

Empisal

KNIT 'N' WEAVE

P U S H B U T T O N

PATTERN SUPPLEMENT

AN EMPISAL PUBLICATION

PATTERN SUPPLEMENT.

PATTERNS & PATTERNING

Apart from the joy of making fashionable garments for your family in the minimum time for the cost only of the yarn, the enjoyment of your Knitter will come from the glorious patterns you can devise by yourself after you have gained a full understanding of the Automatic features of your Knitter.

The few patterns and hints given in the following pages will go a long way to teaching you how best to use the advantages built into your Knitter.

Abbreviations used

HC = Holding Cam; HCL = Holding Cam Lever

MC = Basic or Main Colour.

CC = Contrast Colour.

HP = Holding Position (of needles, Position E).

FF = Fully fashioned.

NSB = Needle Selector Buttons (Needle-bed).

PSB = Pattern Selector Buttons (Carriage).

Hints

When setting the N.S.B. remember to swivel the Set-Lever to the left to raise the needles.

Textured patterns should be steamed lightly. Do not let the iron rest on the fabric when blocking.

H.C.L.'s should always be in Position I unless specifically required in other positions for patterning.

It is advisable to insert comb into fabric when knitting H.C. patterns.

TO JOIN ANOTHER COLOUR OF YARN

To make a stripe:

1. Remove the yarn from the yarn feeder of carriage only. (Rest the yarn under the nearest end of knitter.)
2. Thread the yarn feeder with the second colour.
3. Be sure the new yarn is threaded into the two openings of the yarn feeder. Let the yarn hang 6 inches below the carriage.

Note: Always check that the yarn-feeder is properly threaded, otherwise the carriage will not have yarn to feed the needles, and all the stitches will drop.

4. Continue knitting.

By repeating the above operation, you may join as many colours as you wish.

The lengths of yarn hanging at the selvedge of the fabric can be sewn into the selvedge or knotted, and then cut off, after the fabric has been removed from the machine.

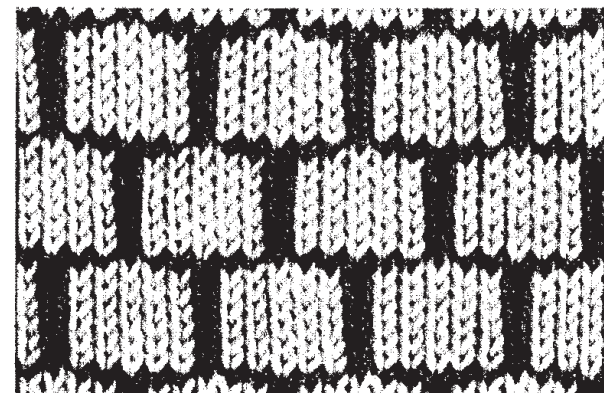


Fig. PS 1

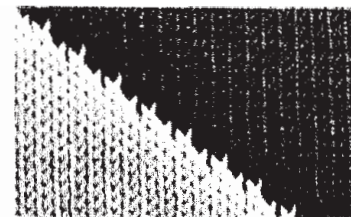
Squares Pattern (Fig. PS 1)

1. Knit 1 row CC.
2. HCL's on III.
3. Raise every 6th needle to Pos. D.
4. Knit 1 row CC.
5. Knit 6 rows MC.
6. HCL's on I.
7. Knit 1 row CC.
8. Repeat from step 1 except that in Step 3 raise every 6th needle *commencing with the 3rd needle to Position D.*

SHORT ROWS.

A short row is a method of shaping and is simply the knitting of only part of a row.

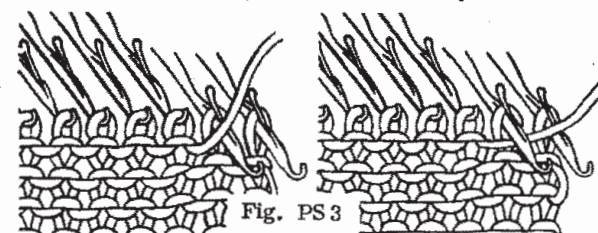
Short rows are principally used for turning the heels of socks, for pockets, horizontal darts, circular yokes, skirts, zig-zag designs and even to make one edge of a panel narrower than the other; as an extension to this diagonal coloured stripe effects are possible because inasmuch as it is possible to narrow one edge, it is also possible to widen that or the opposite edge. The principle of coloured diagonal striping is therefore first to decrease the width of a row and then to re-instate that row to its original width using a different colour yarn.



Examples of short row knitting : Horizontal dart and Two-Colour Diagonal Knit. (Both commence in exactly the same way) :-

Set both Holding Cam Levers on II and the carriage (which can be set on either side of the Needle bed) should be set for the purpose of this practice on the left of a piece of fabric in the Knitter.

- 1) Raise the 2 in action needles at the extreme right of the fabric to position E, where they will remain until manually moved down to C position, or until the Holding Cams are raised to I.
- 2) Knit 1 row (to the right). To avoid the formation of a hole at the point where the short row ends, (i.e. adjacent to the E position needles, - such a hole would only become apparent after completion of the pattern), pass the yarn under the stem of the E position needle nearest those in B position.
- 3) Knit 1 row (to the left). (The E position needles have not knitted, and the one nearest the B position needles holds two stitches).
- 4) Continue raising 2 needles and knitting 2 rows until all needles are in position E, remembering always to pass the yarn under the E position needle nearest the B position needles.

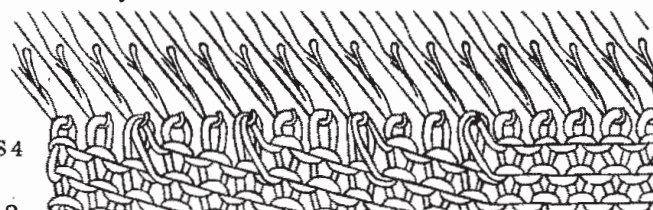


FOR A DART.

- 5) Set Holding Cam Levers on I.
- 6) Knit across. Notice how all needles are now knitted and the fabric is drawn up on one side.
- 7) Continue knitting.

NOTE:

- (a) If you wish to revert the fabric to a straight piece repeat from Step 1 commencing with the carriage on the right and raising the needles from the left.
- (b) If the yarn is not passed under the stem of the needles as explained in Step 2(b) a row of holes will be formed. This could be effectively used for patterning.
- (c) For a normal "horizontal" dart reducing the rows by two needles at a time makes the dart somewhat sharp, usually 3 or more needles are "held" every second row.



FOR TWO COLOUR DIAGONAL STRIPE.

- 5) (a) Transfer carriage to right of needle bed (both Partial buttons in if passing it across the fabric - otherwise remove the carriage from the bed and replace it on the opposite side).
(b) Change colour of yarn in carriage feeder.
- 6) Push into C position the first two E position needles on the side nearest the carriage.
- 7) Knit 1 row (to the left), and pass the yarn under the stem of the E position needle nearest those now in B position.
- 8) Knit 1 row (to the right).
- 9) Continue by lowering to C position two needles and knitting two rows at a time until all needles are back in B position, remembering always to pass the yarn under the relevant E position needle). (See step 7).

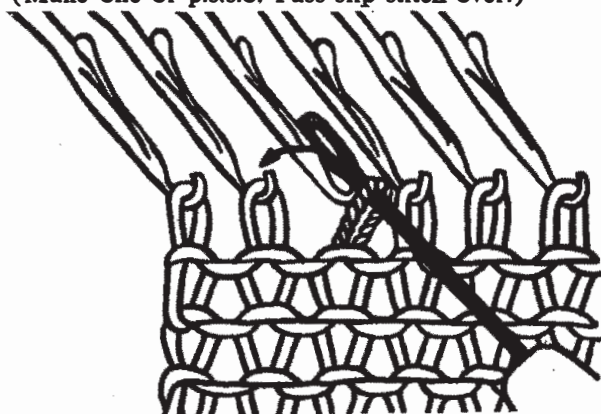
NOTE:

- (a) At the completion the fabric will be diagonally divided into two colours.
- (b) If for patterning purposes, the yarn is not passed under the needles as in 2(b), it must be passed under the needles when using the second colour, (commencing at step 7) otherwise two unjoined pieces of fabric will result!

YARNOVER PATTERNS

This stitch is very popular among hand knitters and can be duplicated very easily on the knitter. The basic stitch is to knit 2 together, this is done by transferring 1 stitch to the adjacent needle, always return empty needle to knit position; as the carriage knits across, this needle automatically picks up the stitch to form Y.O. (Make one or p.s.s.o. Pass slip stitch over.) (Fig. PS 5)

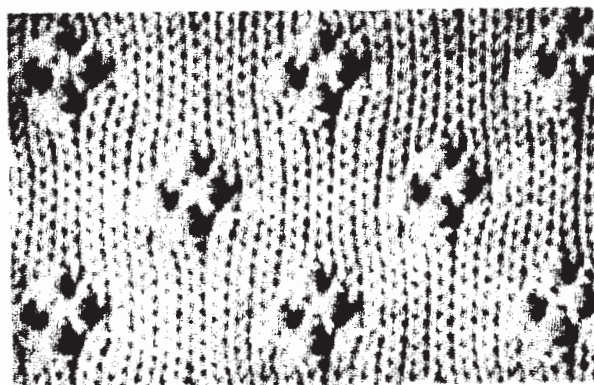
Fig. PS 5



4-Leaf Clover Pattern (Fig. PS 6)

1. With the single transfer tool transfer every 10th stitch to the adjacent needle. (Be sure the empty needles are back in knitting position.)
2. Knit 2 rows.
3. Transfer one stitch from each side onto the needle which is directly above the first Y.O. stitch. The needle now holds 3 stitches.
4. Knit 2 rows.
5. Transfer the stitch directly above the first stitch transferred. Knit the desired number of rows between patterns and repeat, commencing with the fifth stitch.

Fig. PS 6



Lace or open work pattern: (Fig. PS 7)

1. Knit 4 rows.
 2. Transfer every second stitch to the next needle.
 3. Bring the empty needles to Position B.
- Repeat 1, 2, and 3.

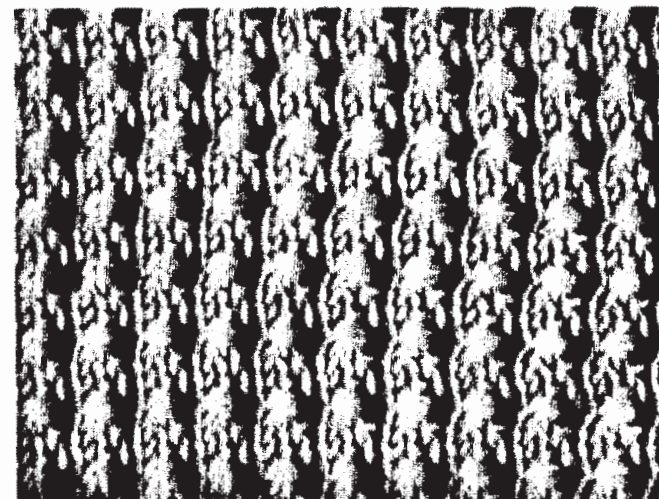


Fig. PS 7

Honey-Comb Stitch (Fig. PS 8)

This is a firm textured stitch, the purl side shows the pattern most effectively.

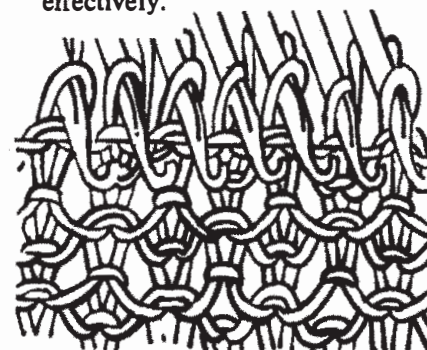


Fig. PS 8

- 1) a) Push in both Tuck buttons.
b) Depress every alternate N.S.B.
- 2) Row 1 -
a) Slide Dial on 1.
b) Press Set Lever.
c) Knit across.
- 3) Row 2 -
a) Slide Dial on 2.
b) Press Set Lever.
c) Knit across.

