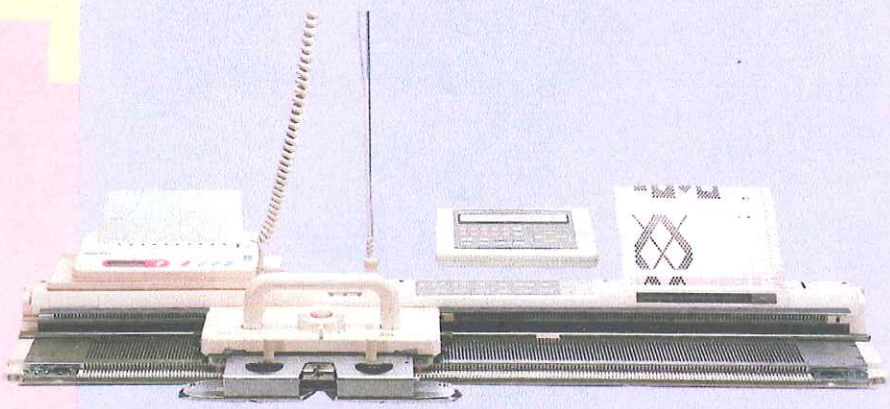
OPERATION MANUAL

MOD.580



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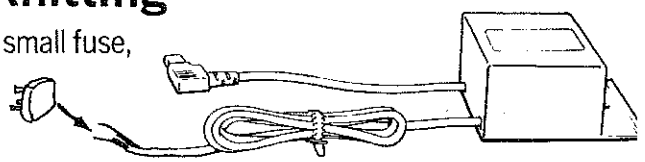
Preparing the machine for Pattern Knitting

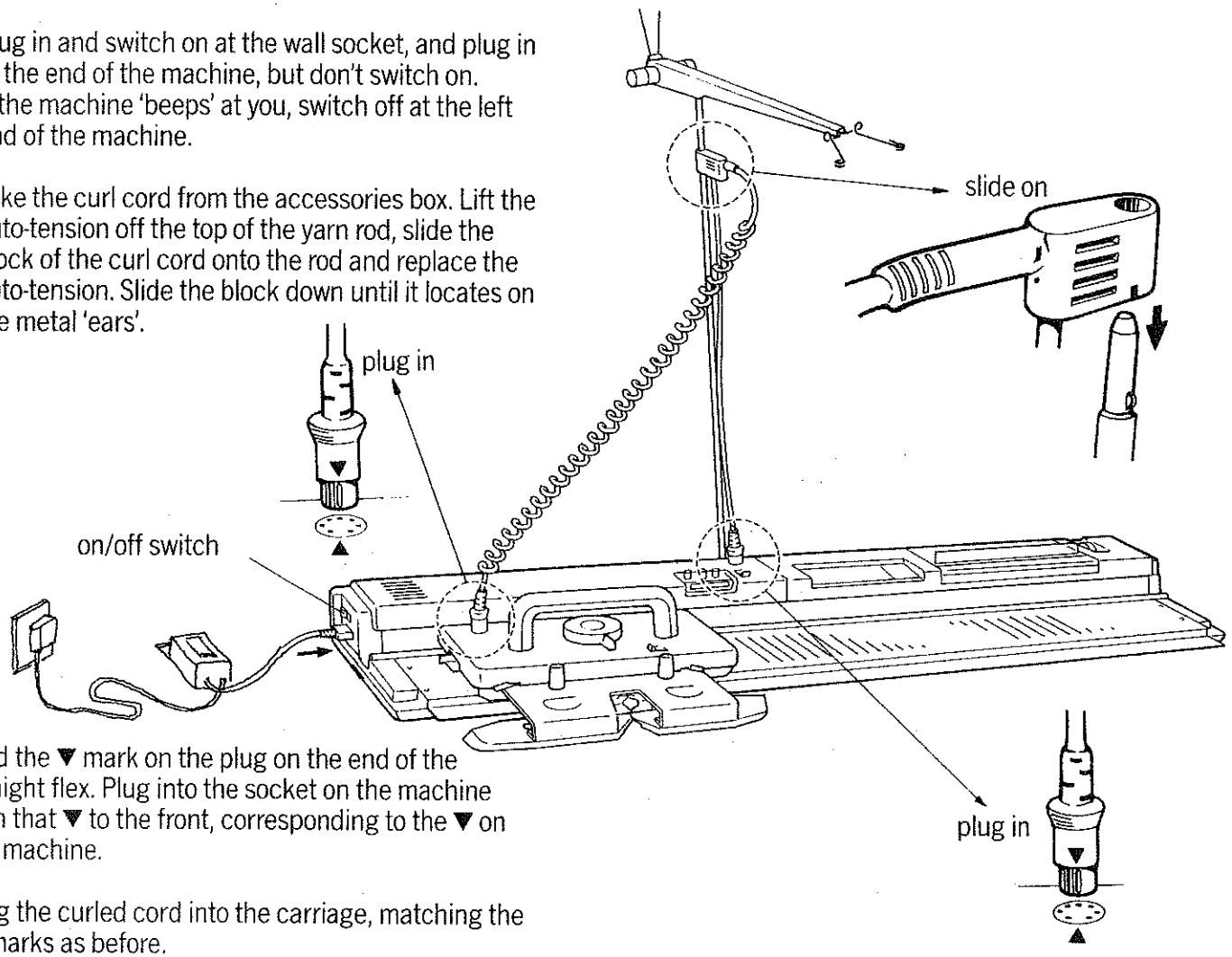
If no mains plug is fitted, put the right kind of mains plug, with a small fuse, say 3 amp, on the longer of the transformer leads.



At the left end of the machine you'll find a socket into which the short lead plugs, and a switch above it.

Plug in and switch on at the wall socket, and plug in at the end of the machine, but don't switch on.
If the machine 'beeps' at you, switch off at the left end of the machine.

Take the curl cord from the accessories box. Lift the auto-tension off the top of the yarn rod, slide the block of the curl cord onto the rod and replace the auto-tension. Slide the block down until it locates on the metal 'ears'.



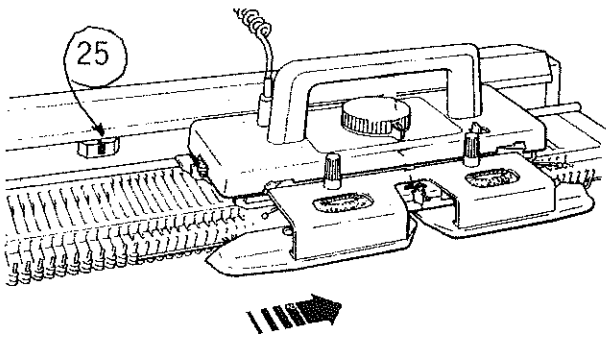
Find the ▼ mark on the plug on the end of the straight flex. Plug into the socket on the machine with that ▼ to the front, corresponding to the ▼ on the machine.

Plug the curled cord into the carriage, matching the ▼ marks as before.

Hint: Always complete the 'plugging in' before you switch the machine on at the left end.

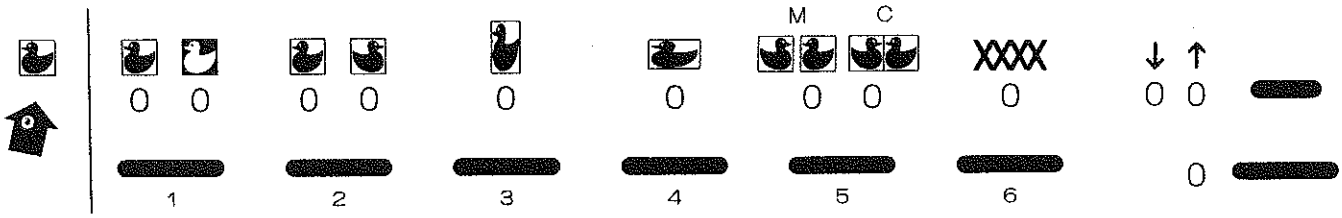
Slide the two point cams to the 25 position – half way between 20 and 30 on each side of the centre. Move the carriage to the right so it is clear of the point cams.

Switch on at the left end and the machine will 'beep'. This tells you that all is well.



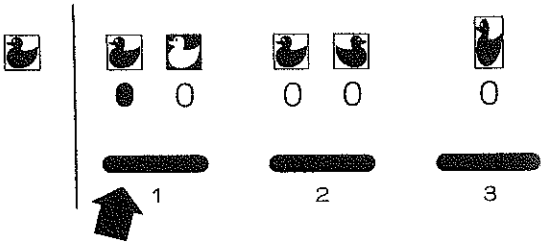
The Pattern Panel

At the left end of the pattern panel there is a single picture of a duck. This shows the pattern on the card, the normal way it is knitted, so you can compare that picture with the pictures by the function switches and see what the effect of that switch is.

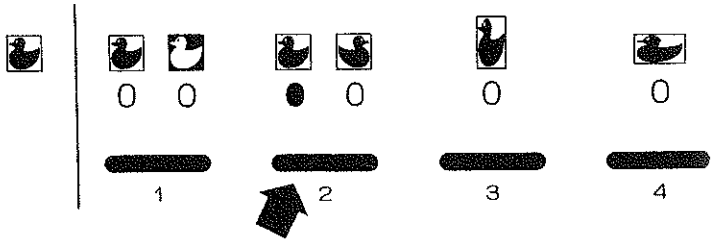


Each of the pastel coloured bars above a number is a press switch or button. The pictures above show what each switch does. The red lights show whether that particular function is on or not.

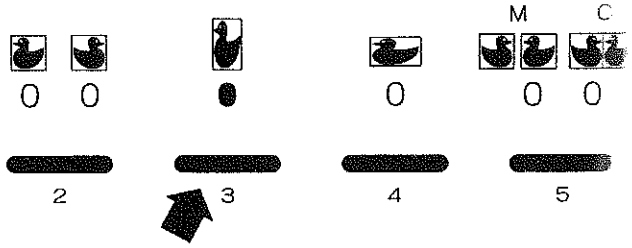
Switch 1 shows the duck either like the sample duck to the left, or with the colours changed round. Depending on whether the light is on under the left picture or the right, Fair Isle will either knit a pattern as you see it, or with the colours reversed. This switch is used mainly for tuck and slip stitch patterns. It must NOT be used when knitting Single Motifs. Press the switch bar gently to see the light change. Leave it with the left light on at present.



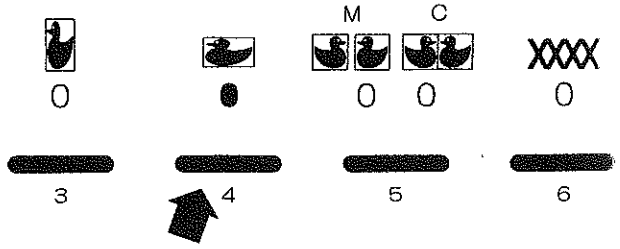
Switch 2 shows the duck facing left or facing right. Pressing the switch changes the light, as it does with switch 1. If the left light is on, the pattern knits as you see it on the card, on the purl side of the knitting. If the right light is on, it faces the other way. If you want the **knit** side to be the same as the card, have the right light on.



Switch 3 has only one picture and the duck is drawn the same width but twice as tall. Press the switch and the light comes on.
Press again and it goes off. When the light is on, any pattern will be knitted twice as tall. There will be two rows of knitting for each row on the pattern card.
(Press this switch when the carriage is at the side, ready to start knitting.)

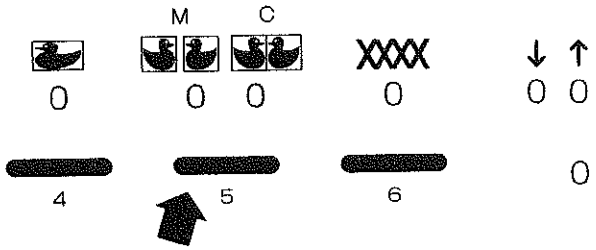


Switch 4 also has only one picture, and the duck is shown normal height but twice as wide. So with the light on, any pattern will knit twice as wide as it is drawn, two stitches for each one on the pattern card.



You can use switches 3 and 4 together to get a pattern twice as high and twice as wide as the pattern drawn on the card.

Switch 5 has two pictures, both with two ducks facing each other.
The difference is that the left one (letter M) shows the two pictures next to each other but not touching, and the right one (letter C) shows them touching.

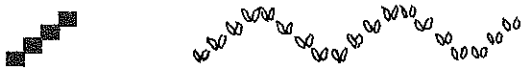


Both these functions give a 'mirror image' effect, but slightly differently. If either of these lights is on, the pattern will knit facing one way, then the other, then the first way again, all across the knitting.

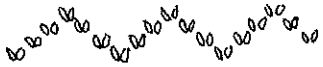
The difference is easiest to understand if we use a very simple four stitch pattern. We'll call the stitches 1-2-3-4.

M means 'mirror' – and if the light is on at that side, the pattern will knit 1-2-3-4-4-3-2-1-1-2-3-4-4-3-2-1 and so on.

C means 'chevron' and this knits 1-2-3-4-3-2-1-2-3-4-3-2-1 and so on. See the difference? Compare carefully.



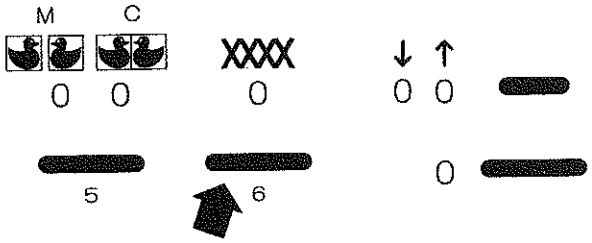
Mirror



Chevron

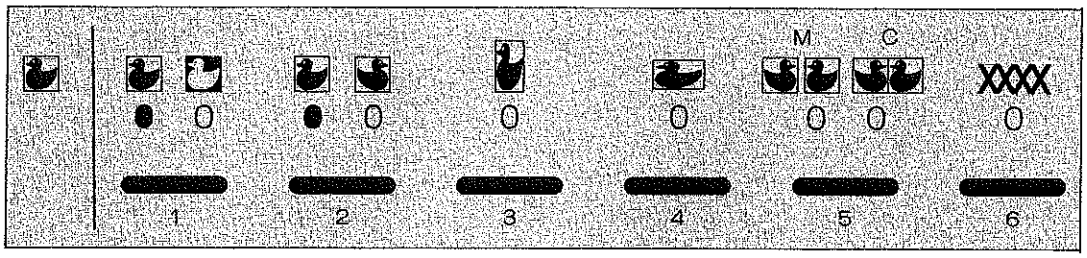
This switch has three settings and if you keep pressing you see the three choices – mirror – chevron – or neither. Leave it with both lights out (neither).

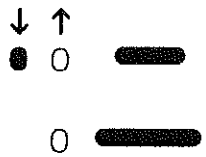
The last patterning switch is number 6 and is for 'Double Jacquard'. We'll cover that in the section on the ribber, leave the light off at present.



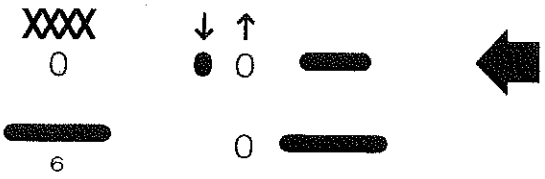
more on page 4

Finally we come to the lighter coloured panel with two switches.





The upper one has two lights, one showing that the pattern will feed downwards and the other upwards. This switch allows you to change the direction, but normally this will be handled completely automatically by the pattern card.

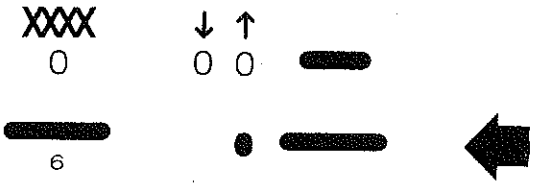


The lower switch is very important and you'll use it a lot. It's the one with a light beside it.

This is often called the 'inspection switch' or 'inspection button'. If the light beside it is out, press the switch so the light comes on.

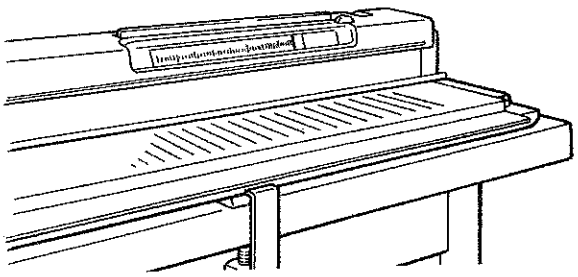
Now press the button and listen.
You'll hear the 'whirr' of a motor, and then two 'clunk' sounds. Press again and you'll hear the 'whirr' but no 'clunks'.

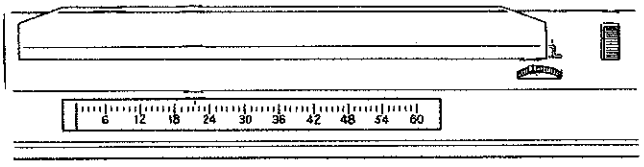
This is the switch you use to feed a pattern card down into the card reader and 'read' or 'scan' the first row of pattern. (That's what the 'clunks' are – the reader scanning across the pattern card.)
The same switch also feeds the card up. Press again to leave the light on.



The Card Reader

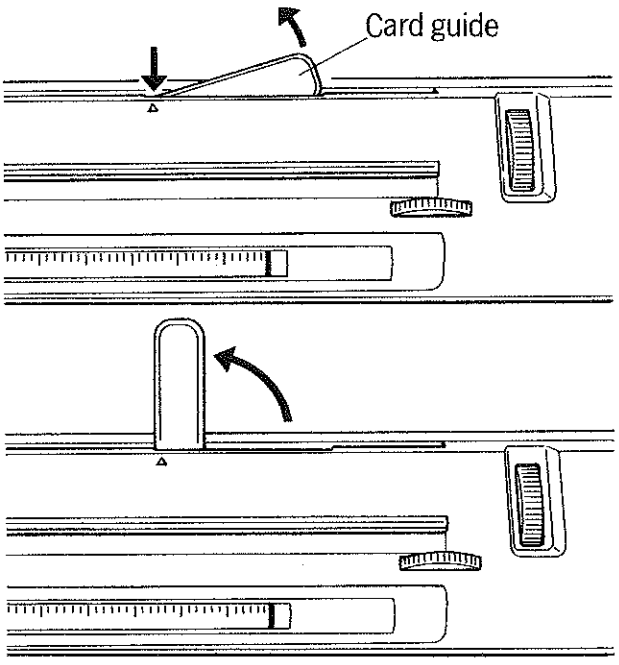
At the right hand end of the machine is the card reader, with its two wheels or dials, the card slit in the top and the pattern width indicator at the front. The pattern width indicator is the scale in the window, with a red pointer indicating the width.





Card Guide

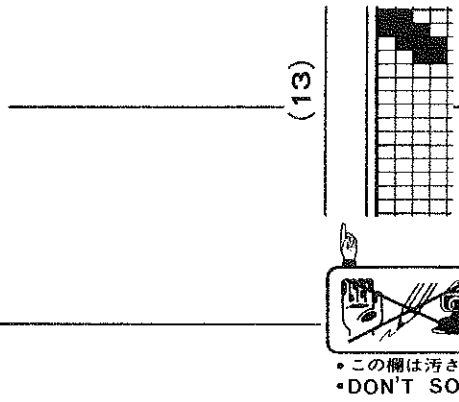
First, look at the back of the machine, where there is another slot, and just above it, the card guide. Press on the end nearest the centre of the slot, and then pull out the other end. The guide swings round to stick out straight backwards. This stops the card from rolling round and getting caught.



The Pattern Card

Take out pattern card 1 from your set. The picture shows pattern card 4, and you are holding card 1, so you can compare them and see the differences.

Starting at the left, beside the sprocket holes are the pattern numbers. Card 1 has seven small patterns, card 4 has two larger ones, numbered (12) and (13) at the side.

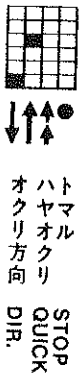


Next to those numbers is a completely blank column. This is where the scanner in the card reader is 'parked' when it is not reading across a row of pattern, so this column **must** be empty and clean.

The pattern is next. Each square is a stitch. A pattern can be as small as you like, or up to 60 stitches wide and 150 rows high (more with the Design Controller). Patterns almost always start at the left. When you draw your own on the blank design cards, always start at the left unless you know you want something different.

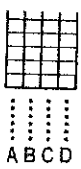
Close to the pattern area is the buzzer column. A mark in this column means that the buzzer will sound when that row is scanned. It is a reminder to you to do something, such as change colour of yarn, or pause while the card returns to row 1 after knitting the next row, which is the last row of the pattern.

Next are the four 'instruction columns'. A mark in the first (left hand) column tells the machine to "feed the card **down**, row by row, as you knit, until it finds a mark in column 2 to say feed the card **up**". Pattern 1 on card 1 shows these two marks.

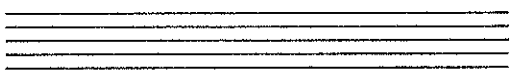


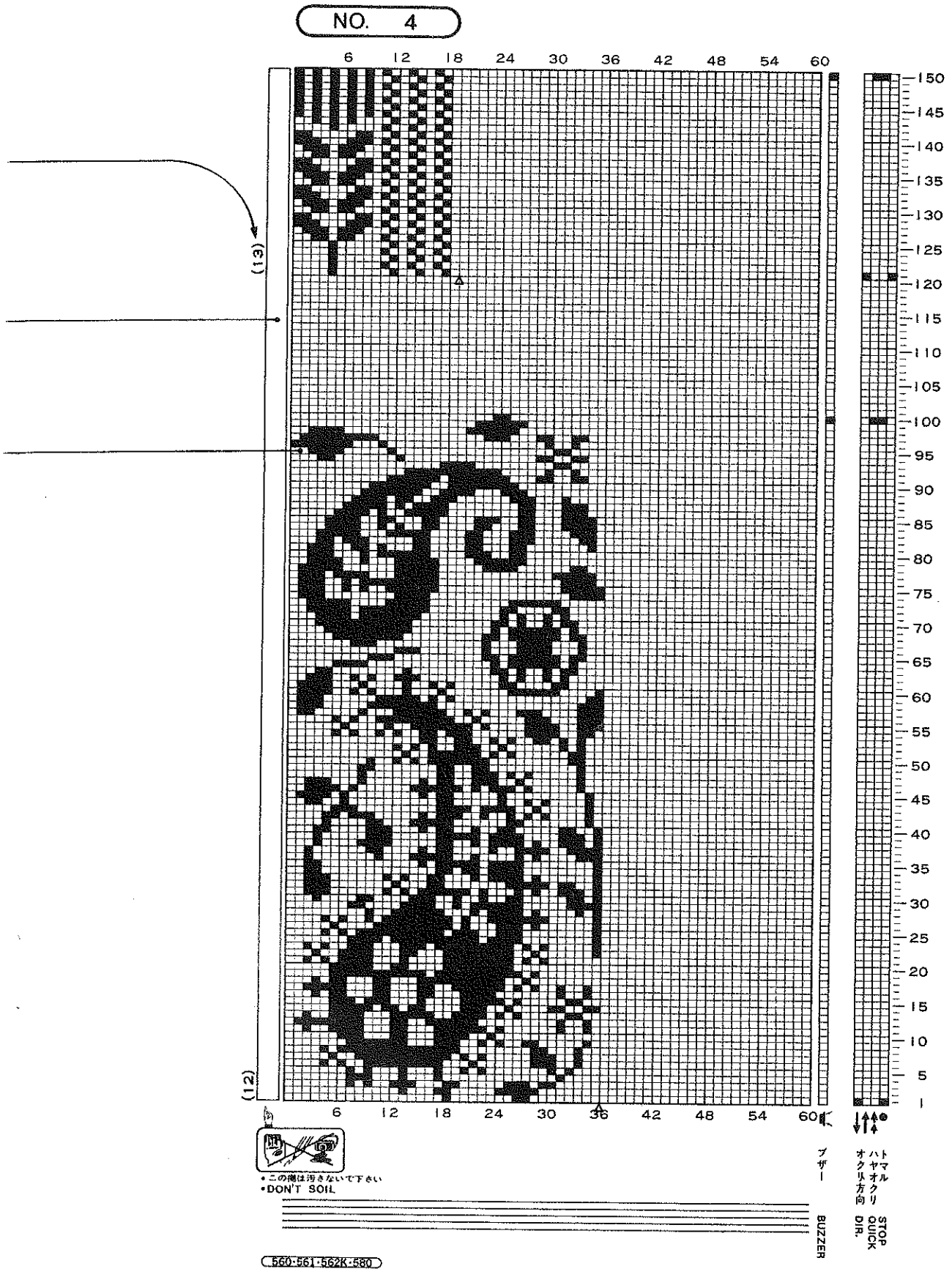
With many patterns you want the card to return quickly to the first row, to start the pattern again from the beginning. A mark in column 3 means "feed quickly" and a mark in column 4 means "stop quick feed". If you have a mark in column 3, there must be one in column 4, or else the card will feed right through the machine and you'll have to switch off at the end to stop the motor.

The notation columns beyond the right hand row of sprocket holes are for colour change instructions to you – but we will cover those later, as we need them. Notice that they are drawn 10 rows higher up the sheet than the rest of the pattern.



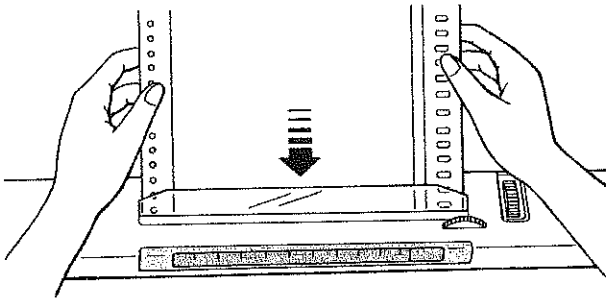
At the bottom of the sheet are 5 red lines. These help you to line the pattern card up square to the machine when you put it into the card reader.



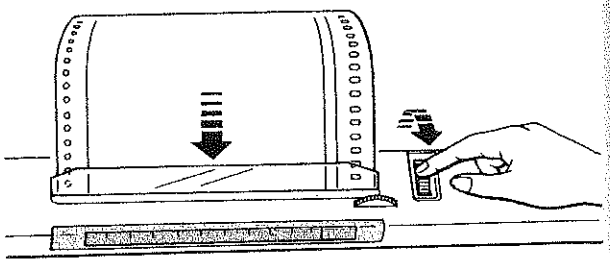

NO. 4
6 12 18 24 30 36 42 48 54 60
(13)
(12)
150 145 140 135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 1
ブザー
BUZZER
トマルヤスクリ方向
STOP QUICK DIR.
•この裾は汚さないで下さい
•DON'T SOIL
560·561·562K·580

Putting in a card

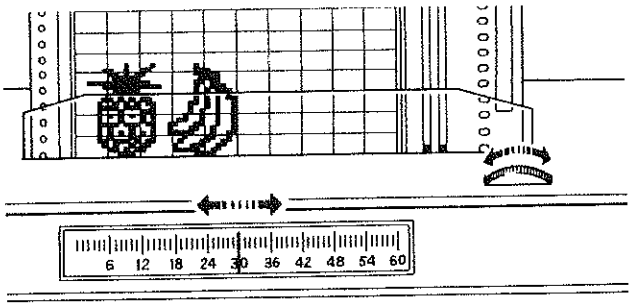
Pick up card 7, hold it in both hands and push it gently into the slit behind the plastic **card cover**. Push down until some of the red lines disappear into the slit. Keeping the card square, use your right hand to turn the **card dial** (on the right) towards you to take the card in. Make sure it goes in straight.



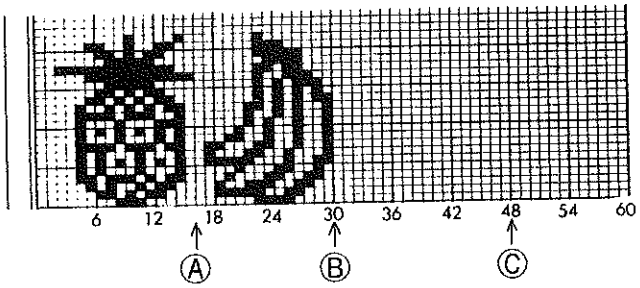
Turn the dial towards you several clicks, until the pattern (22) is approaching the slot. Just under the right hand end of the pattern, can you see the little triangle?
This suggests where to set the pattern width.



The **pattern dial** moves the red pointer across the scale which is the **pattern width indicator**. The **card reader** reads the pattern from the left, up to the position of the red pointer. Move it to 30.



The pictures show different ways of using pattern 22 on card 7, with different positions of the width indicator (the red pointer).



