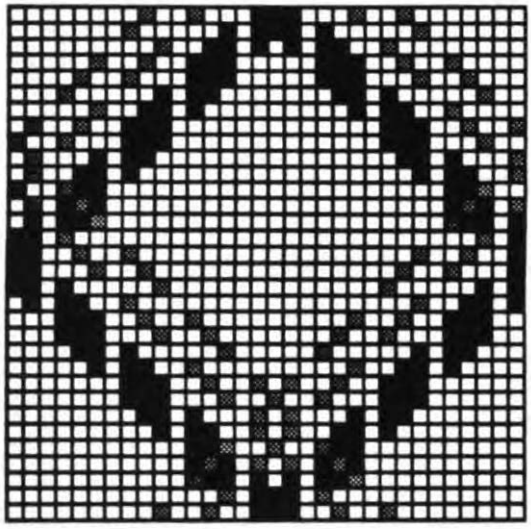
2170 (19 x 19)
col 1= black
col 2 = light blue
col 3 = white
col 4 = blue



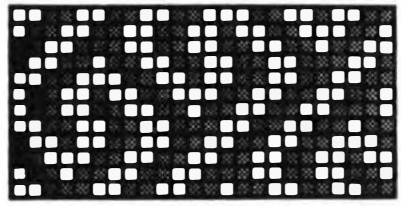
2171 (14 x 14)
col 1= white
col 2 = blue
col 3 = dark blue

Annex 1 : Pattern data

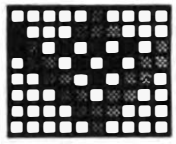
Pattern drawings for Fairisle patterns



2172 (32 x 32)
col 1= white
col 2 = pink
col 3 = green



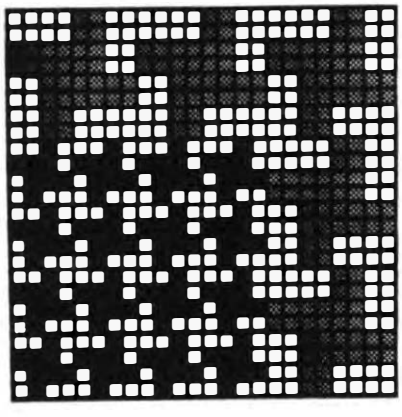
2175 (24 x 12)
col 1= dark green
col 2 = light green



2176 (10 x 8)
col 1= brown
col 2 = white
col 3 = black

2173 (20 x 20)
col 1= white
col 2 = light green
col 3 = dark green

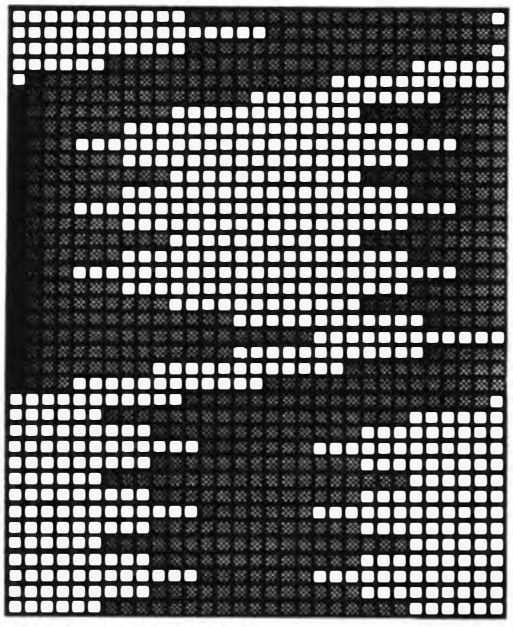
2177 (18 x 18)
col 1= white
col 2 = brown



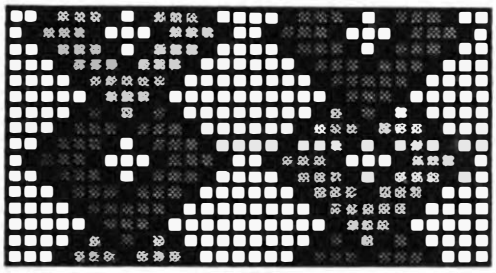
2174 (24 x 24)
col 1= green
col 2 = white
col 3 = brown

Annex 1 : Pattern data

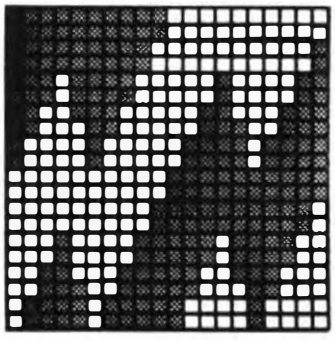
Pattern drawings for Fairisle patterns



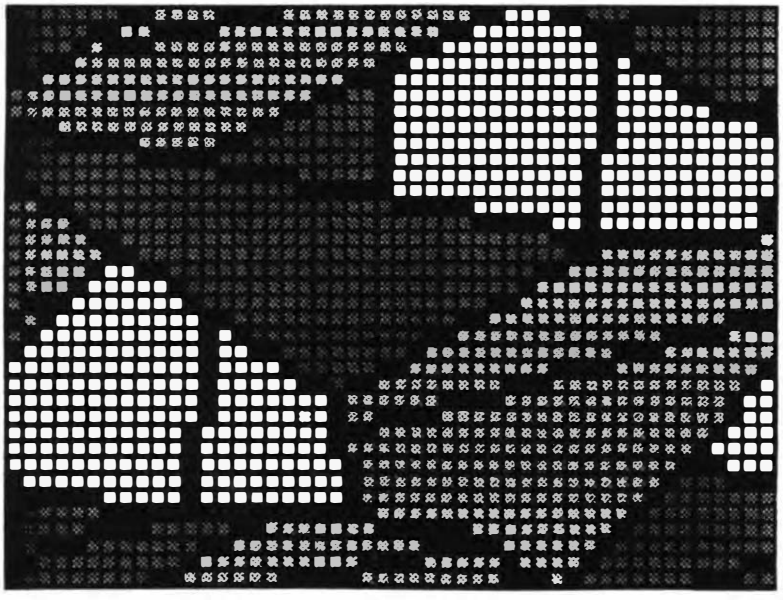
2178 (31 x 38)
col 1 = brown
col 2 = black



2181 (30 x 16)
col 1= white
col 2 = black
col 3 = red
col 4 = yellow



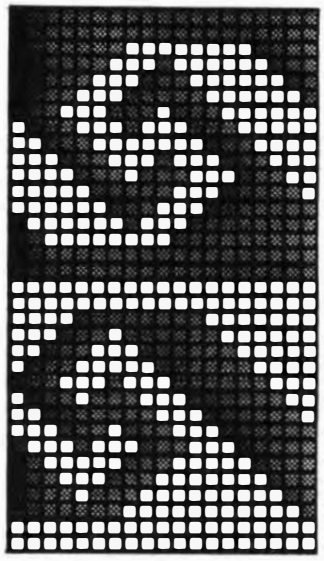
2179 (20 x 20)
col 1 = brown
col 2 = black



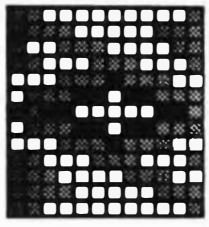
2180 (48 x 36)
col 1= white
col 2 = green
col 3 = pink
col 4 = lilac

Annex 1 : Pattern data

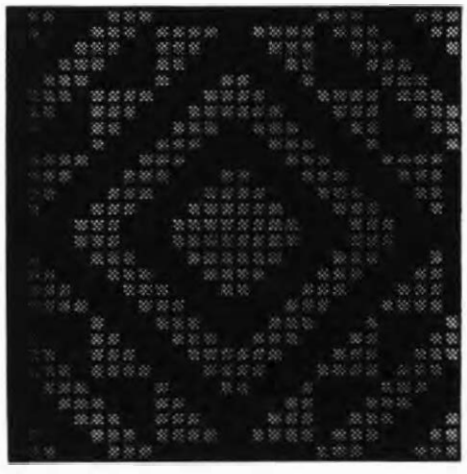
Pattern drawings for Fairisle patterns



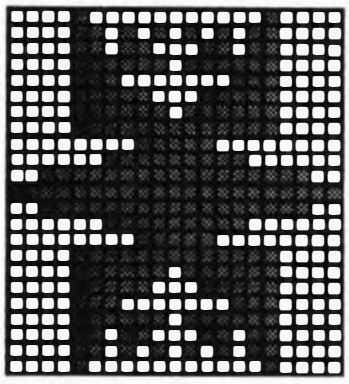
2182 (19 x 34)
col 1 = yellow
col 2 = brown



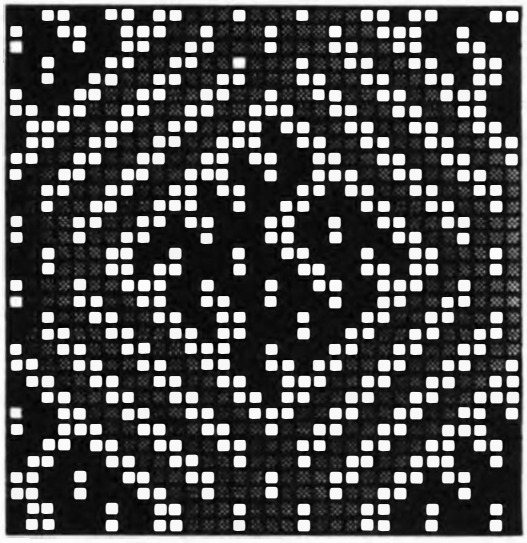
2183 (12 x 13)
col 1= red
col 2 = white
col 3 = dark red



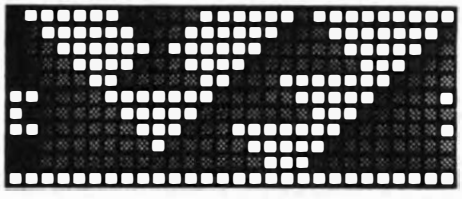
2184 (28 x 28)
col 1= brown
col 2 = black



2185 (22 x 23)
col 1 = white
col 2 = yellow



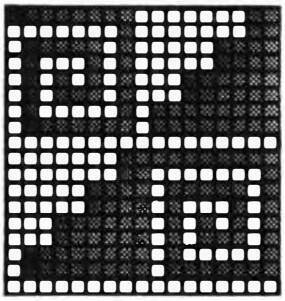
2186 (32 x 32)
col 1= black
col 2 = yellow
col 3 = red



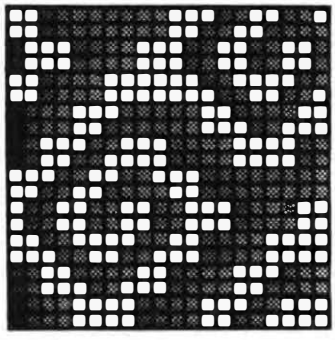
2187 (28 x 11)
col 1 = green
col 2 = yellow

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

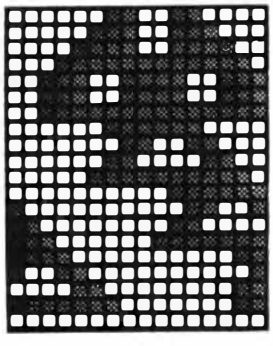


2188 (17 x 17)
col 1 = white
col 2 = green

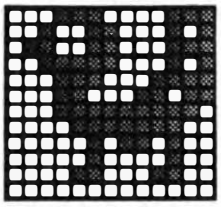


2189 (20 x 20)
col 1 = red
col 2 = green

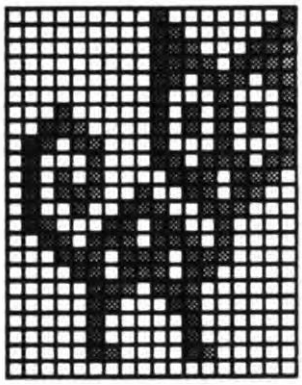
2190 (18 x 21)
col 1 = red
col 2 = yellow



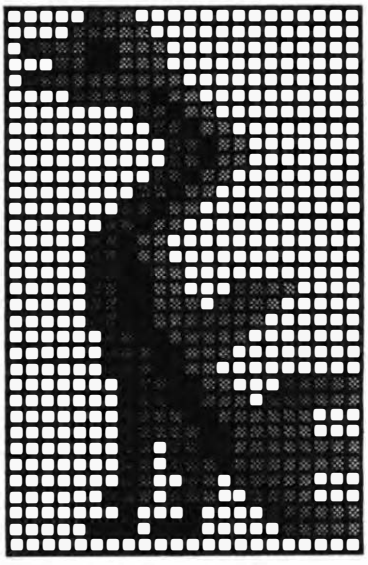
2191 (16 x 20)
col 1 = brown
col 2 = yellow