Repeat 2 & 3 for length of pattern.

CABLES

- Using two three needle transfer handles over six adjacent stitches, form a cable as follows:

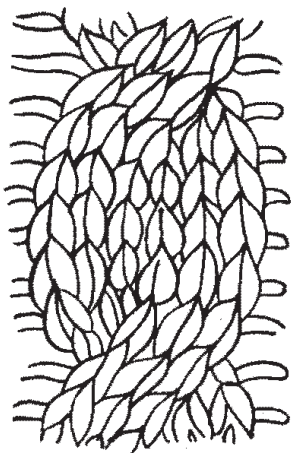


Fig. PS 10

- Lift 3 stitches on to one transfer handle;
- lift the next 3 stitches on to the other transfer handle;
- cross the transfer handles, so that:
 - those stitches from the left-hand needles are transferred to the right-hand needles, and
 - those stitches from the right-hand needles are transferred to the left-hand needles; *over the previously transferred stitches.*

- Push the needles with the twist into E Position, together with a few needles on either side of them.
- Raise H.C.L.'s to Position I.
- Knit six or as many rows as required between cables.
- Repeat from Step 1.

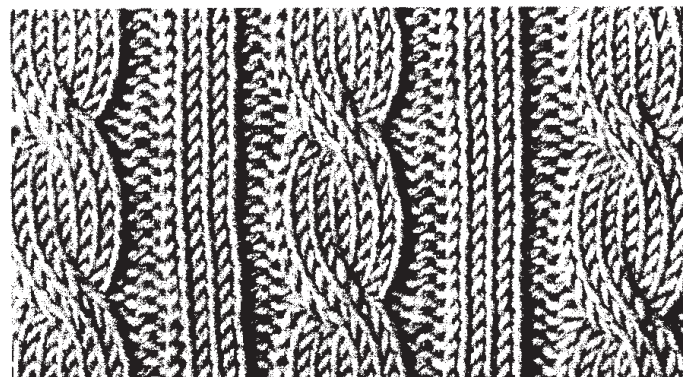
Lace Cable (Fig. PS 11)

Manually knit one row by feeding the yarn into each needle by hand to form a stitch then pull the individual needle as far back as possible to Position A to form a long stitch. When the row is completed insert cast-on comb into the knitting and with the comb carefully pull knitting forward until the needles are in Position B, the stitches hanging on the hooks. Using the 3-needle transfer tools proceed to cross the loops as you would to make cables. Transfer the carriage to the opposite side of the needlebed, re-thread it and proceed with your knitting.



Fig. PS 11

When cable is over more than 4 stitches
(2 each side) release stitch on stitches
by leaving a needle out of action on each side
of Cabling Stitches



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□ + + + + + □

PLAITED CABLE.

Carriage on either side, set at knit.

Using two 3 needle transfer handles work as follows over 9 adjacent stitches.

- Lift the first 3 stitches on the side nearest the carriage on to one transfer handle.
- Lift the adjacent 3 stitches on to the other transfer handle.
- Cross the transfer handles over so that
 - those stitches from the 3 needles furthest away from the saddle are transferred to the vacant needles nearer the carriage.
 - those stitches that were nearest the carriage are transferred to the other vacant needles.
- Knit 3 rows (the carriage will now be on the left side).
- Lift the first 3 stitches on the side nearest the saddle on to 1 transfer handle. (These will be the 3 stitches not previously picked up).
- Lift the centre 3 stitches on to the other transfer handle.
- Cross the transfer handles over so that
 - those stitches from the 3 needles furthest away from the saddle are transferred to the vacant needles nearer the carriage.
 - those stitches that were nearest the carriage are transferred to the other vacant needles.
- Knit 3 rows.
- Repeat from Step 1 for the length of the plait.

BRIEFLY: The centre 3 stitches are always transferred outwards, either to the left or to the right, on to the outer needles before the outer stitches are transferred inwards. If an odd number of rows is knitted between "cables" always work towards the side on which the carriage is resting.

Making Pocket : - ① All needles beyond pocket to "E" Pos.
H.C.L. II Knit across.

② All needles beyond Pocket "E" position.
Knit on Pocket stitches only till long enough

NOTE: The position of the coloured band will depend H.C.L. II
upon when the yarn colour is changed - for school jerseys
the colour change may be required within the hem and not
at the edge, in which case change colour earlier.

8. Close the hem.

Onto the B position needles pick up the lower loop of the
stitches outlined by the marking thread. (Pick up both
yarn and marking thread).

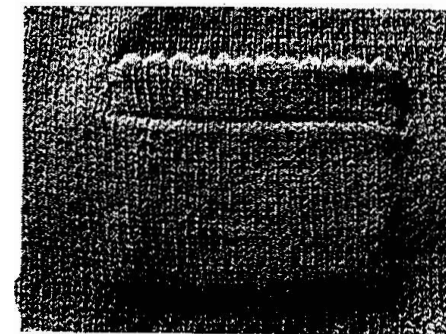
9. Form the pocket lining :

Knit a number of rows equivalent to twice the depth of the
pocket lining; whilst knitting this it is advisable to use
claw weights which should be periodically raised to pre-
vent the extra fabric jumping off the needles.

10. Close the fabric and continue knitting the garment :

- Return to C position those E position needles fur-
thest away from the carriage.
- Knit 1 row. (The C position needles are gathered
into the fabric.)
- Raise the Holding Cam Lever nearest the fabric to
position I.
- Knit 1 row bringing the remaining E position needles
back into operation.
- Reset the carriage for the fabric pattern and conti-
nue knitting.

The pocket will appear as a length of fabric in the centre
of the panel. To finish off it will require to be sewn
down along the inner side selvages and outside the hem
will be sewn down at the side edges.



③ Needles beyond
Pocket. to "C" pos
Knit across
H.C.L. I
Knit across all
needles.

POCKETS.

These are basic instructions, some changes have to be
made for differences in sizes of pockets, thickness of
yarns, etc.

This method in which the pocket is knitted into the fabric
saves binding off or picking up stitches after completion
of the garment and should be worked at the position
required :-

- Set the carriage for Knit (Code 1) with both Holding
Cam Levers on II.
- On the side furthest from the carriage raise to E
position all needles not to be used in knitting the pocket.
- Knit 1 row.
- On the side furthest from the carriage raise to E
position all needles not to be used in knitting the pocket.
- Feed into the yarn feeder, together with the wool
already there, a length of mercerised cotton or nylon
sewing thread of a colour different from the knitting yarn.
This will be used as a marker to facilitate step 8.
- Knit 1 row (using the yarn and marking thread).

The pocket is now knitted using the intermediate B
position needles, and can be plain (without a hem) or
with a straight plain or fancy hem or picot edged hem.
The samples given are for picot edge, and bordered hems.

7. Form the hem :

(i) With picot edge :-

- Knit 7 rows.
- Transfer every second stitch from B position
needles to adjacent needles.
- Return all empty needles to B position.
- Knit 7 rows. (A row of holes is formed as
stitches are picked up onto the empty needles).

(ii) With coloured band :

- Knit 6 rows.
- Change colour of yarn in feeder.
- Knit 4 rows.
- Change yarn in feeder to original colour.
- Knit 6 rows.

BUTTONHOLES

Making a Horizontal Buttonhole

1. Determine the position of the Button-hole;
2. Purl the stitch nearest to the Selvage; (Fig. PS 15)

Fig. PS 15

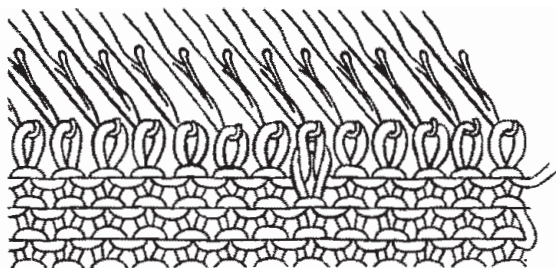
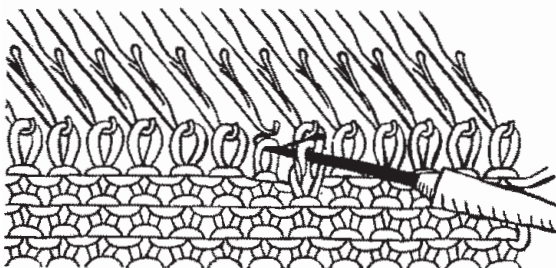
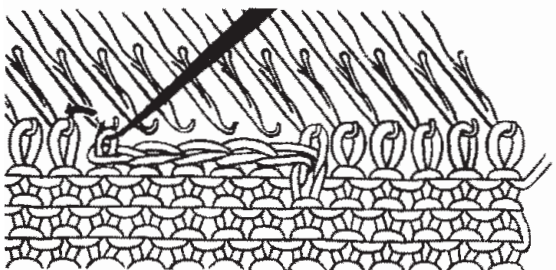


Fig. PS 16



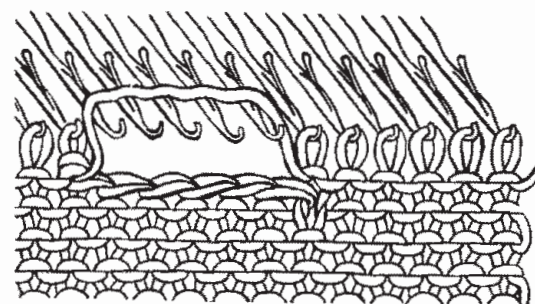
3. Catch the purl half-stitch and bring it forward on to the latchet hook; with that as your first stitch crochet through the next 5 stitches, thus casting off the needle bed;

Fig. PS 17



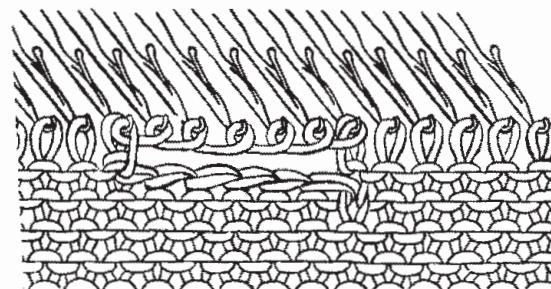
4. Transfer the stitch off the latchet hook on to the next adjacent needle;
5. Knit one row;
6. Over the 5 empty needles there will be a caught thread which is not knitted in (Fig. PS 18).

Fig. PS 18



This thread must now be wound individually round the 5. needles as well as the next adjacent needle, starting from the side furthest from the selvage (Fig. PS 19);

Fig. PS 19



7. Raise the needles with the wound loops and the adjacent needles on either side to "E" position;
8. Both Holding Cams on Position I, knit the row. Continue knitting according to the pattern up to the position of next Button-hole and start from 1 again.

TO KNIT A VERTICAL BUTTONHOLE.

1. Knit up to the row where the buttonhole starts.
2. Divide the fabric at the Buttonhole position, so as to knit first the side of the fabric nearest the carriage, by placing into E position all needles on the side of the buttonhole furthest away from the carriage.
3. Set both H.C.L. on II.
4. Knit on the B position needles at the side nearest the carriage as many rows as are required for the buttonhole, the carriage to rest at the same side as it started.
5. Break the thread.
6. Raise to E position all remaining B position needles.
7. Transfer the carriage to the opposite side of the needle-bed. (The carriage may be passed across the needles as they are in E position with the Holding Cams in Position II).
8. Place into C position those needles raised to E position in Step 2.
9. Knit the same number of rows as knitted in Step 4 to complete the fabric on the opposite side of the buttonhole.
10. Place the H.C.L. nearest the fabric into position I.
11. Continue knitting. The raised H.C.L. will close the buttonhole by bringing the E position needles back into action (B position) to continue knitting the fabric.