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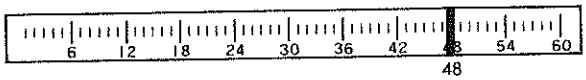
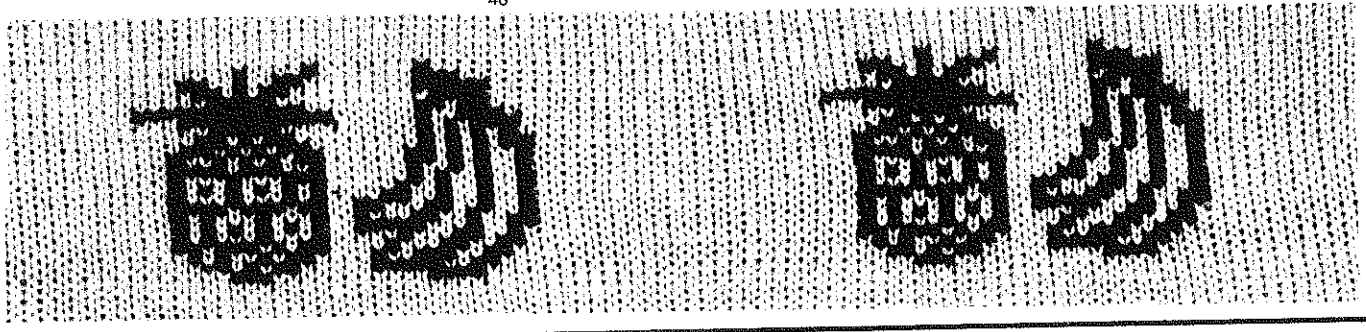
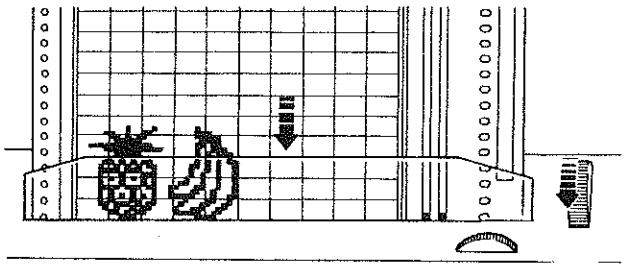


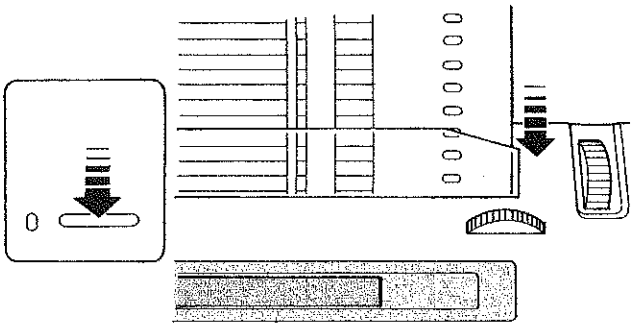


Press the inspection switch, if necessary, to have the light **on**.

Set the pattern width for the pattern you have in, and then turn the **card dial** forward until the first row of the pattern is just visible above the slit.



Now press the inspection switch and (if you have been following the instructions so far) the card will feed in ten rows, and you'll hear the double 'clunk' as the first pattern row is scanned. The light beside the inspection switch should now be out. (The inspection switch is the lower of the two at the right hand end of the pattern panel – the one with just one light beside it.) Press the inspection switch again to bring the card up and the light on.



If we were threaded up with the correct yarns and had done the other settings we would now be ready to start knitting pattern.
However, before we can start, we need to look at threading up and at the other settings.

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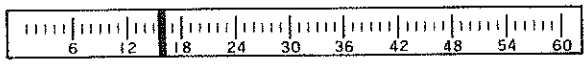

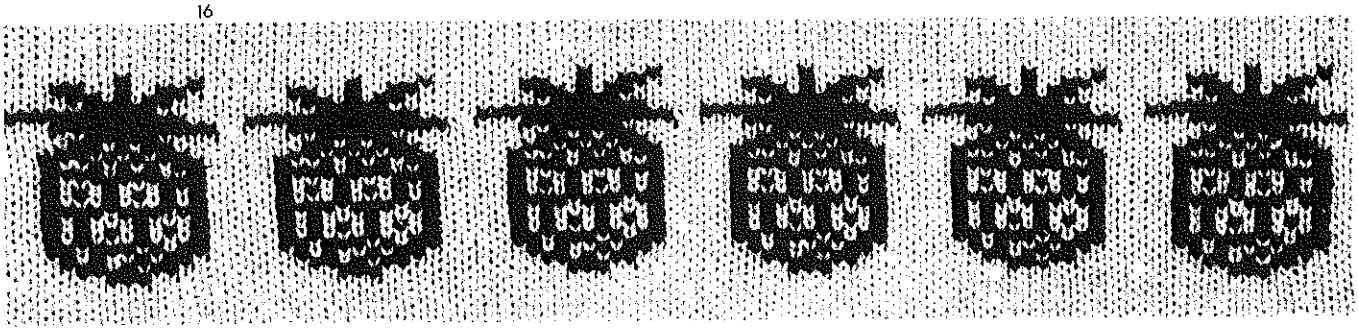

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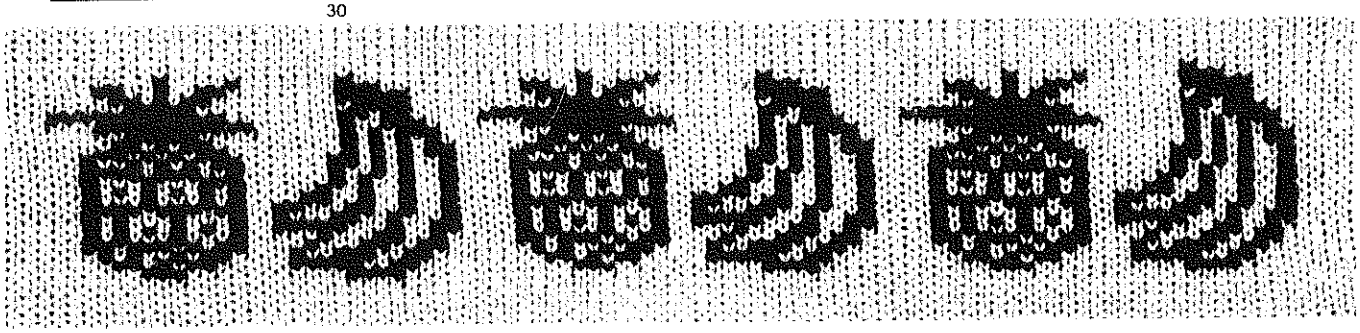
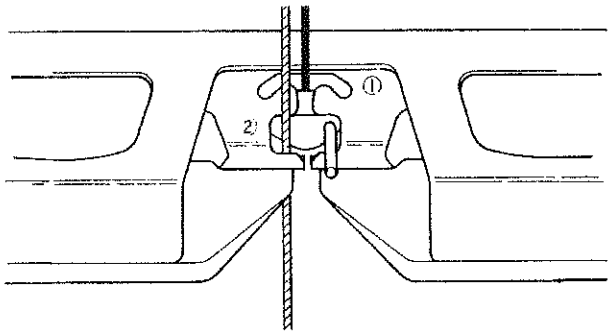


Threading up a second yarn

Some patterns require you to thread up two yarns at the same time, eg Fair Isle. Threading up a second yarn is exactly the same as threading the first except for the yarn feeder on the arm.
The first, main or 'background' yarn goes into feeder 1, and the gate is closed. Then the second or 'contrast' yarn is simply placed into the gate and rests against the '2' mark. You do not secure it in any way, it just rests in that position.

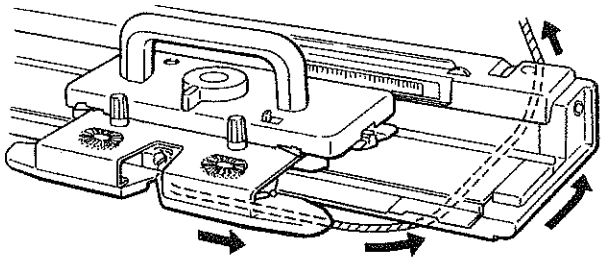
Put it in a yarn clip or hold it in your fingers for the first few rows.

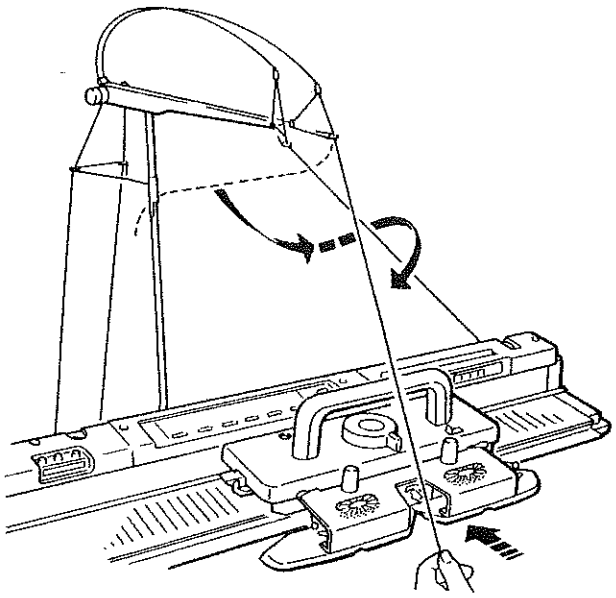


Changing yarns

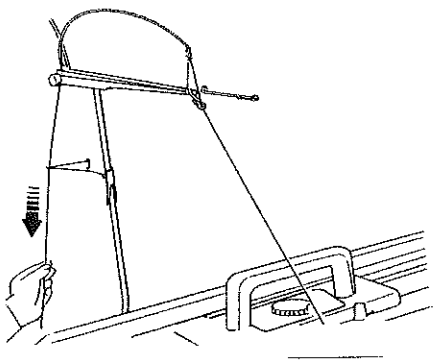
Other patterns require you to have only one yarn threaded in the yarn feeder at any one time, but to change that yarn at regular intervals, say every 4 rows.

Thread up the second yarn, and clip it into the yarn clip. Now remove the yarn from the feeder without cutting or breaking it, and pass it round the right hand end of the machine as shown. Be careful how you take the second yarn from the clip. Thread it into the feeder as a 'main' yarn and tie the end to a table clamp. Now you may exchange the yarns as often as the pattern requires, placing the unwanted one round the end of the machine. Be careful not to take the second yarn round the wrong side of the first, or they will tangle.





Pull down any slack yarn behind the yarn rod.



The Cam Lever

The Cam Lever on top of the carriage can be turned from the centre, non-patterning, position to one of seven patterning positions.

The centre O position is for stocking stitch (stockinet).

The other positions are

F – Fairisle two colour patterning

L – Lace 'punch lace' using a main yarn and a very thin yarn

W – Weaving which knits stocking stitch and weaves a thicker thread in and out of the stitches

S-J – Slip and Jacquard

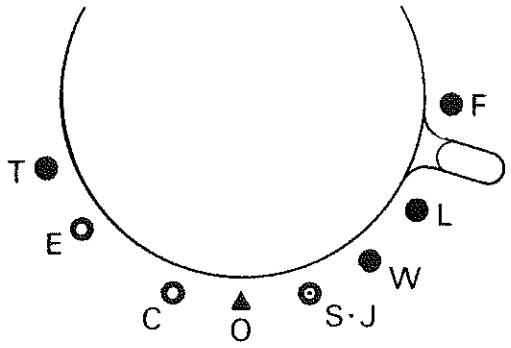
Slip stitch is a single or double bed textured pattern

Jacquard is a double bed pattern of two or more colours without 'floats'

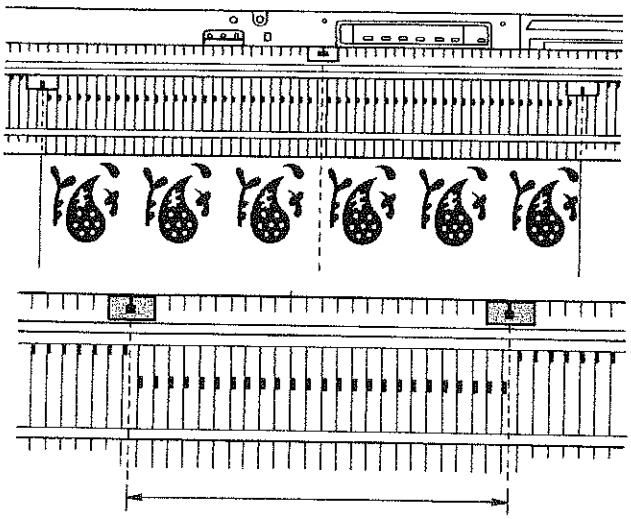
C – Circular this is used to knit a cord or with the ribber for circular knitting

E – English this is used only with the ribber for types of 'fishermans' rib

T – Tuck is a single or double bed textured pattern, bolder than Slip, and the setting is also used for a form of 'lacy' fabric ('tuck lace').



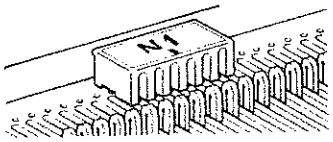
Point Cams and Needle 1 Cam



The point cams are the ones which slide along the rail at the back of the needle bed. The Needle 1 cam is one of the small rectangular blocks with N1 on it, in the accessory box. This has pegs to hold it in place. The pegs fit the small holes behind the needle grooves.

The patterning only operates between the point cams. Usually you will set them at the edges of your knitting, or sometimes you may prefer the effect of setting them one or two needles in from the edge, to give you plain stitches for sewing up.

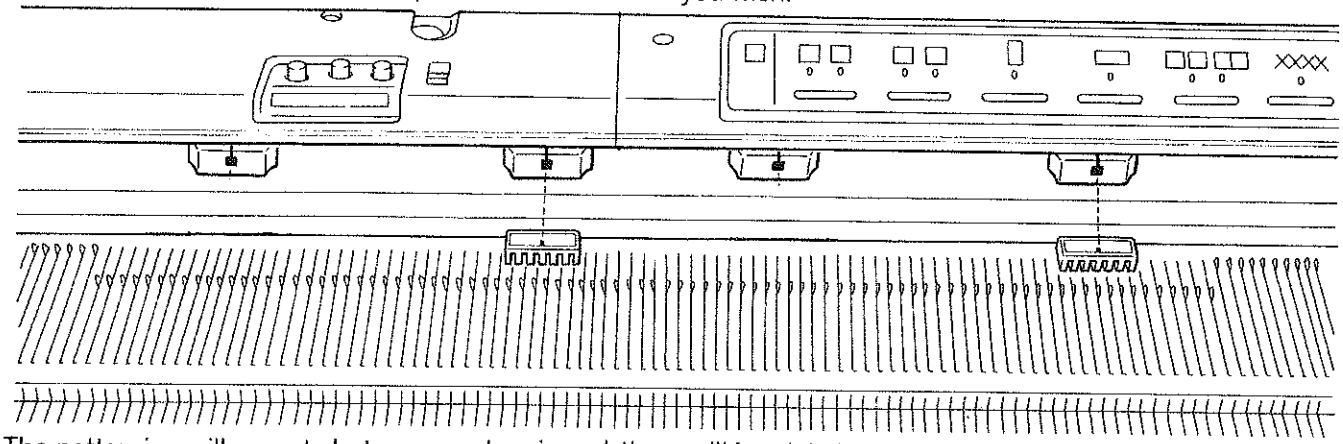
The N1 cam tells the machine where to position the pattern. It corresponds to the left edge of the pattern card. With an all-over pattern, it will not be critical where you put it – but with special motif patterns it will be very important. Put the N1 cam on the centre of the needle bed and leave it there for the moment.



The N1 cam is very important if you are using the Mirror or Chevron switch. The position of the N1 cam is the position where the 'reflection' occurs – the edge of the pattern.

Hint: Be very careful to put the needle 1 cam onto the bed so that it reads **N1** and not **IN** when it is in place. If you put it on upside down, either the carriage will jam or you will break off the plastic pins that hold the N1 cam in place.

With any pattern you can use two pairs of Point Cams if you wish.



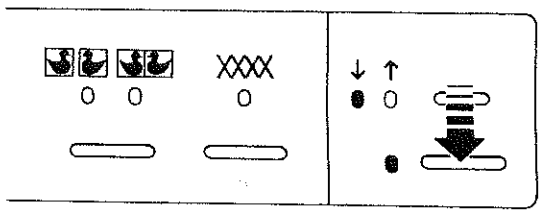
The patterning will operate between each pair, and there will be plain knitting in the centre. You slide the extra cams on at the left end of the rail. Because Fair Isle (for instance) would give long loops of a second colour across the gap between the pairs of cams, it is most often used for such patterns as transfer lace, with the special lace carriage. You can also put a Needle 1 cam (N1) with each pair of point cams, so that the pattern comes exactly how and where you want it.

Hint: Make sure that you put the point cams correctly between needle positions. Listen or feel for the slight 'click'. If you have the point cam balanced between two positions, it can spoil the patterning.

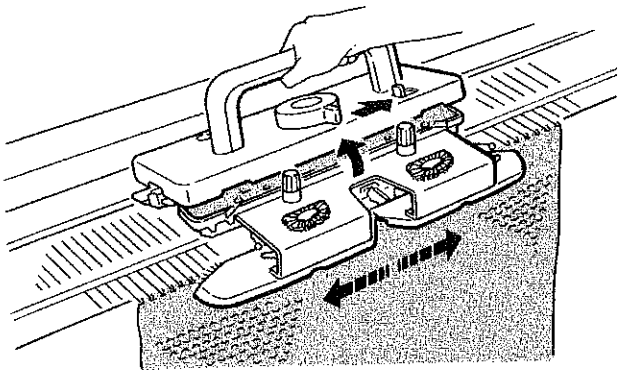
Picking up the cam positions ('free row')

Your machine must know where you have put the point cams and needle 1 cam before you start pattern knitting. If you have had the cams in place, and the machine switched on, while you were casting on or knitting the hem or welt, the machine will already know where the cams are. If not, or if you moved them, you need to take the carriage across and back, to allow it to pick up the positions. You could just knit across and back, but you may not want two plain rows. This is how to do a 'free row' without knitting.

First, have the 'inspection light' ON. Press the inspection switch if necessary.



Then press the carriage release lever to the left so that the carriage opens. Keep the handle lifted as you take the carriage across past the last point cam and back again.

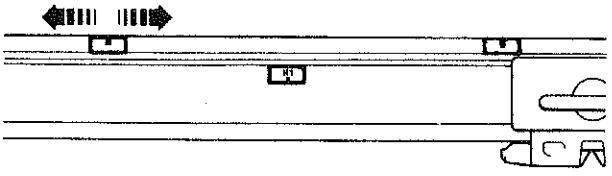


(If you are using two sets of point cams, take the carriage across and back once more, so that the carriage has passed the cams four times in all.)

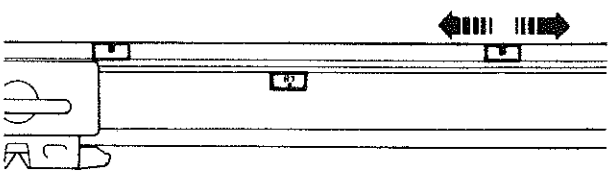
Close the carriage by pressing down on the handle or the stitch dial, pull back slack yarn behind the yarn rod.

Moving the Point Cams

If you are knitting the front of a set-in sleeve sweater, you will want to shape the armholes by decreasing. You must either make quite certain that you keep moving the carriage far enough to clear the point cams, or move them in as you knit.

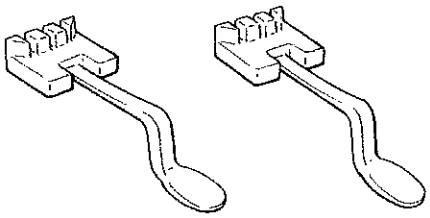


If you are going to move them, you will need the N1 cam in position to 'fix' the position of the pattern on the needlebed.



You may move the point cam on the side away from the carriage, without affecting the patterning.
If the carriage is on the right, move the left cam, knit across to the left, then move the right cam.

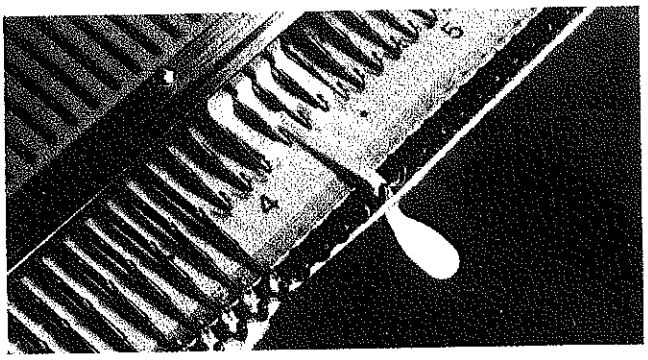
Yarn Separators



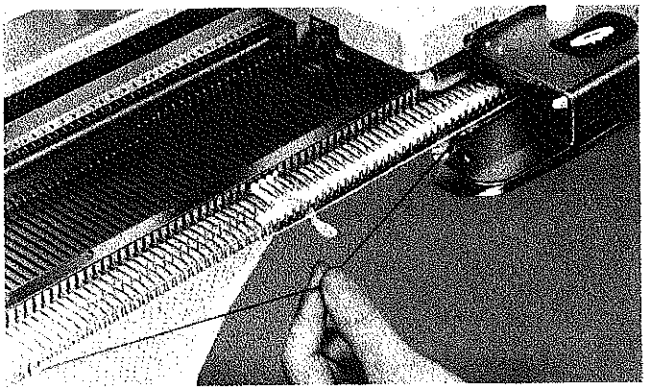
These are used to lift the main yarn as the carriage begins a new row, to avoid any risk of the yarn or yarns getting caught up. They are useful in Fair Isle knitting and tuck stitch, and are essential in motif knitting.

They should be positioned about three needles past each edge of the knitting, one at each side.

Before you put them in, open the latches of the 4th, 5th and 6th needles beyond the knitting, and press the latches fully back with your finger tip. Now slide in the yarn separator under those needles as the picture shows.



Put your main yarn (in feeder 1) **above** the separator, and the contrast yarn (if there is one) **under** it.

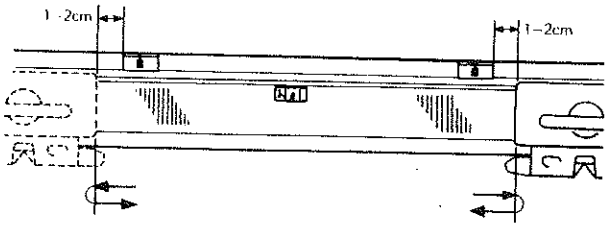


Hint: It is very important to open the latches of the needles where the separator is to be placed, and to press them back, otherwise the carriage will catch them, and will probably bend or break them.

Patterning reminders

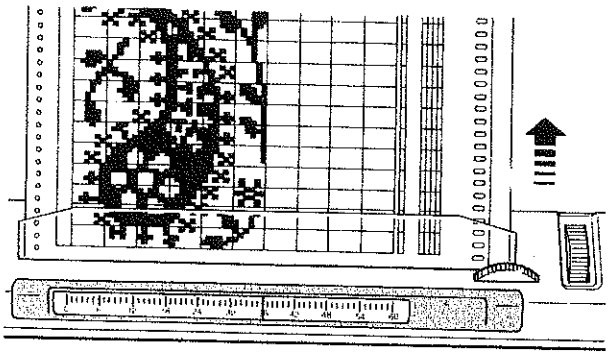
Pass all the cams

When you are pattern knitting you must take the carriage all the way past the point cams and the N1 cam on **every** row.



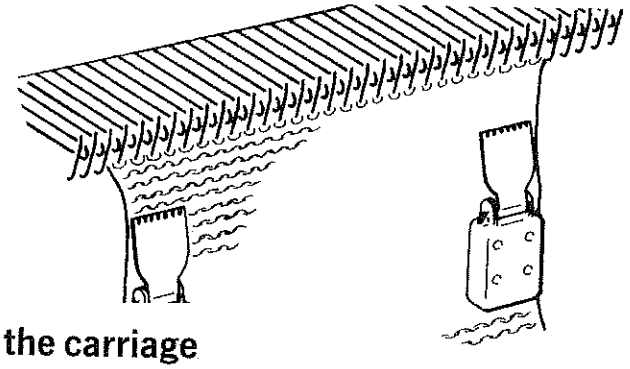
Wait for the card to return

If the pattern you are knitting is long (and you are not using the design controller), listen for the buzzer and pause while the card returns to the first pattern row.



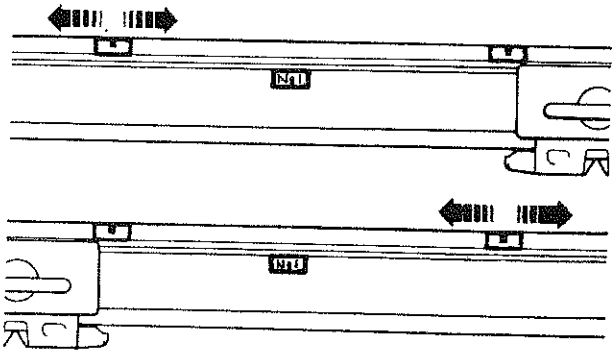
Claw Weights

Use the claw weights **at all times** to help the needles to knit the stitches off correctly. This particularly important when knitting tuck and slip stitch, and single motifs.



Move the point cams on the side away from the carriage

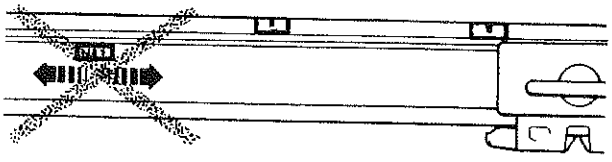
Don't move the point cam next to the carriage, because it will cause mispatterning if you do.



HINT: When you are using two sets of point cams, think of them as L1 and R1 (set 1) and L2 and R2 (set 2). Move either or both of L1 and L2 when the carriage is at the right. Move R1 and/or R2 when the carriage is at the left.

Don't move the Needle 1 Cam

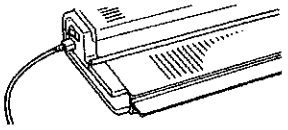
Even if you move the point cams so that the N1 cam is left outside them, don't move the N1 cam.



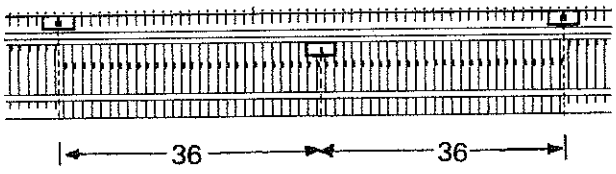
When you have practiced, and understand the machine, you will realise that you can move the N1 cam one complete pattern width to the right or left, and then use the 'free row' to pick up the new position, without affecting the patterning. Until you understand, don't move it.

Your first pattern knitting – Fairisle

Plug in the curl cord and transformer if it is not already done, and switch on at the left end of the machine.



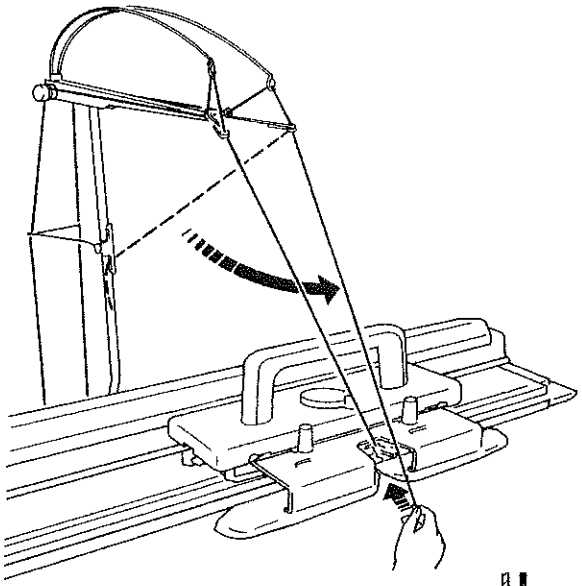
Bring forward 72 needles – 36 each side of 0. Set the point cams at 36 each side and put the N1 cam in the centre if it is not there already.

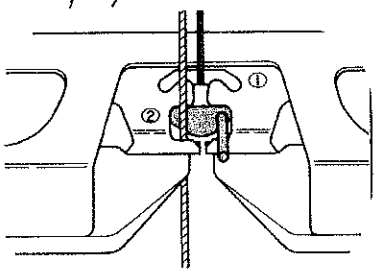


Thread two colours of yarn through the two sides of the auto-tension and catch the ends in the yarn clips on the yarn rod.

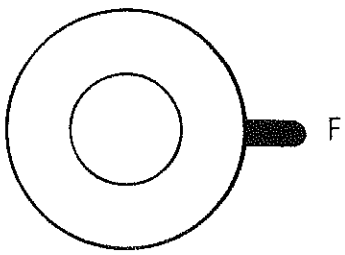
Thread up your main yarn and cast on. (See the Knitting Handbook for how to cast on.)

Place your second (contrast) yarn into feeder 2 and tie the end to the table clamp.

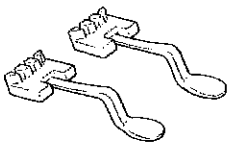




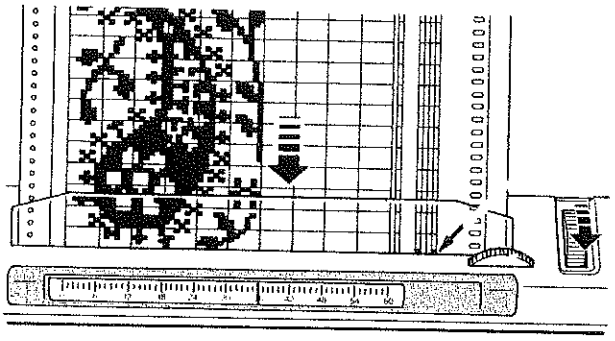
Set the Cam Lever to F for fairisle.



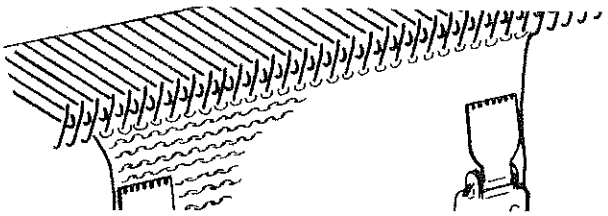
Put in the separators (check that the latches are open) and lay the main yarn on top of the one on the same side as the carriage.



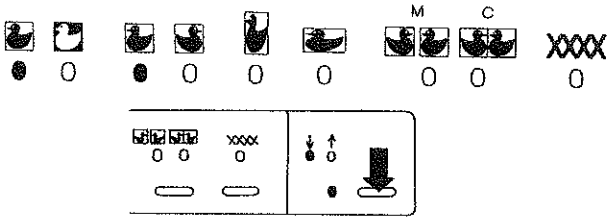
Feed pattern card 4 into the card slit, wind it in until the first row of pattern 12 – the paisley pattern – is just visible above the slit. Wind the pattern dial to the width of this pattern (36).