2192 (13 x 12)
col 1 = yellow
col 2 = green



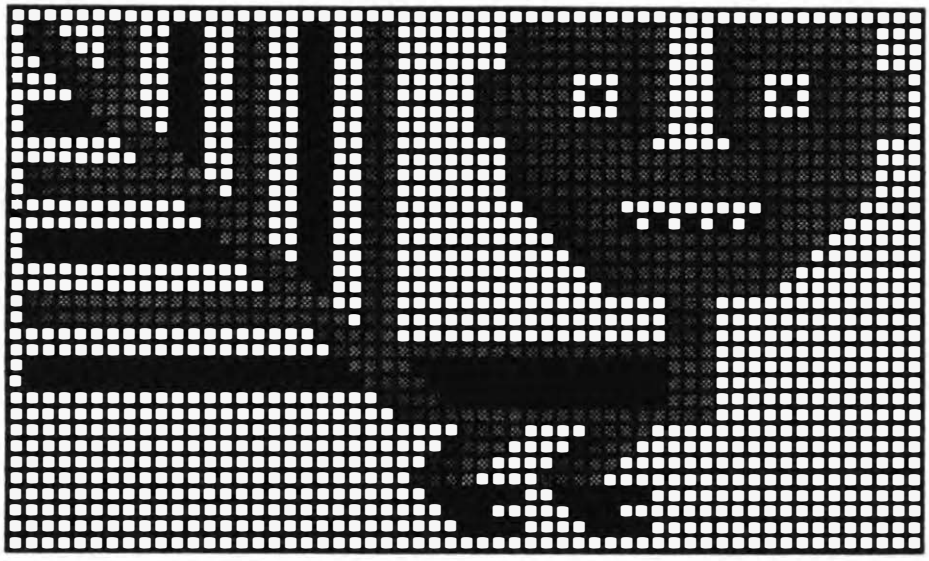
2193 (18 x 23)
col 1 = white
col 2 = brown



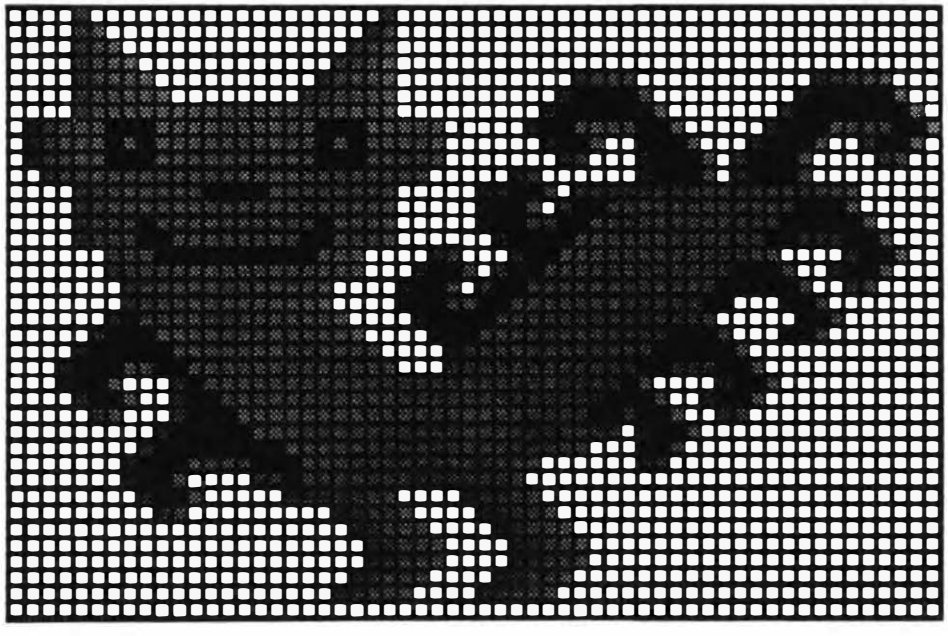
2194 (22 x 34)
col 1 = red
col 2 = green
col 3 = yellow

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns



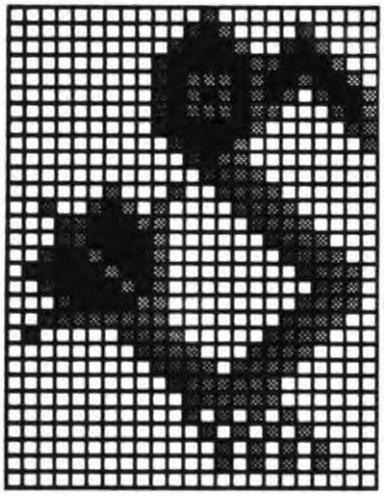
2195 (57 x 34)
col 1= yellow
col 2 = red
col 3 = green



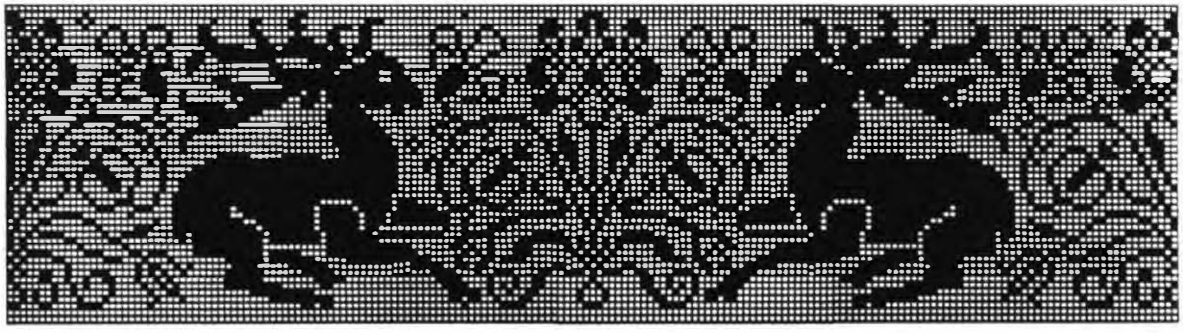
2196 (59 x 38)
col 1= brown
col 2 = green
col 3 = yellow

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns



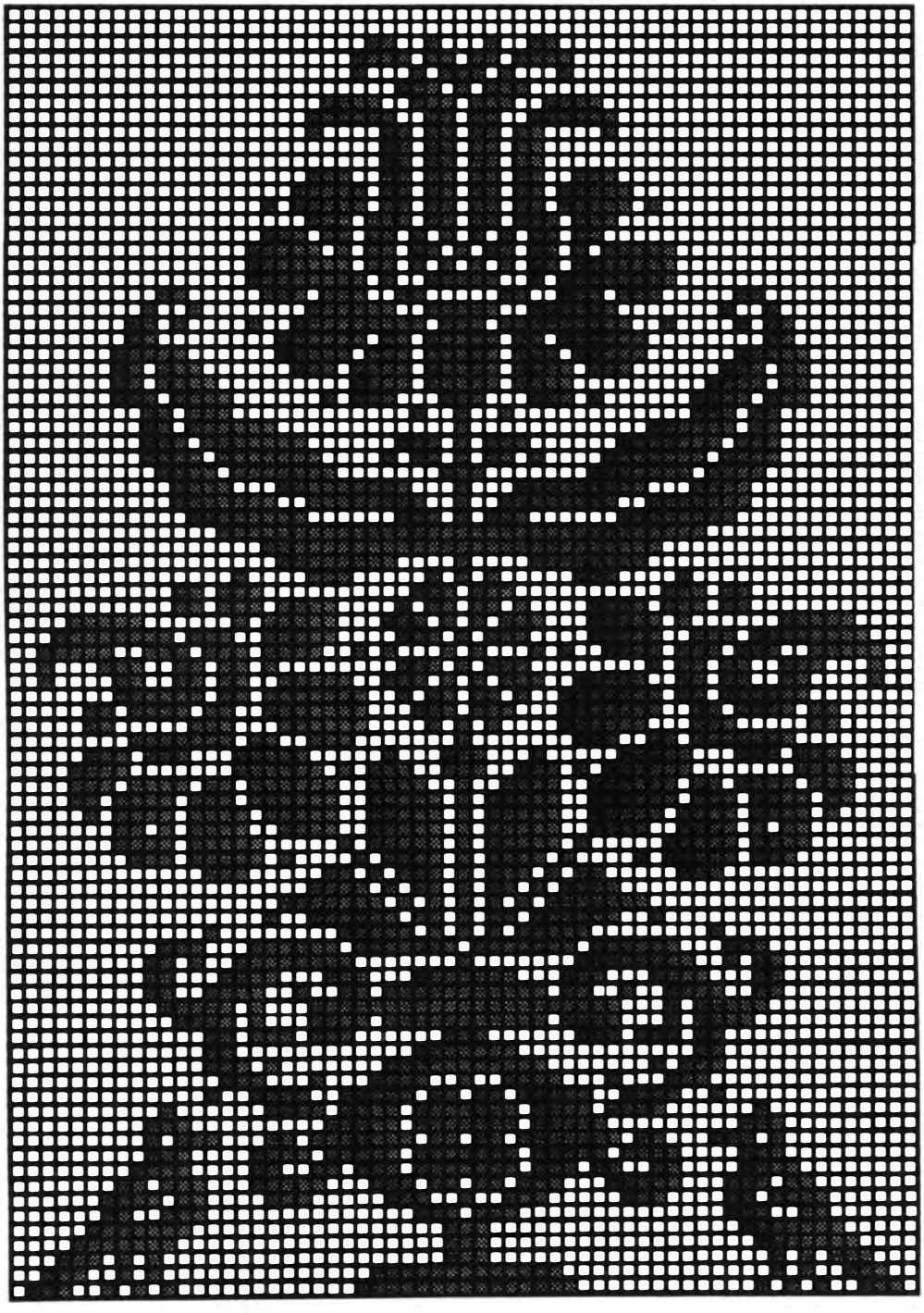
2197 (23 x 30)
col 1= green
col 2 = white
col 3 = red



2198 (182 x 49)
col 1 = white
col 2 = blue

Annex 1 : Pattern data

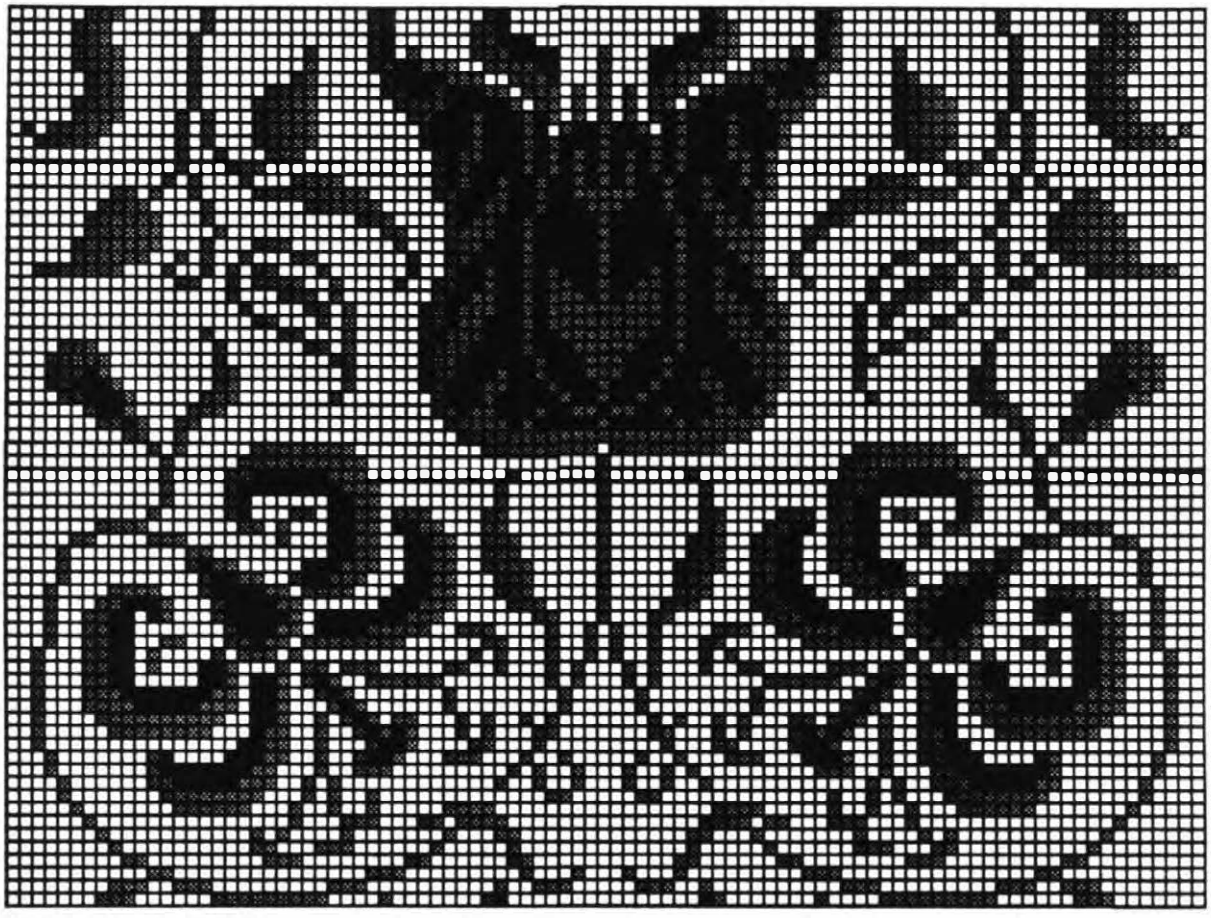
Pattern drawings for Fairisle patterns



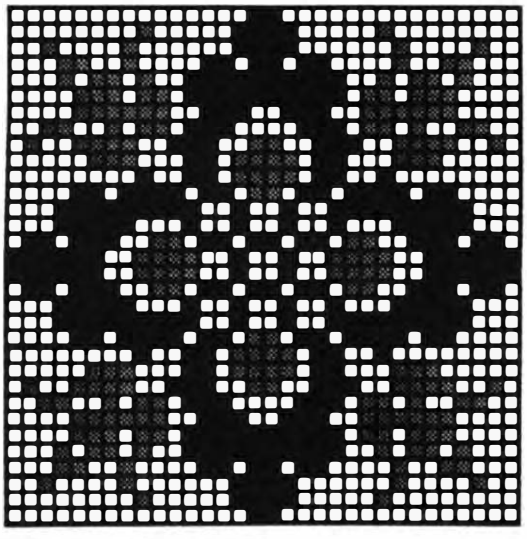
2199 (61 x 87)
col 1 = white
col 2 = red