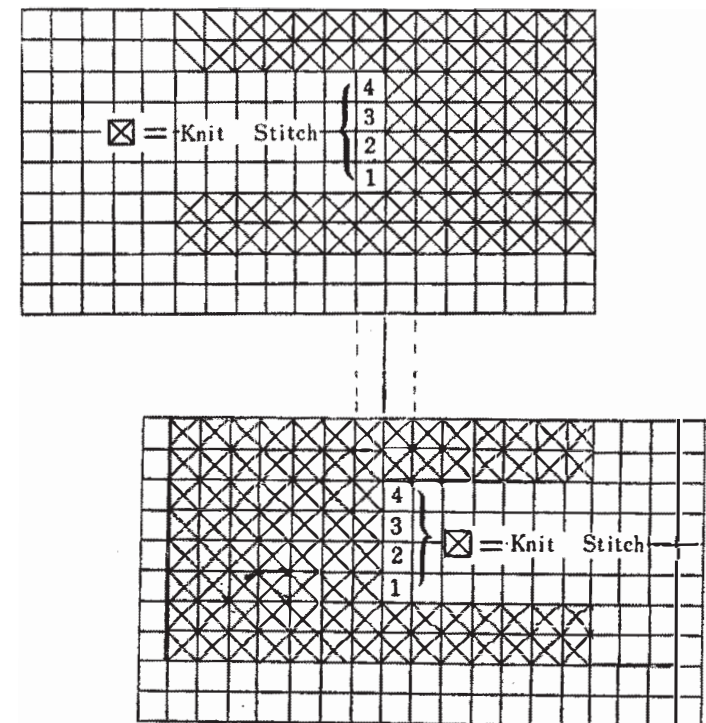


Fig. PS 20

LOOP STITCHES

For these two patterns a ruler or rod is required as an accessory. The width of the ruler or circumference of the rod will determine the length of the loops formed.

Single with the loops showing on the wrong side (Fig. PS 21)

1. Pattern Selector on Knit.
2. Both H.C.L. Raised.

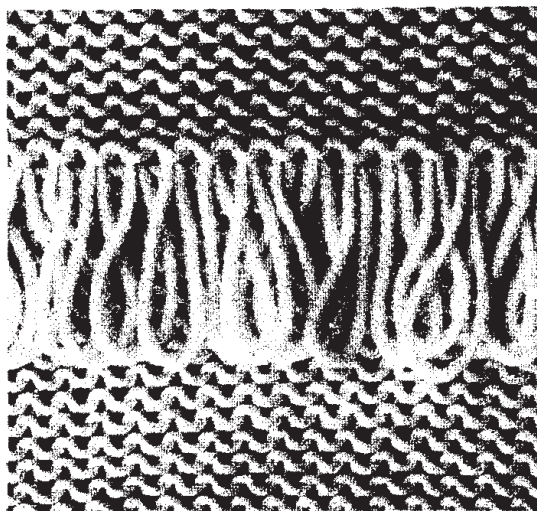


Fig. PS 21

Pattern Stitch

3. Raise the needles to their fullest extent.
4. Open latches.
5. *From a separate ball, loop the yarn into the hook of the needle and around the rod. Continue to hook the yarn on to each needle and around the rod to end of row. (If a double loop is desired, use two strands of wool together.)
6. Knit this row through. (Remember, there will be a pull from the rod if the yarn is wound tightly, so handle the carriage gently.)
7. Knit five rows plain.
Rep. pattern from Steps 3 to 7.

*An alternate method is illustrated in the next column — This is only suitable for Purl loops.

*Alternate Method (Illustrated)

1. Press in both Partial Knit Buttons (Code 3).
2. Pass carriage across the needles — an unknitted thread will lie across the needles.
3. Hang the cast-on comb level below the needle-bed (Figs. PS 22-23).
4. Raise needles to position D (Latches open).
5. Bring yarn in front of gate pegs and return the needles to Position C, with the latches closed over the yarn. (Fig. PS 24)
6. Starting on the side away from the carriage draw the yarn down between each needle onto the hooks of the cast-on comb. (Figs. PS 25 & 26)
7. Check that the carriage feeder is properly threaded. Both HCL's on I, depress Pattern Selector Button Knit (Code 1) and knit across.

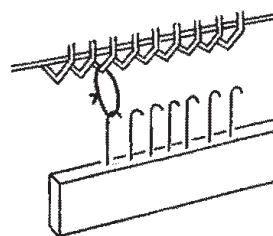


Fig. PS 22

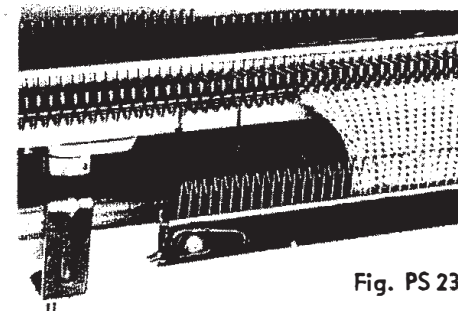


Fig. PS 23



Fig. PS 24

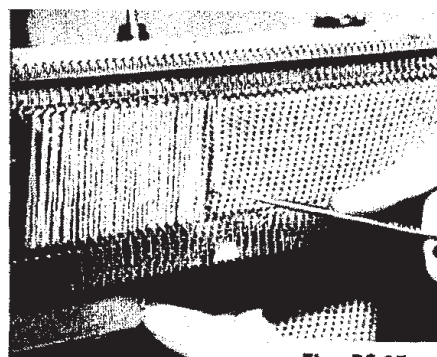


Fig. PS 25

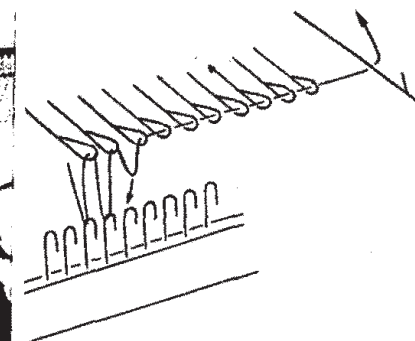
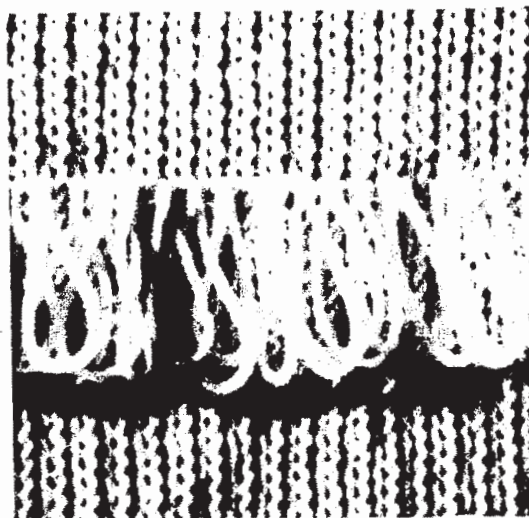


Fig. PS 26

Double with loops showing on the stocking stitch side (Fig. PS 27)

1. Pattern Selector on Knit.
2. Both H.C.L. Raised.

Fig. PS 27



Pattern Stitch

3. Knit one row.
4. Raise the needles sufficient for the stitch to drop below the latchet.
5. Open all latchets. (The stitches now on the needles must remain below the latchets.)
6. *Using a different ball of wool, loop wool anti-clockwise into the hook of the first needle and around the ruler or rod. Continue to hook wool in turn on each needle and around the ruler or rod to end of row.
7. Using a needle guide or straight edge, lower all needles together to B Position. This will knit the stitches through the loops hooked on to the needles.
8. Remove the ruler or rod.
9. Pull the knitting well down, to pull the loops into long stitches.
10. Knit one row.

*An alternative method is sketched below: (Fig. PS 28)

11. Transfer the stitches formed in Step 3 on to the needles as for making a hem.
- IMPORTANT:** Transfer the *stitches*, not the loops.
12. Knit five or more rows as required between patterns. Rep. from Step 3 to Step 12.

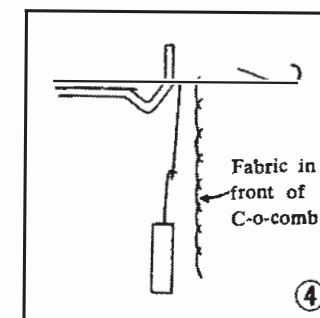
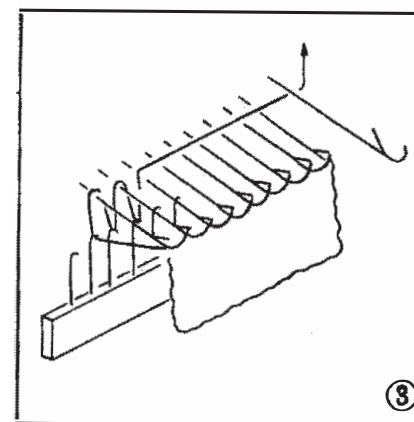
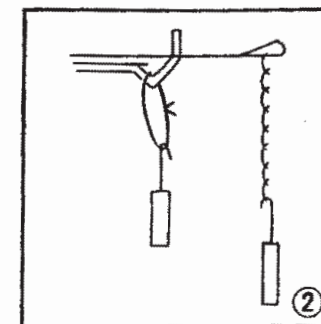
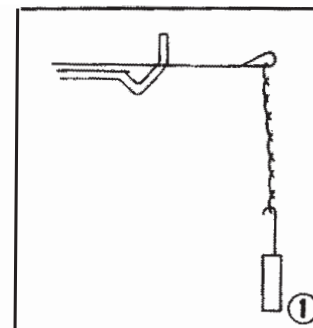


Fig. PS 28

SHAPING A V-NECK

Notes:

MOSS STITCH: Carriage on right. 1. Push in left hand Tuck Button. 2. Press buttons 1.3.5.7. 3. Reverse dial on plus. 4. Set lever. 5. Hold work. 6. Knit 2-rows. 7. Reverse dial on minus. 8. Set lever. 9. Knit 2-rows. Repeat from No.3.

N.B. When any knitting is done involving the use of the Tuck Buttons, work must be held well down on the needles, to avoid machine jamming.

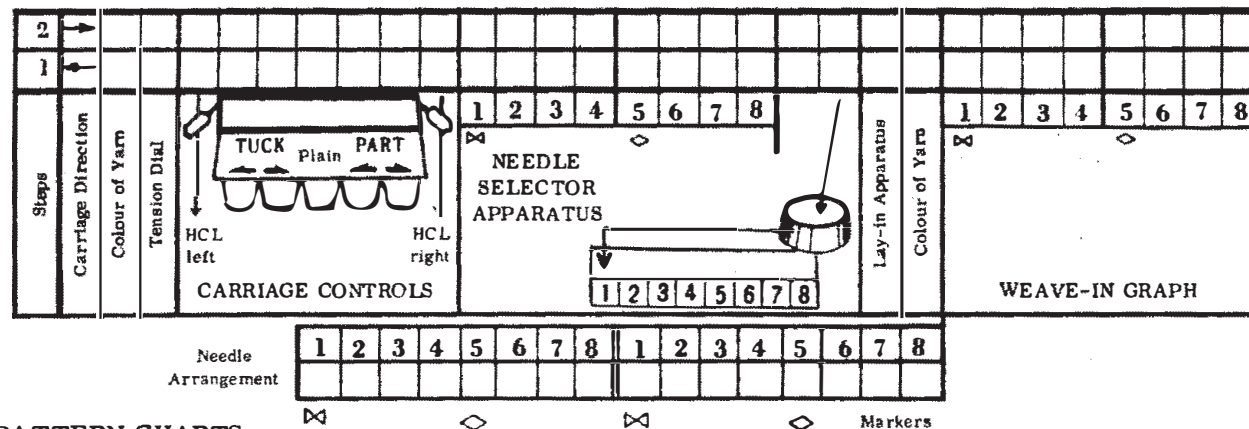
BUBBLE STITCH: Carriage on right. 1. Lower both H.C.Ls. to 111 2. Press buttons 1.5. 3. Slide dial on 1. 4. Set lever 5. Knit 3-rows. 6 Raise H.C.L. nearest the knitting to 1. 7. Knit 1-row 8. Lower H.C.L. again to 111. 9 Slide dial on 3. 10 Set Lever. 11. Knit 3-rows 12. Raise H.C.L. nearest the knitting to 1. 13. Knit 1-row 14. Lower H.C.L. again to 111. Repeat from No. 3.