Hang the claw weights one at each edge of the knitting, about 2 cms below the needles.



Check that the switch settings are as shown on the pattern panel, and then press the inspection switch.



Knit across. Check that the main yarn stays on top of the separator and the contrast yarn below it.
Keep knitting.

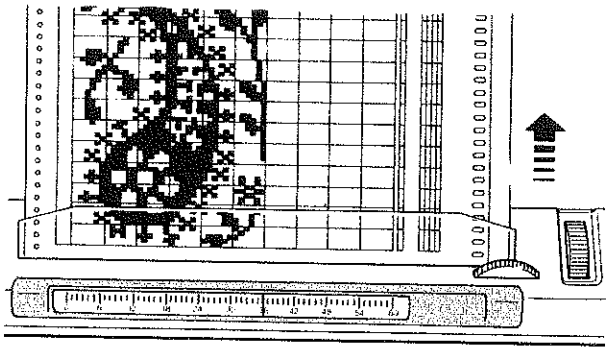
When you approach the end of the pattern, listen for the buzzer.
After you hear it, knit one more row, and then pause while the pattern returns to row 1.

Knit the pattern twice, then break or cut the yarns and run the carriage across to throw off the knitting.

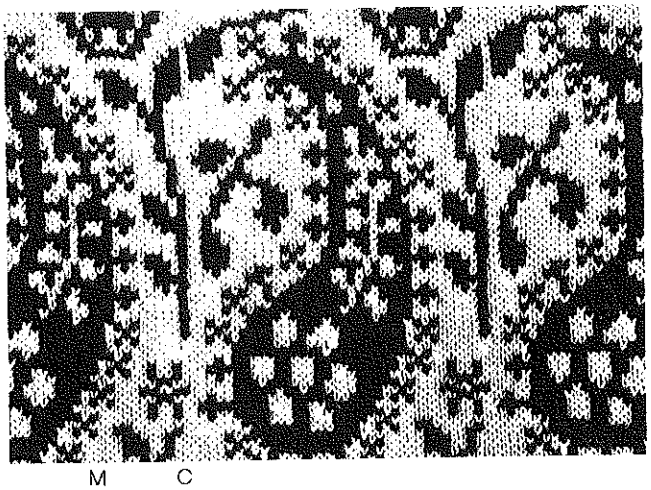
Look at your knitting and notice that although you have been looking at the back (purl side), when you turn it round to look at the front, the pattern is facing the other way from the pattern card.

Switch 2, if pressed to switch the right light on, would make the machine knit the pattern facing the other way.

So, if you drew letters on a design card, you would put the right light on to knit them the right way round.

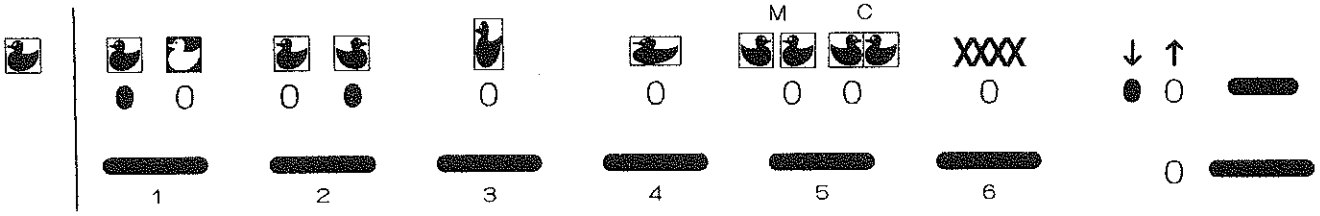


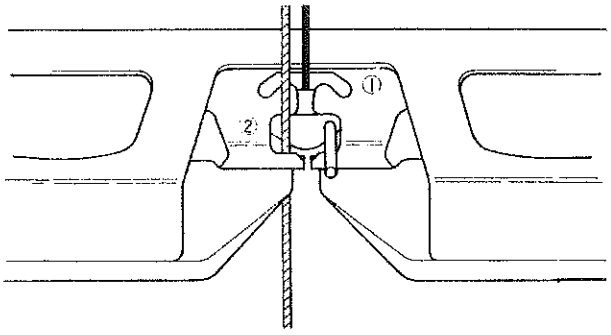
Fair Isle Patterning



Fair Isle is the name given to patterning with two colours knitting in the same row. You can create different effects by changing one or both yarns at regular or irregular intervals as you knit.

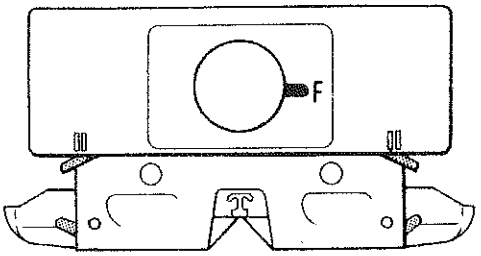
The Pattern book shows examples of Fair Isle on pages 1 to 9. For each illustration the correct switch settings on the pattern panel are also shown.





You need two yarns, threaded up as shown.

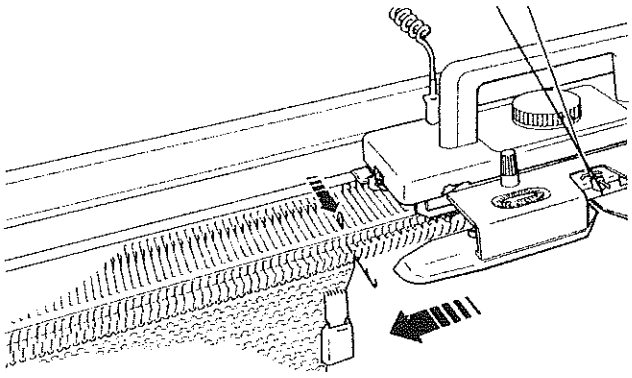
The cam lever is set to F.



Russell levers are on II unless you are using holding position.

Weaving knobs are set to o

If you want a plain stitch at the edge of your knitting, and you want it to be a contrast stitch so that the contrast yarn is knitted at each edge, making a very stable fabric, bring the end needle next to the carriage forward to D position before each row, and have the russell levers on II as we said above.



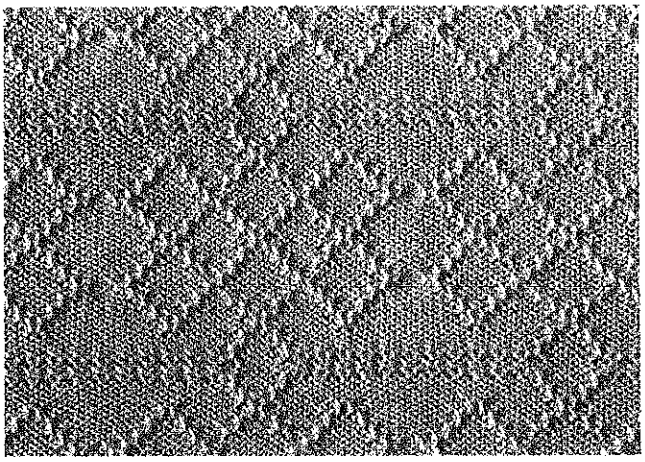
If you are using holding position, bring the needle to C instead of D.

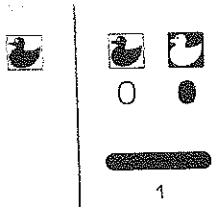
You can use any of the switches except number 6 for Fair Isle knitting, but it is unwise to use number 1 if you are leaving wide panels of plain knitting at the edge of your pattern knitting. The yarns are more likely to catch up if you do.

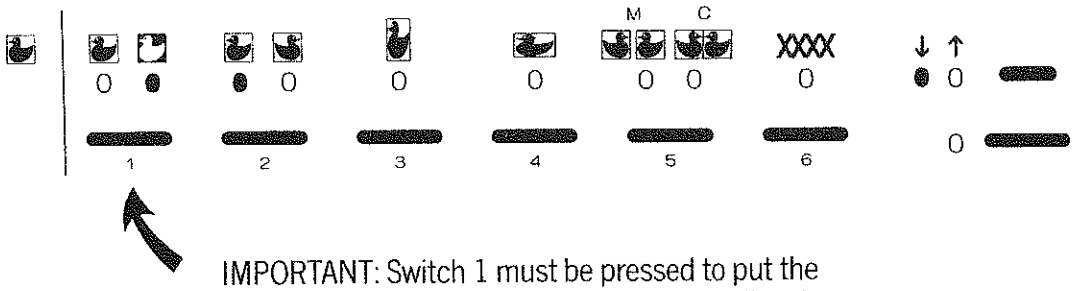
Tuck Stitch

This is a textured pattern, knitted with one yarn only, in feeder 1.
Feeder 2 is empty. Selected needles gather loops of yarn for two or more rows and then they all knit off together. Often the purl side is regarded as the 'right' side of tuck stitch fabric.

Pages 10, 11 and 12 of the Pattern Book show samples of tuck stitch using different patterns.



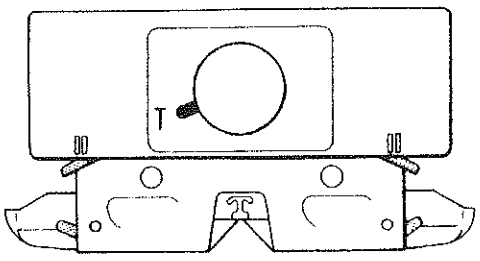




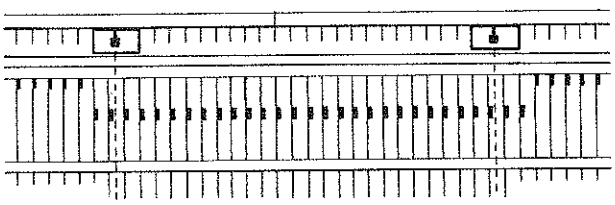
IMPORTANT: Switch 1 must be pressed to put the light on under the RIGHT hand picture for all tuck stitch patterns.

You must not use switches 3 or 4. Switch 5 with the left light on (M) is not recommended, because the machine has difficulty in tucking needles next to each other, and may drop stitches.

The Cam Lever is moved to T for tuck stitch.

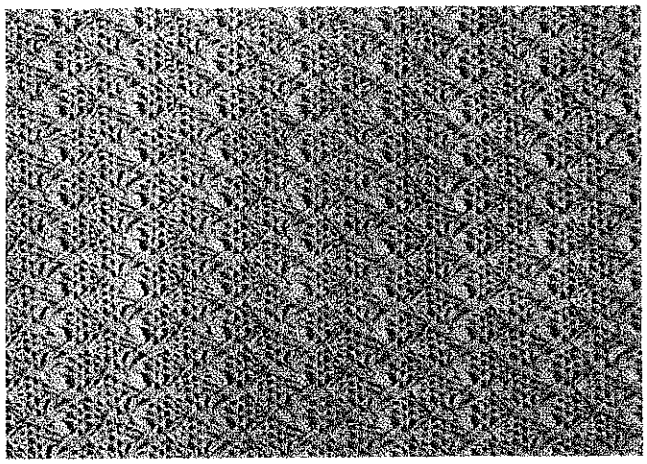


Set the point cams one or two stitches in from the edge of the knitting, to make the edge stitches knit stockinet.

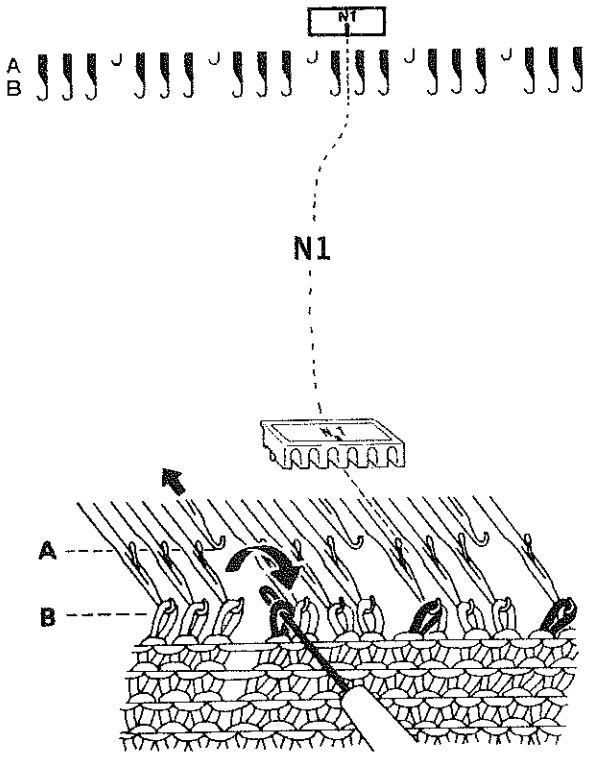


Tuck Lace

This is a tuck pattern which is knitted in the normal way for tuck stitch, but some needles are emptied and pushed back to A. A lacy effect is produced which can be very attractive with a soft or slightly fluffy yarn.



Page 14 of the Pattern Book shows some examples of tuck lace. Notice that the needle arrangement is also shown for each pattern, and the position (most important) of the N1 cam.



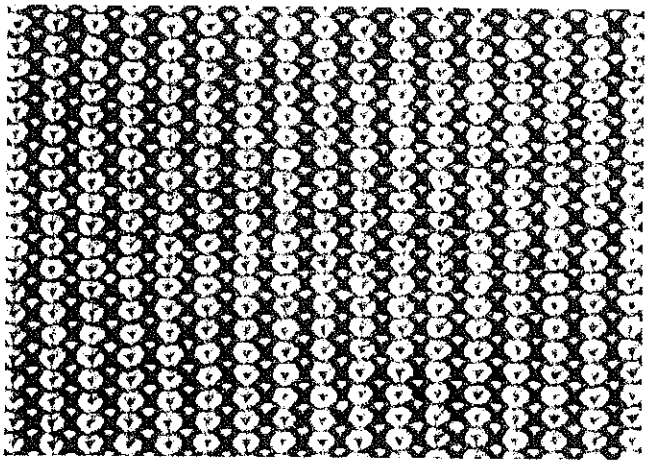
Transfer stitches from the needles which are shown as out of work, and push them back to A position before patterning. If the pattern does not appear to be as shown, you may have positioned the N1 wrongly.

Different effects are produced with the N1 cam in different places relative to the 'working' and 'non-working' needles.

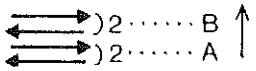
Multi-coloured Tuck Stitch

This is a normal tuck stitch, on all needles, with one yarn only being knitted in any row, but the yarn is changed to a different colour at regular intervals to give the multi-coloured effect. This kind of pattern is very popular for making colourful sweaters with no 'floats' on the back.

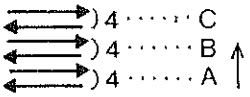
Page 13 in the Pattern Book shows just a few of the possible multi-coloured tuck stitch patterns.



Notice the additional information with each pattern about the number of colours, and the number of rows knitted in each colour.

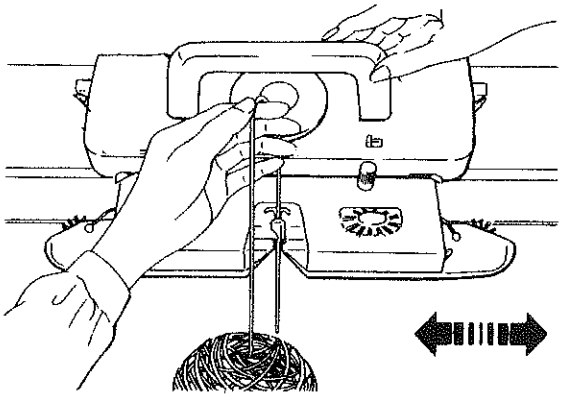


The picture at the bottom left is a very popular multi-colour tuck pattern, and is normally used as shown with the plain side as the 'right' side. Three colours are used, with 4 rows knitted in each. Black, gold and white are also very effective.



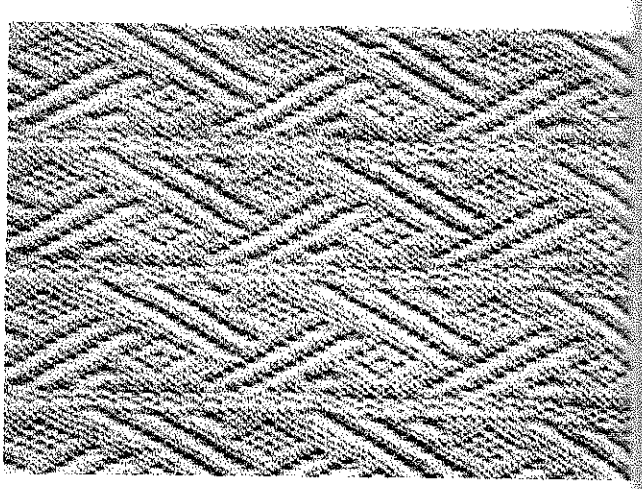
Because your yarn rod only takes two yarns (there is a four colour auto-tension available, and a colour changer) colour 3 would be best used from the floor in front of the machine. When you have knitted four rows in colour 1, four in colour 2, then put both round the end of the machine, thread the third and hold it in your hand above, and slightly in front of, the carriage. Knit across allowing the yarn to feed through your fingers as the carriage requires it. Remember to pull up (gently) at the start of each row, just like the action of the tension spring on the auto-tension.

That seems like a lot of trouble, but the effect is well worth it.

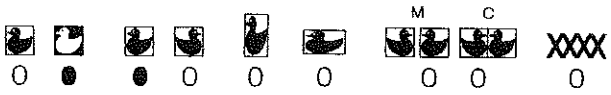


Slip Stitch

This is a textured stitch knitted with one yarn at a time, like tuck stitch, and it gives a softer fabric with a less pronounced texture. Instead of needles gathering loops of yarn which are knitted off together (tucking), the needles simply allow the yarn to lie across the purl side of the knitting (slip) while holding on to the original stitch.

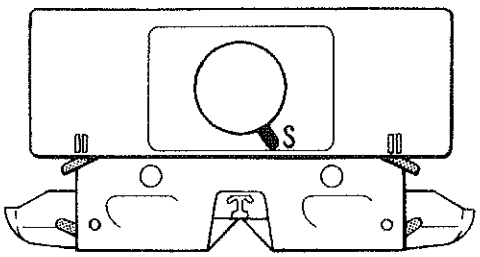


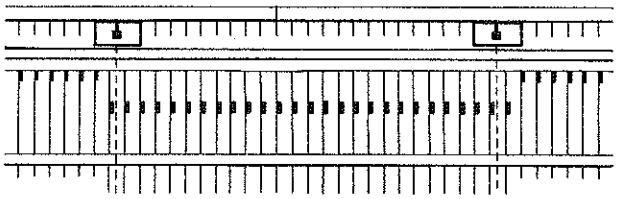
Pages 15 and 16 in the Pattern Book show examples of slip stitch patterns. As for tuck stitch, switch 1 is pressed to switch on the right hand light.



Switches 3, 4 or 5 may be used with slip stitch, but the pattern would be even less pronounced, so experiment with samples before knitting your garment.

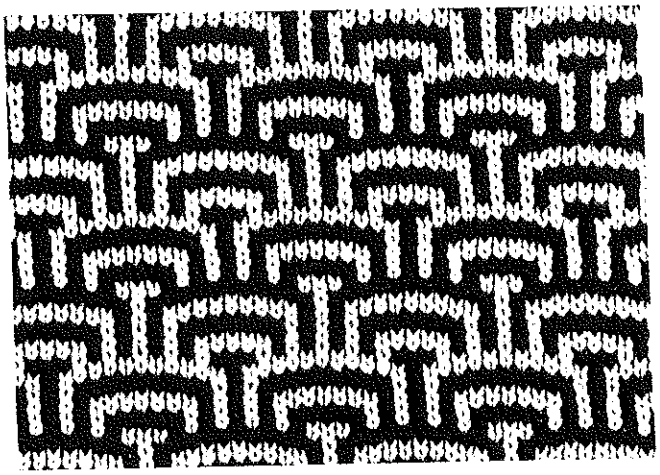
The cam lever is set to the S-J position for Slip.





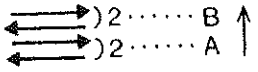
Multi-coloured Slip Stitch

This is a normal slip stitch pattern, with only one yarn being knitted at a time, but the yarn is changed at regular intervals to give the pattern effect.



Page 17 in the Pattern Book shows examples, and you will see that some are effective on the plain side of the knitting.

Most often the effects are achieved by knitting just two rows in each colour. It is worth experimenting with any of the slip stitch patterns to see what effects can be obtained.

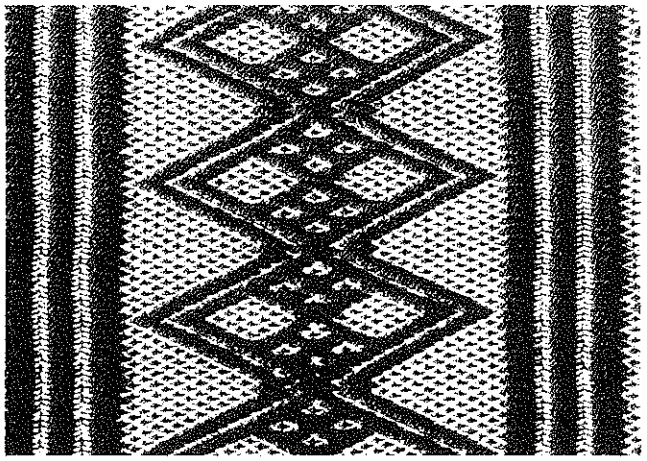


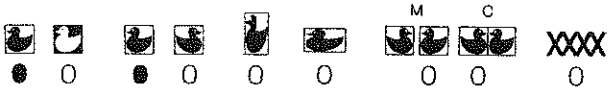
Weaving

This is a fabric with plain stocking stitch in the yarn which is actually knitted, but which uses the pattern to thread a thicker yarn in and out of the stitches, giving a woven effect. This thicker weaving yarn is not threaded into the yarn feeder, but is hooked round the special Weaving Yarn Holders with the little red knobs. The purl side of the fabric is usually used as the 'right' side.

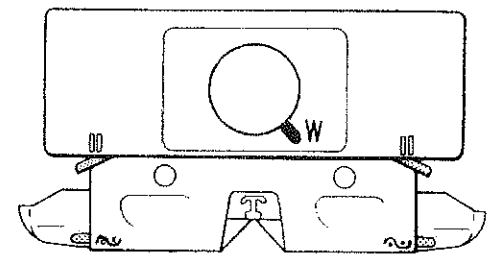
Some weaving patterns are illustrated on pages 20 and 21 of the Pattern Book.

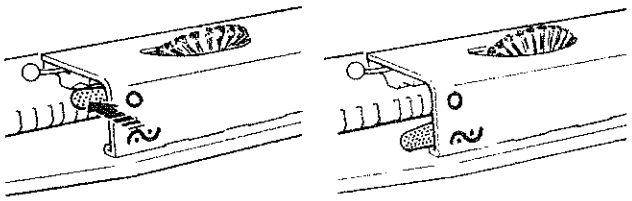
This fabric is particularly good for 'cut and sew', because it does not stretch or fray as much as other knitted fabrics. There is an automatic weaving arm which can be obtained to speed up the weaving process, if you 'get hooked' on this type of fabric.



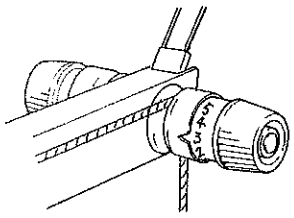


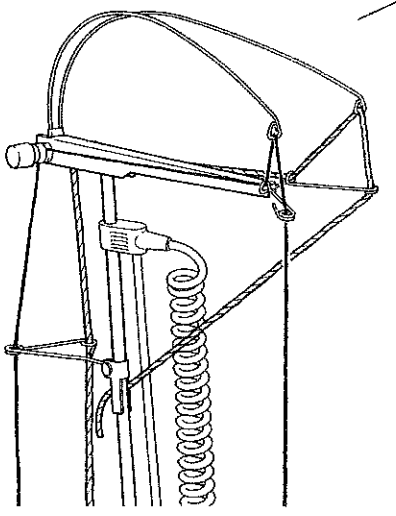
Setting the carriage requires the Cam Lever to be set to W, and the weaving brushes to be set down to the ~ marks. Push the knobs towards the carriage gently and they, and the brushes, will drop down into position.



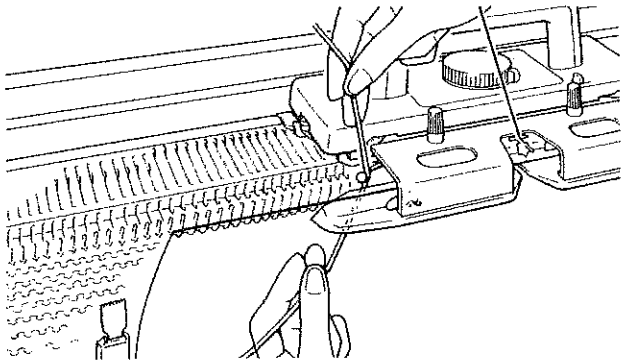


If you are just trying this stitch out, use a three- or four-ply as your main yarn, and something thicker – at least double knitting – threaded up in the auto-tension as your weaving yarn.



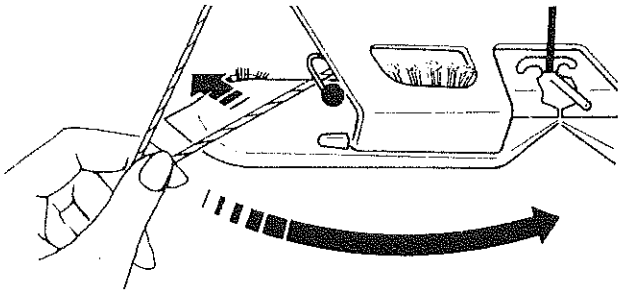


Don't put the weaving yarn into feeder 2, but instead hook it round the weaving yarn holder at the end of the arm next to the knitting.



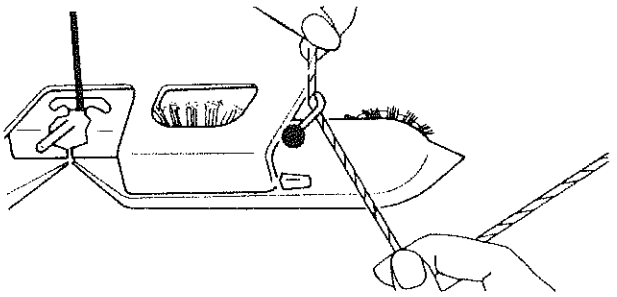
After pressing the inspection switch to read the pattern and doing the usual preparation for pattern knitting, push the carriage across once to knit the first row.

Release the weaving yarn from the holder, hold it down close to the sinkers and move the carriage a little further away from the knitting to release the yarn.



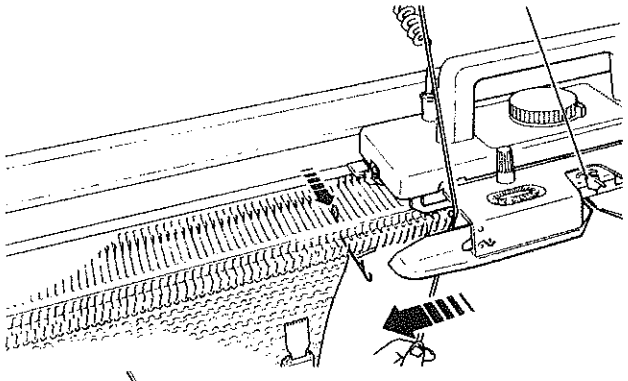
Now hook it into the holder on the side which is now next to the knitting.

Knit back.

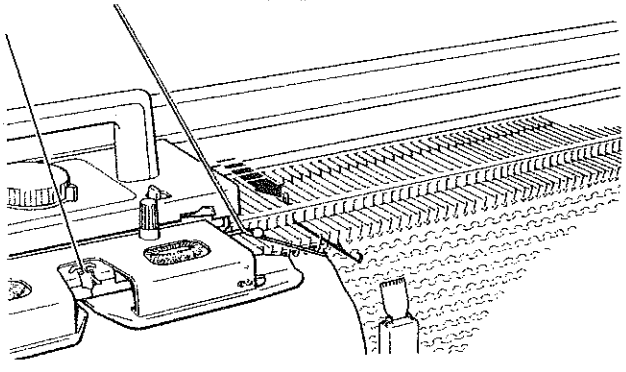


Continue, releasing the yarn at the end of every row and taking it round to the weaving yarn holder on the side next to the knitting.

To get a really neat edge, you may find it better to bring forward the end needle next to the carriage at the start of each row, but this is not always needed. Try without, and then bring the needle forward if you decide that it gives a neater effect.



You may use any of the pattern switches, but usually you will not find them appropriate. Even switch 5 will not always give the effect you might expect, because of the way weaving works.



Plating

Plated knitting requires two yarns which **together** are no thicker than a single yarn with which you could knit stocking stitch. This is because both yarns are going to knit together.
Although they are knitted together, they are kept one to each side of the fabric. So if you used, say a very hairy three-ply, with a smooth silky two ply, you would have the 3-ply on one side of the fabric and the 2-ply on the other, giving a smooth side and a hairy side.

You can knit plated stocking stitch, and you can also knit plated tuck stitch, in which the yarns stay mainly on their own side of the fabric, but show through where the stitches are tucked. Page 24 in the Pattern Book shows examples.