Annex 1 : Pattern data

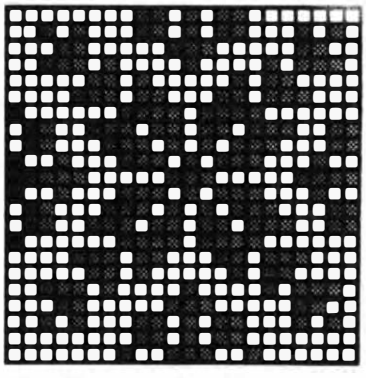
Pattern drawings for Fairisle patterns



2200 (93 x 70)
col 1 = white
col 2 = blue
col 3 = red



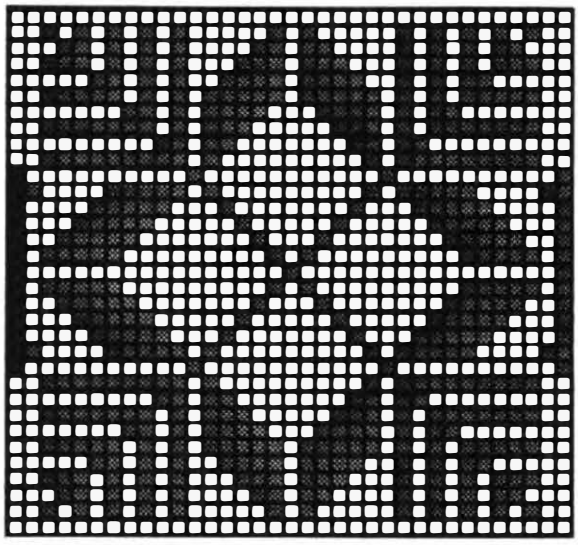
2201 (32 x 32)
col 1 = white
col 2 = red
col 3 = green



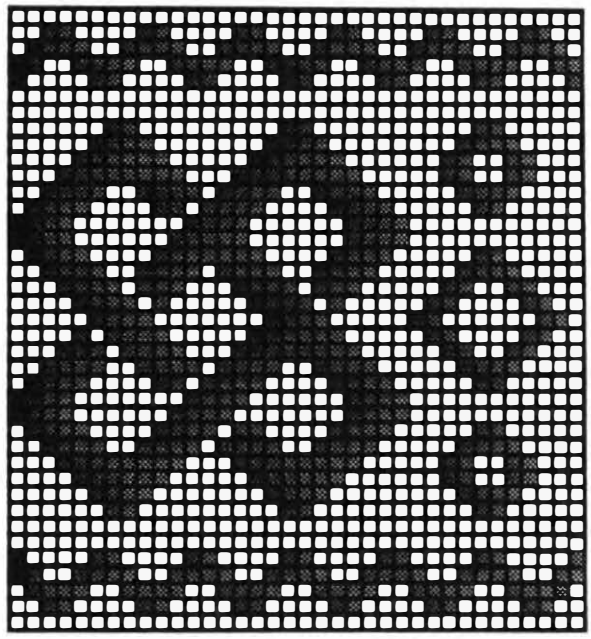
2202 (22 x 22)
col 1 = white
col 2 = blue

Annex 1 : Pattern data

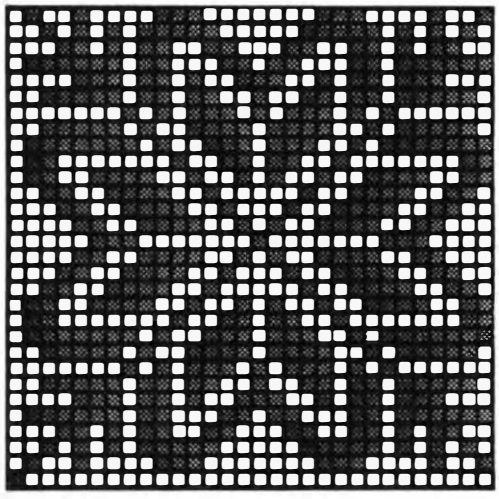
Pattern drawings for Fairisle patterns



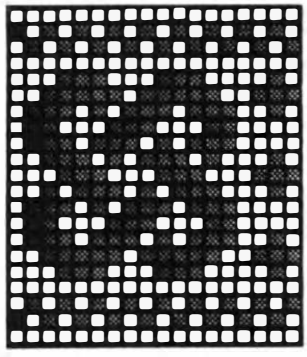
2203 (35 x 33)
col 1 = white
col 2 = red



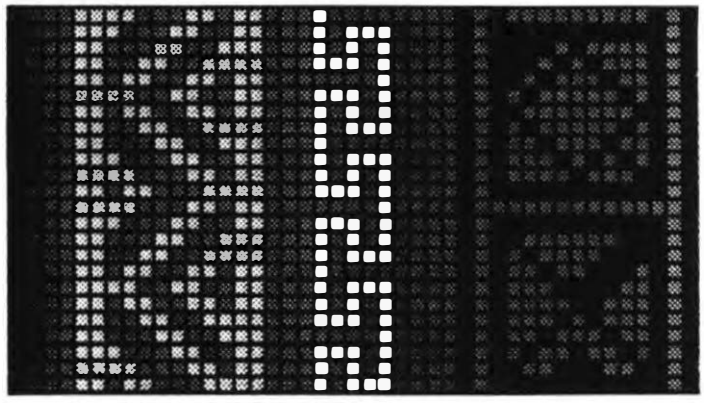
2206 (36 x 39)
col 1 = white
col 2 = blue



2204 (30 x 30)
col 1 = blue
col 2 = white



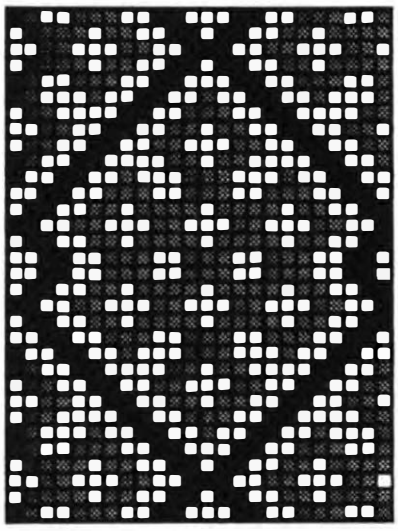
2205 (18 x 21)
col 1 = white
col 2 = black



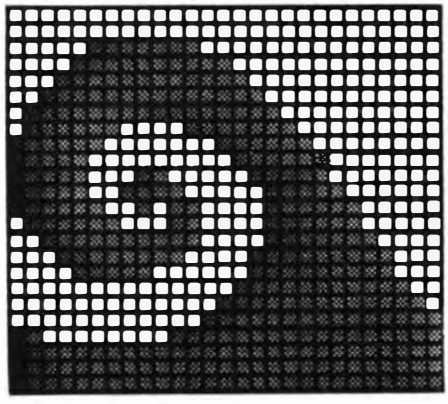
2207 (43 x 24)
col 1 = white
col 2 = blue
col 3 = green
col 4 = red

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

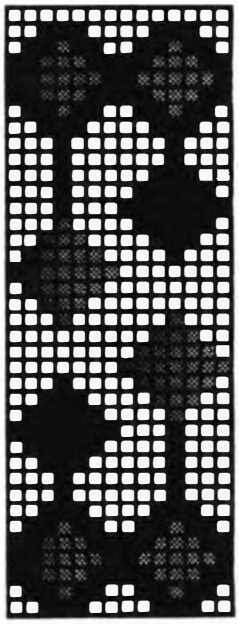


2208 (24 x 32)
col 1 = red
col 2 = white
col 3 = blue



2209 (27 x 25)
col 1 = brown
col 2 = green

2210 (18 x 18)
col 1 = red
col 2 = black
col 3 = white

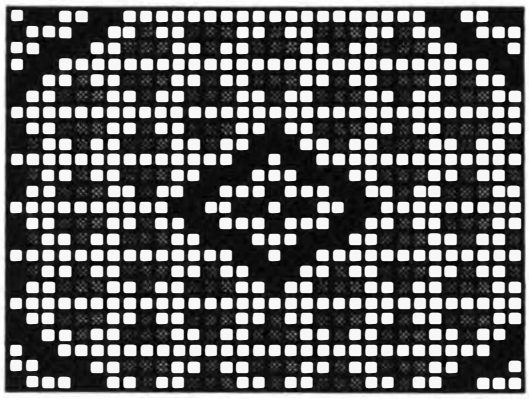


2211 (14 x 37)
col 1 = white
col 2 = blue
col 3 = red

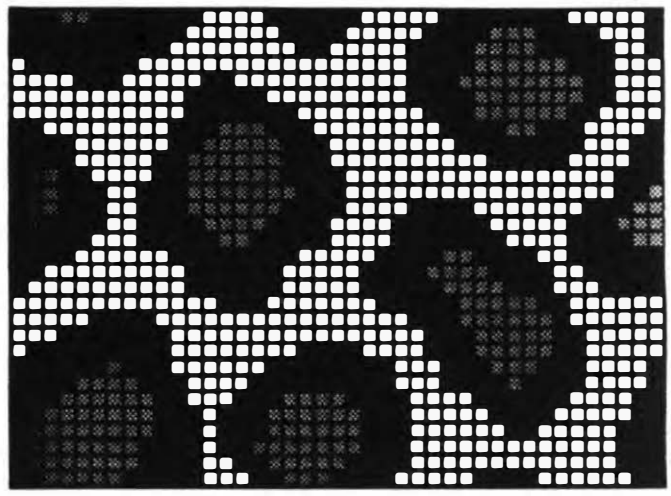
2212 (24 x 24)
col 1 = red
col 2 = black
col 3 = white

Annex 1 : Pattern data

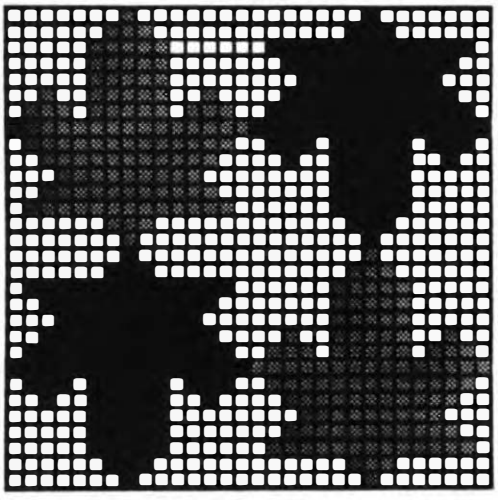
Pattern drawings for Fairisle patterns



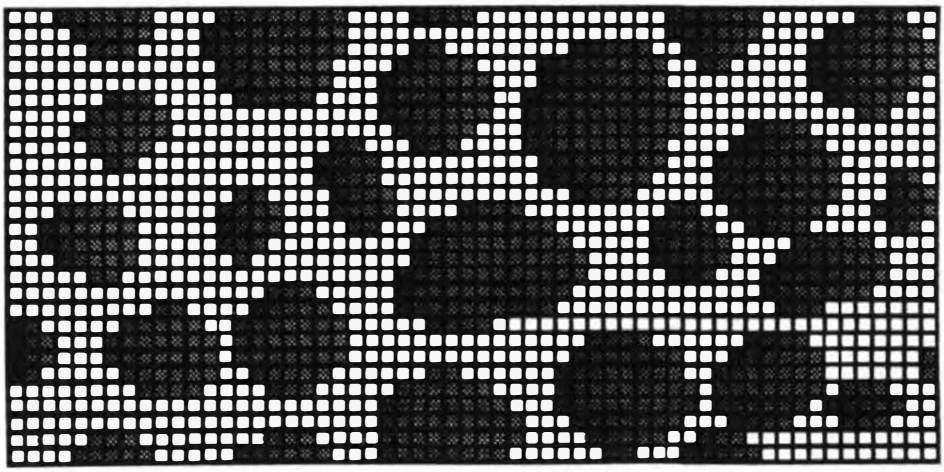
2213 (32 x 24)
col 1 = black
col 2 = white
col 3 = blue