Stocking Stitch

1. Carriage on right of needle-bed set on Knit.
2. Both Holding Cam Levers on Position II (centred).
3. Transfer the centre stitch to an adjacent needle.
4. Put empty needle out of action (Position A).
5. Raise all needles on the **Left** of the empty needle to Position E.
6. Knit 4 rows (see note (b) above).
7. Remove yarn from feeder.
8. Press in both **PARTIAL KNIT** Saddle Buttons (Code 3).
9. Transfer the saddle across the knitting to the opposite side of the needle-bed.
10. Press in the **Saddle KNIT** Button (Code 1). This will automatically release the "Partial Knit" Buttons.
11. Thread the second ball of wool into the feeder.
12. Push needles at Left of Knitting to C or D Position.
13. Raise needles at Right of Knitting to E Position.
14. Knit 4 rows (see note (b) above).
15. To avoid more changes of the saddle than necessary, knit the next 4 rows (see note (b) above), starting again with the saddle on the **Left** side, then change over to the **Right**. To transfer the saddle to the **Right** side, repeat Steps 7, 8 & 9, and continue knitting as from Step 5.
16. When the right number of rows has been knitted on each side of the neckline, cast off as required by the pattern.

Tucking Pattern

1. Carriage on Right of needle-bed.
2. Both Holding Cam Levers on Position II (centred).
3. Transfer the centre stitch to an adjacent needle.
4. Put empty needle out of action (Position A).
5. Raise all needles on the **Left** of the empty needle to Position E.
6. Set Saddle Selector Buttons to **TUCK** on the **Left** Course (Code 7).
7. Set Needle Selector Buttons 1 & 3 and raise the needles with the Set-Lever.
8. Knit 2 rows (see note (b) above).
9. Release Needle Selector Buttons.
10. Set Needle Selector Buttons 2 & 4 and raise the needles with the Set-Lever.
11. Knit 2 rows (see note (b) above).
12. Release Needle Selector Buttons.
13. Remove yarn from feeder.
14. Thread a length of waste yarn into the yarn feeder (sufficient to knit the needles in Position E).
15. Set both Pattern Selector Buttons (carriage) on **Partial Knit** (Code 3).
16. Raise Holding Cam Lever nearest to the Knitting to Position I (If you are using a row counter disengage it).
17. Knit across.
18. Return H.C.L. to Position II.
19. Unravel the stitches knitted with waste yarn and return all needles to B Position. (If you are using a row counter re-engage it).
20. Thread the second ball of wool into the feeder.
21. Change Carriage Pattern Selector Buttons to **TUCK** on **Right** course (Code 5).
22. Raise all needles in the **Right** of the Knitting to Position E.
23. Set Needle Selector Buttons 1 & 3 and raise needles with the Set-Lever.
24. Knit 2 rows (the first 2 of 4 rows — (see note (b) above).
25. Release Needle Selector Buttons.
26. Set Needle Selector Buttons 2 & 4 and raise the needles with the Set-Lever.
27. Knit 2 rows (see note (b) above).
28. To avoid more changes of the saddle than necessary, knit the next 4 rows (see note (b) above), starting again with the saddle on the **Left** side, at the same time alternating the Needle Selector Settings as in Steps 21 and 26, then transfer the saddle over to the **Right** using waste wool again (see Steps 14 to 19) and continue knitting as from Step 5. Remember to change the **TUCK** Pattern Selector Buttons.
29. When the right number of rows has been knitted on each side of the neckline, cast off as required by the pattern.



HOW TO READ PATTERN CHARTS.

To save lengthy description, a simple method of charting patterns has been devised. These charted patterns can be used equally well for Fair-Isle or Weave-in Patterns; however a few words of explanation first.

In Fair-Isle patterns the design will frequently be clearly seen in the chart. Because there are 8 buttons, most of the designs have been chosen to spread over 8 needles, (i.e. 8 stitches in 1 row) resulting in a repeat of the pattern every 8 stitches. Assuming a pattern only covers 5 stitches, if the space between patterns is taken up by 3 background stitches, the constant of 8 will be maintained thus speeding the patterning process. By using a lesser or greater number of stitches between patterns, the benefit of the 8 buttons speed would be lost and needles would have to be set by hand.

Many of the patterns when seen on the chart appear unfinished or unbalanced. This is because only one series of 8 consecutive stitches is charged; however, when the entire pattern is seen repeated along the row of knitting, the full balanced pattern becomes apparent.

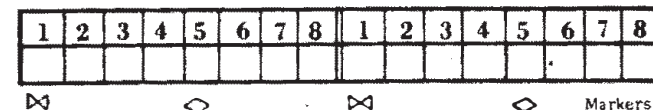
Now for the chart:

Because the 1st row of knitting is on the lowest level and each consecutive row above it, the charts are read upwards so as to simulate the knitting action as near as possible.

For this reason the "headings" are also at the base of the chart. In this section the corresponding operating parts of the knitter are illustrated beneath the relative chart squares for greater clarity.

NEEDLE ARRANGEMENT:

Before any pattern can be started it is necessary to set the needles in the required positions. The patterns therefore start with the Needle Arrangement. Two sets of 8 are shown because it is possible to form a pattern without all needles being in regular patterns of eight.



The top line of this section is numbered 1 to 8 in accordance with the needle indicator on the needle bed; below that the position of the respective needles at the start of the pattern is shown. An "A" in a square means that the corresponding needle is in the A position i.e. out of action; a B denotes the needle as being in action.

THE STEPS:

Each step is numbered to make it easier to follow the pattern.

If the row counter is in use, keep a note of the row number at which the first step is taken; this will help to avoid confusion (e.g. assuming the row counter reads 87 before starting the 1st step and after an interruption you return to the machine to find the row counter at 93 you will know you have completed 6 steps of the pattern). If the row counter is not in use set it at '0' before starting the pattern; put the tripper in action then as each step is completed the row counter will note it for you.

CARRIAGE DIRECTION:

The direction of the movement of the carriage is shown by the arrow heads. Thus in step 1 if the arrow head points to the left, it means the carriage will travel in the left course; (see page PS 11 to do this it must start from the right of the needle bed.

MARKINGS:

In all patterns each step and carriage movement will be indicated by various marks in the relative squares or columns.

In the other columns a mark denotes an action or setting of a particular control. If it appears on the lowest or any other row and is not repeated in the subsequent rows, it means that that action or setting remains operative in the following rows until it is altered by a different mark. In this way the chart is kept clear of all confusion and only the changes are noted.

COLOUR OF YARN:

This first "colour of yarn" column will indicate the colour of the fabric yarn. When only one colour is involved for the pattern there will be no mark in this column, the yarn being the one in the feeder.

If the pattern involves two colours these will usually be distinguished as follows :

M or MM representing Main Colour
C or CC representing Contrast Colour

When there are more than two colours M or MC will still usually be used otherwise A is the main colour, the other colours being distinguished by succeeding letters of the alphabet e.g. B, C, D, E, etc.

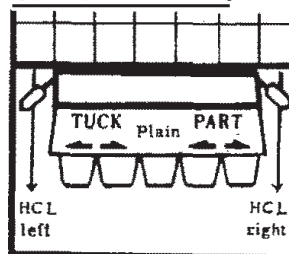
One other mark will appear in this column - The "O". If this appears it means that the carriage must be operated in the direction of the arrow without yarn in the feeder .

This will occasionally happen in Fair-Isle patterning when the required yarn is at the opposite side of the knitting - In such cases be sure to press in the "Part" button for the appropriate course to avoid dropping stitches. This will usually also be indicated in the section of the chart showing the Pattern Selector Buttons.

TENSION DIAL:

In this column appropriate tension dial readings will usually be shown only in cases where a certain type of yarn is recommended. If no special yarn is recommended and a dial reading is shown then such tension will be appropriate for average 3 or 4 ply yarn.

THE CARRIAGE:



The Holding Cam Levers and the Pattern Selector Buttons are illustrated; each control in its appropriate position having a set of squares to itself.

a) The Holding Cam Levers: These are on either side of the carriage and the position of the respective levers will be shown by the marks I or II or III in the relative squares; such readings corresponding with the markings on the carriage.

b) The Needle Selector Buttons: Each button has a set of squares to itself. To denote which button is to be pressed in, the appropriate square above it will be shaded. If two buttons are to be pressed in two squares will be shaded.

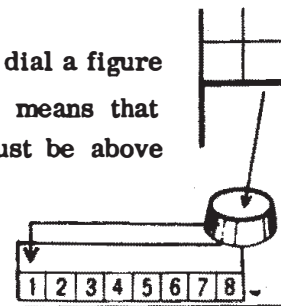
THE NEEDLE SELECTOR BUTTONS : 1 - 8 are indicated in the next section.

Those buttons to be depressed and set are indicated by shaded squares. Thus if in a step a square or series of squares is shown shaded the corresponding buttons must be depressed and the set lever used to raise the required needles. Thereafter one or more rows may not be shown as shaded squares; this means that the set key is not to be used in those rows; if the same sequence of shaded squares is repeated in a later step then the set key is to be used again to raise the needles.

The indication to use the "0" or Release Button comes when there is a radical change in the button setting as when one or more buttons are not required for a subsequent row. If however one or more additional buttons are to be depressed without releasing any previously in use it is not necessary to press the "0" button - merely depress the extra button or buttons.

THE NEEDLE SLIDE DIAL:

In the column above the slide dial a figure from 1 - 8 will be shown. This means that the 1 on the moving indicator must be above the number corresponding with that on the chart on the fixed indicator.



There must be no confusion in the understanding of the operation of the Needle Selector Buttons and the Slide Dial. The chart shows the Buttons to be depressed - NOT the needles to be raised; these latter are controlled by the position of the Slide Dial.

LAY-IN PATTERNS:

Patterns where the Lay-in apparatus is used have 3 extra columns as follows :-

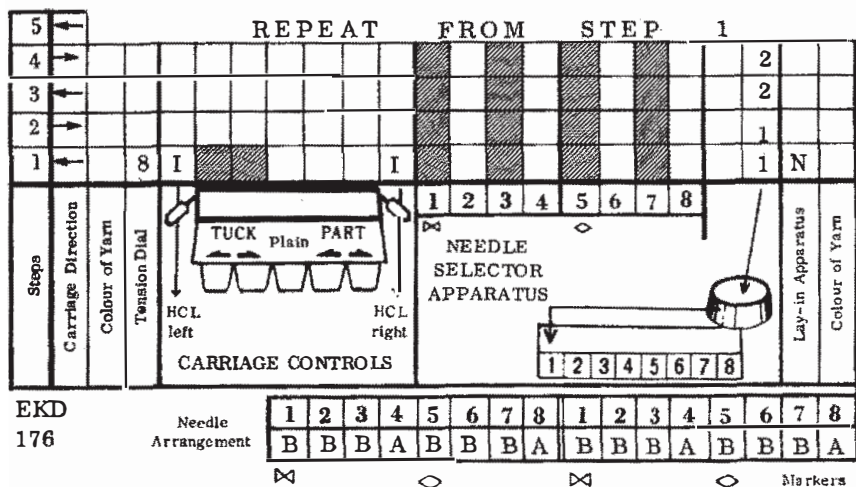
1) Lay-in Pattern Apparatus: In the appropriate squares the letters N or W will appear. Set the Lay-in controls (i.e. both sets of Lay-in cam levers and brushes) in the positions indicated by the letters N or W in the relative squares.

2) Colour of Yarn: This second "colour of yarn" column is to indicate the colour of yarn to be used for weave-in patterning. The same symbols will be used in this column as in the first colour of yarn column.