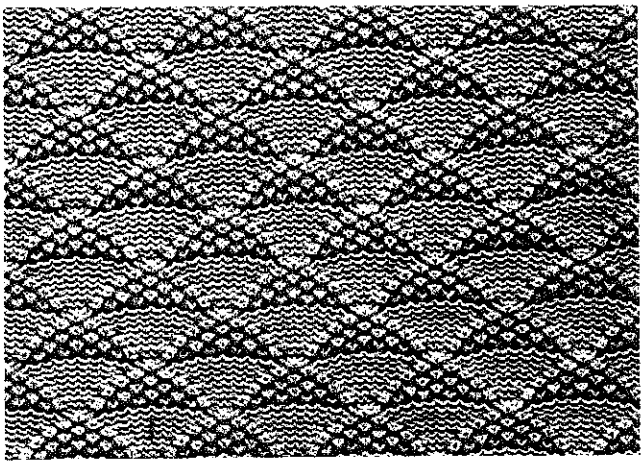
The only special thing about plating is the way the yarns are threaded. This is more difficult to explain than to do!

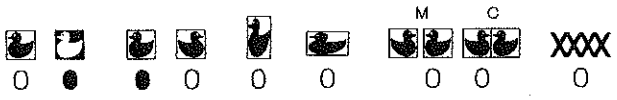
Open the feeder gate and look in.
There is a slit just behind the actual hole (feeder 1).
What you have to do is to put the plating yarn (which will stay on the purl side) down through that slit, instead of through the hole.

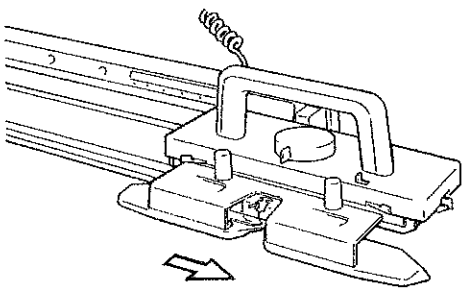
The simplest way is to thread the yarn through a needle, and poke it down through that slit. When you have done that, take hold of the yarn above and below the arm and pull it gently towards you.
If it comes out, you didn't get it through the slit behind the hole, try again. If it doesn't come out, it is correctly threaded.

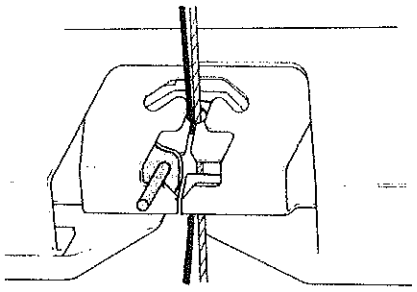
Now thread the main yarn, the one that will be the plain side (or the 'back' if you are knitting tuck stitch) in the normal feeder 1 and close the gate.

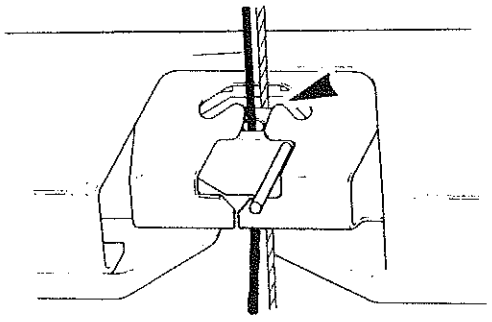
Knit – there is nothing else special about plated knitting.





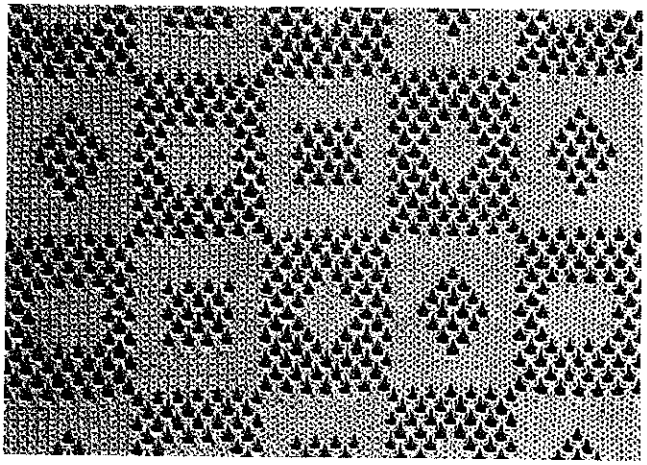




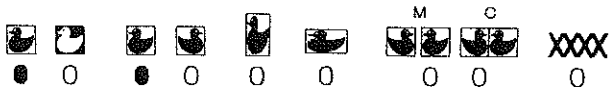


Punch Lace

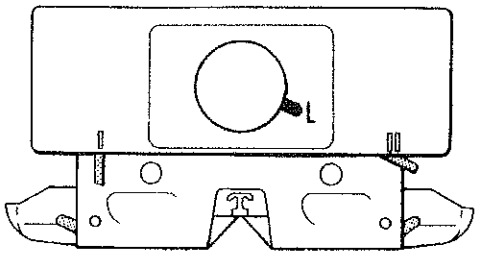
This is a different type of lacy fabric which uses a very fine thread and a normal knitting yarn. The normal yarn goes in feeder 1 and the fine thread goes in feeder 2. It is not the same as fairisle, because the fine thread knits a stitch on every needle, but the main yarn only knits on selected needles. The apparent 'holes' are actually stitches in the fine thread. Pages 22 and 23 in the Pattern Book show examples.



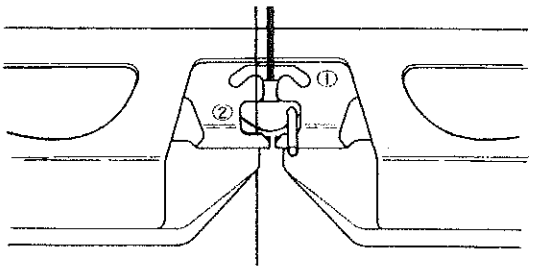
Use either a toning or contrasting sewing thread, or one of the special transparent nylon threads which will be almost invisible.



The cam lever is set to L for Lace.

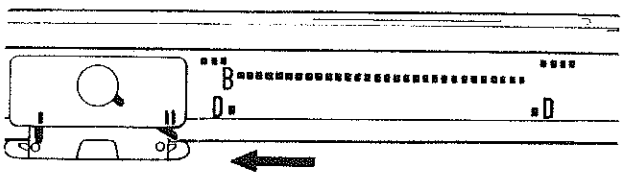


The yarns are threaded as shown, fine thread in feeder 2.

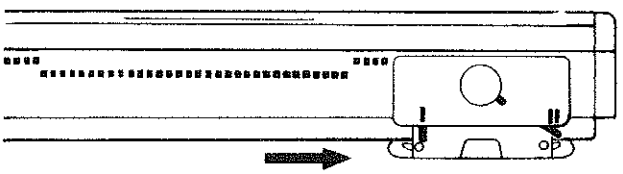


You will probably have to put the auto-tension to 7 at the top of the yarn rod, to hold the fine thread. Do not wrap it round at the top, just thread it normally.

If you are using a transparent thread, this tends to be slightly 'springy' and it may need help to make it knit in properly. The best way to do this is to set the russel levers as shown (I at the left and II at the right) and bring one needle at both edges of the knitting forward when the carriage is at the right.

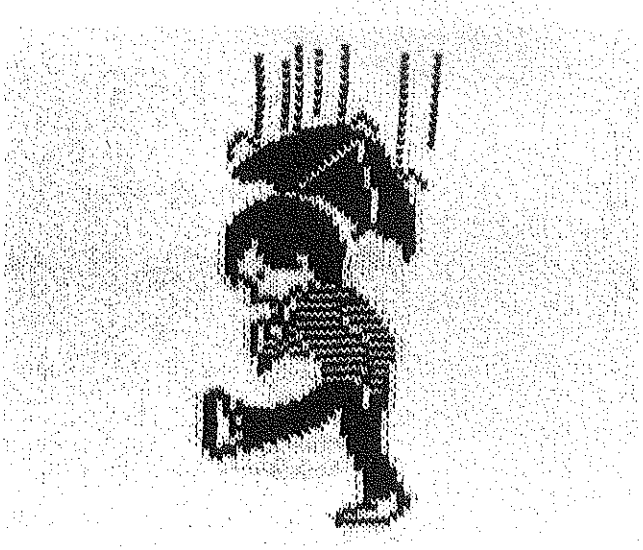


When you knit to the left, the needles stay out in D. When you knit to the right, they knit back. Repeat, bringing both edge needles out when the carriage is at the right.

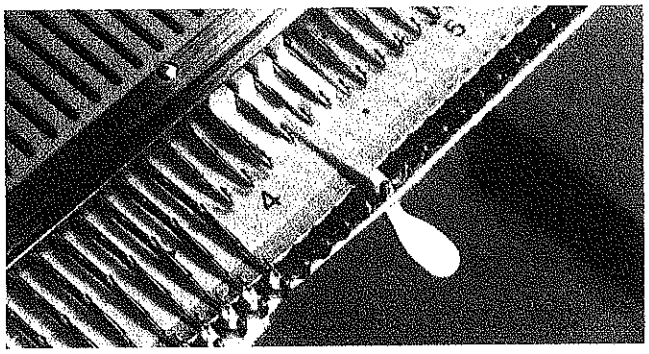


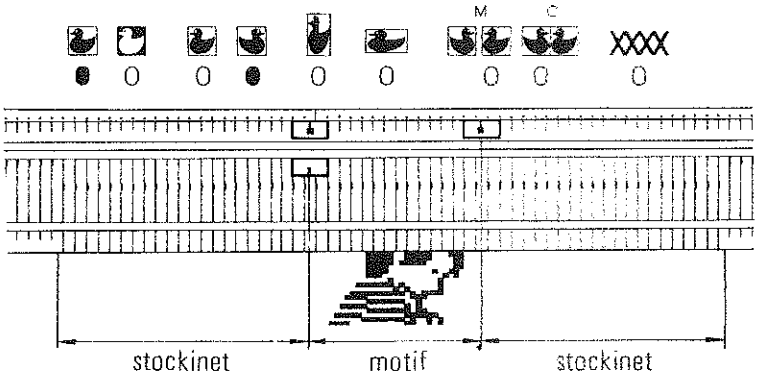
Single Motifs

Single motif work is simply knitting a pattern panel between panels of plain stocking stitch.
It can be Fair Isle, as illustrated, or other patterning stitches can be used for special effects. Transfer lace with the Lace Carriage accessory is very effective as one or more motifs.



You use the point cams to isolate a panel of knitting where you want the patterning, and the Needle 1 cam to position the pattern. With Fair Isle motifs, you'll need the yarn separators too.

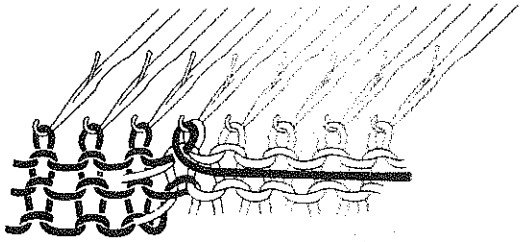




With Fair Isle, the only extra thing you need to know is how to stop the contrast yarn from pulling away from the background at the edges of the motif, leaving open 'ladders'.

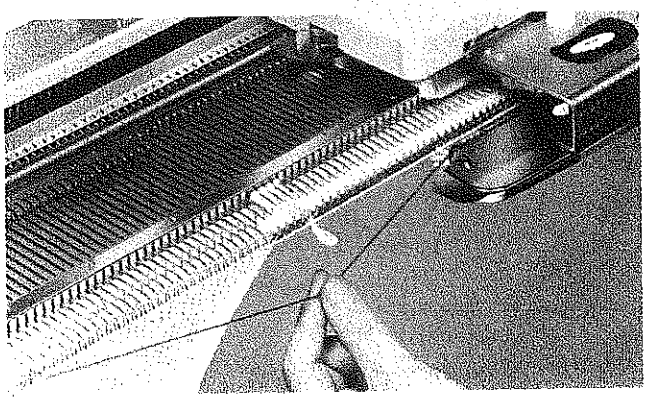
There are several techniques, some of which use separate strands of yarn, but the simplest is this.

At the edge of the motif next to the carriage, bring forward the needle with the background (main) yarn which is next to the motif.

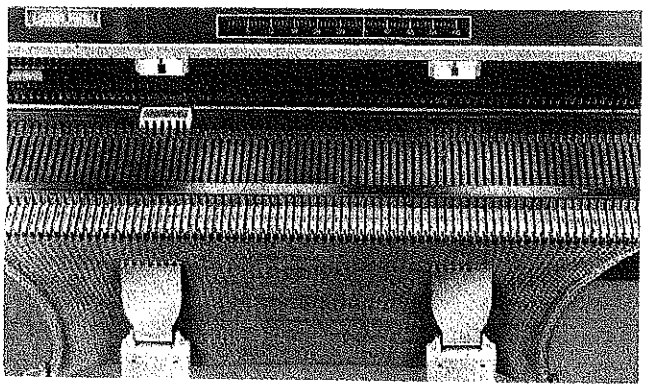


Bring it only 1 cm forward so the stitch does **not** go behind the latch. Now take the contrast yarn and wrap it in an 'e' round the needle, inside the hook, but not overlapping the stitch. Then carefully replace the yarn under the yarn separator.

Push the needle back carefully to B.



Knit across and repeat at the other edge in the same way. Take care to keep the 'e' wraps of contrast yarn separate from the stitches of main yarn, otherwise your wrap-round will show on the 'right' side.



Use the claw weights, but position them at the edges of the motif, not at the edges of the actual knitting. It is the patterning needles which will be helped by the extra weight.

Pages 18 and 19 in the Pattern Book show examples of motif knitting, and the right hand one of the two at the top of page 18 is particularly helpful. Look at that one now.

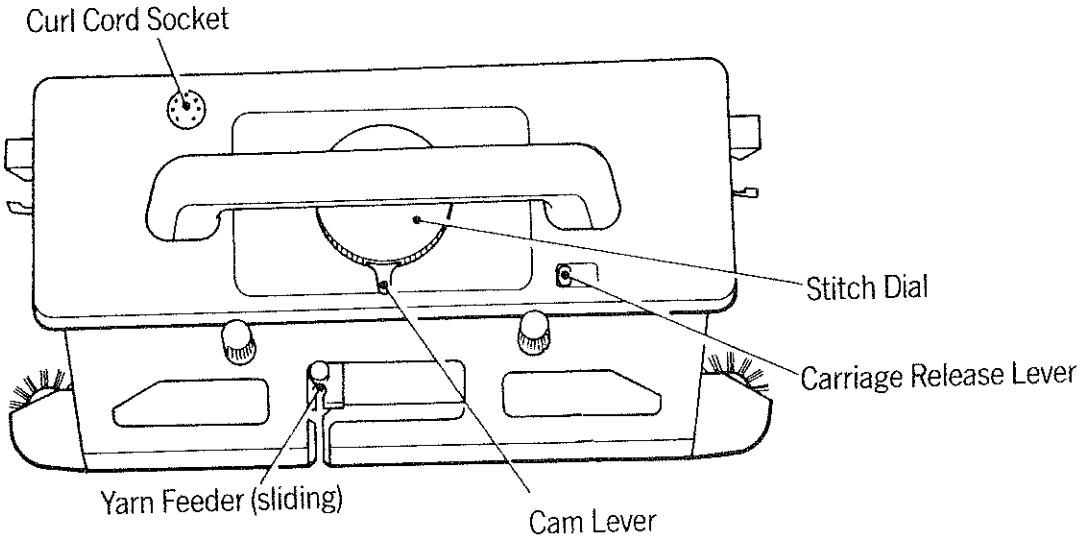
Notice that in order to knit any pattern so that it appears on the knitting the same way as it is drawn, the machine has to turn it round, because you see the back of the fabric as you knit. To get one complete pattern on the left, and a half pattern (the Red Indian) on the right, you have to set the cams so that the complete pattern is to the right of the N1 cam on the needlebed, and the half pattern is to the left.

Can you also see that to get one Indian and two trees, you would put the point cams 87 needles apart, and put the N1 cam beside the left hand one? Experiment and you'll soon see the idea.

Using a Lace Carriage with your MOD.580

The Lace Carriage

The Lace Carriage has its own Carriage Arm. **Never change the arms round.** The Main Carriage can have its own Arm or the Ribber Arm, but never the Lace Carriage Arm. The Lace Carriage can only be used with the Lace Carriage Arm. Any other combination may cause damage. Never fit a Ribber Arm to the Lace Carriage.

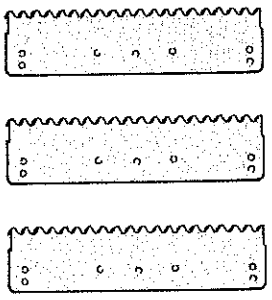


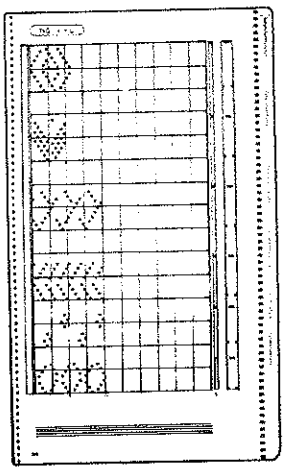
The Carriage Release Lever can only be used (if the Lace Carriage jams) after you have taken off the Arm (Brush Plate). There is a special Cam Lever position for doing the 'free row' with the Lace Carriage.

Accessories

A pack of 5 lace pattern cards comes with the lace carriage.

There will also be either three wide claw weights or three comb weights.





You may also find two small screws in a bag. These may be included in case you have a ribber with joining screws that stick up. Most ribbers don't, but some early versions of the model SRP50 did have tall screws. You would need these screws to replace the tall ones (which would catch on the lace carriage).

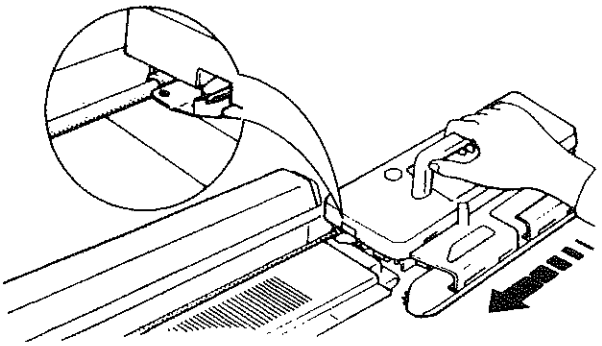
SPECIAL NOTE:
There are no Russell Levers on the Lace Carriage **because it can only be operated when all needles are either in A or B positions**. The Lace Carriage is never used with needles in C or D positions.

HINT:
If you are a new knitter, the easiest sequence to follow is 'learning to knit' with the Knitting Handbook, then 'Patterning with the Main Carriage' (the first part of this book) and then this section on the Lace Carriage. Learning this way will make it much clearer to see why we do some things slightly differently with the Lace Carriage than with the Main Carriage.

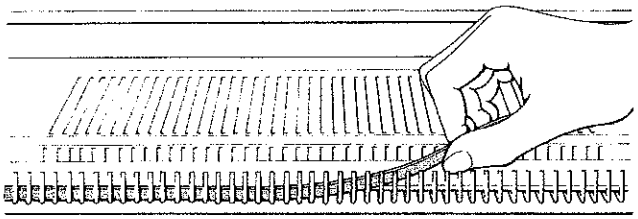
Preparing to use the Lace Carriage

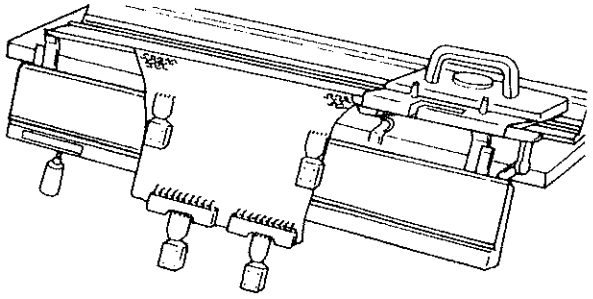
Switch off the machine and disconnect the curl cord from the carriage.

Swing up the handle of the Lace Carriage and lift it out of its box. Slide the main carriage off the end of the needle bed, put it in the box in the place of the lace carriage and slide the lace carriage onto the bed in the usual way. Plug in the curl cord and switch on the machine.



HINT: If you already have a ribber fitted to your machine, then drop the ribber right down, make sure the close knit bar is not behind the sinkers, and cover the ribber bed before doing any lace knitting. You can get ribber covers as an accessory, or use baking foil or brown paper. This is needed because **lace** knitting must come forward over the **front** of the ribber bed, not down between the beds like all other knitting.





Note: If you are using an LC580, or an LC560 with serial number 573037 or higher, you will be able to fit the extra Knit Radar feeding lever. With an LC560 Lace Carriage earlier than January 87 – serial number less than 573037 – you'll need to have the left guide plate replaced. This is called "Guide Plate (L)" and is the grey plate that sticks out to the left near the back of the carriage. Early models had one hole in, but the latest model has 2 holes. See your dealer, or contact Knitmaster for the address of a dealer who will help.

Cam Lever

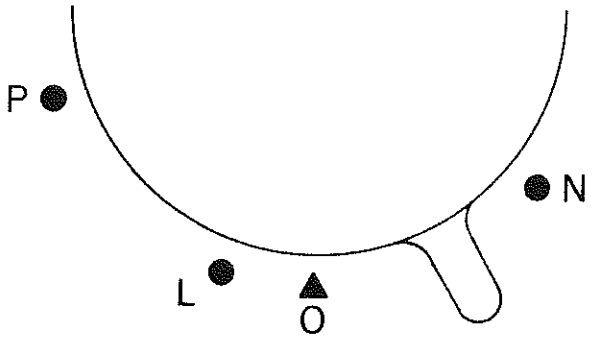
The Lace Carriage Cam Lever has four positions.

N – the non-knitting position which you use (instead of the Carriage Release Lever) for a 'free row' to pick up the positions of the point cams and N1 cam.

O – the stocking stitch position which you use for plain knitting.

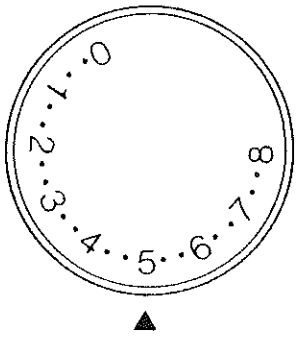
L – the automatic Lace position when the carriage transfers stitches and knits a row each time you take the carriage across. This is called 'Plain Lace'.

P – the special Patterning position for doing 'Fashion Lace', in which two or more transfer rows are done before the row is knitted off. Special patterns are provided for this type of lace.

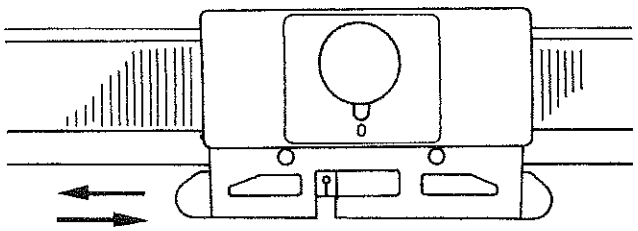


Stitch Dial and Yarn

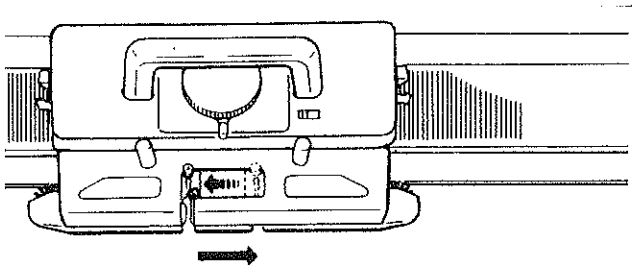
Notice that the Stitch Dial does not go up to 10, but only to 8.
You will see from this that the thickest yarns are unsuitable for lace. Heavily textured or fluffy yarns also make it more difficult for the lace action, so use smoother yarns without slubs, loops or knobbles.



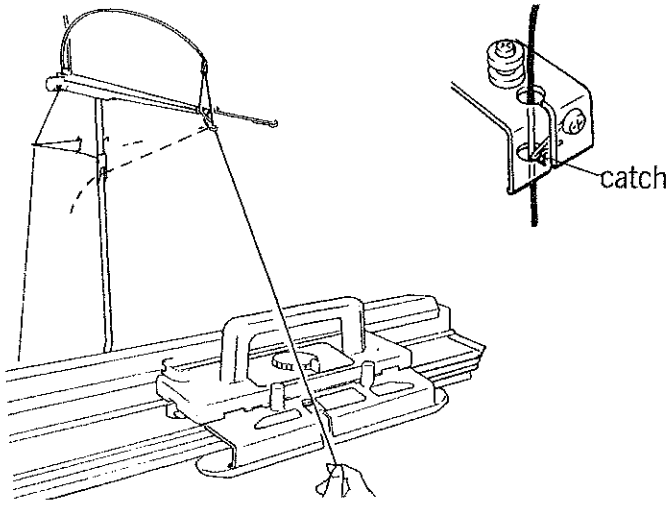
Threading up the Lace Carriage



Notice that as you slide the carriage to and fro, the yarn feeder moves to the trailing end of the slot in the arm



This is because transferring stitches takes place in the leading side of the carriage and arm, so the yarn feeder moves away from that side and knits the stitches off at the trailing side.



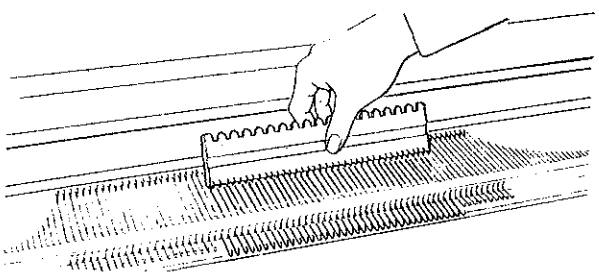
The yarn feeder can only be easily threaded when the carriage is at the right, and the feeder is at the left end of its slot, opposite to the opening in the arm.

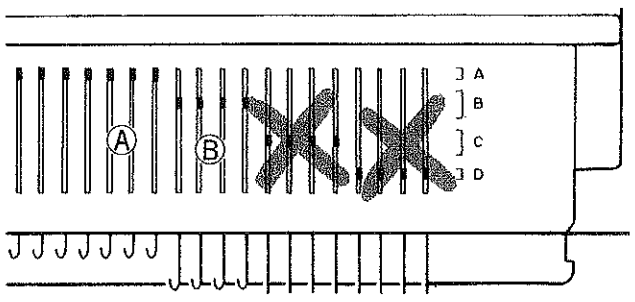
There is a spring catch in the yarn feeder, so when you thread up, press the yarn in so that you feel or hear it 'click' into place inside the spring catch.

Lace Carriage Cast-On

Usually, use the main carriage to cast on, to knit your hem or welt, and only change to the Lace Carriage when you are ready to knit lace.

However, if you are just practicing, or if you do want to cast on with the Lace Carriage, you must use the open-edge cast-on shown on page 12 of the Knitting Handbook. Never use needles in C or D positions when the Lace Carriage is on the needle bed.

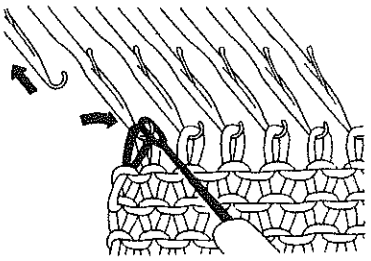


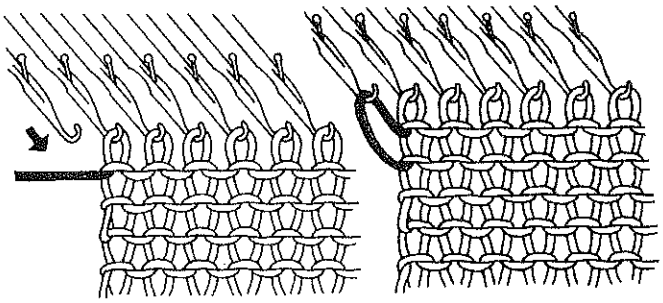


Shaping when knitting Lace

Single stitch increasing and decreasing

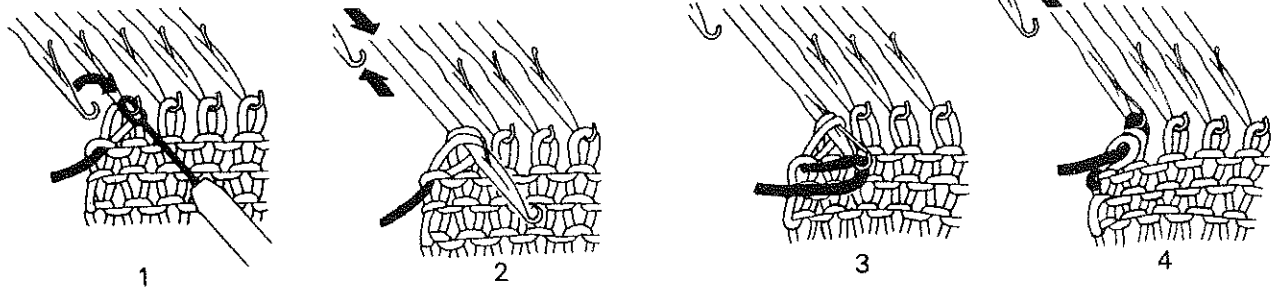
Do all single stitch shaping (either plain or fully fashioned) at the opposite edge of the knitting to the carriage. Then reposition the point cam 2 needles in from the edge.





Decreasing several stitches

This can only be done on the side next to the carriage. When the carriage is at the opposite side **before** knitting the row after which you want to shape, move the point cam in to cut off those needles which will be decreased. Then knit across and decrease as usual.