2216 (41 x 30)
col 1 = black
col 2 = brown
col 3 = yellow



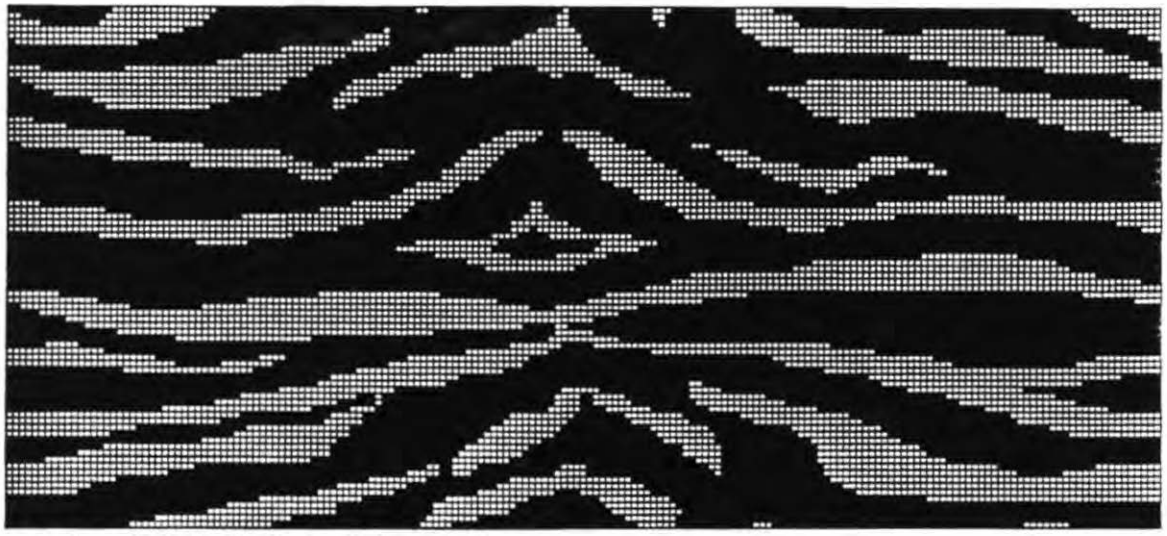
2214 (30 x 30)
col 1 = brown
col 2 = green
col 3 = yellow



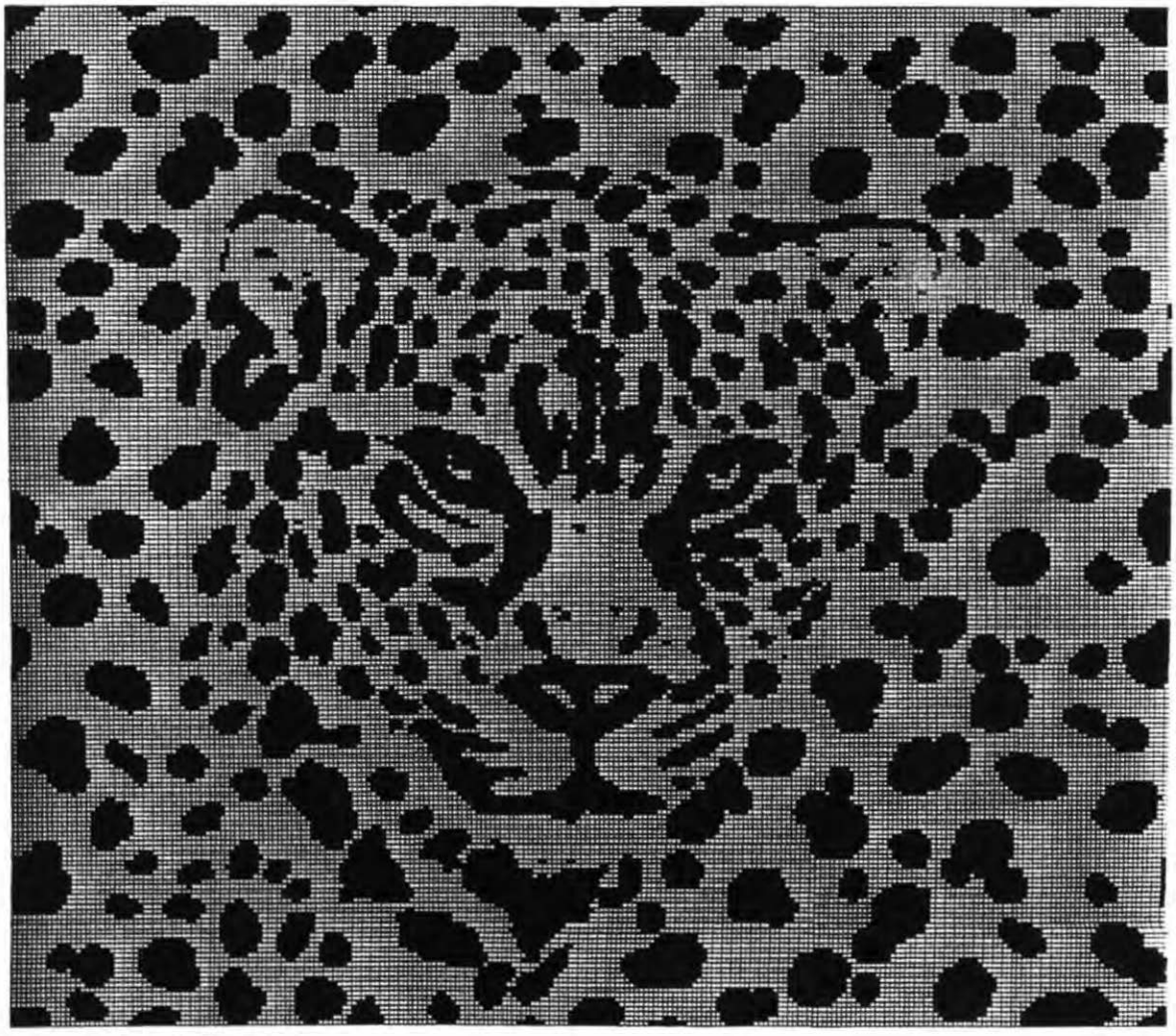
2215 (58 x 28)
col 1 = yellow
col 2 = green

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns



2217 (179 x 81) col 1 = black
col 2 = white

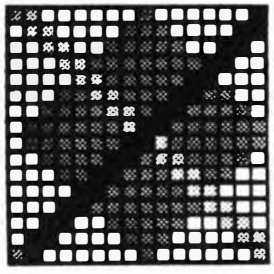


2218 (241 X 210)
COL 1 = brown
COL 2 = yellow

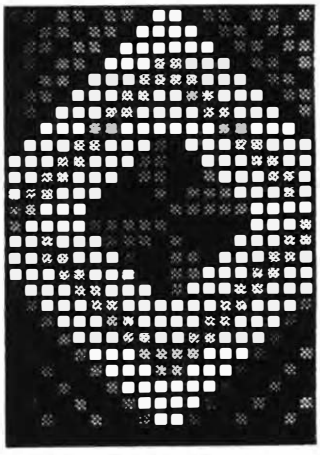
Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

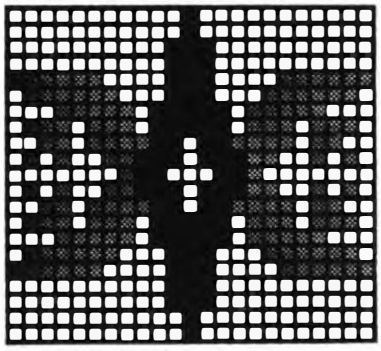
2219 (16 x 16)
col 1 = white
col 2 = green
col 3 = black
col 4 = blue



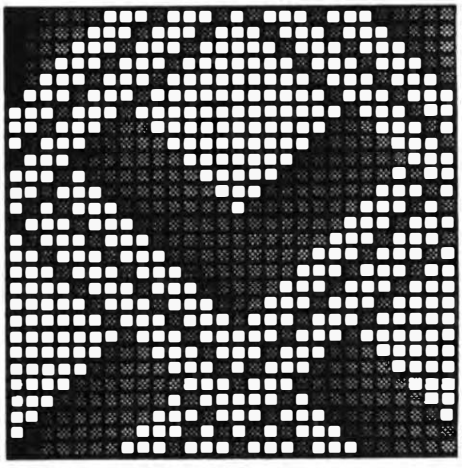
2220 (16 x 16)
col 1 = black
col 2 = brown
col 3 = white
col 4 = blue



2221 (19 x 27)
col 1 = black
col 2 = white
col 3 = green
col 4 = brown



2222 (23 x 21)
col 1 = blue
col 2 = green
col 3 = white

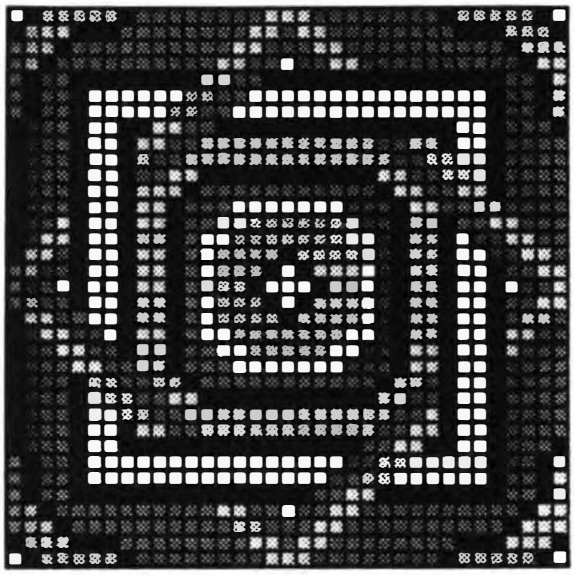


2223 (28 x 28)
col 1 = black
col 2 = blue

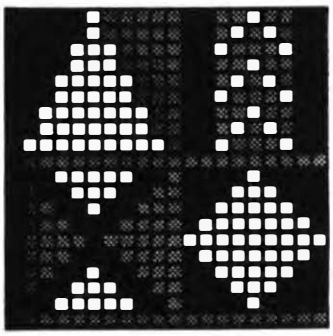
2224 (14 x 6)
col 1 = red
col 2 = black
col 3 = blue

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

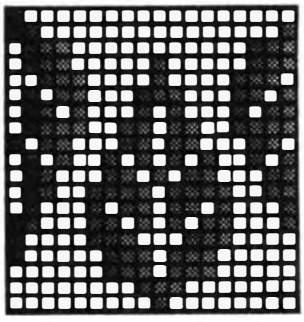


2225 (35 x 35)
col 1 = white
col 2 = black
col 3 = brown
col 4 = blue

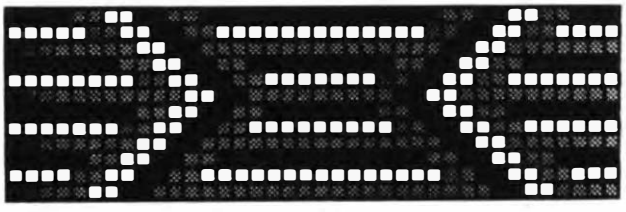


2228 (20 x 20)
col 1 = black
col 2 = yellow
col 3 = red

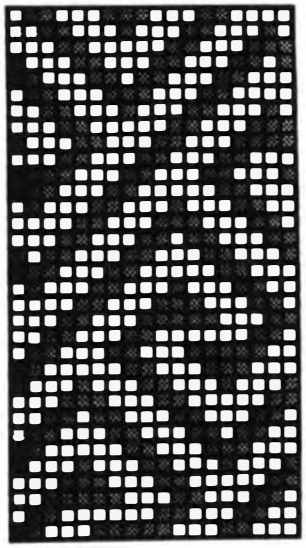
2226 (16 x 16)
col 1 = white
col 2 = light blue
col 3 = dark blue
col 4 = red



2229 (18 x 19)
col 1 = yellow
col 2 = green



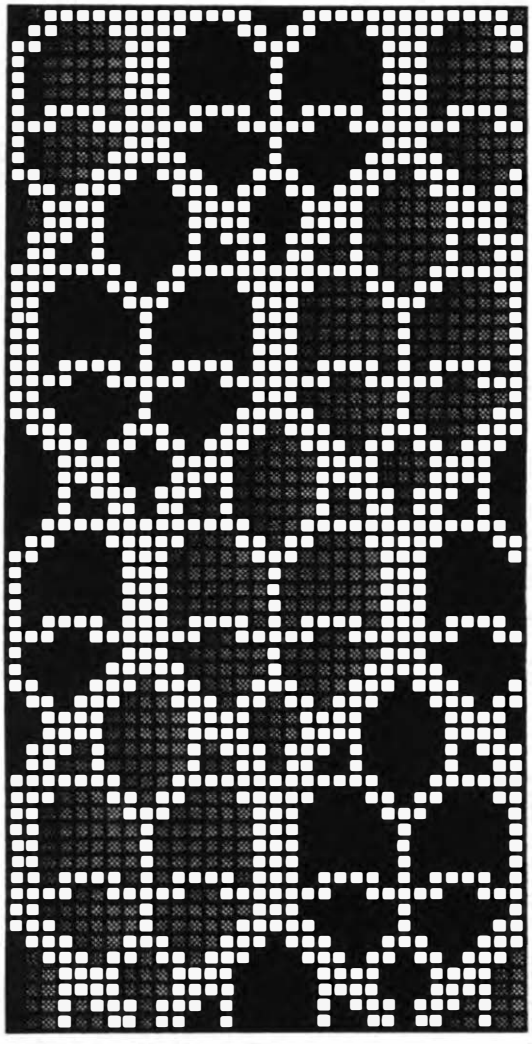
2230 (38 x 12)
col 1 = red
col 2 = yellow
col 3 = black