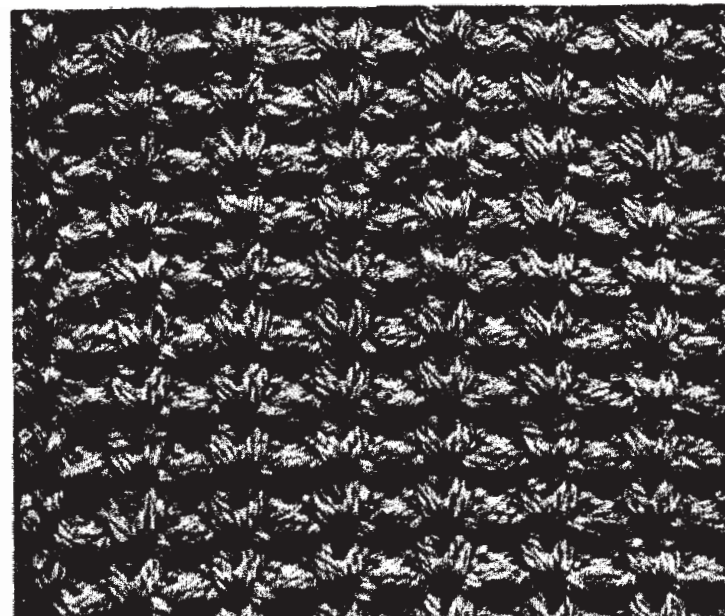
3) Lay-in Column: The last 8 squares will show the Lay-in pattern requirements and which stitches will actually catch (or weave-in) the lay-in yarn.

Plain stitches (the front of the fabric) are represented by an upright line in a square purl stitches (the back of the fabric - i.e. the side facing the operator when knitting) are shown by a horizontal line in the square the course of the weave-in yarn is then outlined over or below the stitch.

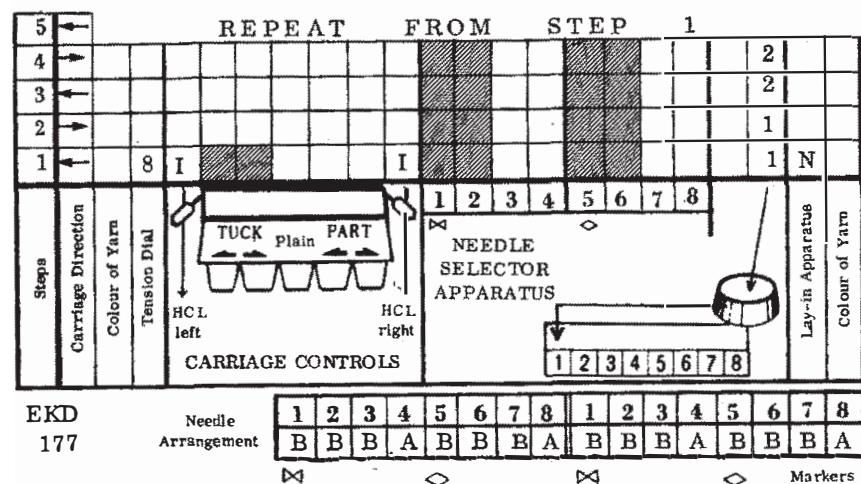
THE PICKER: In certain Fair-Isle patterns "C" position needles are used. In such cases the picker is ideal for setting the needles. To indicate this the word "PICKER" is written along the intermediate line between the respective steps with an arrowhead showing the direction the Picker is to be operated across the D or E position needles.



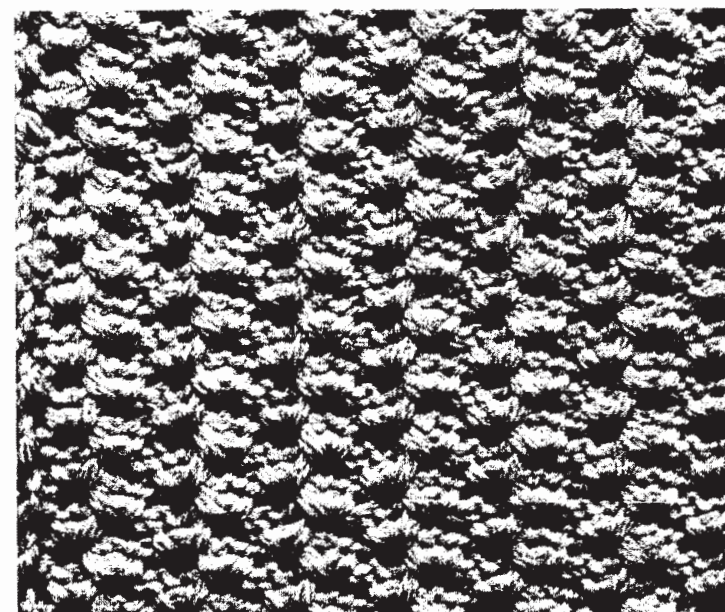
Yarn Used: Two threads of Baby Wool



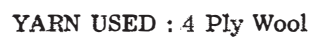
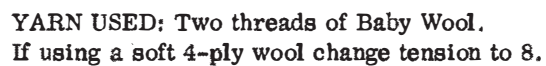
EKD 176

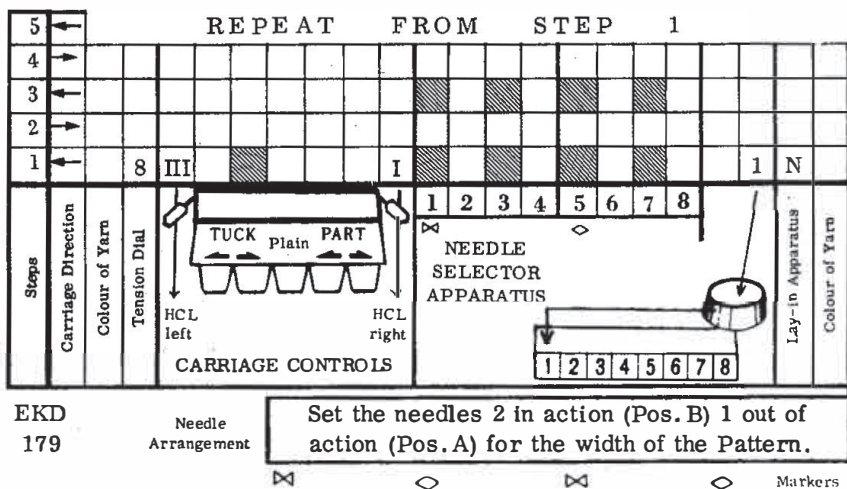


YARN USED : 2 Threads Baby Wool



EKD 177

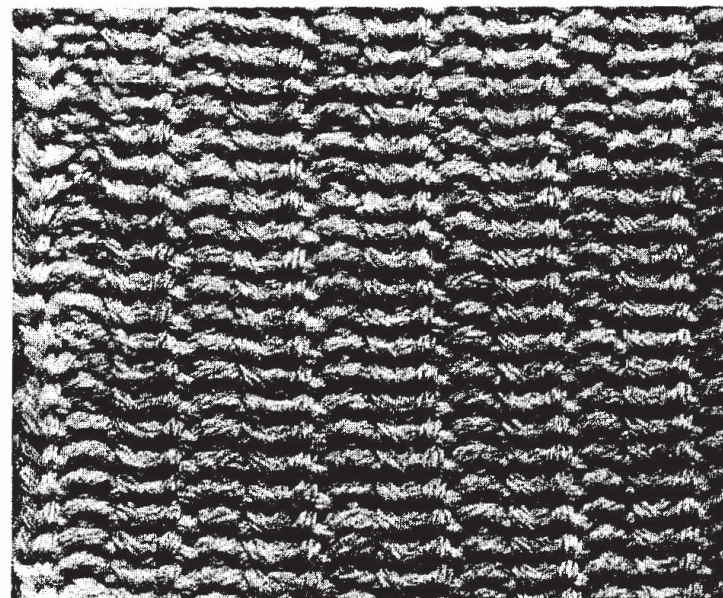




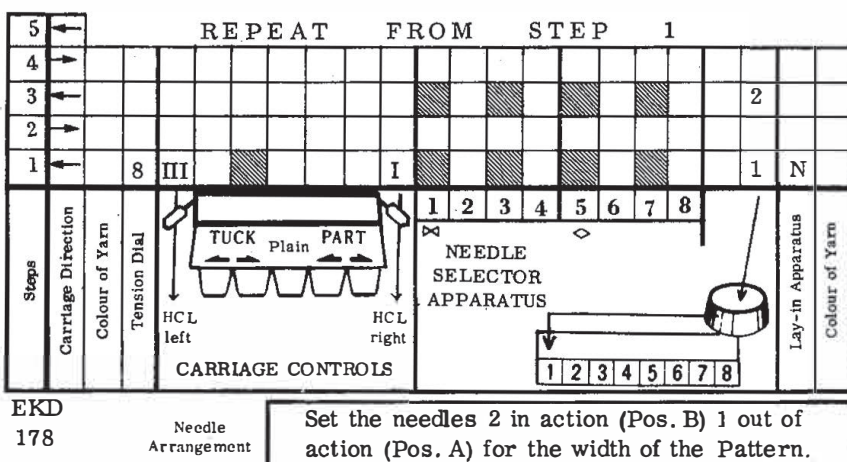
EKD
179

Needle
Arrangement

YARN USED : 2 Threads Baby Wool



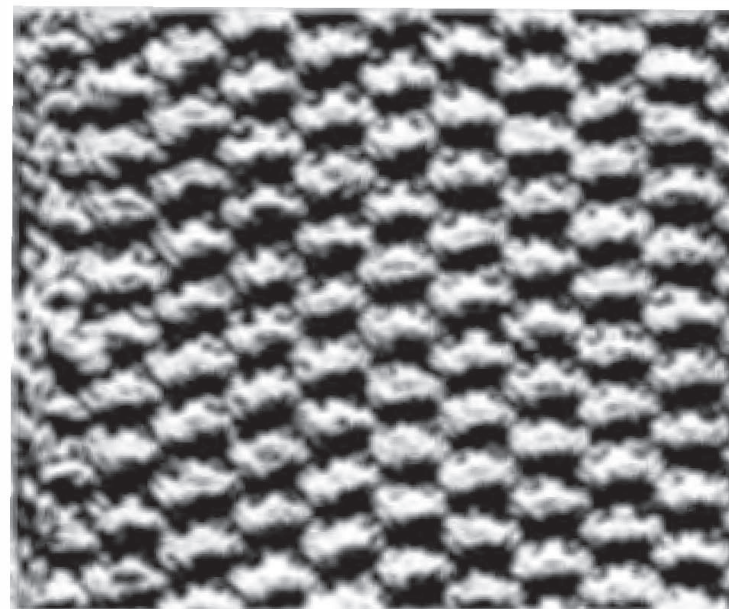
EKD 179



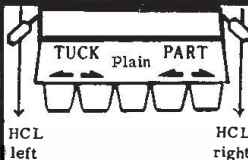
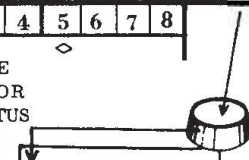
EKD
178

Needle
Arrangement

YARN USED : 2 Threads Baby Wool



EKD 178

29	←	REPEAT FROM STEP 1																			
28	→																				
27	←																	2			
26	→																				
25	←																	3			
24	→																				
23	←																	4			
22	→																				
21	←																	5			
20	→																	6			
19	←																				
18	→																	7			
17	←																				
16	→																	8			
15	←																				
14	→																	7			
13	←																	6			
12	→																				
11	←																	5			
10	→																	4			
9	←																	3			
8	→																	2			
7	←																				
6	→																				
5	←																				
4	→																				
3	←																				
2	→																				
1	←	7	III					I										1	N		
Steps	Carriage Direction	Colour of Yarn	Tension Dial																	Lay-in Apparatus	Colour of Yarn
				1	2	3	4	5	6	7	8										
				1	2	3	4	5	6	7	8										