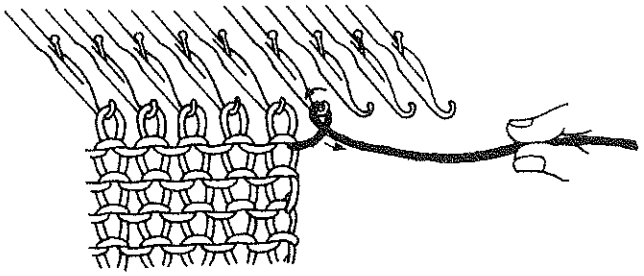


Increasing several stitches (rarely used with lace)

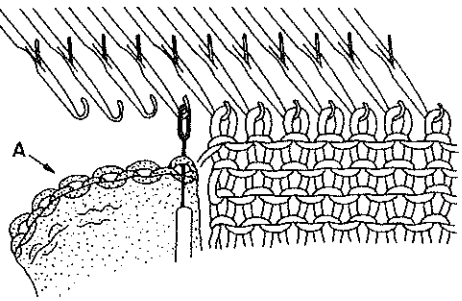
You cannot use C or D positions.

If you need to increase several stitches, you must do the 'e' wrap (see Knitting Handbook page 36) **in the needle hooks**. Do it carefully and as loosely as possible. Then push the needles firmly back to B and lay in the cord to hold down those increased stitches while you knit 3 rows.

Then take out the cord, and move the point cam to two needles from the edge.



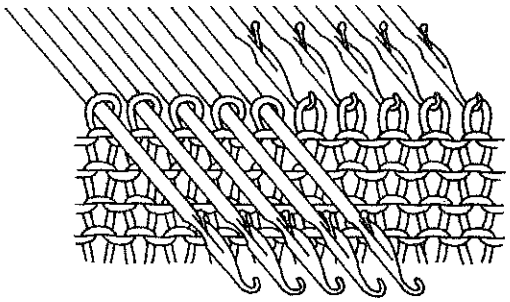
Alternatively, hang a small piece of waste knitting into the needle hooks before doing the 'e' wrap, then you should not need to use the cord, and you have knitting to hang the claw weights on straight away.



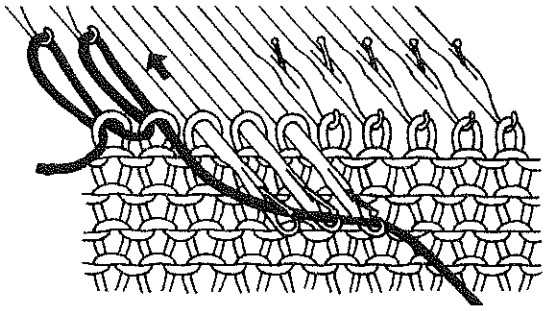
Holding Position using a Cord

Since you cannot use D position with the lace carriage, there is another way of 'holding' stitches.

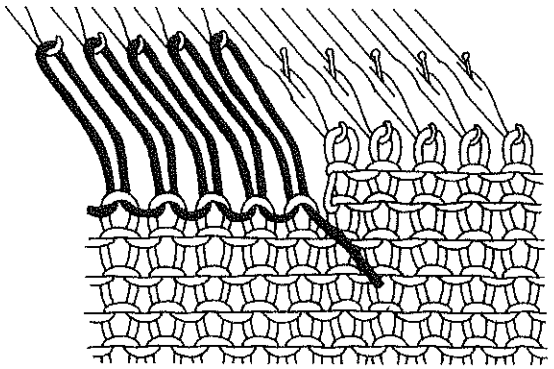
Bring the needles which are to be 'held' forward to D position on the opposite side to the carriage. Lay a cast-on cord into the open needle hooks. Push the needles back carefully so that the stitches push the latches shut, trapping the cord inside the needles hooks.



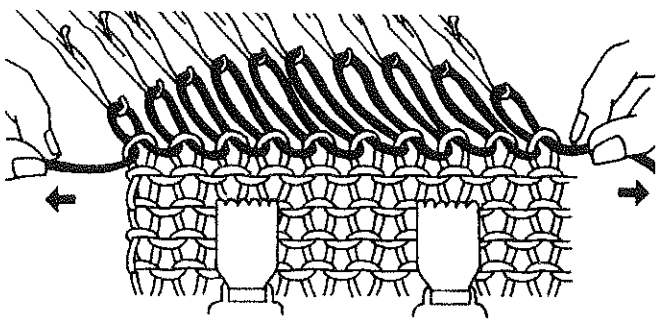
Now, starting at the edge of the knitting, push one needle right back to A, knitting the stitch off onto the cord, and leaving a long loop of cord in the needle hook.



Repeat for the next and the other needles, one at a time, but be very careful not to pull the previous needles forward from A. If the cast-on cord is tight, the needles will come forward and the carriage may jam.



When you have completed the knitting, pull both ends of the nylon cord to bring the needles forward and flick the stitches back into the hooks. Line the needles up in B again and knit one last row before running off onto waste yarn or casting off.

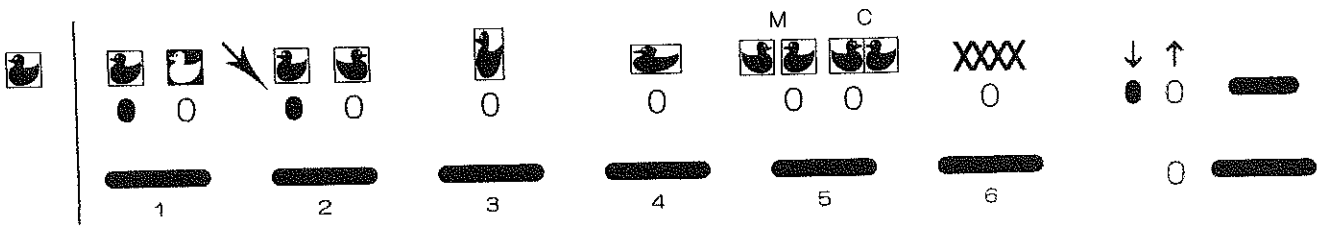


Special Instructions for all Lace Patterning

Patterning Panel

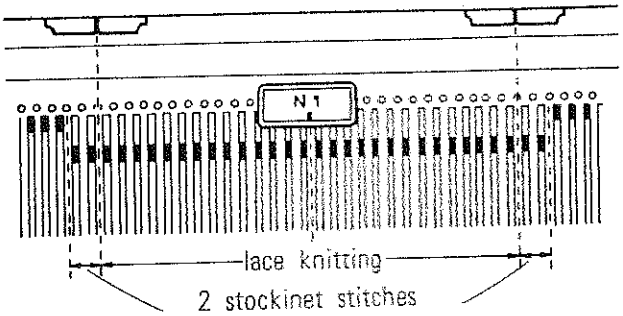
All lace patterns are designed to be knitted with switch 2 pressed to show the light under the **left hand** picture.

Switch 1 must always be set to show the **left hand** light, and all the lights for switches 3, 4, 5 and 6 must be **OFF**. Look at the diagram below.



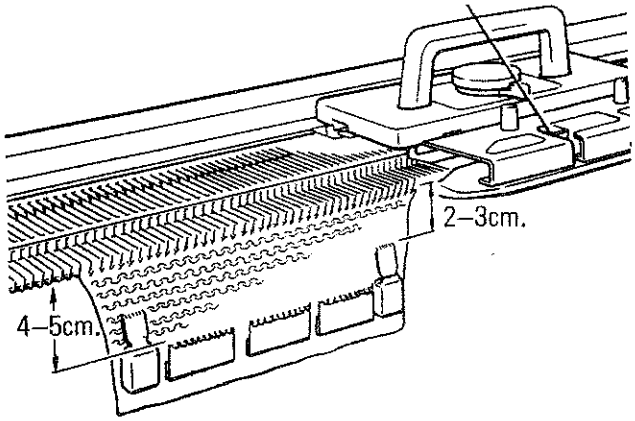
Point Cams

Always set the Point Cams 2 needles in from the edge of the knitting, so that edge stitches will not be transferred. If they are, they may drop.



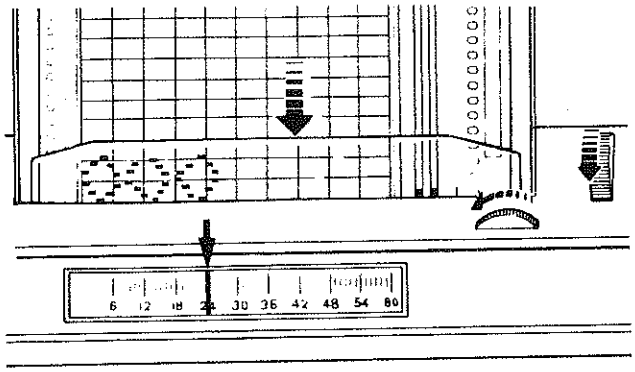
Weights

Weight the knitting evenly all along the width of the fabric, using as many of the 3 comb weights as will fit, as well as your 2 claw weights. (Remember to bring the knitting forward over the front of a ribber if it is fitted.)



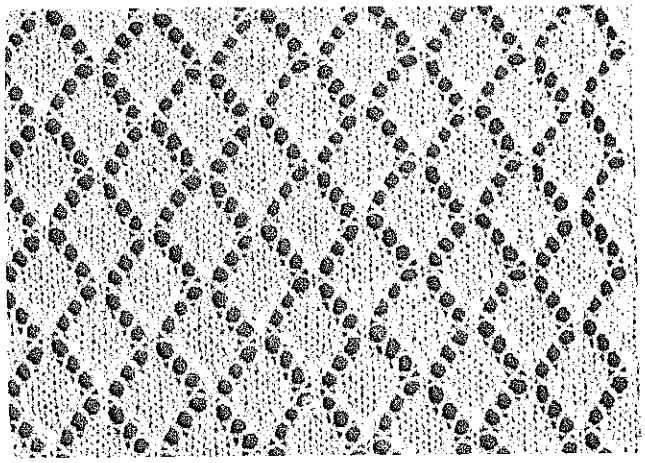
Pattern Width

Set the Pattern Width Indicator to match one of the △ marks on the pattern sheet below the pattern you are using.

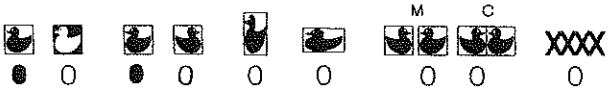


Plain Lace

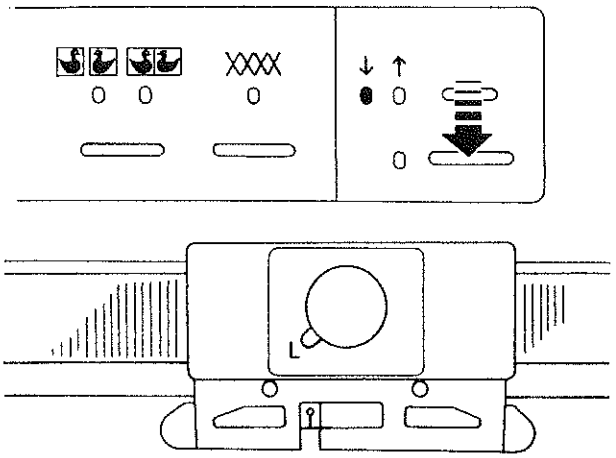
Plain Lace is transfer lace knitted with the lace carriage fully automatically. The carriage transfers stitches and knits in a singe movement. Patterns L-(1) to L-(14) are the plain lace patterns, on cards 1-L, 2-L, 3-L and (for pattern 14 only) 4-L.



When you have picked up the cam positions (Cam Lever to N for a 'free row') set the correct pattern width and set switch 2 correctly.

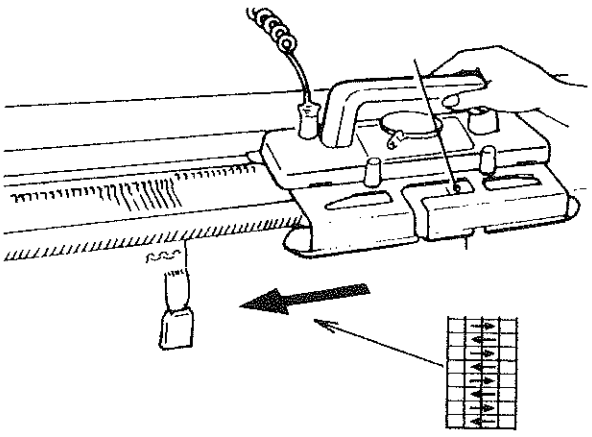


With the carriage at the right press the inspection switch to take the pattern card in and scan the first row. Weight the knitting all across, thread up and put the Cam Lever to L for plain lace.



Notice the arrows on the right of the pattern card, which show the direction in which you should next move the carriage.

Don't be afraid of the noise of the stitch transfers, or the apparent jerky action. Just push the carriage across and back firmly and as evenly as you can.



Fashion Lace

Fashion Lace is transfer lace knitted with the single action lace carriage, but in two stages.

Stage 1 is multiple stitch transfers without yarn, with the cam lever on P. Stage 2 is two or more knitted rows with yarn in the feeder and the cam lever on O.

The fashion lace patterns supplied are L-(15) to L-(20) on cards 4-L and 5-L. Check the instructions on page 38.

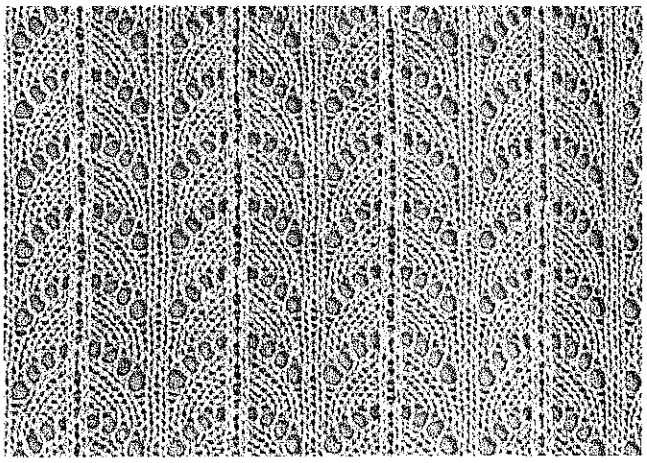
A fashion lace pattern has black bars printed in the column next to the knitting direction arrows.

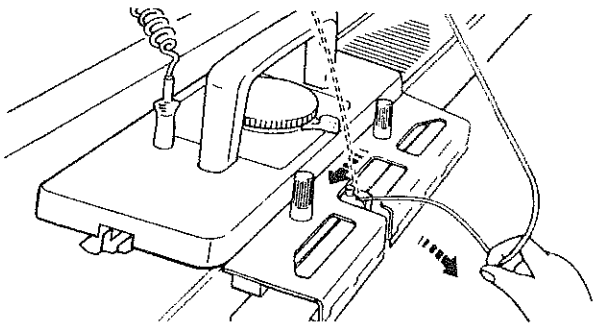
Where the black bar is showing, that row is part of Stage 1, stitch transfers with no yarn. Where the bar is not printed, that is the rows of Stage 2, knitted with yarn.

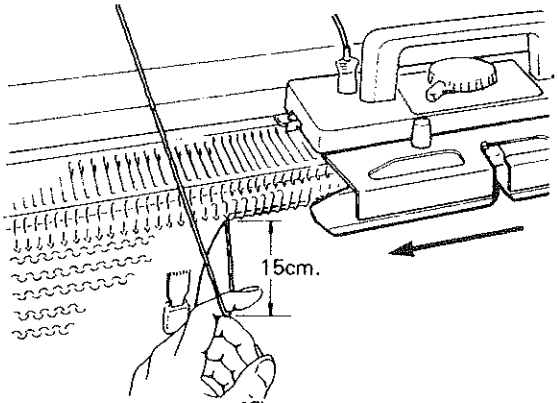
To knit fashion lace pattern L-(16) for example, you will see that the first four rows are knitted with yarn, so you thread up the feeder, put the cam lever on O and knit the four rows shown. (Having set up everything else exactly as for Plain Lace.)

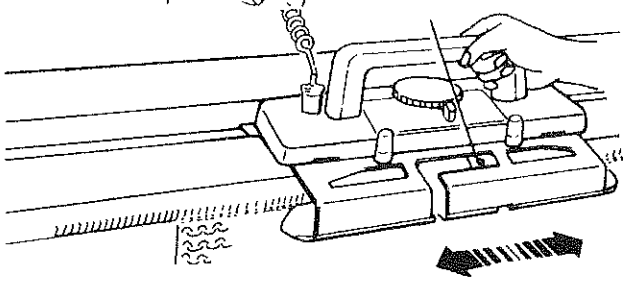
When the black bar shows, you remove the yarn from the feeder and hold it hooked in your finger, below the carriage and away from the knitting, so it doesn't get caught up as you move the carriage.
Turn the Cam Lever to P, and take the carriage across as many times as the pattern shows. Then when the black bar disappears again, put the yarn back in the feeder, turn the Cam Lever to O and knit as shown. (In this pattern, the end of the black bar coincides with the pattern card returning to the first row.)

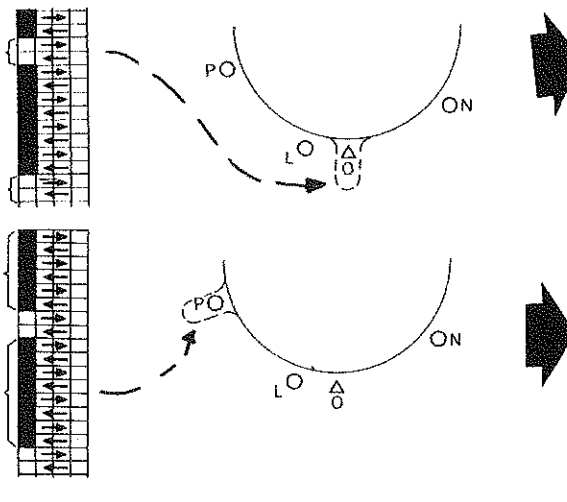
Notice that some fashion lace patterns have irregular numbers of Stage 1 and Stage 2 rows.

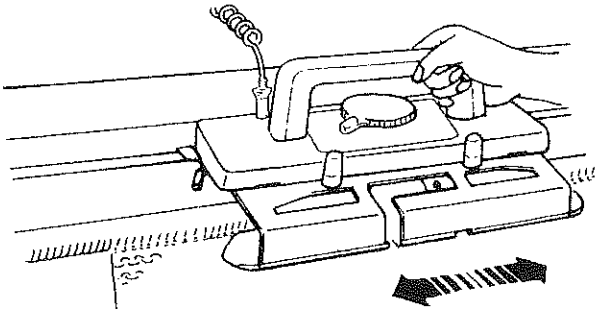






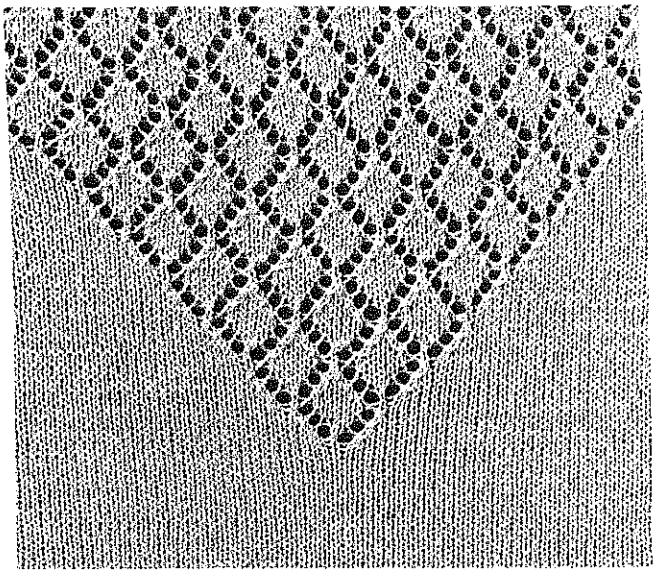




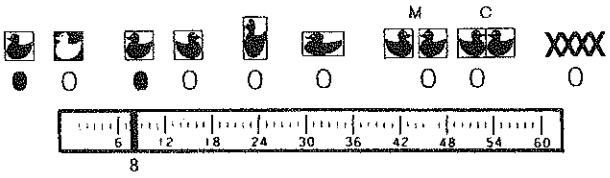


Motif Lace

By choosing and changing the positions of the point cams, lace motifs of many different kinds can be knitted. Both Plain Lace and Fashion Lace can be knitted as motifs. The lace 'V' shown in the picture could look very effective on the front, and perhaps the sleeves, of an otherwise plain sweater. It uses pattern L-(1) on card 1-L, with the pattern width indicator set to 8 to isolate just one 'diamond'. Check the instructions on page 38.



When you are ready to start patterning, position the cams to include eight needles. If your pattern is to be on the centre of the needle bed the cams would be between needles 4 and 5 on both sides of 0. Put the N1 cam opposite to one of the point cams.
Start with the carriage on the right.



These are the five steps in the knitting sequence.

1. Knit 6 rows of plain lace.

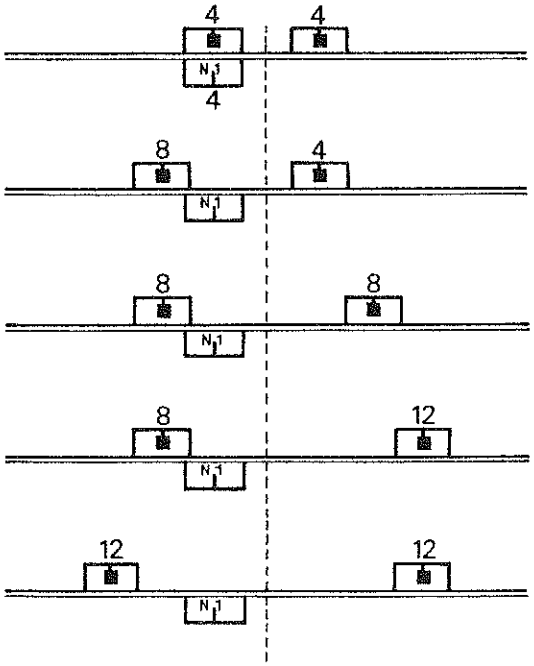
2. Move the left point cam four needles to the left. Knit 1 row.

3. Move the right point cam four needles to the right. Knit 6 rows.

4. Move the right point cam (again) four needles to the right. Knit 1 row. (Pattern card returns to row 1.)

5. Move the left point cam four needles to the left.

Repeat the five steps exactly until you reach the edge of the knitting, or finish your garment piece.



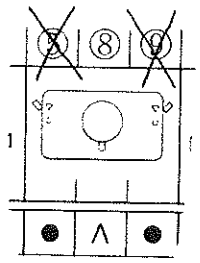
Using a Ribbing Attachment with your MOD. 580

Using a Ribbing Attachment with your MOD. 580

An instruction book is supplied with each ribbing attachment, and that book assumes that you have a punchcard machine. You are fortunate enough to have an electronic machine, so you need to know what is different about the use of the ribber on your machine. There are only three small points of difference (A, B and C explained next) – so you will not find it difficult.

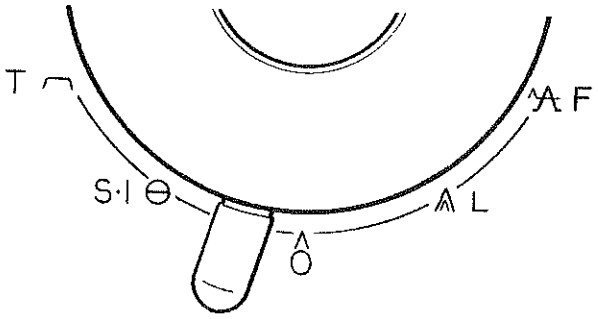
A – Side Levers

Ignore all references to Side Levers in the ribber instructions.
The side levers are controlled automatically on your MOD.580, under the carriage. They do not have knobs at the sides as they do on a punchcard machine.



B – Cam Lever

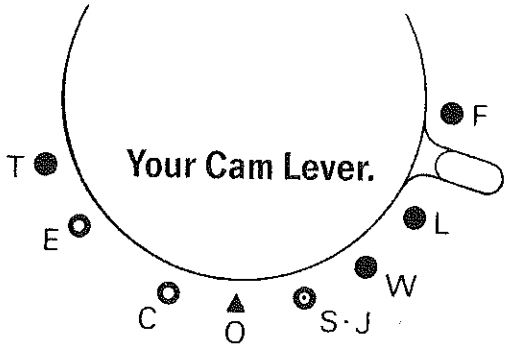
The Cam lever on your MOD. 580 has two extra positions (marked C and E), and has letters round the dial, but no symbols. In some Ribber Instruction books, such as the SRP60N, the symbols are used in the Operation Tables. The sketch here shows The Cam Lever positions on punchcard machines with symbols.
As you can see, each symbol has a letter as well, and T stands for Tuck, S for Slip, L for Punch Lace, F for Fair Isle.



Cam Lever positions with symbols.

On your Cam Lever, the two extra positions are C and E.

C is for Circular or Tubular Knitting. If you have the SRP60N ribber book, this is on page 26.
In Order 2 you'll see a triangle and the Slip ('no entry') symbol.
With your electronic machine, setting the Cam Lever to C produces exactly that effect.

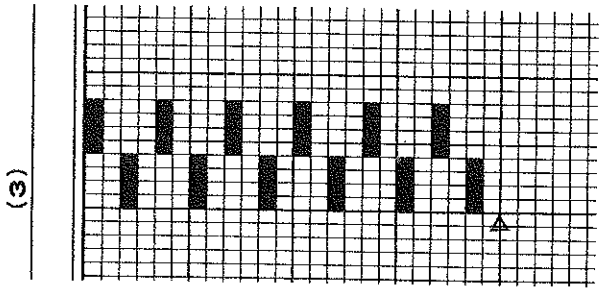


The E position is for English (half-fishermans) rib. On page 29 of the SRP60N book, Order 2 shows the Tuck symbol and a triangle.
On your MOD. 580, putting the cam lever to E does exactly what is required. This also applies to Swung English Rib, or Variation of English Rib and Herringbone Swing (pages 29,30 and 31 of the SRP60N book).

C – Patterns

Naturally, you can copy any punchcard pattern onto a design sheet for use on your MOD. 580. However there is one special point to note, which needs a little explanation.

On your MOD. 580, every tuck or slip pattern requires button 1 pressed to put the **right** hand light on. Check page 10 and the following pages in your Pattern Book if you are not sure.



This is because you want your tuck or slip pattern to be effected on the black parts of the pattern. If you look at recommended patterns for Tuck, you'll see that they are mainly 'white'. If you copy one of the designs shown later in this section, you copy them exactly as they are printed.

However, if you look at the punchcards supplied with your ribber, you'll see that they are mainly 'holes', with less 'solid card'.

This is because a punchcard machine has not got a 'switch 1' to invert the pattern for you – the patterns have to be punched as the machine wants them.

So, when you copy a **punched card for tuck or slip** onto an electronic design card, you put a black mark for each position that has 'solid card', and leave the design sheet blank where there are 'holes'. Then, when you knit, you put the right hand light on above switch 1 as usual for tuck or slip.

REMINDERS:
1. Never fit the ribber arm to a lace carriage – only fit it to the main carriage.

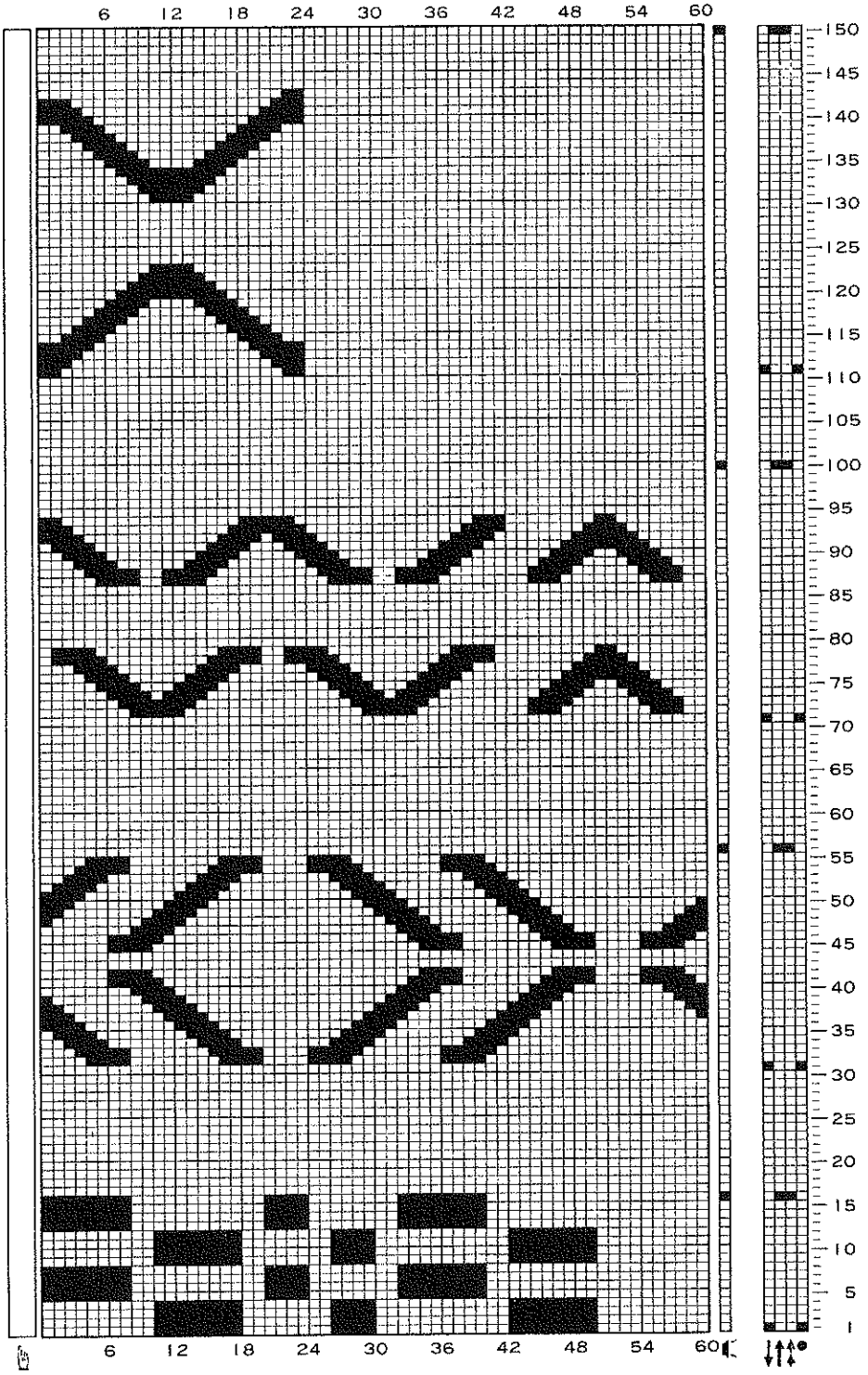
2. Turn the Cam Lever to O before fitting the ribber arm.