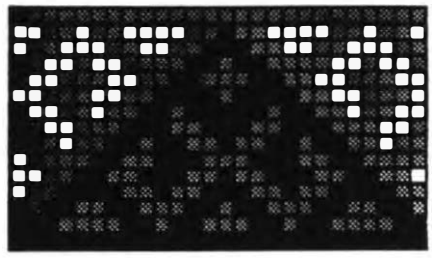
2227 (18 x 33)
col 1 = red
col 2 = grey

Annex 1 : Pattern data

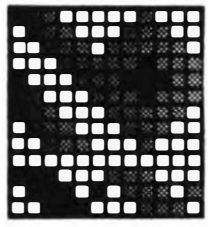
Pattern drawings for Fairisle patterns



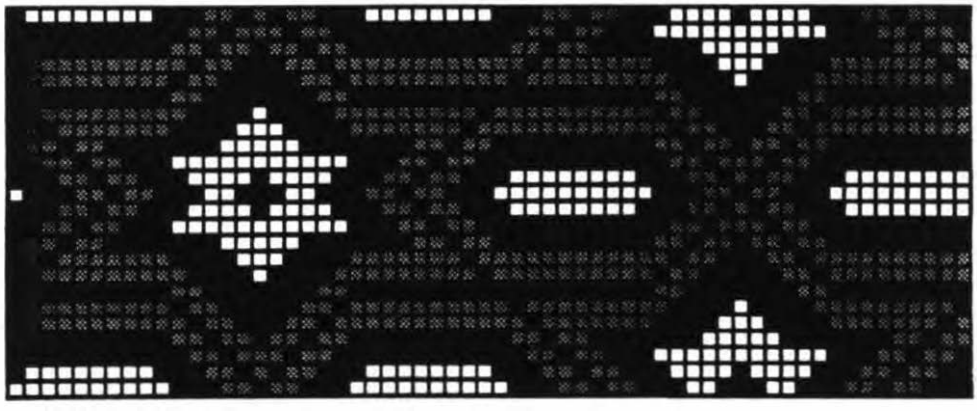
2231 (32 x 64)
col 1 = red
col 2 = dark red
col 3 = yellow



2233 (26 x 15)
col 1 = yellow
col 2 = red
col 3 = black



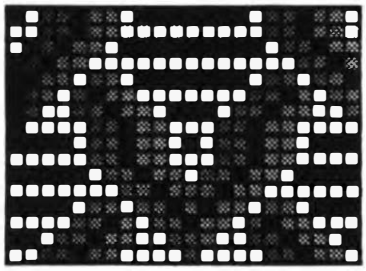
2234 (12 x 13)
col 1 = dark red
col 2 = red
col 3 = black



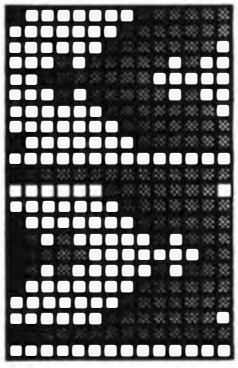
2232 (60 x 24)
col 1 = yellow
col 2 = black
col 3 = red

Annex 1 : Pattern data

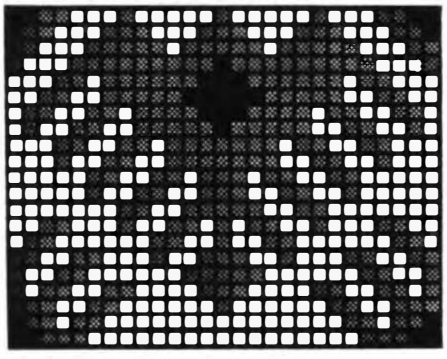
Pattern drawings for Fairisle patterns



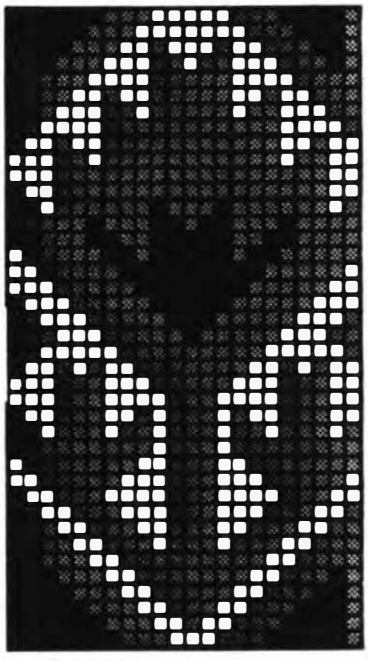
2235 (22 x 16)
col 1 = yellow
col 2 = red
col 3 = dark red



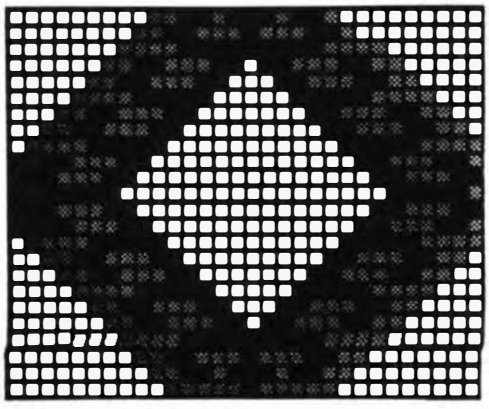
2238 (14 x 22)
col 1 = red
col 2 = yellow



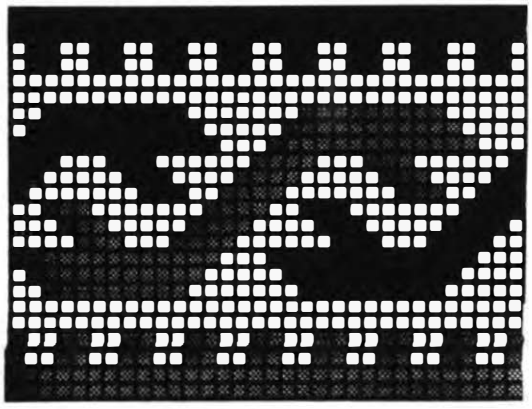
2236 (27 x 21)
col 1 = black
col 2 = yellow
col 3 = red



2239 (22 x 40)
col 1 = red
col 2 = black
col 3 = yellow



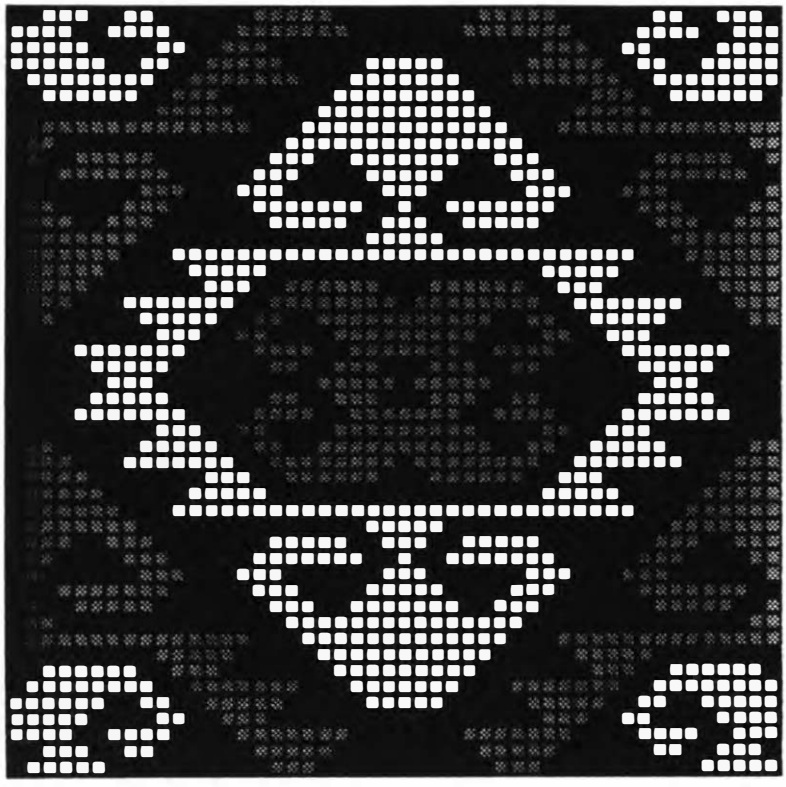
2237 (30 x 24)
col 1 = red
col 2 = yellow
col 3 = black



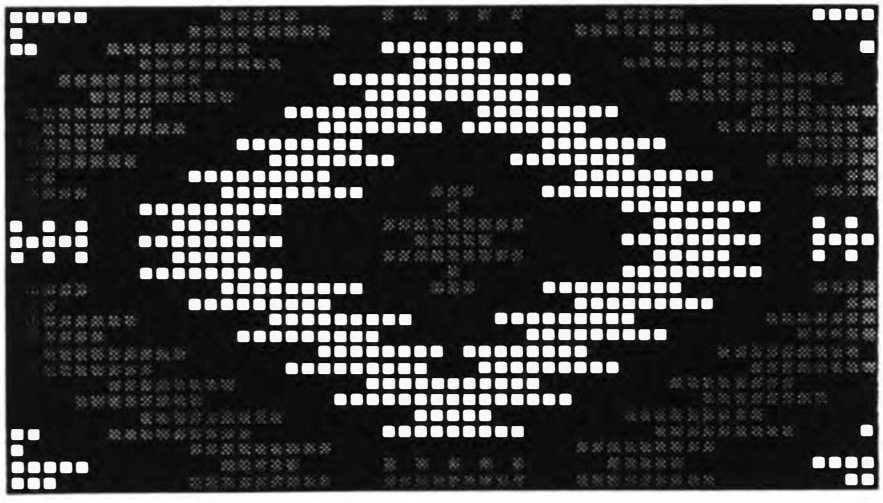
2240 (32 x 2 4)
col 1 = dark red
col 2 = yellow
col 3 = red

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns



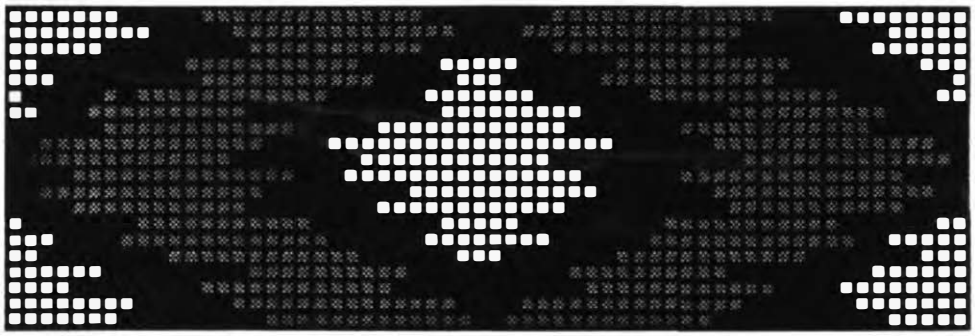
2241 (48 x 48)
col 1 = black
col 2 = yellow
col 3 = red



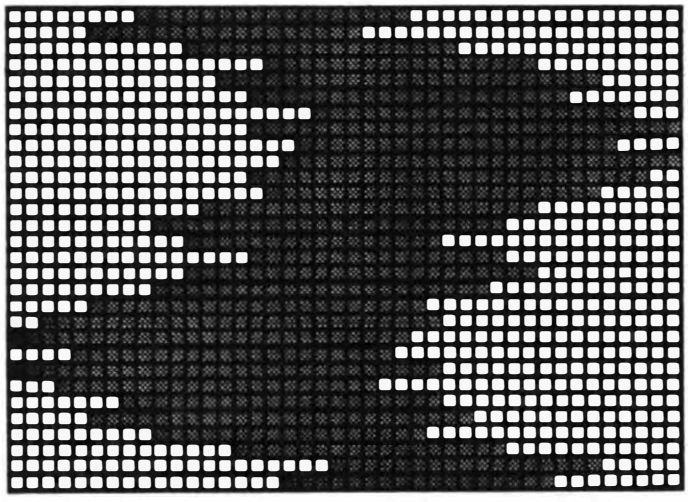
2242 (54 x 30)
col 1 = violet
col 2 = lilac
col 3 = pink