EKD
180

Needle
Arrangement

1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

Markers

EKD
180

Needle
Arrangement

1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B



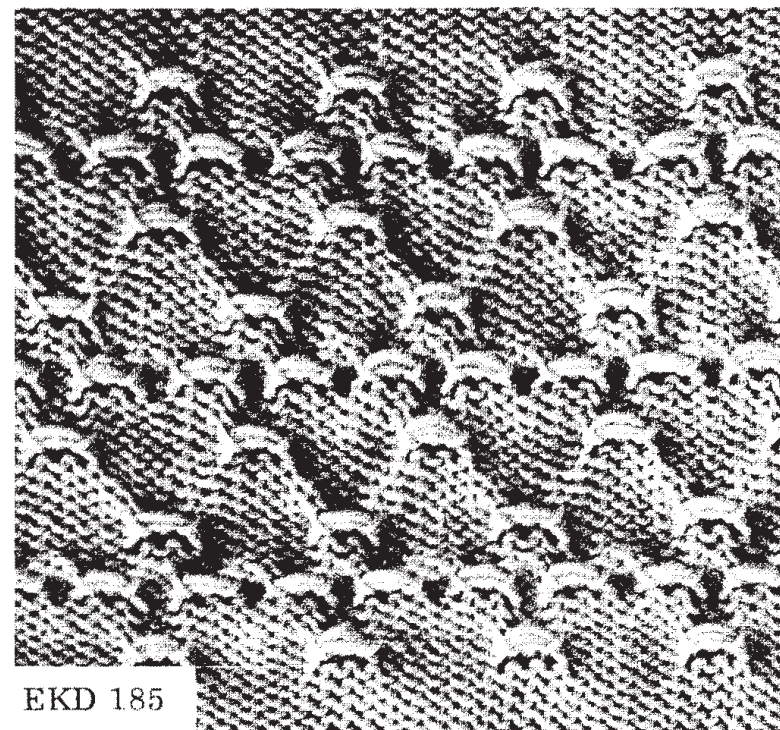
Markers

YARN USED : 4 Ply Wool



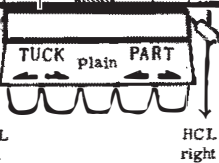
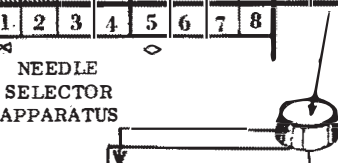
EKD 180

31	REPEAT FROM STEP 1															
30																
29				I												
28																
27																
26				III												
25																
24				I												
23																
22																
21				III												
20																
19				I												
18																
17																
16				III												
15																
14				I												
13																
12																
11				III												
10																
9				I												
8																
7																
6				III												
5																
4				I												
3																
2																
1	6	III			III									1	N	
Steps	Carriage Direction	Colour of Yarn	Tension Dial	CARRIAGE CONTROLS		NEEDLE SELECTOR APPARATUS								Lay-in Apparatus	Colour of Yarn	
				TUCK	Plain	PART										
				HCL left	HCL right											
														</		



EKD 185

YARN USED : Soft 4 ply fingering





23	←	REPEAT FROM STEP 1																																																				
22	→							I																																														
21	←																																																					
20	→		III													2																																						
19	←		I																																																			
18	→																																																					
17	←							III								1																																						
16	→							I																																														
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14	→		III																																																			
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12	→																																																					
11	←																																																					
10	→																																																					
9	←		I																																																			
8	→																																																					
7	←							III																																														
6	→							I																																														
5	←																																																					
4	→		III																																																			
3	←		I																																																			
2	→																																																					
1	←	6	III					III								2	N																																					
Steps	Carriage Direction	Colour of Yarn	Tension Dial																	Lay-in Apparatus	Colour of Yarn																																	
				HCL left								HCL right																																										
				CARRIAGE CONTROLS																																																		
		Needle Arrangement		<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td></tr></table>																1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Markers	
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8																																							
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B																																						



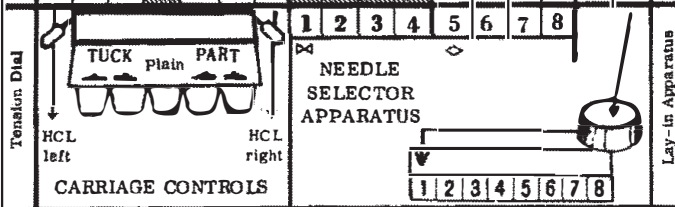
EKD
187

Needle Arrangement

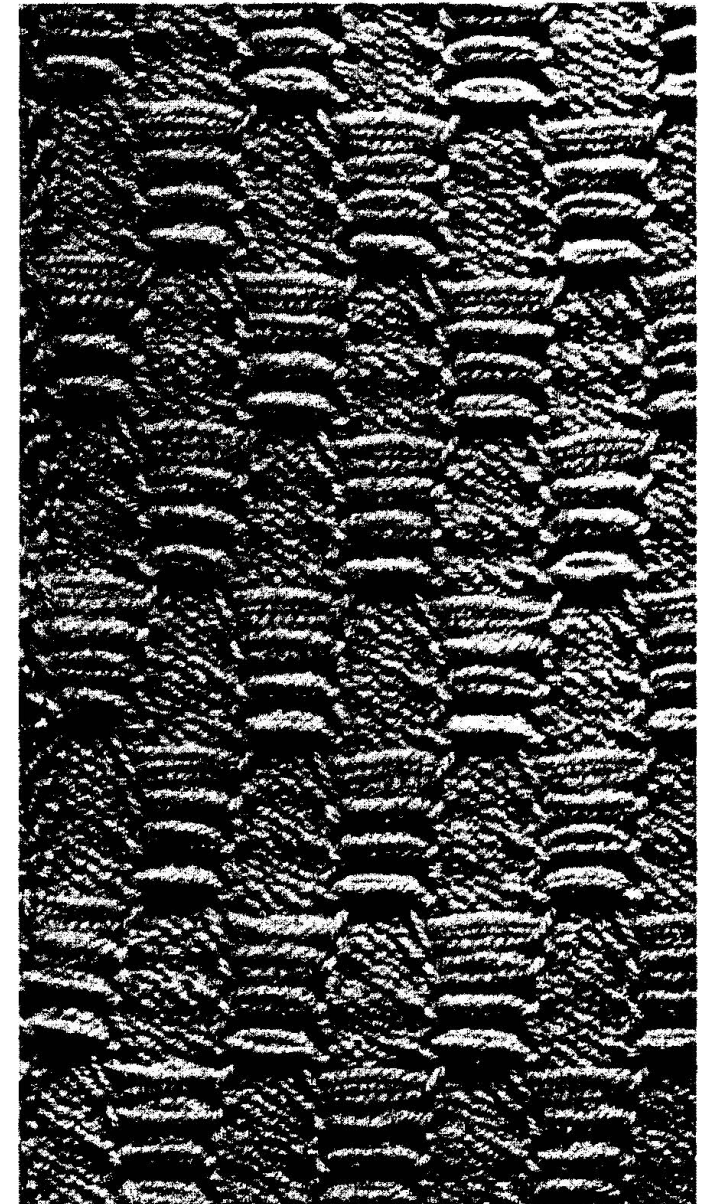
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B





 Markers

YARN USED : Soft 4 ply wool

25	→	REPEAT FROM STEP 1																		
24	→					I														
23	→																			
22	→																			
21	←					III												5		
20	→					I														
19	←																			
18	→																			
17	←					III												5		
16	→					I														
15	←																			
14	→																			
13	←					III												5		
12	→					I														
11	←																			
10	→																			
9	←					III												1		
8	→					I														
7	→																			
6	→																			
5	←					III												1		
4	→					I														
3	←																			
2	→																			
1	←	7	III					III										1	N	
Steps																				
Carriage Direction																				
Colour of Yarn																				
																				
EKD 138																				
Needle Arrangement		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8			
		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
		⌘				◇				⌘				◇				Markers		

YARN USED : Soft 4 ply wool



EKD 138





		REPEAT FROM STEP 1									
31	←									1	
30	→										2
29	←										3
28	→										4
27	←										5
26	→										6
25	←										7
24	→										8
23	←										1
22	→										2
21	←										3
20	→										4
19	←										5
18	→										6
17	←										7
16	→										8
15	←										7
14	→										6
13	←										5
12	→										4
11	←										3
10	→										2
9	←										1
8	→										8
7	←										7
6	→										6
5	←										5
4	→										4
3	←										3
2	→										2
1	←	9	I								1

EKD
137

Needle
Arrangement

1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

Markers

YARN USED : Soft 4-ply wool

YARN USED : Soft 4 ply wool





REPEAT FROM STEP 1									
23									
22									
21									
20									
19									
18									
17									
16									
15									
14									
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11									
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9									
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7									
6									
5									
4									
3									
2									
1	A	4	I			I			

CARRIAGE CONTROLS

NEEDLE SELECTOR APPARATUS

Steps	Carriage Direction	Colour of Yarn	Tension Dial	1	2	3	4	5	6	7	8	Lay-in Apparatus	Colour of Yarn
23													
22													
21													
20													
19													
18													
17													
16													
15													
14													
13													
12													
11													
10													
9													
8													
7													
6													
5													
4													
3													
2													
1	A	4	I			I						1	W B

CARRIAGE CONTROLS

WEAVE-IN GRAPH

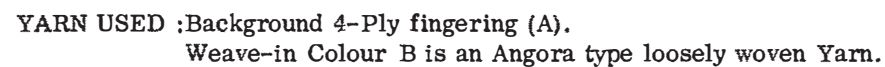
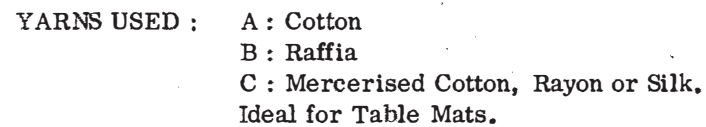
EKD 155

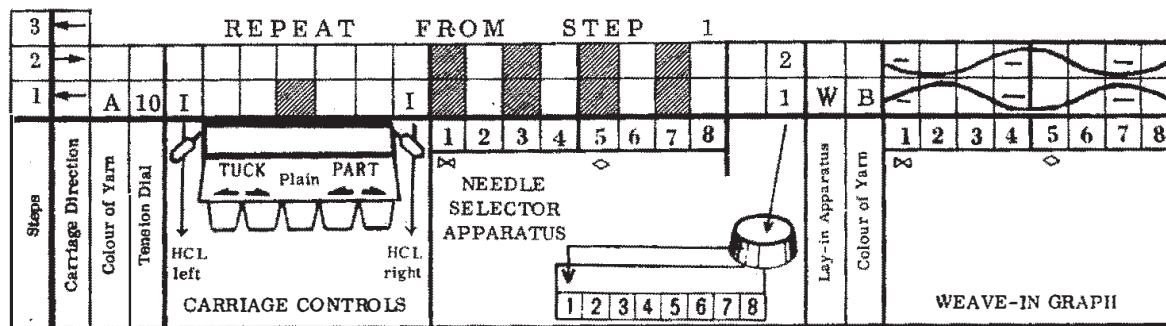
Needle Arrangement

1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

Markers

Page PS 28





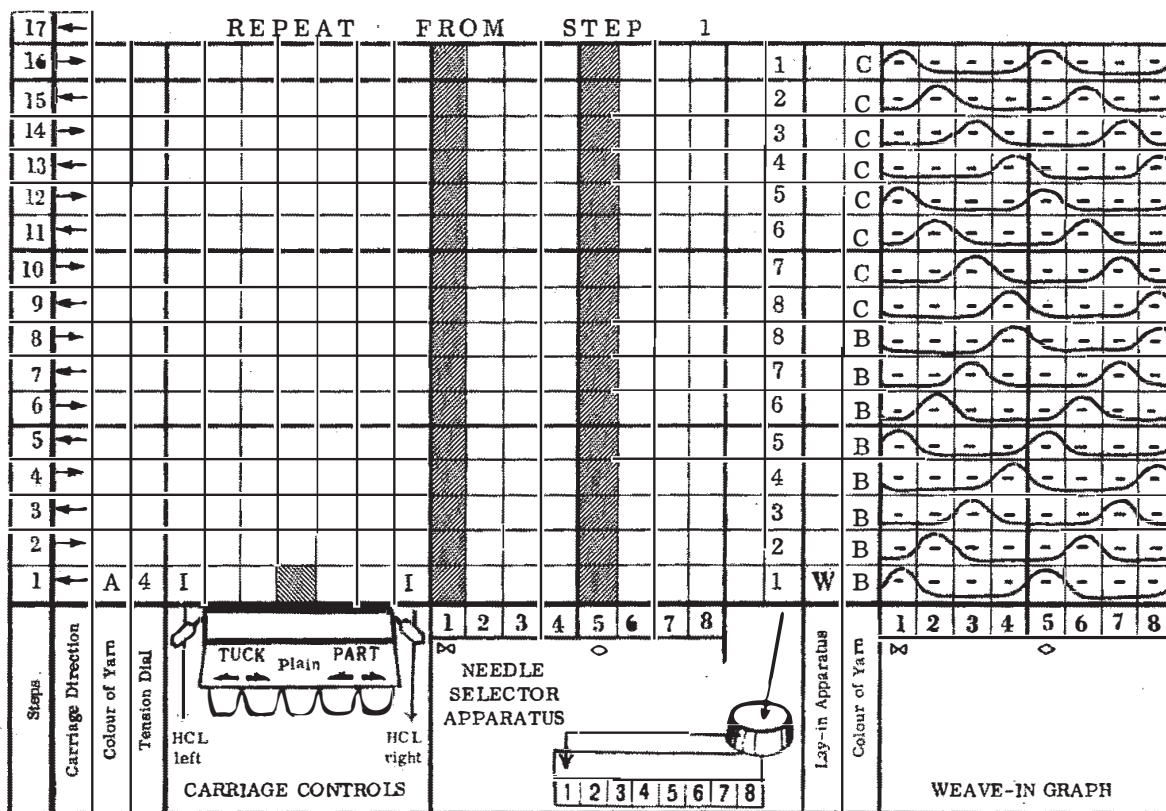
EKD
157

Needle
Arrangement

Set the needles 1 in action (Pos.B) 2 out of action () for the width of the pattern.