Patterning with the Ribbing Attachment.

Punch Pin Tuck.

The picture of a design card on this page shows 4 patterns, all suitable for this stitch pattern. (They are Slip Stitch, so don't forget switch 1.)

The top pattern is identical to punchcard 9 (R-2), the one next to the bottom is identical to punchcard 10 (R-2), if you put the pattern width to 12. A different pattern appears if you set the pattern width to 60.



Punch Tuck Rib

This works well with all the patterns which are recommended for single bed Tuck Stitch.

The following list covers the patterns which are probably illustrated in your ribber book, and shows which electronic pattern gives that exact effect.

Punchcard 10-A Electronic No 1 (6)
2-A No 1 (2)
4-A No 1 (4)
7-A No 1 (5)

Punchcards 9-A and 12-A are not reproduced in the electronic sets, but there are very similar ones
9-A similar to No 13 (40), 13 (41), 14 (42)
12-A similar to No 11(34)

Tuck Rib Stitch

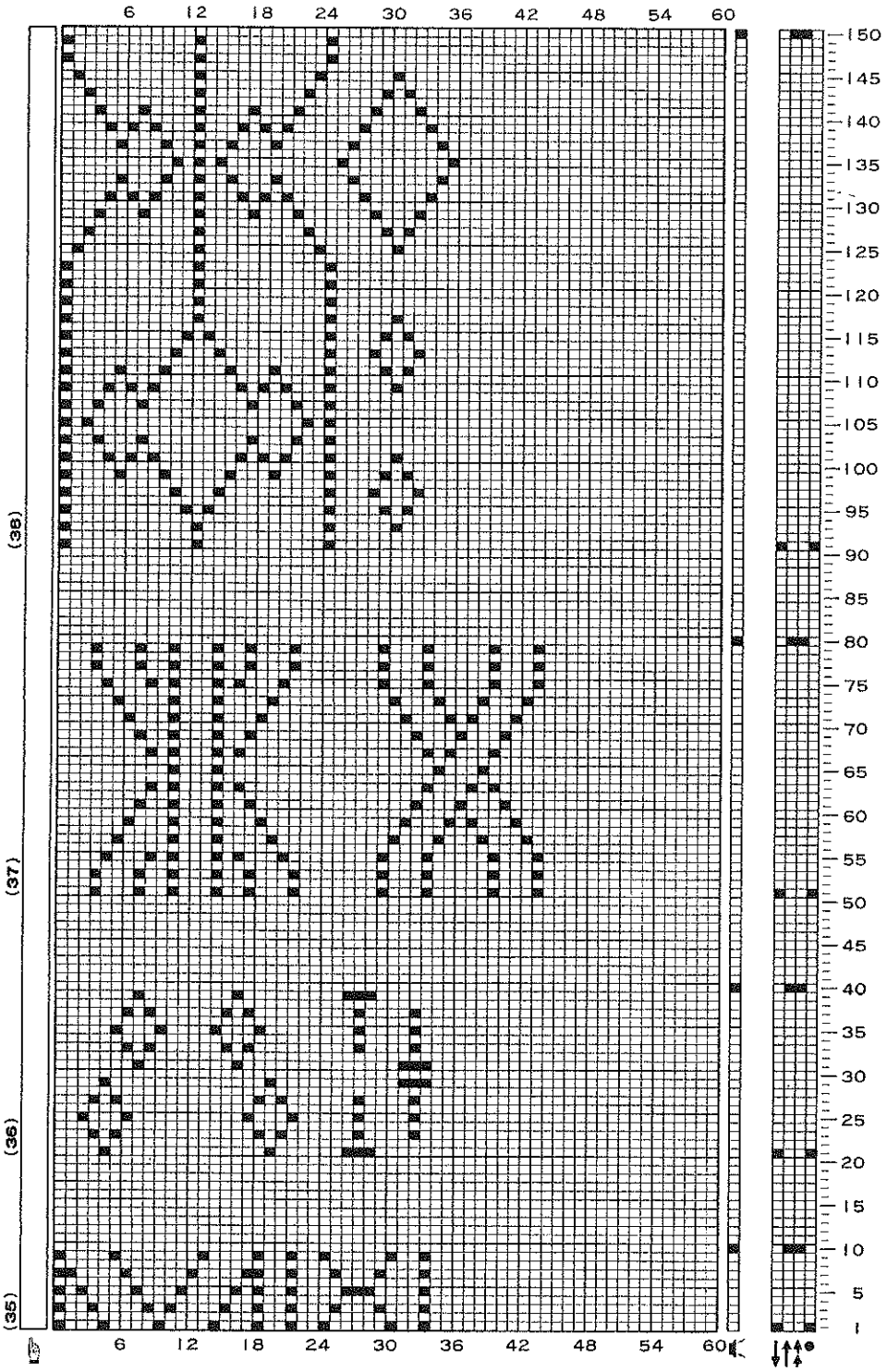
The illustrated patterns in the SRP-60 book are:

Punchcard 7-A Electronic No 1 (5)
10-A No 1 (6)

Any pattern that is suitable for single bed tuck stitch is also suitable for Tuck Rib Stitch. The difference between Punch Tuck Rib and Tuck Rib Stitch is simply in the needle arrangement you use on the ribber. You can experiment with different needle arrangements.

Drive Lace

The patterns on this page are all suitable for Drive Lace. The pattern in your Ribber Instructions shown as being knitted with punched card 1(R-2)A is the same as the pattern in the centre of this design card, with the pattern width set to 24.



Mesh Knitting

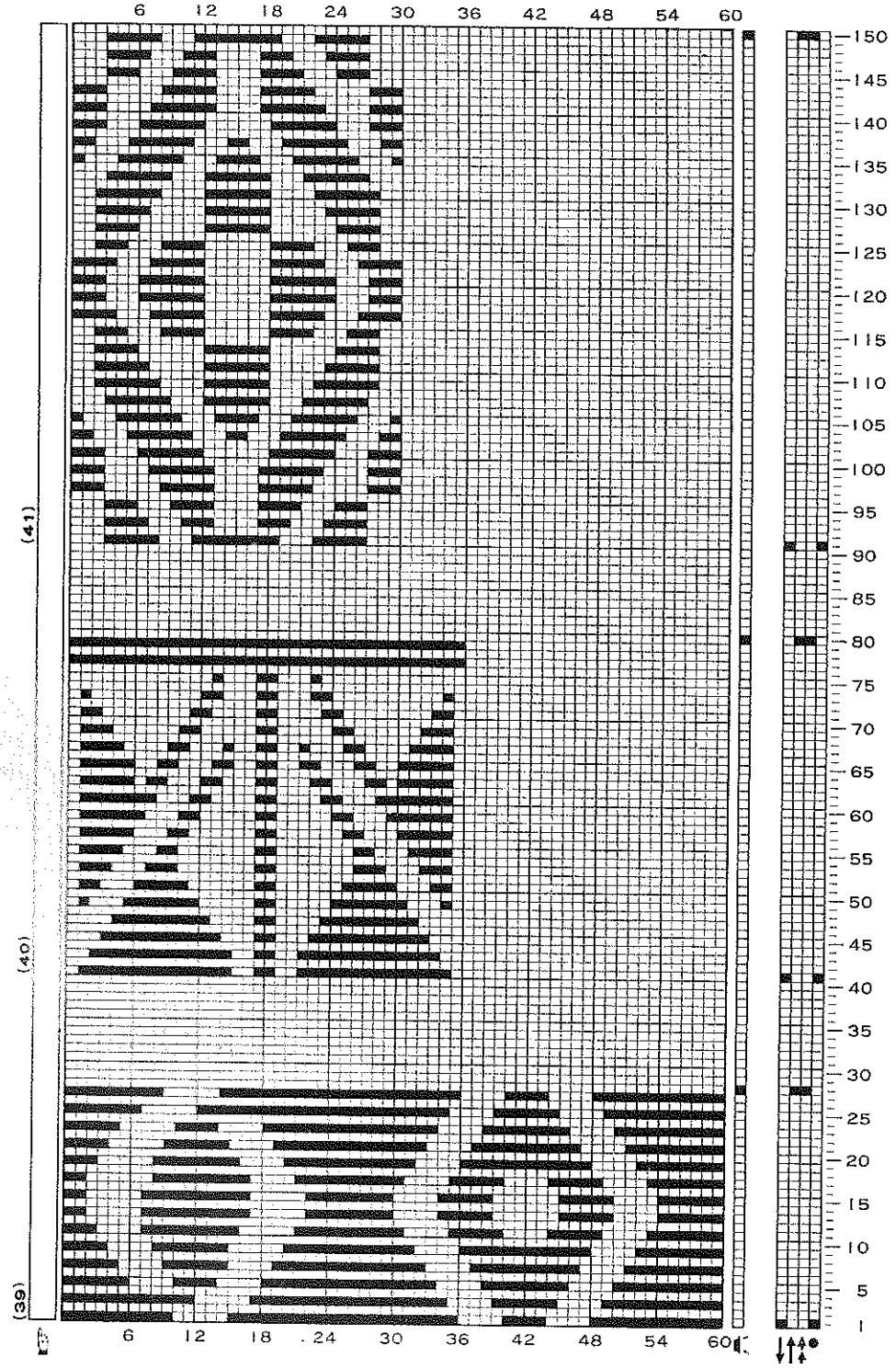
Mesh Knitting is Drive Lace, but is knitted in a fine smooth yarn, at a large stitch size. The bolder designs shown for Pile Knitting on the facing page are suitable for this stitch pattern.

Note the point made in your ribber instructions about being careful not to press Mesh Knitting widthways – if you did, the pattern would become very faint, and might disappear altogether.

Pile Knitting

Where the first line of Order 2 shows the side lever being moved, you simply move your Cam Lever to 'S'. That is all that is needed, everything else works completely normally.

The patterns on the illustration on this page are specially produced for Pile Knitting, though there are many possibilities.

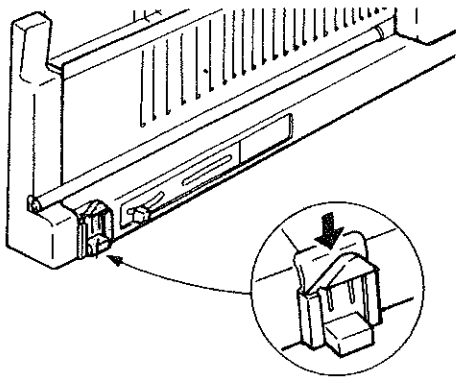


Using the YC-6 Automatic Yarn Changer for Double Jacquard

Double Jacquard is patterned fabric with two colours in a row, but with no long loops or 'floats' on the reverse side of the knitting.

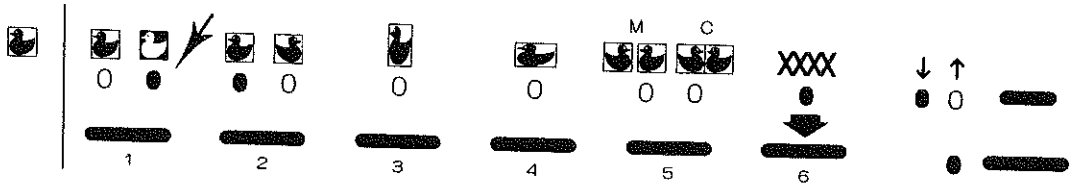
Normal Double Jaquard has the pattern on the 'right' side, and has stripes of the two colours on the 'wrong' side.

If you have a ribber with Auto-set Levers, and a Driving Cam that can be installed at the left end of the ribber, such as the SRP60N ribber, you can also produce a lighter weight fabric with a plain back instead of stripes. The sketch shows the Driving Cam.



The enormous advantage of your MOD. 580 electronic machine over mechanical models is that you do **not** need any special cards. Any fairisle card can be used.

Set up the machine, ribber and Yarn Changer as shown in the Yarn Changer instructions. Have the machine switched on and the Point Cams and Needle 1 cam in position before you complete the cast on or welt, so that the machine knows the positions of the cams.
With the **background** yarn in the Ribber arm, and the carriages joined together at the **right** side of the beds, press switch 6.



You will see that the light above switch 6 comes on, of course, and also you will see that the light by switch 1 has changed from left to right.

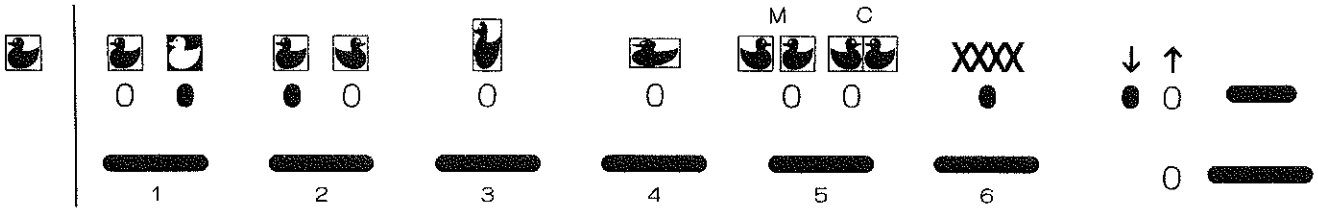
When you knit to the left, the machine only knits those stitches which are in background colour. When the carriages reach the left side of the machine, the Yarn Changer changes to the contrast yarn, and as soon as the carriages start to move towards the right, the switch 1 light switches automatically to the left.

Now as the carriages move to the right, the stitches which were not knitted in the previous row **are** knitted, and that row is completed. Knit to the left, the contrast stitches only for that row are knitted. At the left, the yarn is changed to background and those stitches are filled in. The light by switch 1 shows whether you are knitting background (right) or contrast (left). It takes two complete movements of the linked carriages to make one row of finished knitting on the main bed.

In normal Double Jacquard, the ribber knits on every row -- so you have twice as many rows on the back as on the front, and the two yarn colours alternate, every two rows.

In the special Double Jacquard called **Double Face Knitting** the ribber knits when the background yarn is threaded in the yarn feeder, but slips (does not knit) when the contrast yarn is threaded. The contrast yarn is only knitted on the main bed. So there is the same number of rows on the back and front, and the back is plain colour. There are loops of contrast yarn, but they are trapped between the back and front so they cannot be seen and cannot catch.

You can use any of the pattern switches 2 to 5 with Double Jacquard, just as though you were knitting Fair Isle, and the effect of each switch is the same.

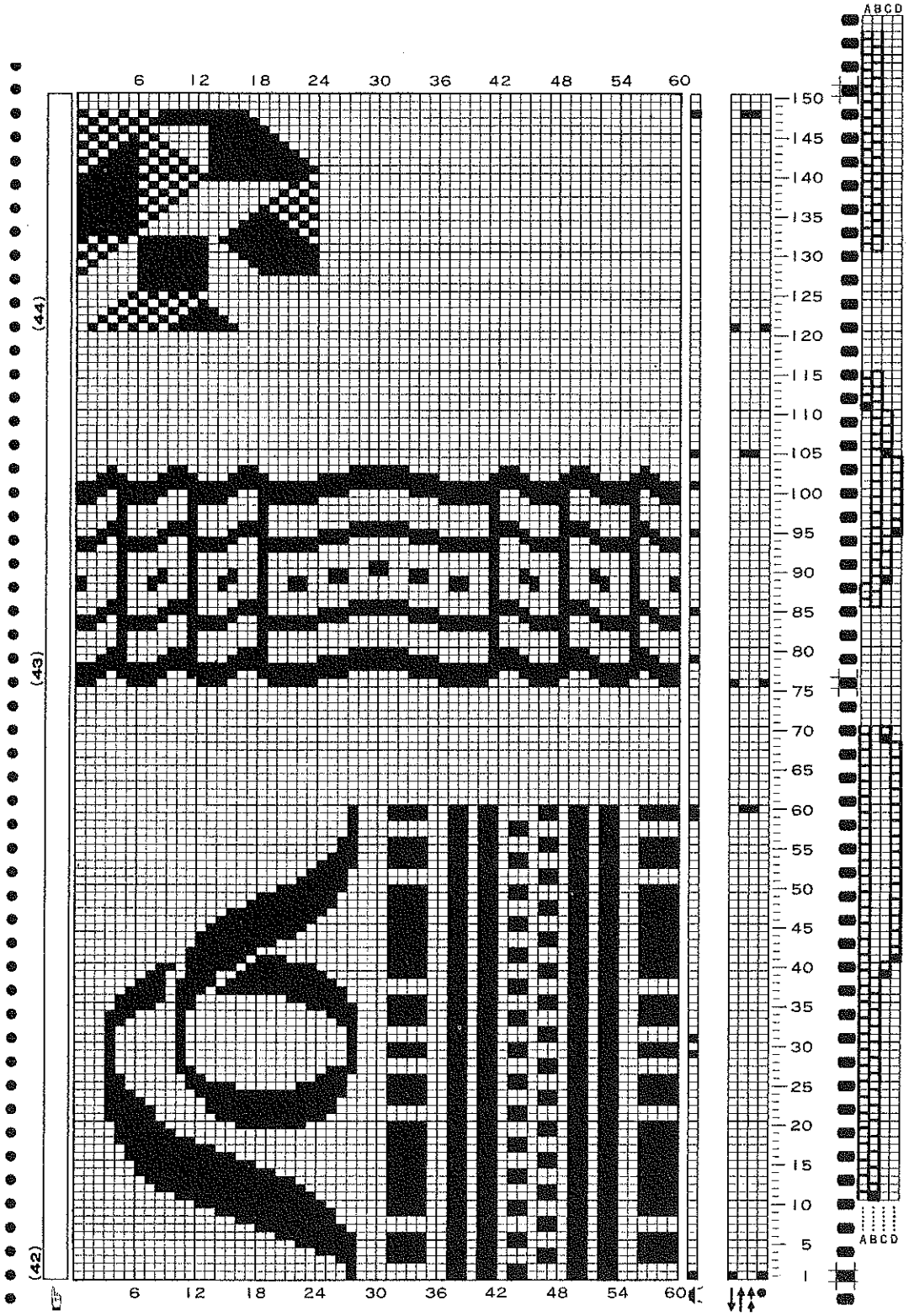


HINT:
If you want to use a thick yarn, such as 4-ply, you cannot do a true Double Jacquard, but by using every 3rd or 4th needle on the ribber, instead of every needle, the floats or loops are very short, and provided the fabric is not stretched sideways they will not show.

The two pattern sheets illustrated suggest ideas that you would probably not consider for Fair Isle because of the length of the floats, but which are superb for Double Jacquard.

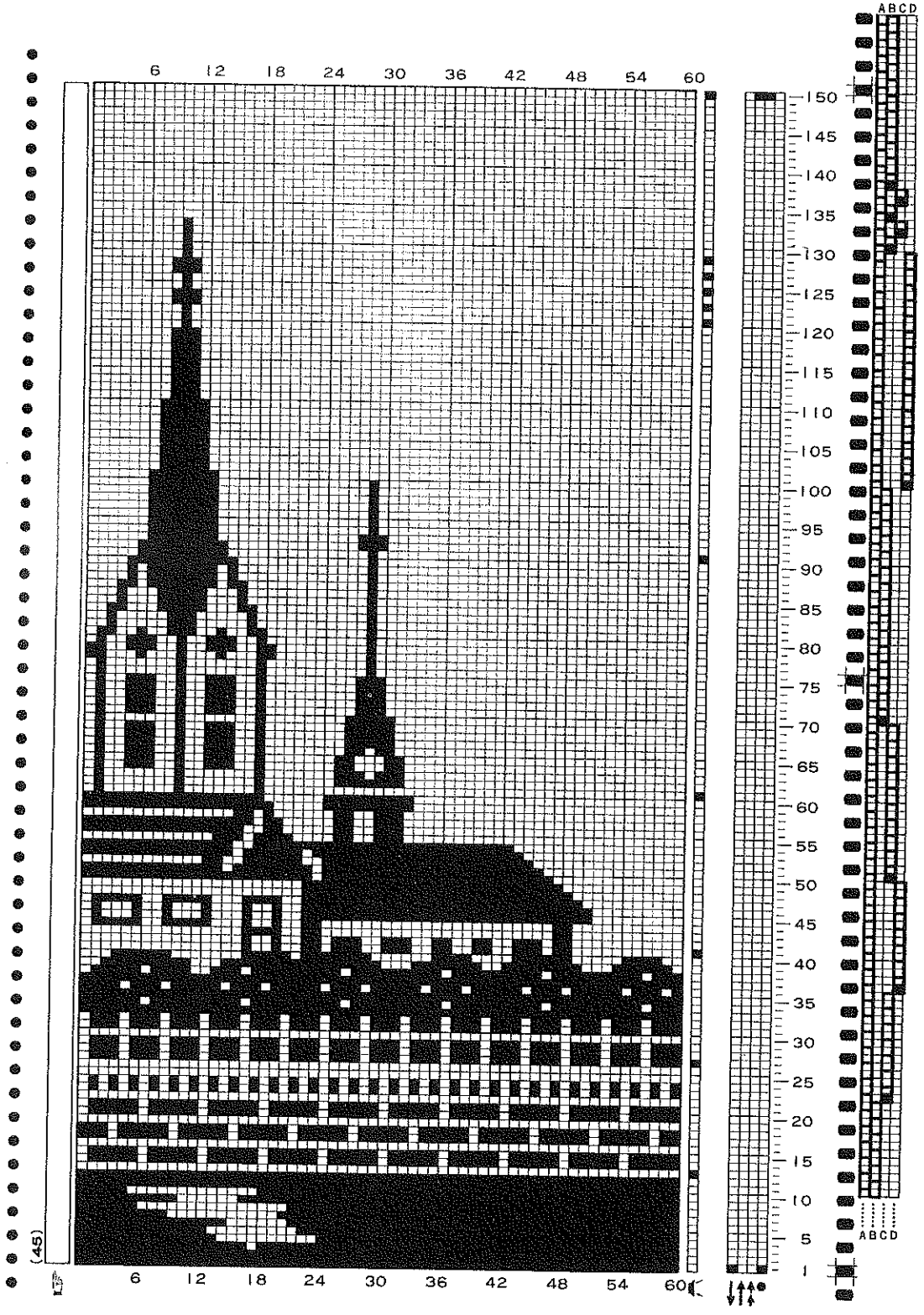
The 'linenfold' effect in the middle of the pattern sheet is particularly effective in four colours – the instruction columns at the far right show which colour to change and when. Notice that it is the background colour which changes, the contrast stays the same all through.

If the main background colour was, say, golden brown, and the contrast was black, then light blue and white would go well with them. The background would change from brown to blue, from blue to white, and then back through blue to brown again, while the contrast stays black. Leave a band of plain golden brown between strips of pattern.



The Design Controller allows you to make very large and impressive patterns, but even without it – you can make a large effective picture from this 'church' pattern, by using the mirror image switch (5) set on 'C'. Use the point cams to progressively cut off the small spire from one side (after row 54), then the large spire from the other (after row 60), and you'll be surprised how effective it can be.

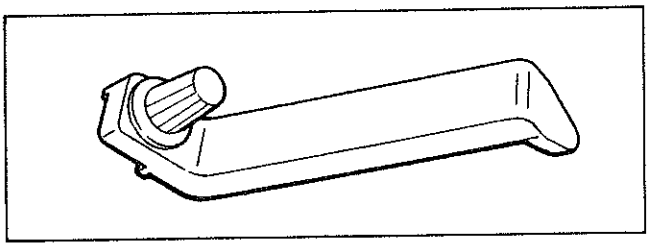
You could treat the bottom of the small spire as a 'chimney stack'. This pattern has been designed to offer you as many options as possible. Try them!



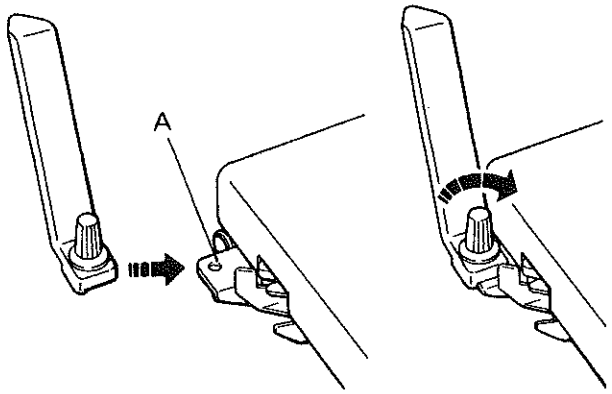
Using other accessories with your MOD.580

Using the KR-7 Knit Contour (Radar)

The Knit Contour (Radar) is a visual pattern system, which shows you how many stitches to cast on, and when and where to increase and decrease 17 different pre-printed pattern styles come with the attachment.



To feed a pattern paper, attach the Knit Contour (Radar) feeding cam contained in the accessory box.



Place a feeding cam onto the left extension plate "A".

Fasten the feeding cam to the extension plate by turning the knurled knob clockwise.

Using the AG-20 Intarsia Carriage

The actual knitting operation, stitch size and general method of use are exactly the same as with any other standard gauge machine. You will have to remove the N1 cam, if you have one on the bed.

The only restriction which applies to the AG-20 is that early versions of it have the Knit Radar tripper positioned so that it does not operate the KR-6 or KR-7 Knit Radar when they are fitted to the MOD. 580. Later versions of the AG-20 work equally well on all models. If you look at the inner packing of the AG-20, you will find some Blue printing on the box of the later AG-20.
If there is no blue printing (or if the radar tripper does not operate the radar), you have an early AG-20, and will need to replace it.

Using the SC-3 Linker

There is nothing special about using the SC-3 Linker with the MOD. 580.

You will see that the N1 cam(s) need to be removed, and that the point cams need to be slid aside, because the SC-3 uses the rail which the point cams slide on.

Otherwise, follow the instructions completely normally.

HINT: If you are knitting with a 560 or 580 Lace Carriage, you may find that the last row before linking (which must be a LOOSE row) is too tight, because the Lace Carriage Stitch Dial only goes up to 8. If so – knit that last row with the main carriage which goes up to a looser stitch size.

Using the RT-1 Ribber Transfer Carriage

As for the SC-3, there is nothing special about the use of the RT-1 on the MOD. 580, provided that you have a Ribbing Attachment, of course.

You will see that the N1 cam(s) need to be removed, and that the point cams need to be slid aside, because the RT-1 uses the rail which the point cams slide on.

Follow the normal instructions for using the RT-1, and do make sure that the needles of the two beds are carefully lined up opposite to each other. Give the ribber a push to the left or right if necessary.

Using the Garter Bar with the MOD. 580

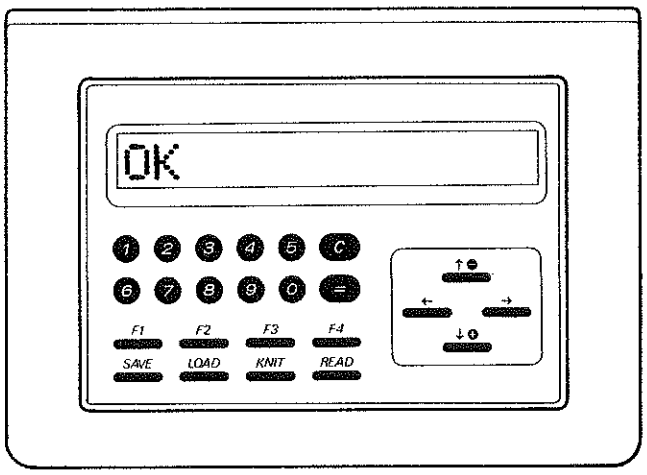
There are no special precautions or preparations – the Garter Bar works completely normally on the MOD. 580.

There is a knack to using the Garter Bar on any machine – if you find it difficult, why not get someone who **can** use it to help you, and to show you how to avoid making it difficult for yourself. It is not just for 'garter stitch' – there are many ways you can use it to hold knitted raglan pieces before knitting the neckband, or to move blocks of stitches along the bed to get a true circular yoke in a Fair Isle pattern for example.

The Design Controller (PE-1)

Introducing the Design Controller

The Design Controller is an additional unit for the MOD. 580 which cannot be connected to earlier models 550,560 etc.



It extends the patterning of the machine in several ways, giving you scope for all kinds of exciting garments. It is not so much an 'advance', which sounds rather dull, but more a 'leap forward'.

You can use a much larger pattern than the 150 rows by 60 sts that fit on a single pattern card. The pattern can be over 20 times as big as a single card – 1000 rows by 200 sts, for example.

SAVE

Also you can store patterns in a 'memory card', which can be quickly recalled into the Design Controller and knitted immediately.

KNIT

You can use the Design Controller to help you with single bed patterns with 3 or more colours in a single row of finished knitting –
it knows about problems like that!

READ *F3*

Making a copy of a memory card is easy, too, and your supplier can even use the Design Controller as a diagnostic aid to help locate and correct a machine problem if one should occur.

LOAD *SAVE*

If you accidentally press a wrong key, and get a display that you do not want or do not understand, press 'C' (more than once if needed) to clear the display, then '=' to put the 'OK' on the display. You cannot damage the design controller or your machine by pressing a wrong key.