Annex 1 : Pattern data

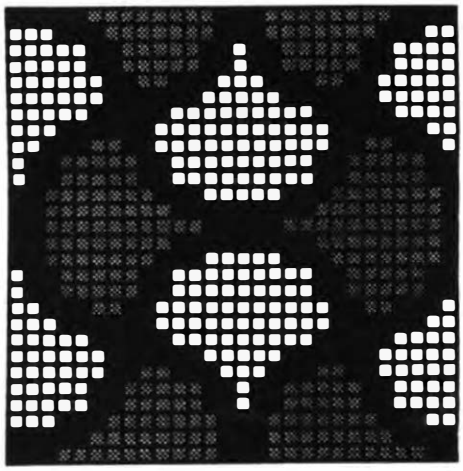
Pattern drawings for Fairisle patterns



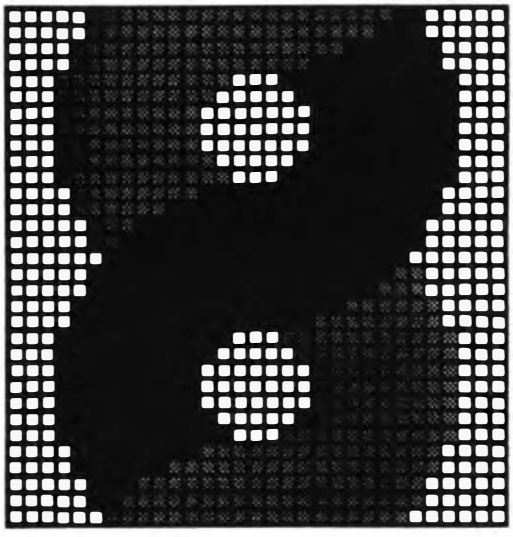
2243 (60 x 20)
col 1 = pink
col 2 = violet
col 3 = lilac



2244 (42 x 30)
col 1 = pink
col 2 = violet



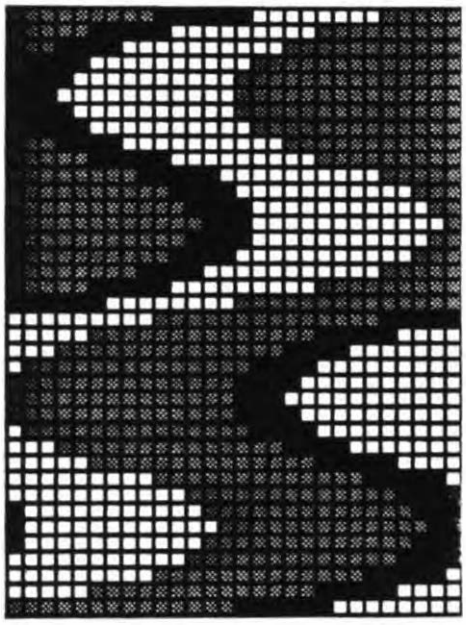
2245 (28 x 28)
col 1 = black
col 2 = dark red
col 3 = pink



2246 (31 X 32)
col 1 = white
col 2 = violet
col 3 = pink

Annex 1 : Pattern data

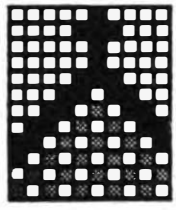
Pattern drawings for Fairisle patterns



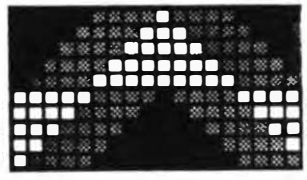
2247 (28 X 38)
col 1 = green
col 2 = violet
col 3 = yellow

2248 (15 x 32)
col 1 = violet
col 2 = green
col 3 = dark red

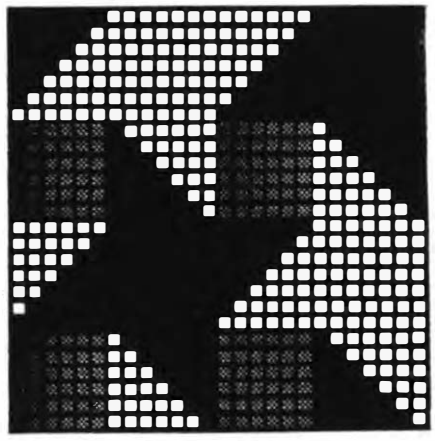
2249 (9 x 9)
col 1 = dark blue
col 2 = brown
col 3 = white
col 4 = blue



2250 (10 x 12)
col 1 = pink
col 2 = white
col 3 = dark blue



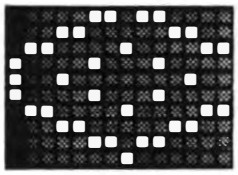
2251 (18 x 10)
col 1 = violet
col 2 = lilac
col 3 = white



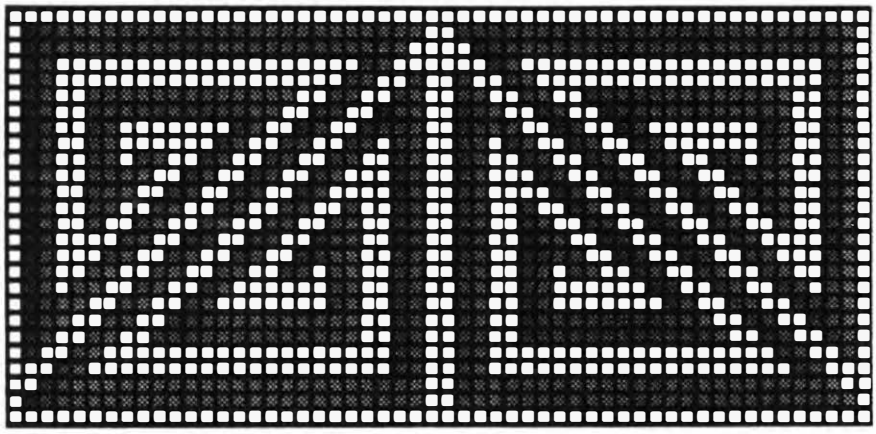
2252 (26 x 26)
col 1 = green
col 2 = pink
col 3 = violet

Annex 1 : Pattern data

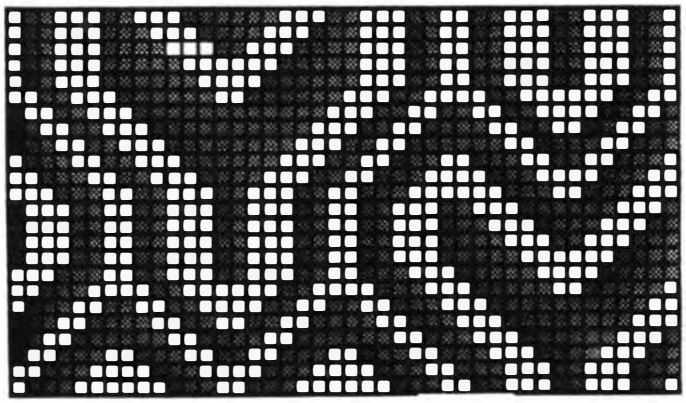
Pattern drawings for Fairisle patterns



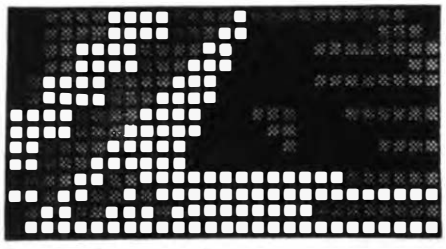
2253 (14 x 10)
col 1 = pink
col 2 = violet



2254 (54 x 26)
col 1 = white
col 2 = black



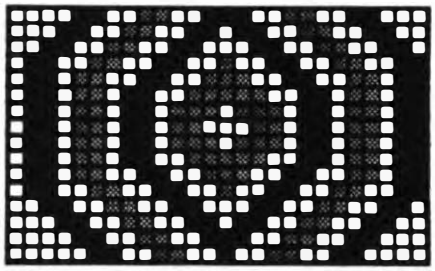
2255 (42 x 24)
col 1 = black
col 2 = white



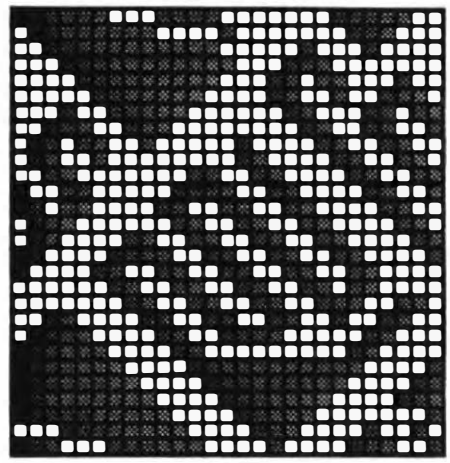
2256 (27 x 14)
col 1 = white
col 2 = black
col 3 = green

Annex 1 : Pattern data

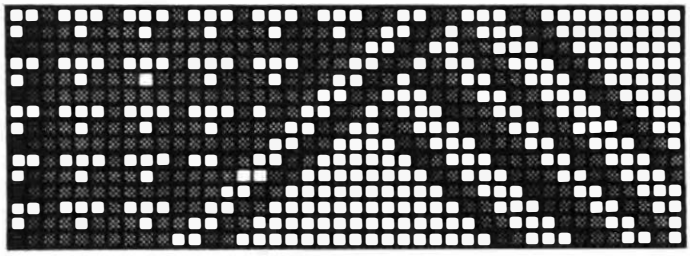
Pattern drawings for Fairisle patterns



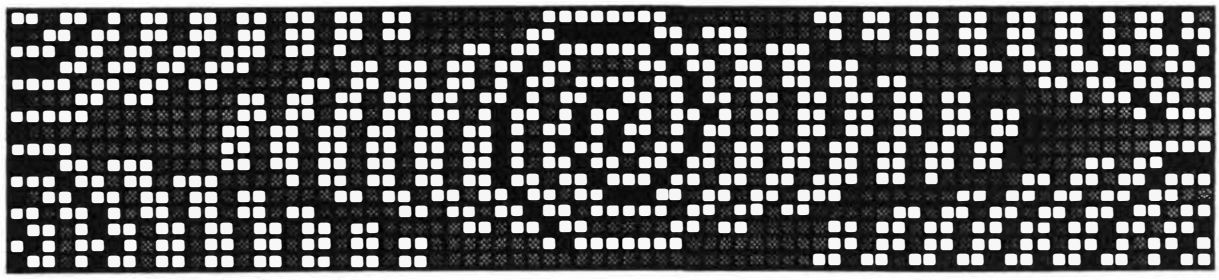
2257 (26 x 16)
col 1 = white
col 2 = black
col 3 = grey



2259 (27 x 28)
col 1 = black
col 2 = red



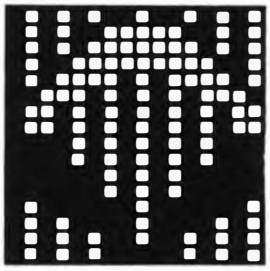
2258 (42 x 15)
col 1 = black
col 2 = white



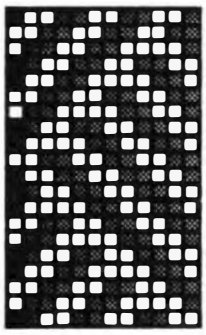
2260 (75 x 14)
col 1 = red
col 2 = white
col 3 = black