⌘ ◇ ⌘ ◇ Markers

YARN USED : Trilon



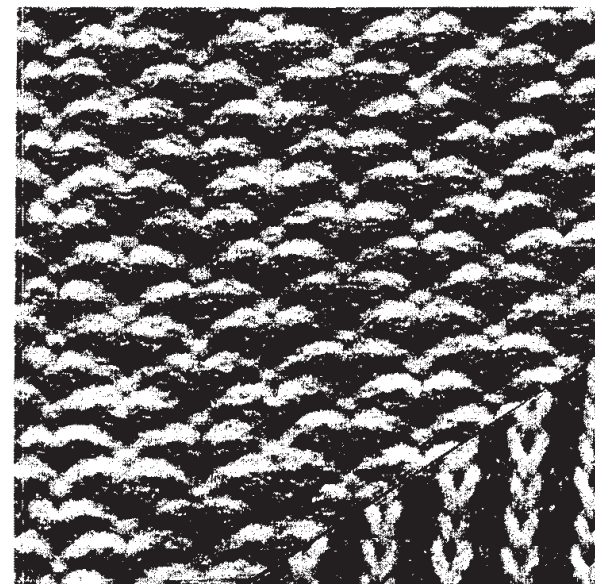
EKD
152

Needle
Arrangement

1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

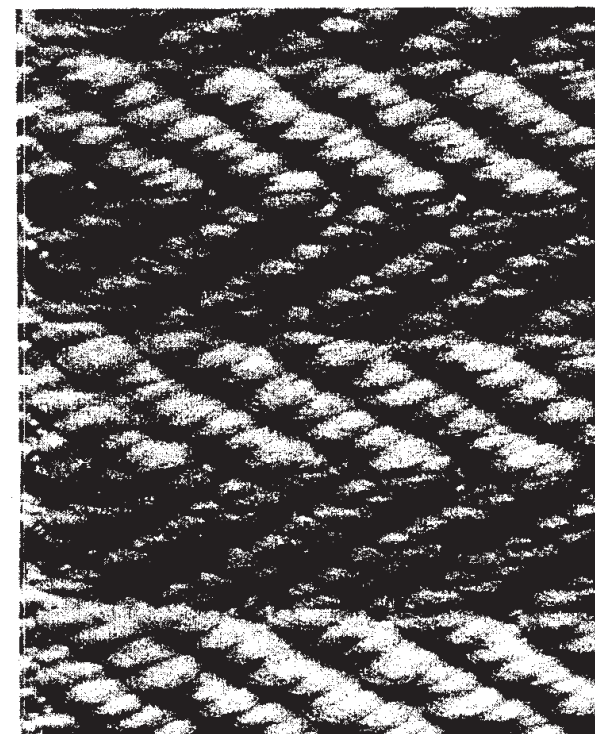
⌘ ◇ ⌘ ◇ Markers

YARN USED : Background (A) 2-Ply Baby yarn
(C) (B) Baby Blanket yarn

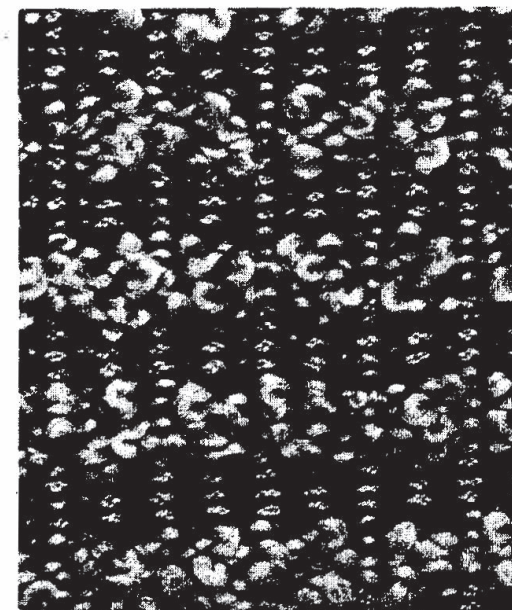
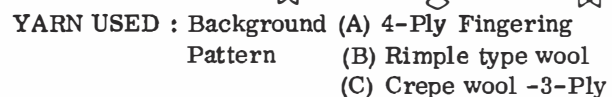


EKD 157

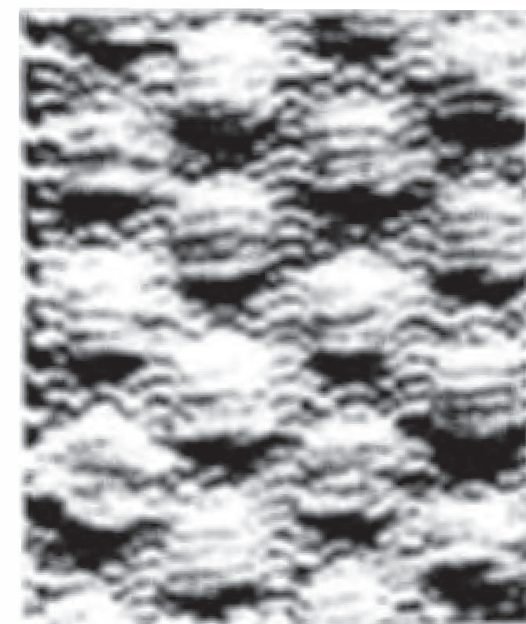
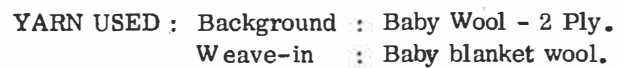
EKD 157 R shows the back of the fabric.



EKD 152



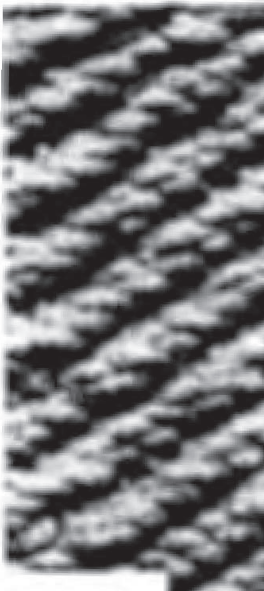
EKD 149



EKD 154

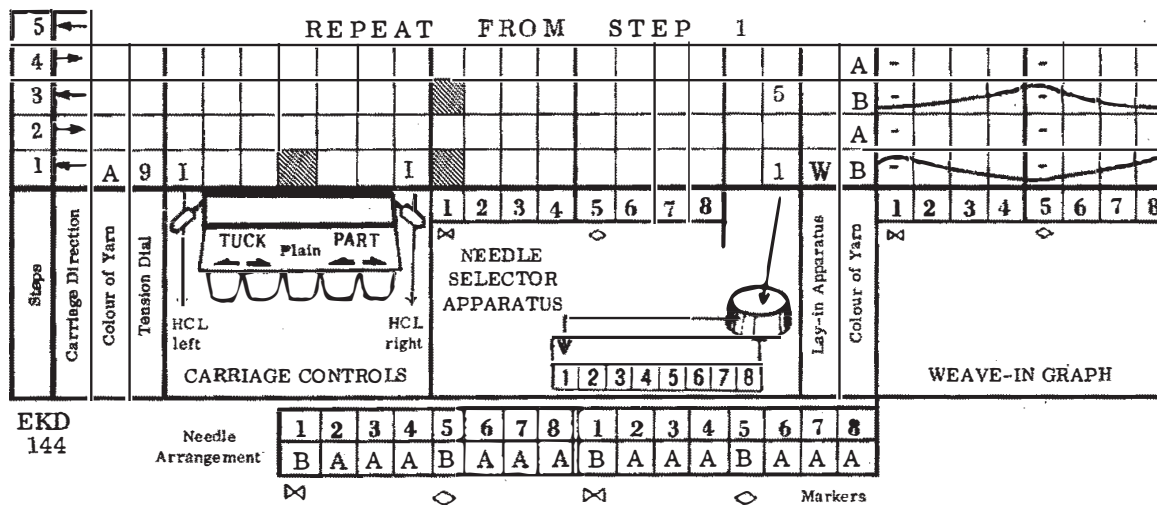
EKD 203

YARN USED : 3 ply fingering for Background (A)
with loosely woven 4 ply yarn for
the weaving-in (B).