The parts of the Design Controller

The four parts of the controller which you will use are the Display, Keyboard, Direction keys and the Memory Card Slot. The electronics and the re-chargeable battery inside look after themselves.

Display

This is a multipurpose display, which can show a section of your pattern 8 rows by 64 stitches (and can show any part of the pattern) or can display messages to you like SET CARD to ask you to put a memory card in the slot. The **display dial** is a knurled wheel at the front of the left side, and is used to adjust the contrast of the display.

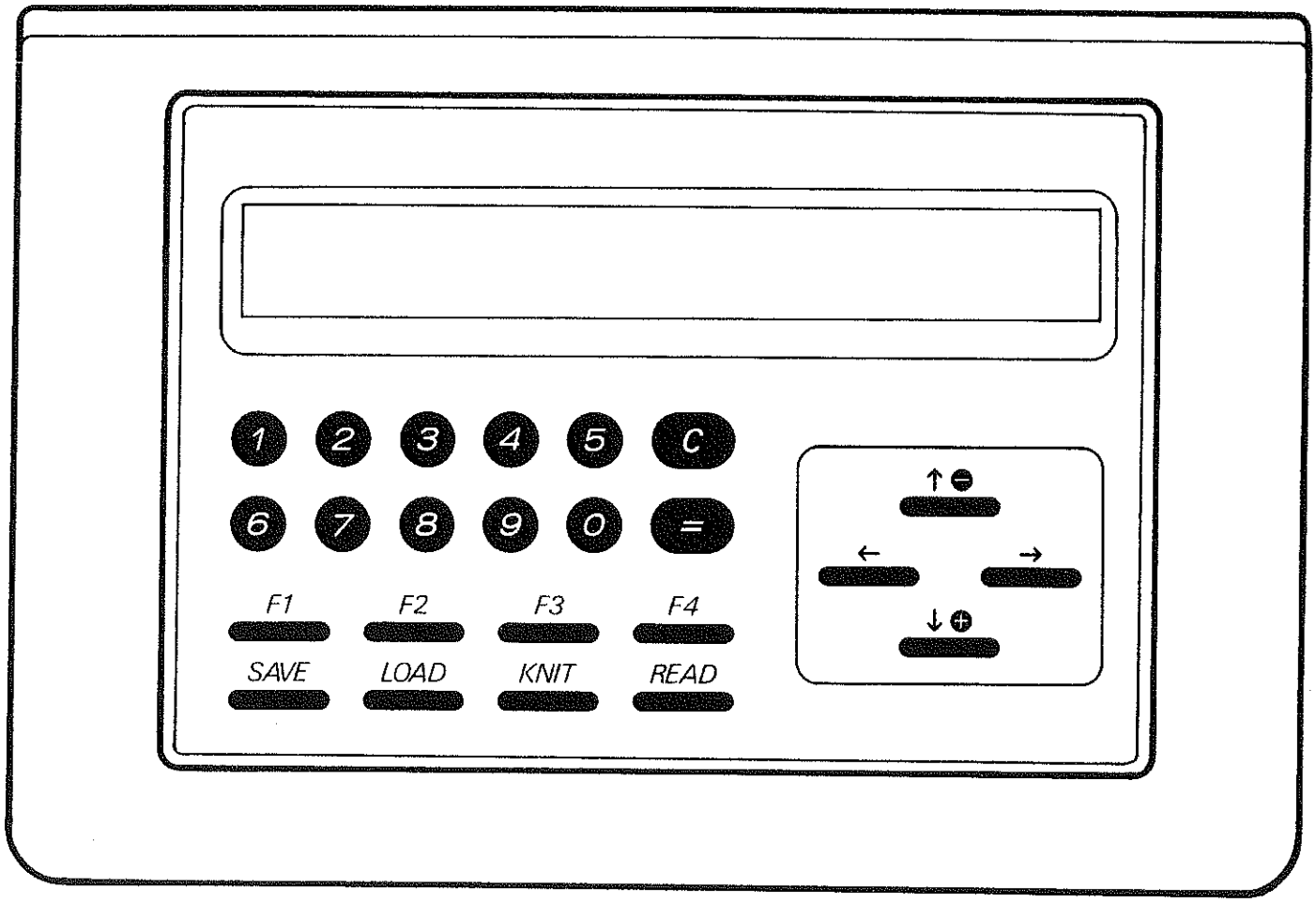
Keyboard

The ten numbered keys are for you to enter the pattern size or to select a particular pattern. (Memory Cards can hold many different patterns, all on one card.) Pressing any key causes the Design Controller to 'beep' gently.

The 'C' key is for 'Cancel' which allows you to correct an entry - or even to abandon some instruction part way through, if you change your mind.

The '=' key is used mainly to say to the Design Controller "Go on to the next step, I've finished". If you are entering a number of stitches, say 20, then you enter 2 0 =, which tells the Design Controller that you dont want 2 stitches, or 200, but 20.

The four keys marked F1 to F4 are called 'Function' keys, because they perform different functions at different times, depending on what you are instructing the Design Controller to do. (One key to do several different things is much simpler than lots and lots of special keys.) We'll see how they are used in the following pages. When you press a function key, a letter is displayed.
The letters are F1 – 'm', F2 – 'x', F3 – 'j', F4 – 's'. The other 4 function keys (with names) are always used as the start of an instruction.



SAVE saves a pattern onto a memory card

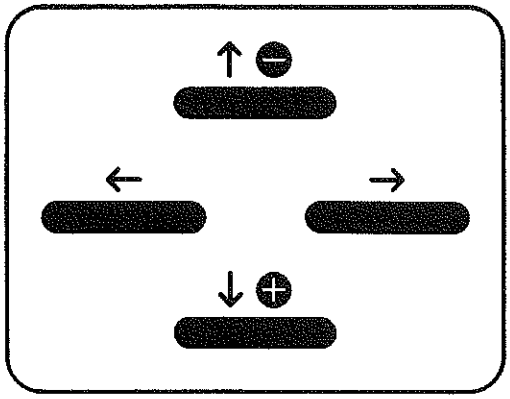
LOAD retrieves a pattern fron a memory card

KNIT tells the design controller to act like the card reader, controlling the patterning as you knit.

READ initiates reading a pattern from the card reader into the Design Controller ready for knitting and/or saving.

The four direction keys

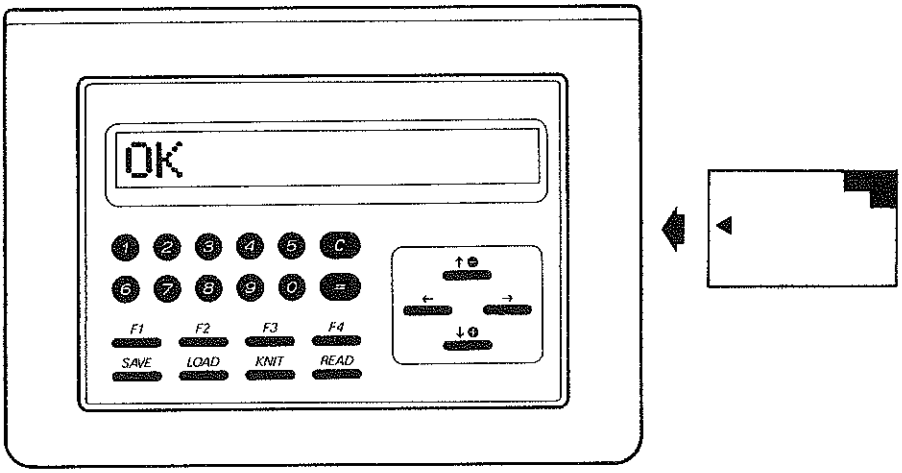
These are sometimes called 'scrolling' keys, because they move the pattern about in the display, as though the pattern was on a 'scroll' of paper behind the display window. The 'up' and 'down' keys move the pattern exactly like the card dial, one row at a time, or by keeping your finger on the key, the pattern moves continuously. The 'left' and right' keys only act if there is a pattern larger than 64 stitches wide in the Design Controller. If there is, each press moves the pattern 1 st in the display, to the left or right.
This does not affect the **knitting** at all – that does not move about as you press the left and right keys – it just allows you to look at any part of the next row to be knitted (the bottom row in the display).



It is worth repeating that the point cams on the needle bed dictate where the patterning will be, and the N1 cam fixes the position of the edge of the pattern. The left and right direction keys on the Design Controller only affect what you see in the display (of a large pattern).

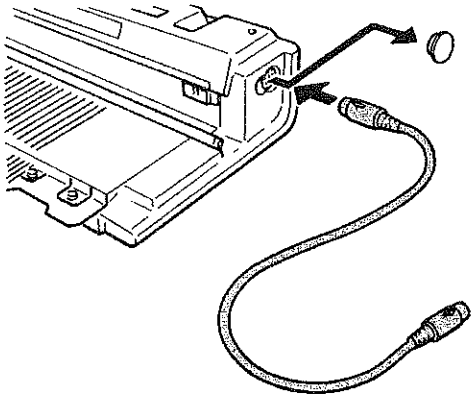
The memory card slot

This is where the Memory Card is inserted when saving or loading patterns.



Connecting up the Design Controller

Remove the white cap covering the socket in the right hand end of the machine.

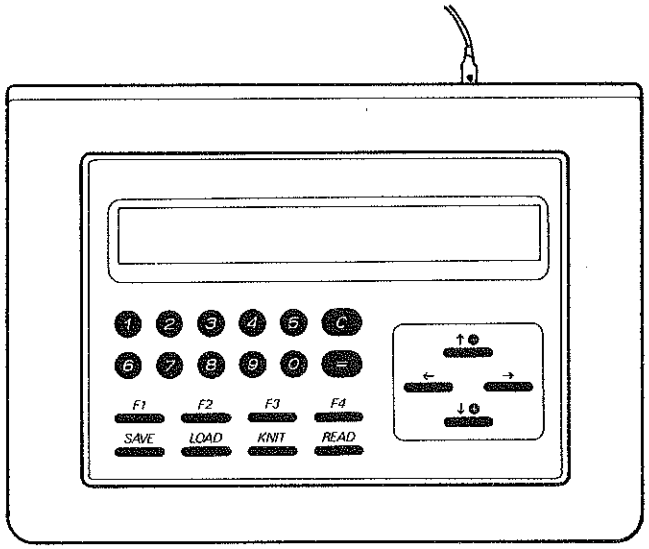


Switch off at the left end of the machine.

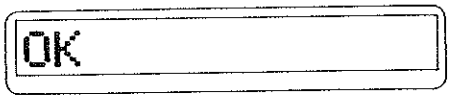
Plug the connection cord into the socket at the top of the design controller, just above the display, and at the right hand end of the machine. Although either plug fits at either end, look carefully to see which way the actual plug fits – like the curl cord, you may need to turn it to have the moulded arrow on top of the plug before plugging in.

Have the curl cord connected.

Switch on at the end of the machine.



Display shows →



HINTS:
1. There is a re-chargeable battery built into the design controller. It charges when the machine is connected and switched on. When fully charged (which takes 8 hours, the first time) it will remember a pattern for a week, even if it is switched off and put away. (Memory cards remember permanently, and have replaceable batteries to achieve this.)
2. Having the machine switched on for, say, 2 hours a week would not be enough to keep the battery in the design controller fully charged, so transfer any pattern you want to save onto a memory card. The design controller works perfectly when connected, whether charged or not, but to use the internal 7-day memory facility you need to keep the battery charged. You don't need to be using the patterning – or the machine – it just needs the design controller to be connected and the machine switched on.
3. With earlier models without a design controller, there was no advantage in having the machine switched on. With this one, there is. If all you are doing is keeping the battery charged, you don't even need to have the curl cord connected.

IMPORTANT: Always set the pattern width indicator to 60 (full width) when using the Design Controller with your MOD. 580.

Using the Design Controller – the explanation

In the following sections, we will use the Design Controller to READ, KNIT, SAVE and LOAD patterns. The later instructions will be as brief as possible, so you don't have to read a lot of text, and they will be easy to follow when you are knitting. In this section we expand one example, and explain step by step what you do.

If you find the following sections clear without any further explanation, skip this section until you come across something you are not clear about. If you prefer to know why you do things, then read this first.

First – if you make a mistake – use the 'C' key. You may press it several times if you want. You'll see that the last entry is deleted, one character at a time, if you keep pressing 'C'.

Let us take the paisley pattern (No 12 on Card 4) as an example and see how to read it into the Design Controller.

It has 100 rows, and is 36 sts wide.

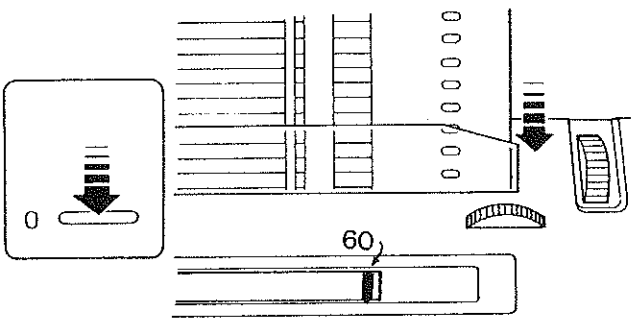
Set the pattern width indicator to 60 – **always to 60 when using the Design Controller.**

Pull out the Card Guide (see page 5).

Have everything plugged in, first, **then** switch on the machine.

Description	Key(s) to press	Display shows
		OK
Put the pattern into the card reader with row 1 just showing and the Inspection switch light ON.		
To read the pattern press	READ	R
One hundred rows	1	R1
	0	R10
	0	R100
Now use a function key	F4	R100s
(s is 'stitches'), so enter	3	R100s3
	6	R100s36
Check that it's correct. Use the 'C' key to delete and correct if necessary.	Press =	100RS. SET

That means 'put the card in ready to read 100 rows and press the inspection button.' Press the Inspection Switch now. Card is taken in as usual. Light OFF.



Now press 

The pattern is read, row by row. When it is all in, the display changes to COMPLETED

and then quite quickly to OK

Take the card out of the Reader. That pattern is now memorised in the design controller, and stays there until either you read a different one, or the internal battery goes flat.

In the following sections we will show a series of key presses like this READ 1 0 0 F4 3 6

You press the keys in that sequence, starting from the left. As a result. the display would show R100s36

Reading a pattern (summary)

from the Card Reader into the Design Controller

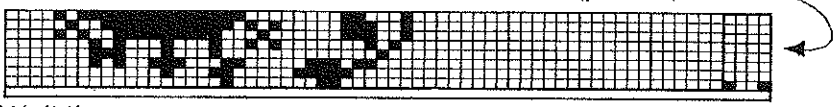
Description	Key(s) to press	Display shows
Connect up first, then switch on. Inspection Switch light ON. Pattern width indicator to 60. Put the pattern in the card reader and set to the first row. (example:- pattern is 28 rows and 46 stitches)	READ 2 8 F4 4 6	OK R28s46
Confirm by pressing	=	028RS. SET
Inspection light to OFF and read the pattern by pressing	=	
Pattern is read		COMPLETED
Then		OK

(You can see each row of pattern in the display, as it is read.)

Knitting a pattern

from the Design Controller

Description	Key(s) to press	Display shows
		OK
Connect up first, then switch on. Card Reader empty. Inspection Switch light ON. Move the carriage across and back to pick up the point cam and N1 cam positions. Move the carriage across and back a **second** time. (Recommended with the design Controller.)		
Press	KNIT	K
Press	=	(pattern)



Press the inspection switch, light OFF. Knit the pattern normally, just as though you were using a card. You need not pause at the end of a pattern, of course, because 'return to start' is instant.

If you need to move the pattern on or back, use the up or down arrow keys.

If you want to 'lock' the pattern and knit the same row repeatedly, press the inspection button to put the light on, just as you would if there was a card in the reader. Press again, light out, pattern continues to feed.

You may stop knitting at any time, and switch off.

You may press 'C' at any time to return to the OK prompt. 'KNIT=' will return you to the knitting function.

To re-start (within 7 days, if the battery was fully charged) connect up and switch on.

Press the Inspection Switch (light on), pick up the cam positions and press	KNIT =	

The same pattern row will be displayed as the row where you switched off. Press the Inspection Switch (light off), and away you go.

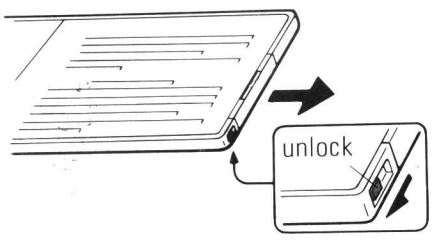
HINTS: It is a good idea to press the '=' key to display the pattern row number before you switch off. Then you can check that you are starting again on the correct row.

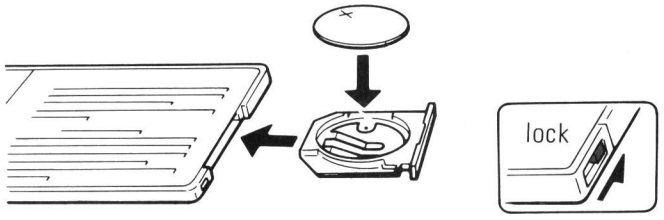
The bottom line of the display is the row of pattern that will knit next. You may use ANY of the pattern switches as usual, just as though you were knitting from a card.

Memory Cards – Introduction

Each memory card is supplied with a battery, which will last about 5 years. You need to pull out the battery holder from the end of the memory card **away** from the contacts, and put in the battery, the right way up. You **must** have a battery in. If you do not, any pattern you save will be lost when you take the memory card out of its socket on the design controller.

To fit the battery to a new memory card, pick up the memory card and look closely at each end. The end with the arrow on the front has the connection slot which makes contact when you plug it into the Design Controller. The other end is where the battery fits. There is a tiny sliding lock at one side which you move towards the edge to unlock the battery holder. Use a transfer tool to slide it. Now grip the very edge of the memory card with thumb and finger on the flat surfaces, and gently pull out the battery holder. Place the thin disc battery into the holder with the smaller side against the metal springs (–), and the main embossed lettering facing out (+). Slide the battery holder gently back in – it only goes one way – and then lock it.





When the battery is put in, the memory card needs to be prepared to receive patterns. It is called 'formatting' the card. Do it like this:

Connect up and switch on as usual.		OK
Press	SAVE F1 =	Sm FORMAT?
Confirm by pressing	=	SET CARD
Put the memory card into the slot at the right hand end of the design controller. It only fits one way – look carefully. When the card is firmly in the slot, press	=	
After a short pause		COMPLETED
and then		OK

What can go wrong?

1. If the card is not inserted correctly (or is not in at all) the display shows

NO CARD

(Action: push a card in firmly)

2. If the card is not suitable for the MOD. 580, display shows

BAD CARD

(Action: check with your supplier)

3. If the battery is too old and has discharged ('gone flat'), the display will show

CHANGE CEL

(Action: if there are patterns memorised on the card, put in a new battery WHILE THE CARD IS STILL FITTED TO THE DESIGN CONTROLLER. If the card is blank, it is easier to take it out of the slot to fit the battery and then replace it.) WARNING: SAVE and FORMAT do not work after CHANGE CEL appears on the display.
LOAD still works if there is still a little charge in the battery.
Press the '=' key, and unless NO DATA appears, you can LOAD the pattern.

4. If you try to SAVE or LOAD a pattern (see next pages) on a memory card that has not been prepared, the display shows

NO FORMAT

(Action: format the card as we saw earlier)

5. If the card cannot be formatted (such as a ROM card - Read Only Memory)

BAD CARD

(Action: Use a correct card)

Memory Card Size and Contents

A single memory card can hold up to 250 different patterns, if they are fairly small. The larger the patterns, the fewer will fit on. There is not a simple relationship between pattern size (Rows x Stitches) and the number which will fit on a card – but the capacity of a card is LARGE!

Because you can put so many patterns on a card, each time you add another you'll need to make a note of the number (see later) and what pattern it is. To help, you'll find that page 72 is laid out as a record sheet for 10 patterns. What is suggested is that you take this book along to a photocopier, and get some copies of that page to use as your records.

You can either make a little sketch, or write a description, or both, and you can mark what kind of pattern it is. It is also very useful to know how big that pattern is – so fill in the Rows x Stitches as well.

When you put the eleventh pattern on the memory card, take a new sheet, and write 1's down the left (and a 2), so the sheet is for numbers 11 to 20. You can do this for as many pages as you need (21 to 30 and so on).

Storing a pattern onto a Memory Card

(After preparing the card with FORMAT, and after READing the pattern into the design controller.)

	Keys	Display
Press	SAVE =	SET CARD
Put a memory card into the slot (if it is not already in) and press	=	
The Design Controller allocates the next pattern number on the card and the display now shows you that number, for example		1 PAT.
	or	2 PAT.
	or	3 PAT.
	etc.	
which is the number of that pattern on the memory card. Write the number down with a pattern description, then press	=	OK

To see how many patterns are on a Memory Card

Put in the card, then Press	LOAD F1 = =	3 PATS.
Notice the 'S' on PATS – this is the display which shows how many patterns are stored. Press either C or	=	OK

To recall a pattern from a Memory Card

You need to know what the number is! (The number which was displayed when you SAVEd the pattern.)

To recall pattern 3 press then press	LOAD 3 =	L3 SET CARD
Put the card in (if it is not in already) and press	=	20 X 38
The display shows the pattern size (ROWS by STITCHES). Note the size for setting the cams then press	=	OK
The pattern is now loaded and ready to knit.		

Erasing a Memory Card

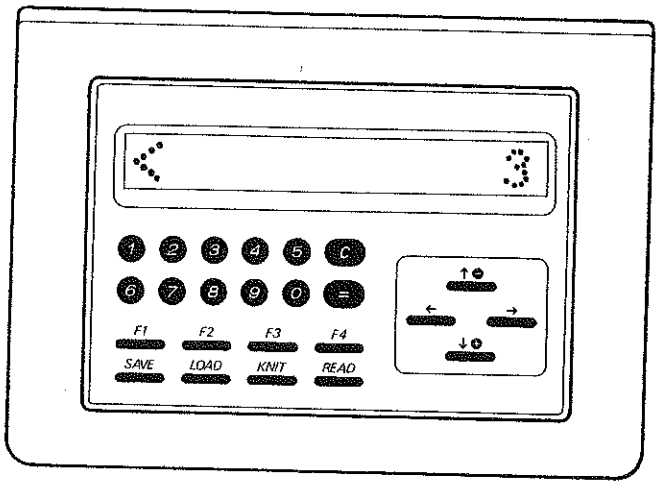
You can erase the last pattern saved.
If you want to erase a whole card, use FORMAT.

To erase the last pattern	SAVE F2 =	Sx ERASE?
To confirm erase, press	= =	SET CARD COMPLETED OK
Or to abandon the erase, press	C	OK

Design Controller Basic Summary

READ a pattern 70 rows by 46 sts from a pattern card	READ 7 0 F4 4 6	R70s46
Inspection Switch light OFF	=	70RS. SET
	=	COMPLETED
		OK
KNIT a pattern in the Design Controller (Inspection Switch light OFF)	KNIT =	(pattern)
STORE a pattern on a memory card (memory card in)	SAVE =	SET CARD
	=	4 PAT.
	=	OK
RECALL (LOAD) a pattern from a memory card	LOAD 4 =	SET CARD
	=	70 X 46
	=	OK
How Many Patterns?	LOAD F1 =	SET CARD
	=	4 PATS.
	=	OK
What row am I about to knit? With the knitting pattern in the display, press (the symbol at the left will be explained shortly, and 3 means 'Row 3.')	=	< 3

Press '=' again to return to the display. You may do this at any time. ALSO, you may knit with the row number and symbol showing.

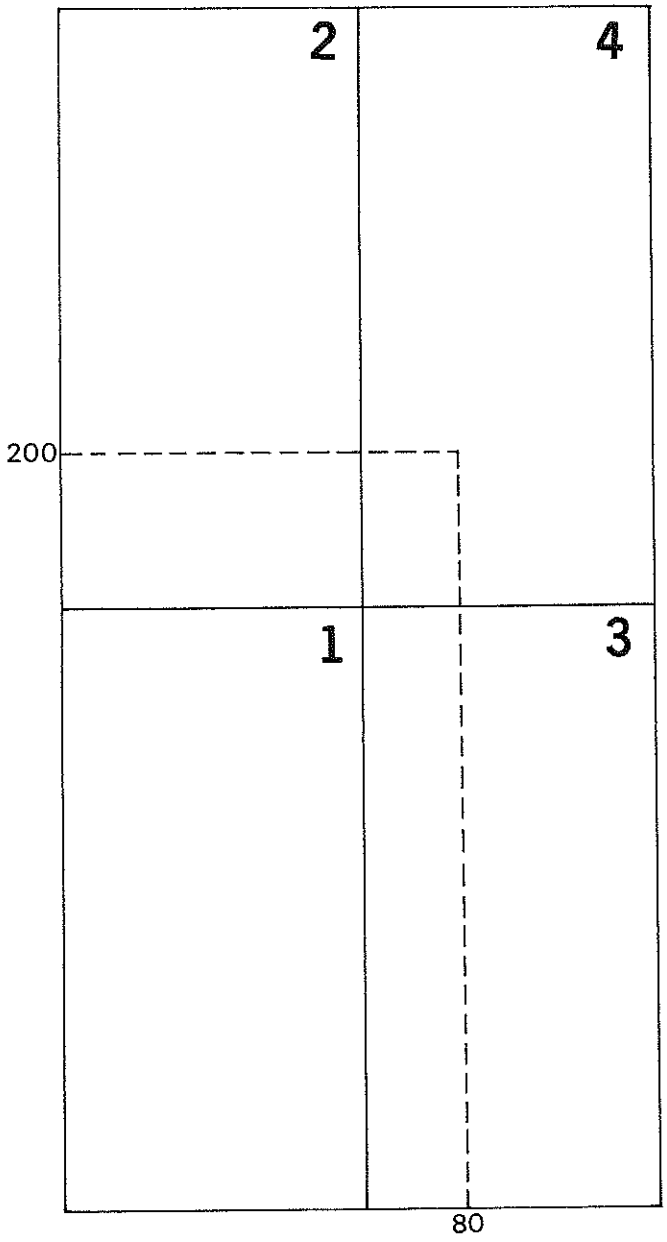


HINT: Unless you actually want to check the pattern, why not knit with the row number showing – then you'll always know where you are on the pattern, and you can see the symbols – which will be useful sometimes. You can change between the pattern display and the row number at any time, just by pressing '='.

Patterns that are larger than one pattern card.

Use design pencils to draw patterns which you are intending to read into the Design Controller and then SAVE onto a memory card.
Then, when you have saved the pattern, you can rub out the design and re-use the pattern cards.

The number of cards you will need is dictated by the number of rows and stitches in your pattern. If you want to save a pattern which is 200 rows by 80 stitches, you will need 4 design cards on which to draw.



The pattern must start at the bottom left corner of the first design card. The four cards are referred to as 1, 2, 3 and 4 as shown on the sketch, because that is the sequence in which they are put into the Card Reader.
Use the buzzer column on cards 3 and 4 of this example for any of the usual purposes such as reminding you to change colour.
Use the buzzer column on card 4 also to mark the last row of pattern, as usual. You'll need this, because the pattern will return to row 1 instantly after knitting the last row – and if you are not concentrating, you could miss it.

Set the pattern width indicator to 60, as always.

Instruct the Design Controller like this	READ 2 0 0 F4 8 0		R200s80
	=	150RS. SET	
(150 because that is a full card) Put in Card 1, press the Inspection Button to put the light out, and press	=		
At the end of the first card, the display shows (the 50 needed to make up the 200)		050RS. SET	
Put in card 2, press	=		
At the end of the 50 rows, the display asks you for the next card which will be another 150 rows		150RS. SET	
Put in card 3, press	=		
Display shows		050RS. SET	
Put in card 4, press	=		
When the last 50 rows have been scanned, display shows and then		COMPLETED OK	

HINTS:

1. Even if one of the cards has no pattern on it, you must still read it in, in the correct sequence, or the Design Controller would not understand.

2. Always start by reading the card from the bottom left corner of the design, then the one above, and so on up to the top. Then read the next column from bottom to top, and so on until the last card read is the top right hand one of your pattern.

3. Do not move the pattern width indicator. The Design Controller knows how many columns to read at each stage.

MEMORY CARD RECORD SHEET

Name on Card

Pattern Number **Description** **Sketch**

1

Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

2

Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

3

Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

4

Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

5

Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

6

Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

7

Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

8

Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

9

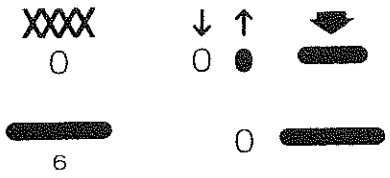
Rows X Sts

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

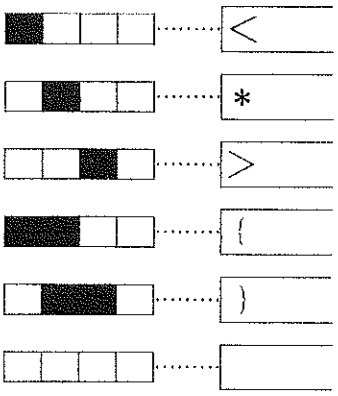
0

Fair Isle
Tuck/Slip
Punch Lace
Knitweave
Transfer Lace
Ribber
Double Jacquard

Using the Instruction Columns

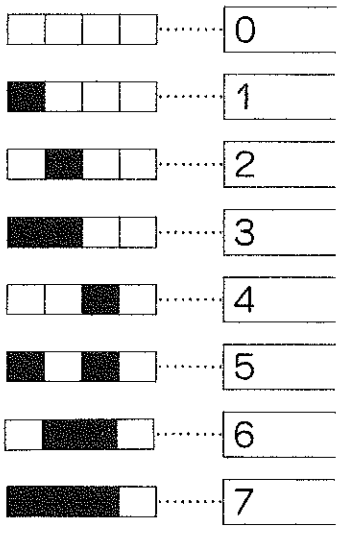


Patterns stored in the Design Controller always knit under the control of the inspection and direction switches. You can make the machine knit a pattern from the top to the bottom instead of the usual way (bottom to top). You do it by using the arrow keys to position the pattern to the top row, and then press the direction switch to put the right hand light on (near the inspection switch). Therefore the instruction columns on the pattern sheets are available for patterning information. The first three of the instruction columns can be used.