Annex 1 : Pattern data

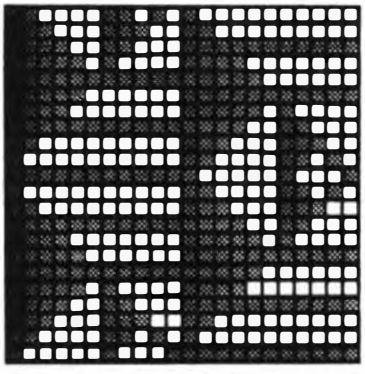
Pattern drawings for Fairisle patterns



2261 (16 x 16)
col 1 = red
col 2 = black

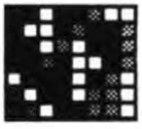


2264 (12 x 20)
col 1 = white
col 2 = black

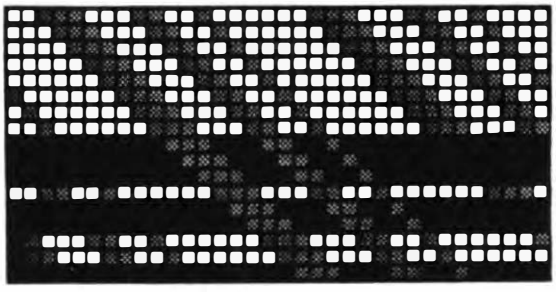


2262 (22 x 22)
col 1 = black
col 2 = grey

2265 (21 x 13)
col 1 = black
col 2 = red
col 3 = white

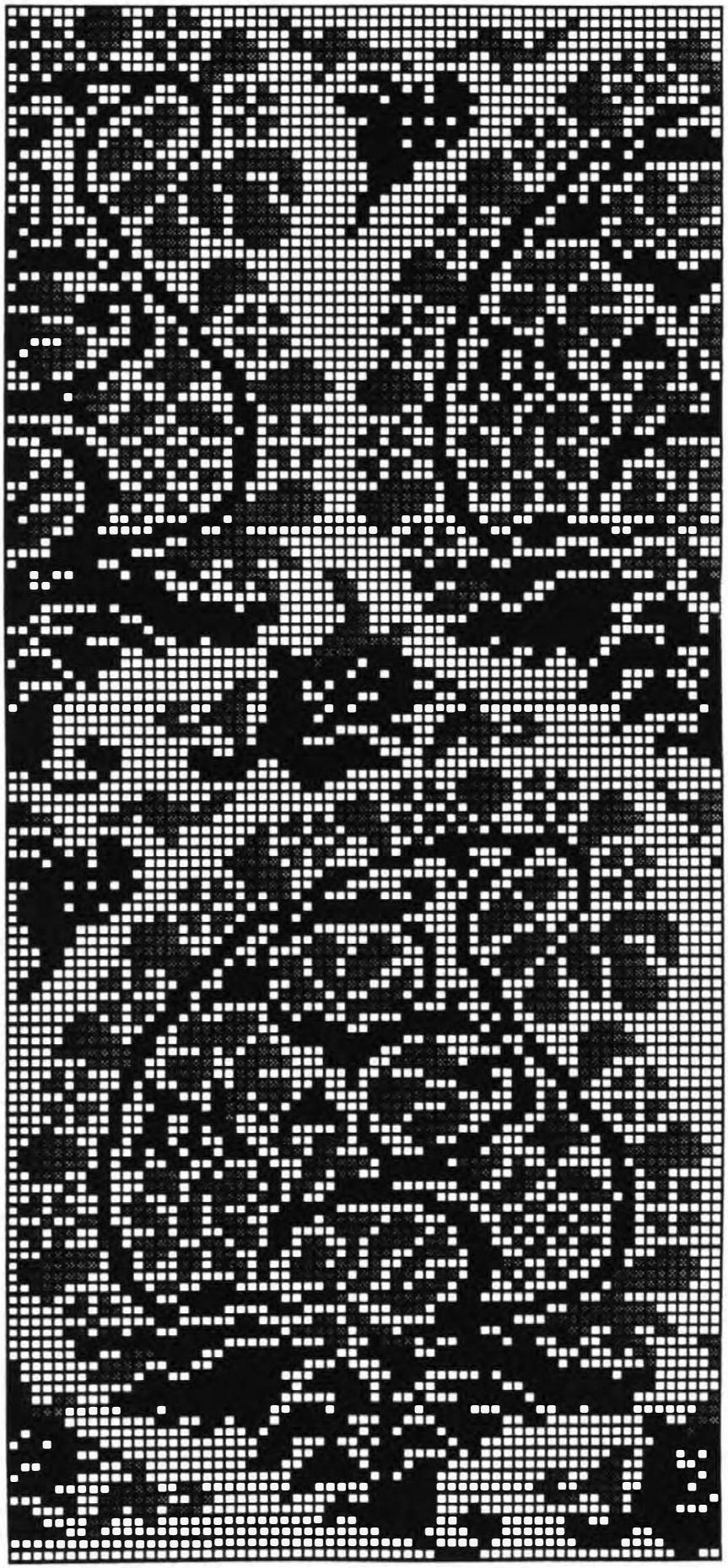


2266 (8 x 7)
col 1 = white
col 2 = red
col 3 = black



2263 (34 x 17)
col 1 = black
col 2 = green
col 3 = white

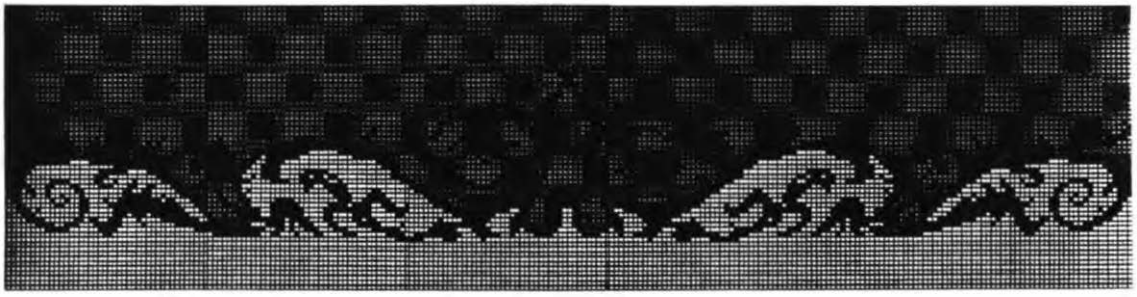
Annex 1 : Pattern data



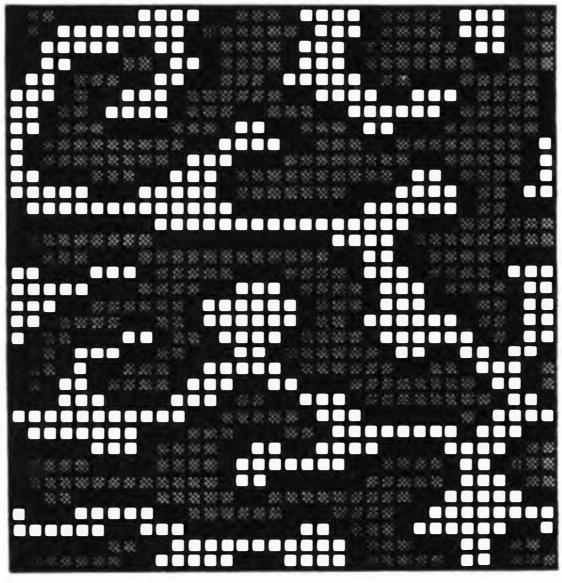
2267 (64 x 140)
col 1 = red
col 2 = green
col 3 = violet

Annex 1 : Pattern data

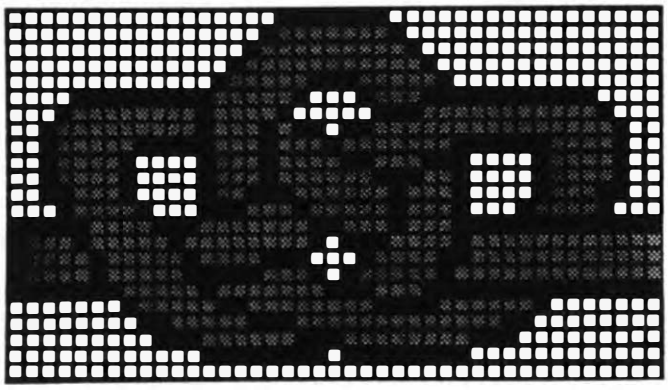
Pattern drawings for Fairisle patterns



2268 (234 x 59)
col 1 = blue
col 2 = yellow
col 3 = red



2269 (34 x 35)
col 1 = green
col 2 = violet
col 3 = red



2270 (41 x 23)
col 1 = yellow
col 2 = black
col 3 = brown

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

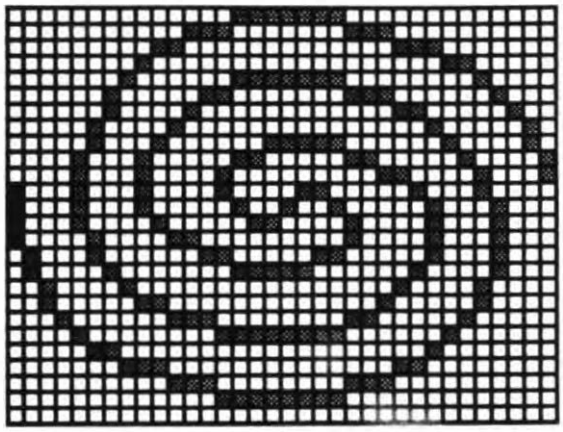
2271 (64 x 44)
col 1 = black / green
col 2 = red / yellow

2272 (383 x 51)
col 1 = green
col 2 = yellow
col 3 = brown

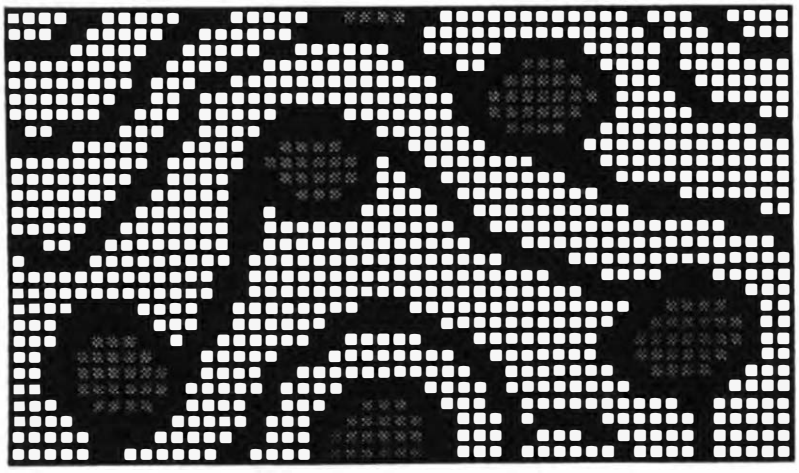
Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

2273 (18 x 42)
col 1 = grey
col 2 = black
col 3 = white



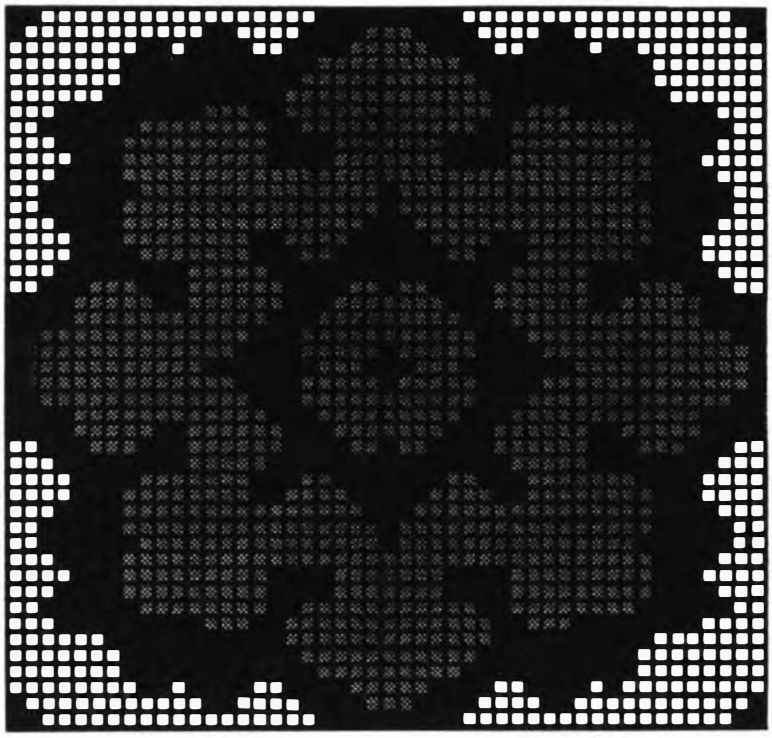
2275 (34 x 27)
col 1 = blue
col 2 = black



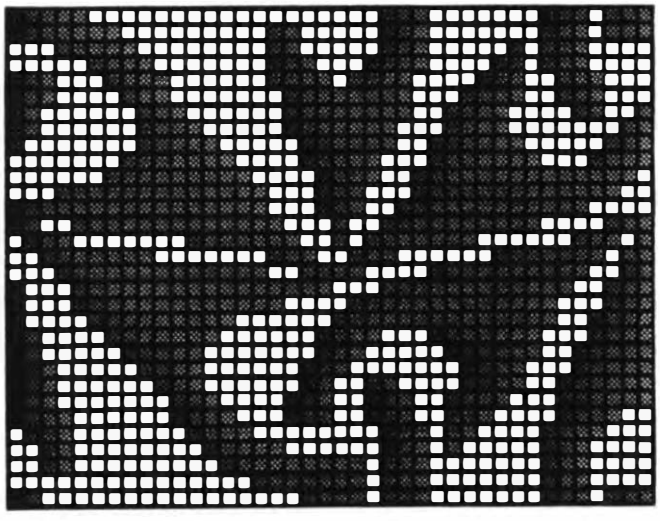
2274 (49 x 28)
col 1 = green
col 2 = red
col 3 = violet

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns



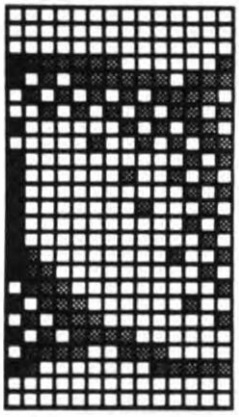
2276 (47 x 45)
col 1 = lilac
col 2 = green
col 3 = violet



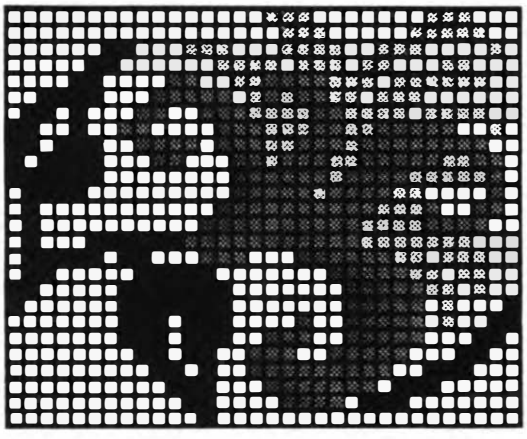
2277 (40 x 31)
col 1 = brown
col 2 = yellow

Annex 1 : Pattern data

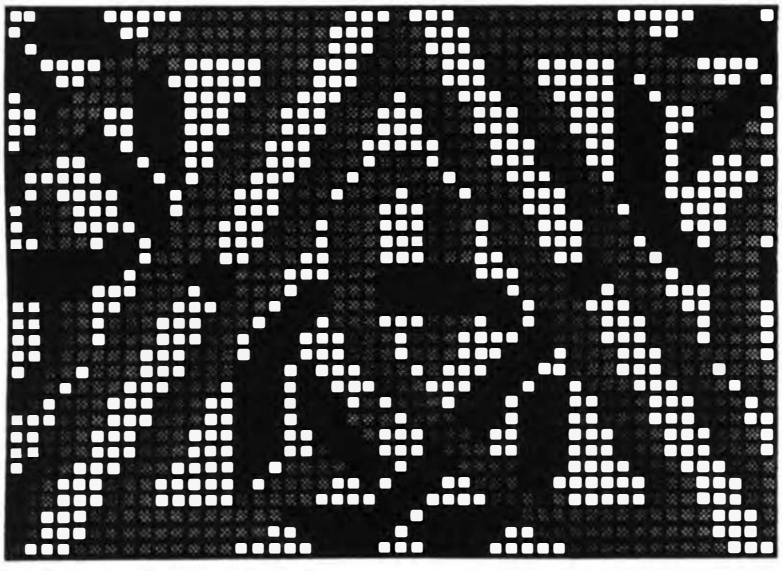
Pattern drawings for Fairisle patterns



2278 (14 x 25)
col 1 = white
col 2 = brown



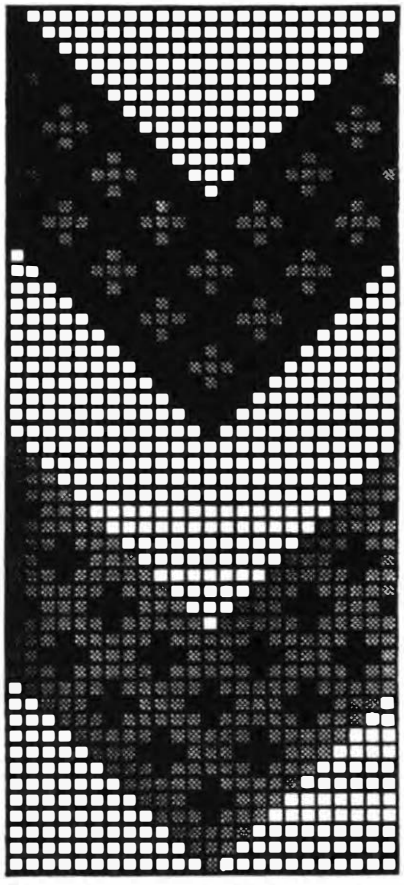
2279 (32 x 26)
col 1 = white
col 2 = green
col 3 = violet
col 4 = lilac



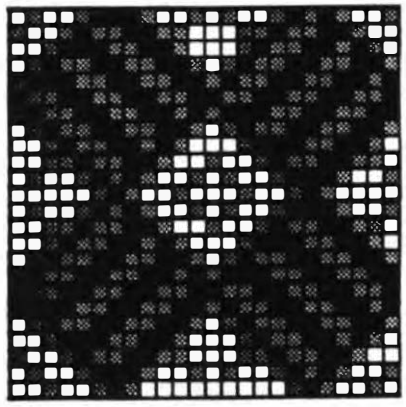
2280 (48 x 36)
col 1 = yellow
col 2 = black
col 3 = red

Annex 1 : Pattern data

Pattern drawings for Fairisle patterns

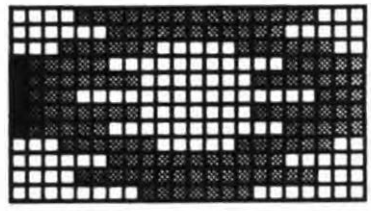


2281 (24 x 54)
col 1 = red
col 2 = white
col 3 = black

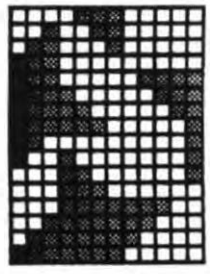


2282 (24 x 24)
col 1 = red
col 2 = white
col 3 = black

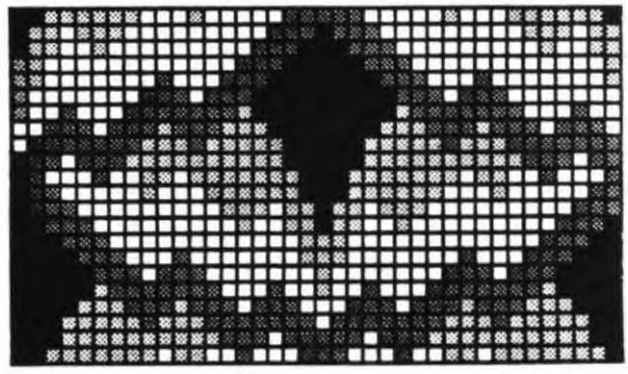
2283 (38 x 18)
col 1 = white
col 2 = red
col 3 = black



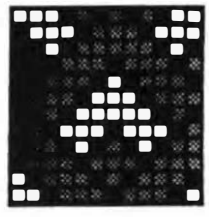
2284 (22 x 12)
col 1 = white
col 2 = red



2285 (12 x 16)
col 1 = white
col 2 = green



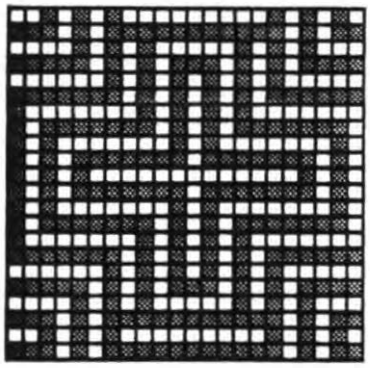
2286 (38 x 22)
col 1 = pink
col 2 = white
col 3 = light blue
col 4 = dark blue



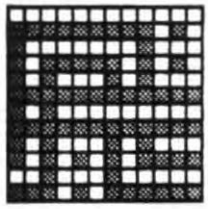
2287 (12 x 12)
col 1 = blue
col 2 = dark blue
col 3 = white

Annex 1 : Pattern data

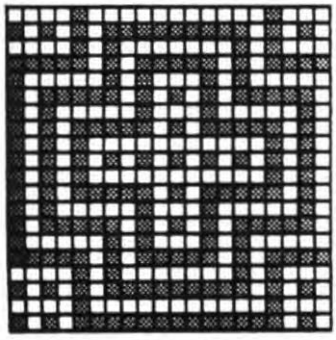
Pattern drawings for special Fairisle (TECH 450, 451, 452)



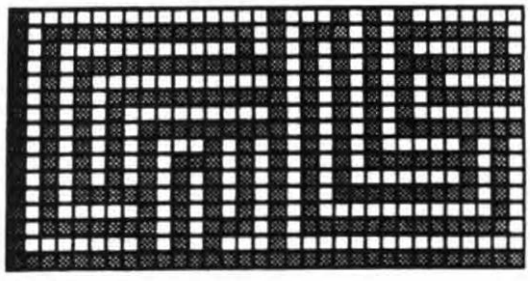
2290 (22 x 22)
col 1 =blue
col 2 = white



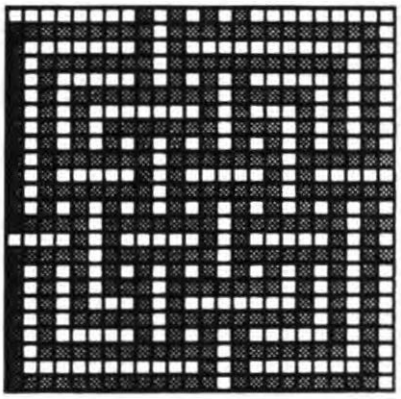
2291 (12 x 12)
col 1 = red
col 2 = grey



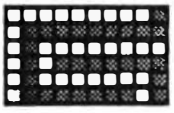
2292 (20 x 20)
col 1 = dark blue
col 2 = blue



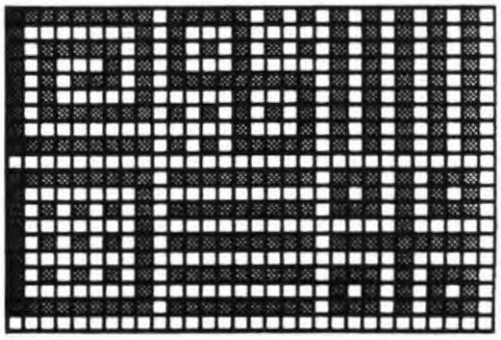
2293 (32 x 16)
col 1 = violet
col 2 = lilac



2294 (24 x 24)
col 1 = violet
col 2 = pink



2295 (10 x 6)
col 1 = pink
col 2 = grey



2296 (30 x 20)
col 1 = white
col 2 = pink

Annex 2 : Production data

The purpose of the following data is, to show which are the techniques and the patterns that obtain the best result in as little time as possible.

All the data relates to a panel 55 cm (21.65 ins.) wide and 65 cm (25.6 ins.) high, which corresponds to the panel needed for a medium sized ladies sweater.

For the following data the panel was always knitted as far to the right side of the needle bed as possible.

The yarn length in relation to its weight is indicated in Nm,) that means meters per 1 gr.)
The number after the slash indicates how many strands the yarn is made up of. Example 13/2 means the yarn is made from two strands, of which each measures 13 m per gr.
The yarn as a whole therefore measures 6,5 meters per gramm or 650 m (710.85 yds.) per 100 gr (3.527 ozs).

Take into consideration that the actual time your machine needs to knit such a panel might be slightly different. Not only techniqe and pattern have an influence on the time you need. Other factors that influence the knitting time are: stitch size (which varies slightly from one machine to the other), material used and even the color of the material can have an influence as light shades are usually slightly thinner than dark shades.

The basic knitting techniques

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
100				Acryl	13/2	8' 6"
102				Acryl	30/2	11' 12"
104				Acryl	30/2	18'

Annex 2 : Production data

Tuck stitch patterns, single bed

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
300	2025		7	cotton	13/2	10' 36"
315	2016		13	cotton	13/2	13' 24"
317	2021		13	cotton	13/2	11' 42"

Slip stitch patterns, single bed

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
321	2038		29	Acryl	15/2	11' 30"

Annex 2 : Production data

Tuck stitch patterns, double bed

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
350	2028		22	silk	20/2	13' 24"
352	2031		27	wool	19/2	14' 36"
373	2039		26	wool	19/2	14' 54"
391			9	Acryl	30/2	21'

Pintuck patterns

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
392	2027		33	Acryl	30/2	25'

Annex 2 : Production data

Racking patterns

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
409*			95	cotton	13/2	10
409*			92	wool	19/2	15' 54"
435	2000		91	wool	19/2	28'
445			90	wool	19/2	19'6"
446			95	wool	19/2	19' 6"
447	2096	2097	94	Acryl	30/2	35' 54"
453	2041		93	Acryl	15/2	17' 48"

Lacy patterns

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
461	2067		38	cotton	13/2	22" 54'

Annex 2 : Production data

Fairisle

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
500	2144		50	Acryl	30/2	27' 42"
501	2146		52	Acryl	30/2	36' 54"
502	2170		52	Acryl	30/2	44' 12"
511	2230		62	Acryl	30/2	31' 30"
512	2221		76	Acryl	30/2	33' 42"
520	2135		47	Acryl	30/2	19' 12"
521	2209		61	Acryl	30/2	30' 6"
528	2182		67	Acryl	30/2	19' 12"
540	2215		70	Acryl	15/2	18'
541	2235		41	Acryl	30/2	28' 54"

Annex 2 : Production data

Different pattern drawings for the reverse side of 2-color Fairisle patterns

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
524 2-col	2121	2069				33' 12"
"	"	2070				30' 48"
"	"	2071				36' 6"
"	"	2072				36' 6"
"	"	2073				28' 18"
"	"	2074				48' 12"
"	"	2075				34' 24"
"	"	2076				40' 54"

Different pattern drawings for the reverse side of 3-color Fairisle patterns

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
524 3-col	2166	2069				37' 54"
"	"	2070				32' 42"
"	"	2071				34' 54"
"	"	2072				34' 12"
"	"	2073				30' 24"
"	"	2074				54' 54"
"	"	2075				38'
"	"	2076				48' 24"

Annex 2 : Production data

Different pattern drawings for the reverse side of 4-color Fairisle patterns

TECH	vPattern	^Pattern	Pattern book p.	Material	Nm	Knitting time
524 4-col	2163	2069				37' 42"
"	"	2070				31' 54"
"	"	2071				35' 54"
"	"	2072				37'
"	"	2073				38' 54"
"	"	2074				51' 36"
"	"	2075				53' 24"
"	"	2076				71' 30"

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