If you use them, you will see various symbols displayed when you knit. Normally you will be able to see symbols like < or >. If you are programming the Design Controller for multicoloured slip stitch, say, then you will use the F3 key to tell it how many pattern cards carry the different colours. In that case, instead of symbols, there will be numbers, meaning colour numbers from 0 to 7. The way this is used is explained next and in 'Several colours in one row.'

The way the 'counting' works is that the first column is given the value 1, the second is given the value 2 and the third is given the value 4. Whatever marks you put in the columns, those values are added together, and the display shows the resulting number. So a mark in the third column only (which has value 4) would display '4'. Marks in the first column (value 1) and the third (value 4) would display the total of 1 + 4, '5'.



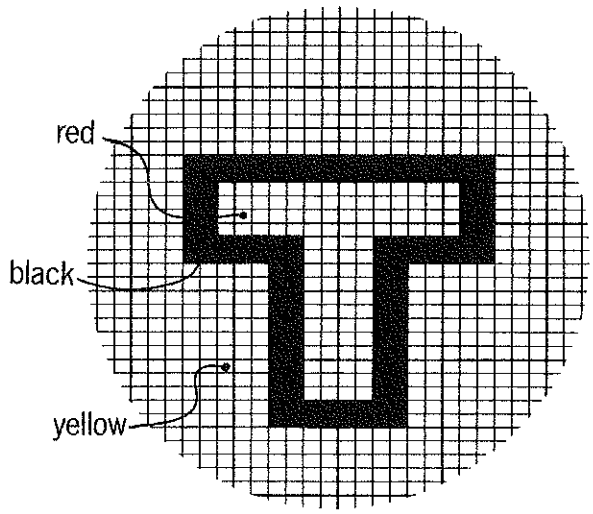
The two tables show first the symbols which are normally displayed, and then the numbers which you will get when you use the function key F3.

Several colours in one row.

Until now, it has been very complicated to get your machine to do more than two colours in any one row. It is much simpler with the Design Controller, because although you still have to sort out in advance which colours you want where, you can draw pattern sheets which you can think of as lying on top of one another. The top one might have the information about the red the next one might have the information about the blue, and the bottom one would have the background and the main contrast – black and white, say. You read them in one after the other (having told the Design Controller what you are doing) and then when you knit, the controller selects only those needles for the current one of the (four, in that example) colours when you are knitting that row, and then on the next carriage movement, selects the needles for the next colour and so on, building up a complete row of knitting before moving on to the next.

The key to this process is in the way that you draw parts of the pattern onto separate sheets, and particularly in the way you use the Instruction Columns (not the ABCD columns at the far right of a Design Card, but the ones next to the buzzer column).

A simple illustration is easier to follow than a lot more words. Let us say that we want a pattern to draw this Letter T, with a black outline. The background is yellow, and the centre of the T is red.



Because it is only 20 rows high, we could draw it in several patterns on one sheet – but each will be read separately.

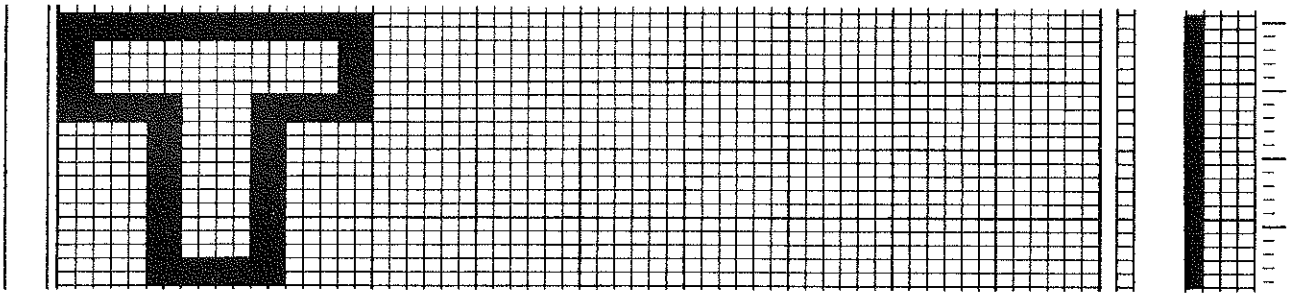
First, you decide what your 'background' is. It will probably be a single colour – though it may be changed at a horizonal line part way up the pattern. The background is a pattern sheet which is blank apart from the Instruction Columns – it is best to read that sheet in last.

Now you have to draw two more sheets, one for each of the two contrast colours. This is where the 'coding' of the first three of the instruction columns is used.

Look at the three pattern sheets. See how the instruction columns are used to code the three different colours.

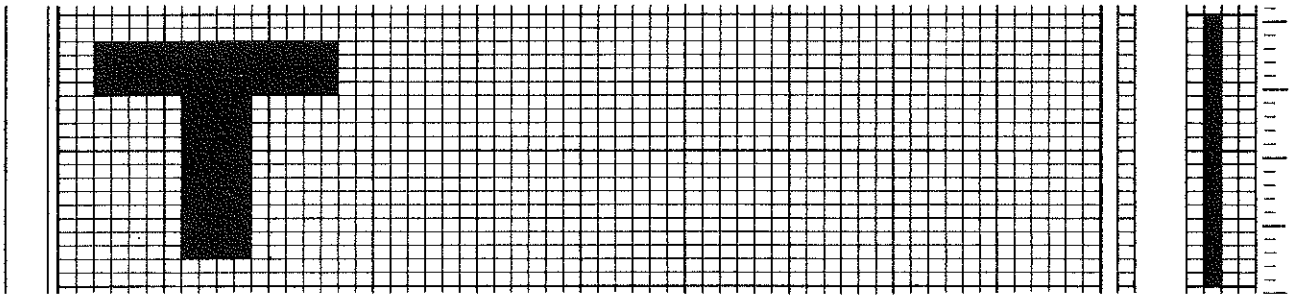
When you knit this pattern, the coded number of the colour required for the row you are about to knit can be shown in the left end of the display (and the row number in the right end).

Card 1



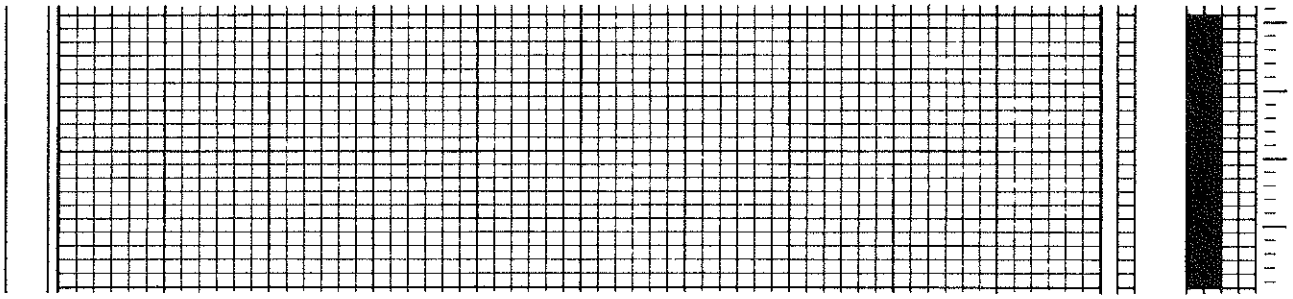
colour 1

Card 2



colour 2

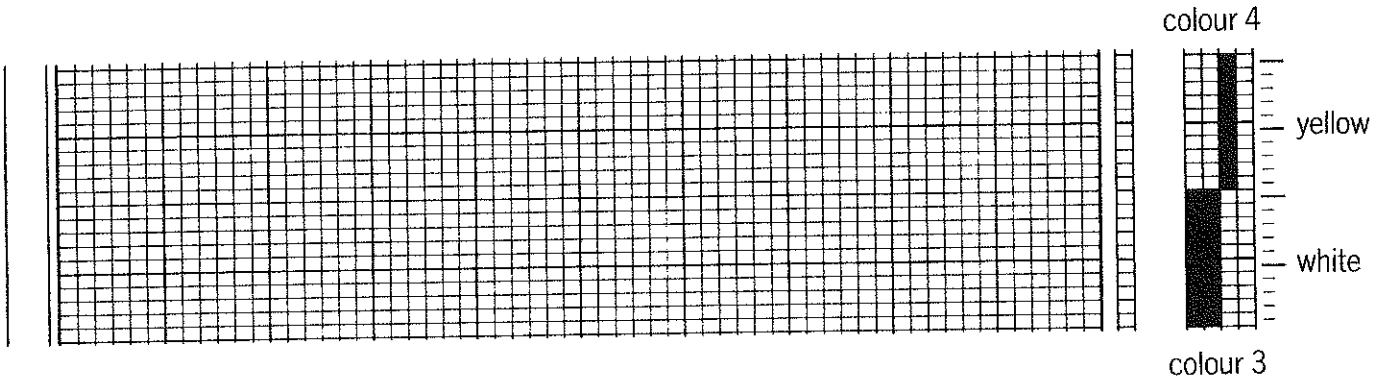
Card 3



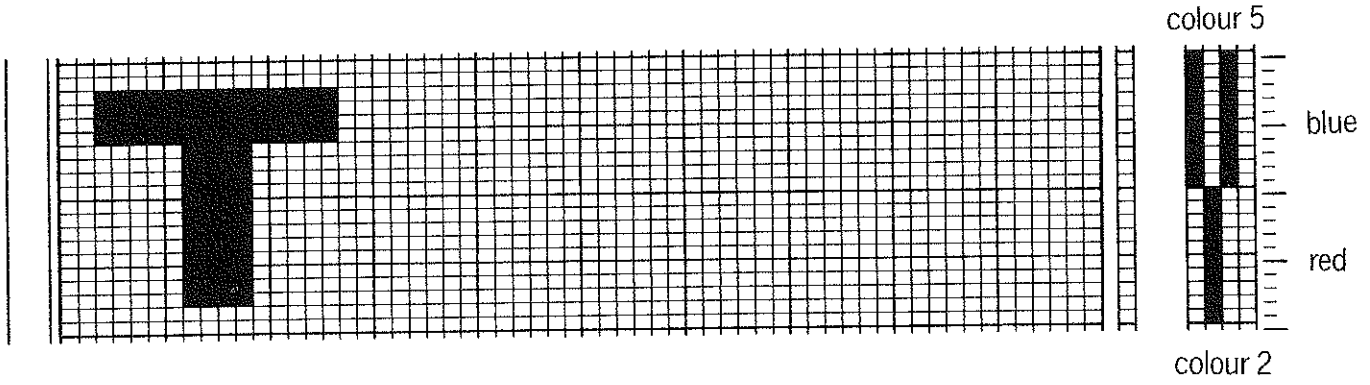
1+2=3

colour 3

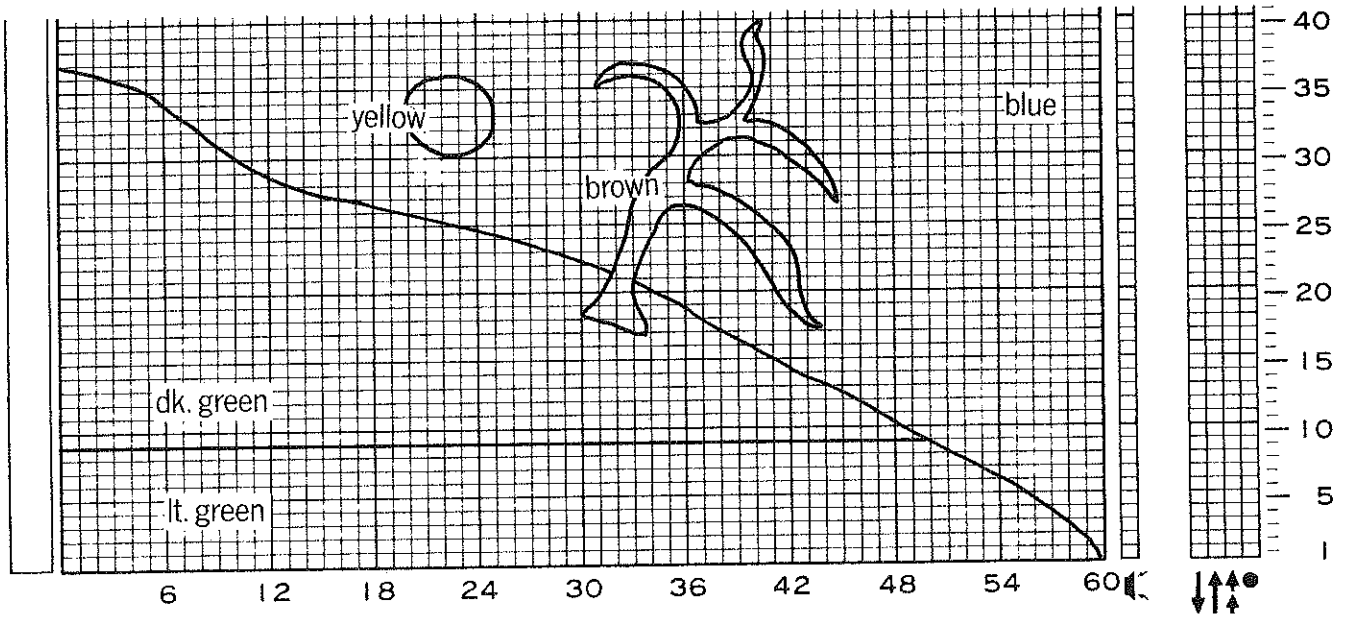
If we wanted the letter to be on a two-tone background, the bottom half white and the top yellow, say, we could change card 3 like this:



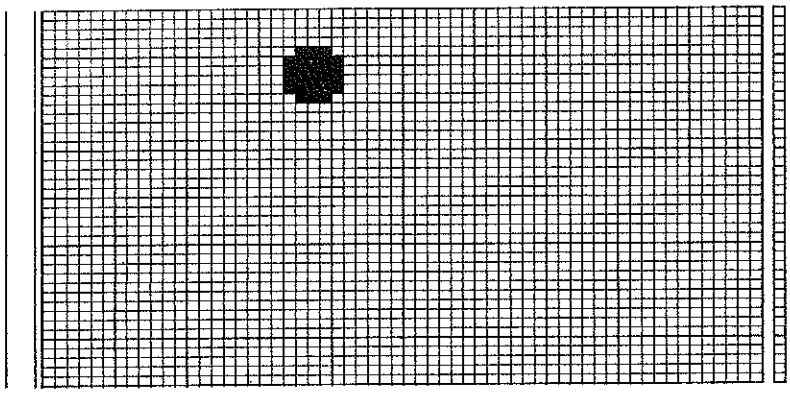
And to divide the red T into a T with the bottom half red and the top half blue, we could do this with card 2:



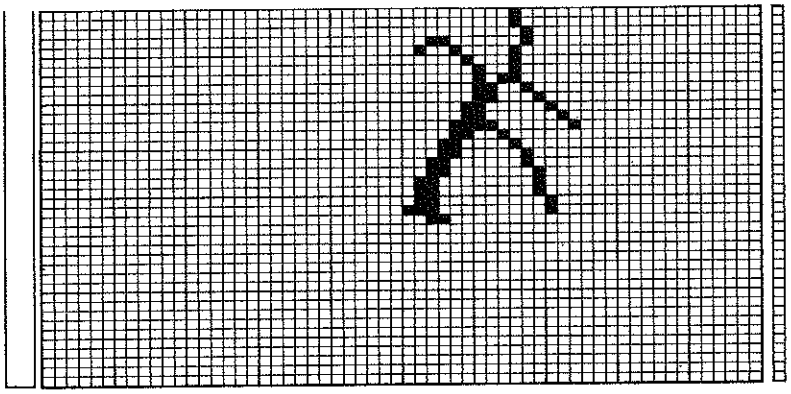
Now let us see a more realistic illustration. Here is the scene we want to knit.



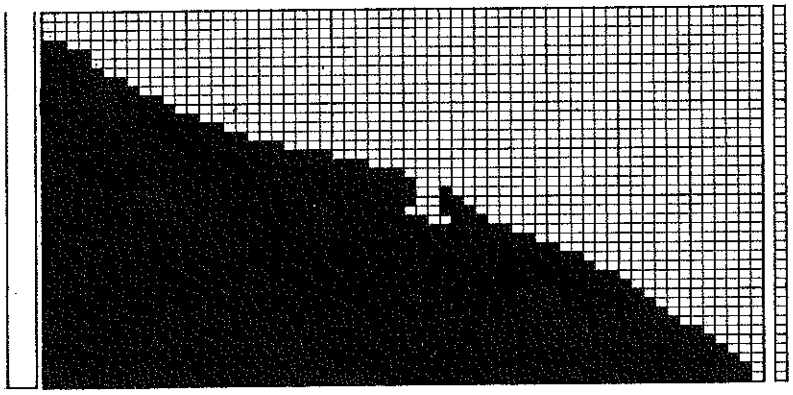
In the rows where the yellow sun is, we have FOUR different colours, the yellow sun, the brown tree, the green hillside and the blue sky. Four colours in one row – therefore four cards.



colour 1 – yellow

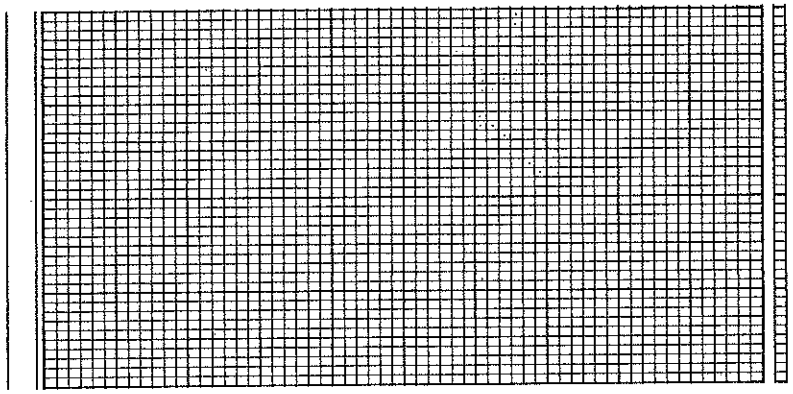


colour 2 – brown



colour 4 – dk. green

colour 3 – lt. green



colour 5 – blue

To read these cards into the design controller you use a normal read instruction, plus two extra keys.

To read in the T pattern you would enter	READ 2 0 F4 1 8	R20s18
and now, instead of pressing the '=' key, you add the F3 key, and then the number of patterns, like this	READ 2 0 F4 1 8 F3 3	R20s18j3
When you now press	=	20 RS. SET
appears, as usual, and you set the first card ready to read and press the inspection switch to put the light off.		
Now, when you press '=' it will read that card, but instead of saying 'COMPLETED' and 'OK,' the 20 RS. SET		
message re-appears. Put in card 2	=	
and once again		20 RS. SET
Put in card 3, press	=	COMPLETED
and then		OK

The instruction for the other design we just looked at is the same, with different numbers.

	READ 4 0 F4 6 0 F3 4	R40s60j4
and then	=	

Notice that we told the Design Controller to read 4 cards this time. (F3 and then 4.)

Uses for the symbols which display.

When drawing your own design card for transfer lace, you could mark alternate rows of the pattern like this. On row 1, mark column 1 to show '<' (meaning knit to the left) and on row 2, mark column 3 to show '>' (meaning knit to the right). Do this alternately up the side of the pattern. Then when you are knitting, you can have the row number and the < and > symbols showing in the display. You may find other uses for the symbols (there are 5 to choose from – see page 73).

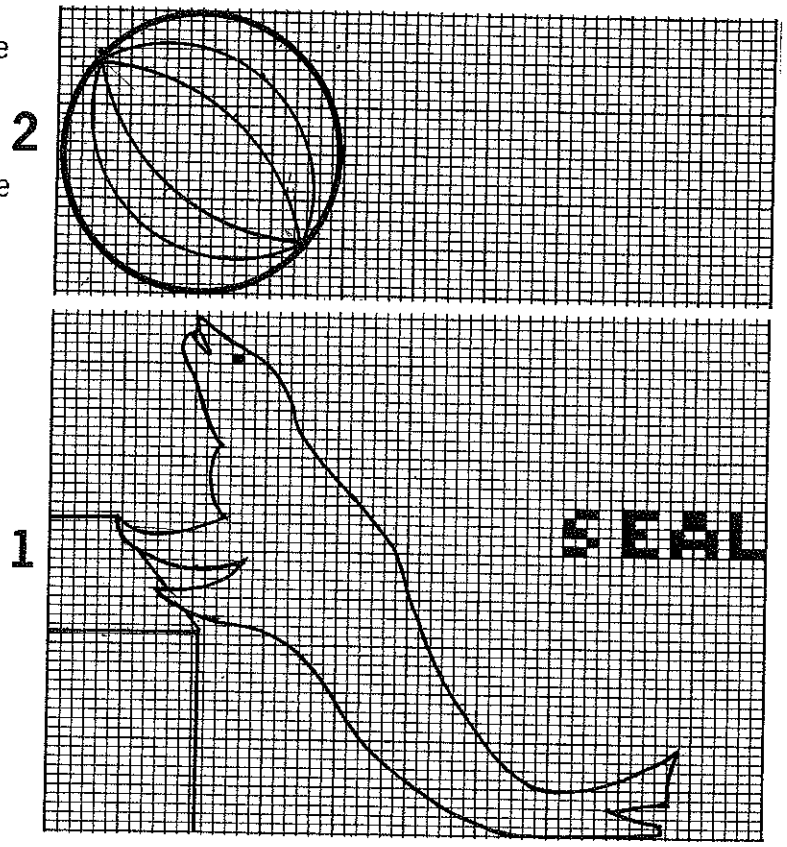
For knitting fashion lace patterns which you draw yourself, (or copy from a pattern book), why not use the * for the rows knitted **with** yarn, and leave the rest blank?

Combining two patterns into one.

If you have two patterns, you can instruct the Design Controller to read first the 'bottom one', then add the top one above it, so that whole can be knitted as one pattern. (You can also read a third or more patterns from a Memory Card on top of the previous ones.) You can read both (all) patterns from memory cards, or the bottom one from a design card and the top one from a memory card.
There are two limitations. First – the 'top' pattern can only be loaded from a memory card – so if both exist on design sheets, you must READ and SAVE the top one first. Second, both patterns must be the same width (same number of stitches). This implies that the narrower one must be read in at the width of the other – including sufficient 'blank' area to the right to make up the width.

These are the two patterns we'll use to illustrate. The top one is 30 rows by 25 sts wide and the lower one is 55 rows by 60 sts.

We need to save the top one to a memory card at the same width as the bottom one, that is 60 sts.
Call the cards 1 and 2 as marked on the sketch.



Insert card 2, and a memory card.

READ 3 0 F4 6 0 — R30s60
= — 30 RS. SET
= — COMPLETED
OK
SAVE = — SET CARD
= — 5 PAT.
= — OK

Insert card 1

READ 5 5 F4 6 0 — R55s60
= — 55 RS. SET
= — COMPLETED
OK

Now the important part.

LOAD F2 5 — Lx5
= — SET CARD
= — 30 X 60
= — OK
KNIT =

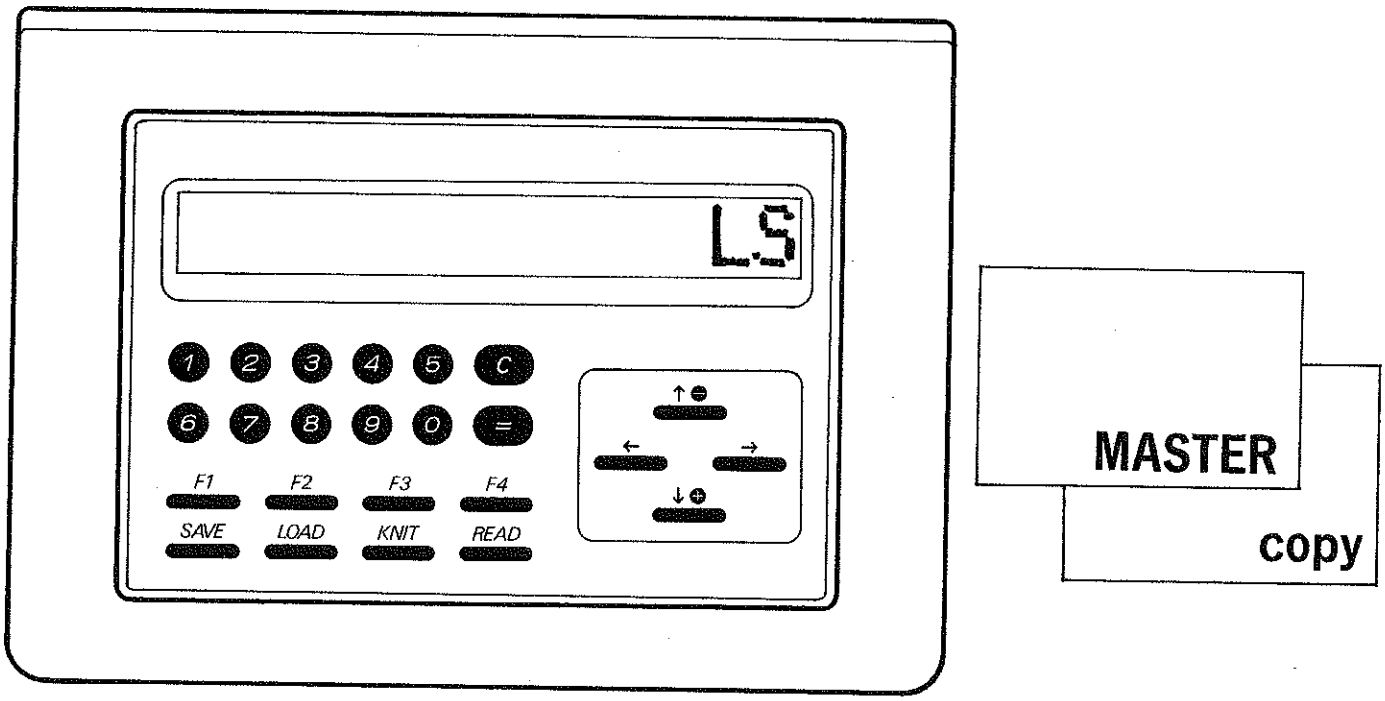
Now check by pressing and hold the 'down' button to roll the pattern down. The pattern from card 2 should be correctly in place above the pattern from card 2. If you want to SAVE that new combined pattern, you can.

See page 80 for combining two patterns which are both on a memory card.

Copying a complete Memory Card

You may make a copy of a complete card all at once, instead of pattern by pattern, if you wish. It is done with LOAD and SAVE in the same instruction.

	LOAD SAVE =	LS MASTER CRD
The Display is asking you for the card to copy FROM. Put it in the slot, the press	=	CHANGE CRD
and now it is asking for the blank memory card to receive the patterns. Take out the card to copy FROM and put in the card to copy TO. Press	=	COMPLETED OK
and then		



Combining patterns from Memory Cards.

If the 'seal' was pattern 4 on a memory card, and the 'ball' was pattern 5, proceed like this

Press	LOAD 4 =
to LOAD the first pattern, then	LOAD F2 5 =
to load the second pattern on top of the first.	

(Notice that you must have SAVEd both patterns at the same width.)

Messages displayed – summary.

OK	Ready for instruction
TOO BIG	You've programmed in too big a pattern, check and re-input after pressing C.
CARD FULL	Either you have put more than 250 small patterns on one card, or the patterns are too large in total.
NO DATA	You have told the Design Controller to LOAD a pattern number which is not on that card.
CHECK PAT.	The internal battery is very low, because the Design Controller has been disconnected. The pattern may still be there, but check it, and READ it or LOAD it again if necessary.
CHECK STS.	The second pattern (to be LOADed from Memory Card) is not the same width as the first one. The second one is not loaded, start again after pressing 'C.'
15RS. SET	Put the pattern sheet in and set it ready to read a 15 row pattern, then press '='.
CHANGE CEL	The battery in the Memory Card needs to be replaced. Patterns on the card can still be LOADed, but you cannot SAVE or ERASE. Change the battery while the Memory Card is plugged into the Design Controller, if you want to preserve the patterns on the Card.
NO CARD	The Memory Card is not plugged in correctly.
BAD CARD	For some reason this card is not useable. See your dealer for a correct replacement.
NO FORMAT	You have attempted to SAVE before FORMATting the Memory Card.
SET CARD	Put a Memory Card into the slot.
MASTER CRD	Insert the card to copy FROM.
CHANGE CRD	Insert the blank card to copy TO.
PROTECTED	You cannot use this card as a Master for copying – it was made using the Master Card facility. You can load individual patterns and save them, but you cannot 'bulk copy.'
FORMAT?	After the 'SAVE F1 =' sequence, this asks if you wish to format a card. Press '=' to say 'yes' or 'C' to say 'no.'
ERASE?	After the 'SAVE F2 =' sequence, the display asks if you wish to erase the last pattern on the Memory Card; '=' for 'yes'; 'C' for 'no.'
15 PAT.	That was the 15th pattern stored on this Memory Card.
15PATS.	There are 15 patterns altogether on this card.
COMPLETED	A function such as READ, LOAD, FORMAT etc is complete.

NOTE: Press '=' when a pattern is displayed (during KNIT =) and the display shows the next row number within pattern at the right. Press '=' again to return to the display of the pattern.
You may knit the whole pattern with the row numbers showing, if you wish. Press 'C' to stop knitting and show the OK display.
KNIT = returns you to the point in the pattern where you left.
Pressing the inspection switch to put the light ON is effectively locking the pattern, just as though it was on a card.