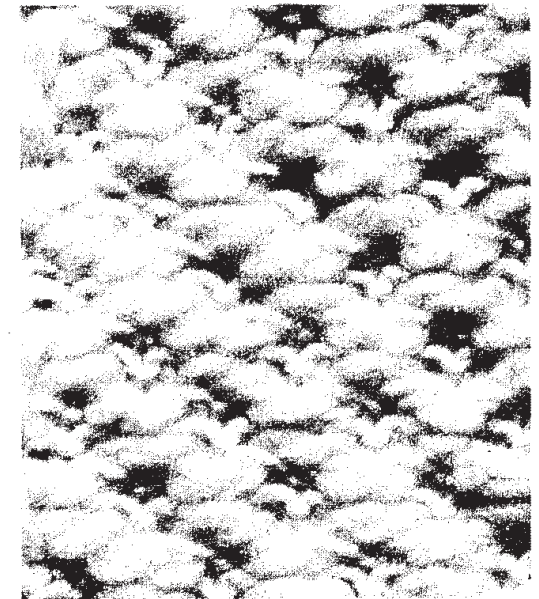


END 101

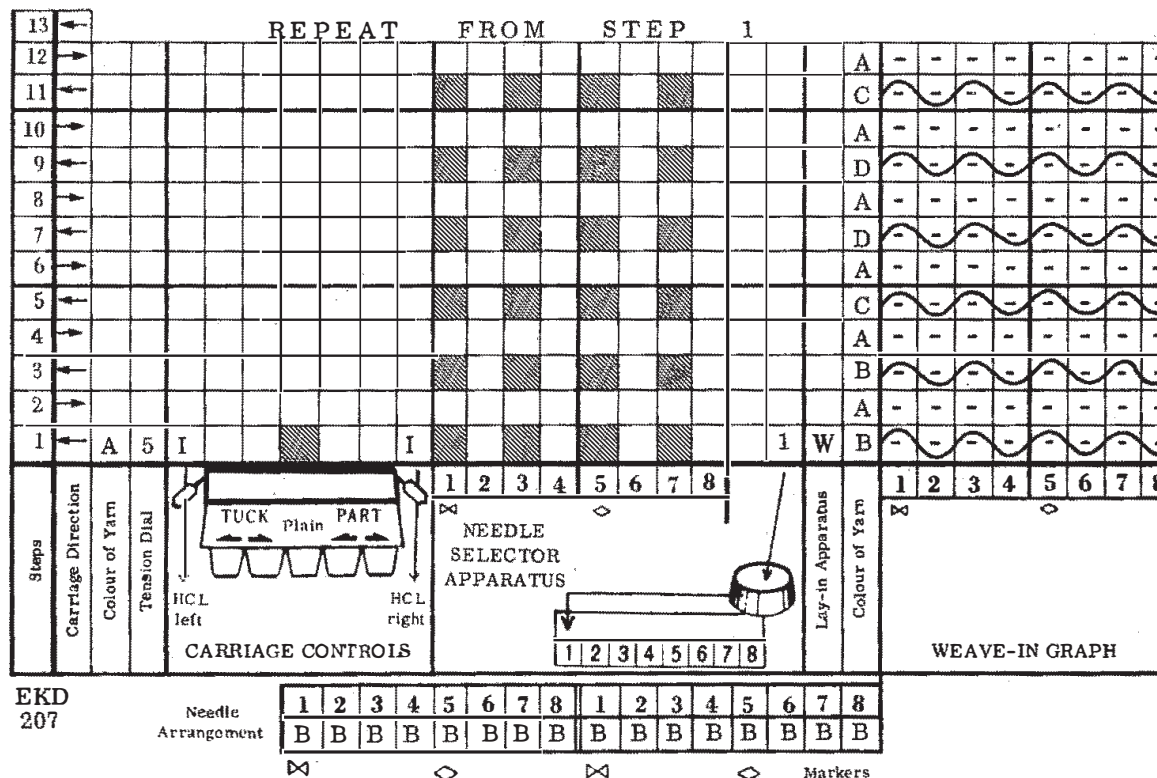
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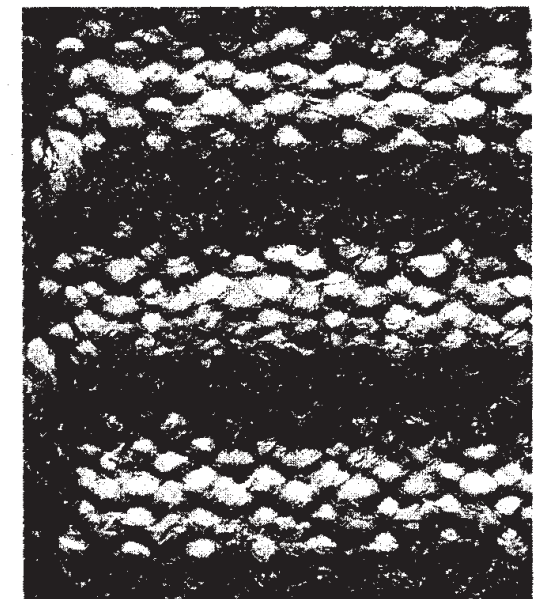
YARN USED : Background (A) : Double Crepe Wool
Weave-in (B) Baby Blanket Wool



EKD 144



YARN USED : Background : A 3 Ply Wool.
Weave-in : Various thick loosely woven 4-ply yarns.



EKD 207

YARN USED : Background : (A) Soft 3-Ply wool.
Tweed Effect: (B) (C) (D) Loosely spun thick 3-Ply fancy yarns.

The figure consists of a grid of 12 small plots (6 rows by 2 columns) and a large, detailed plot. The small plots show various waveforms (sine waves, square waves, etc.) and a grid of numbers (6, 7, 8). The large plot shows a complex, noisy waveform.

EKD 167

KIND 147

D 169

EKD 169

EKD 169

EKD 169

EKD 169

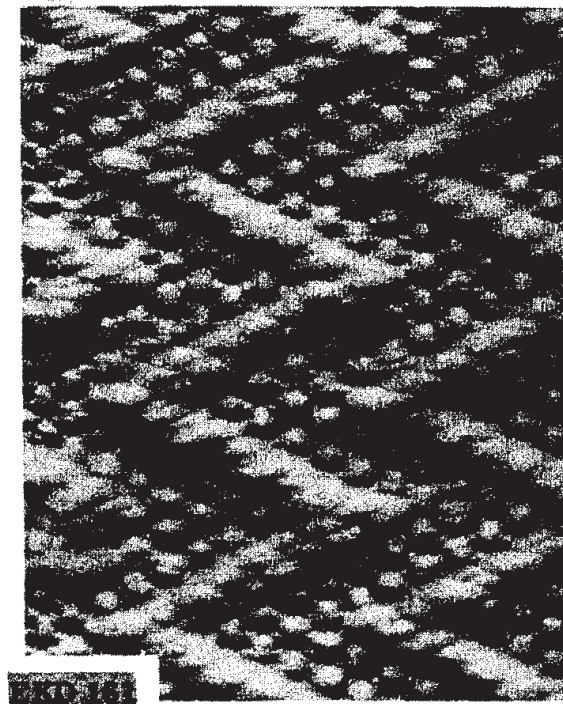
EKD 169



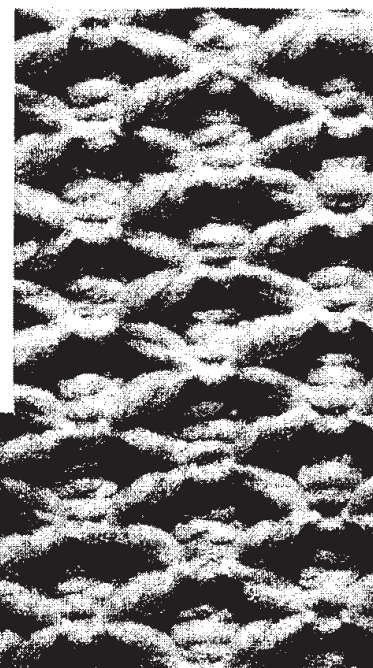
Page PS 37

[illegible]

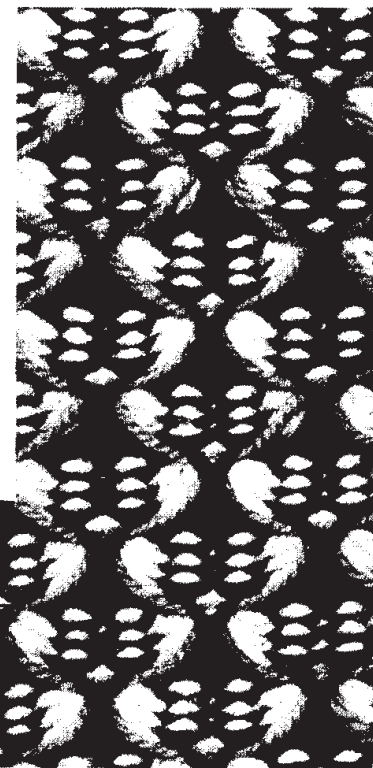
YARN USED : Background 2-Ply Wool.
Weave-in Blanket Wool.



Page PS 38



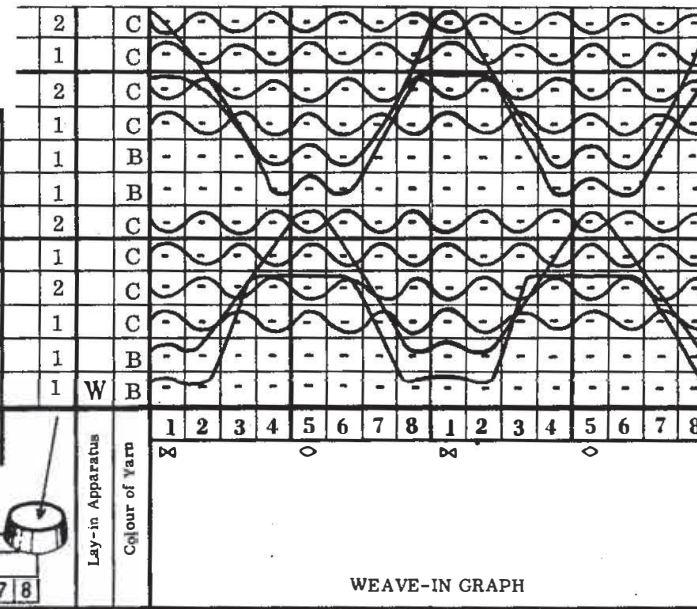
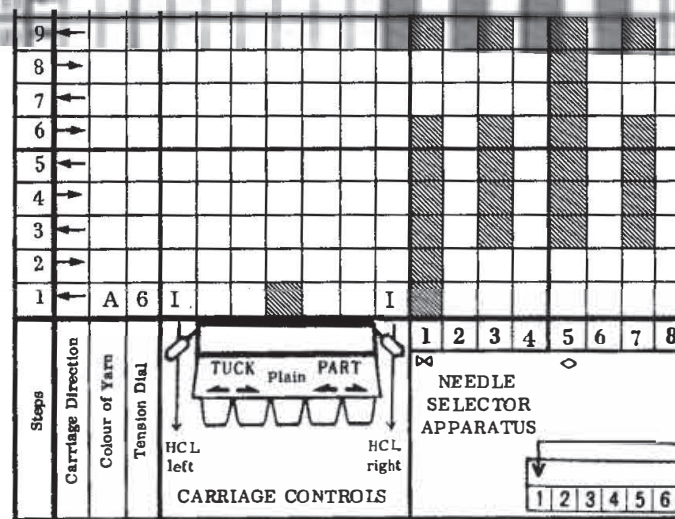
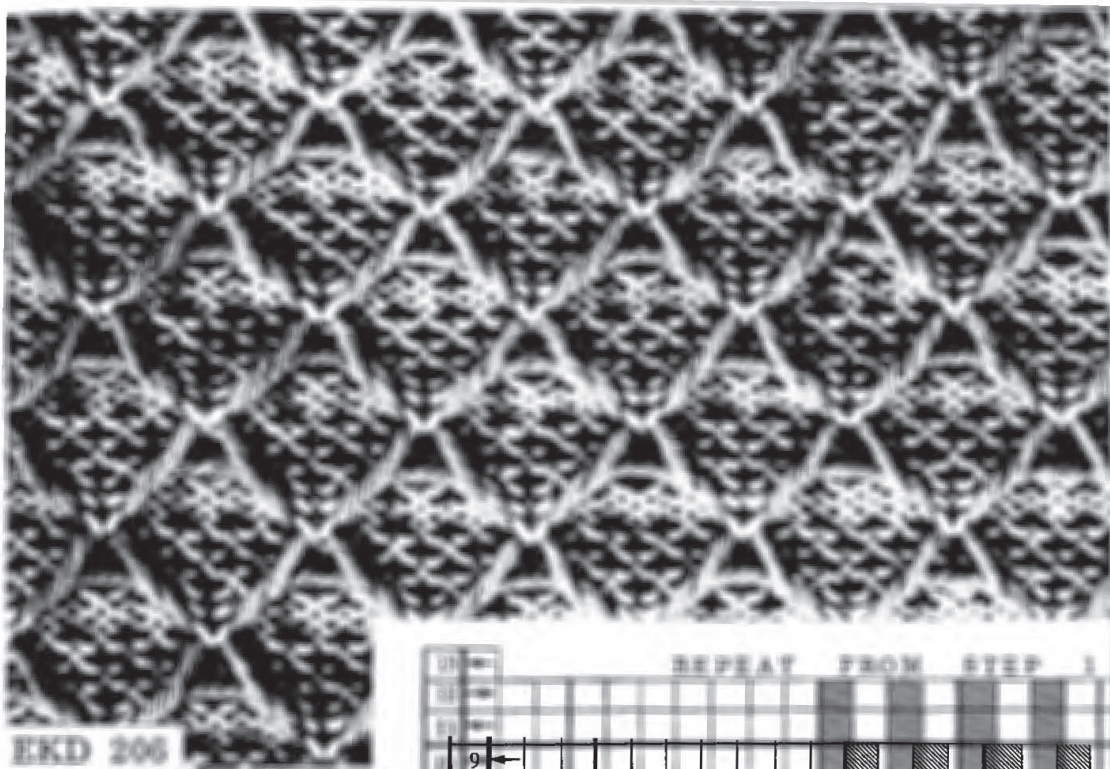
EKD 148



EKD 148

YARN USED : Background (A) : Baby wool
(B) : Baby blanket wool

YARN USED : Background (A) : 4 ply wool
Weave-in (B) and (C) : two differently coloured
2 ply yarns.



EKD	206	Needle Arrangement	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	Markers
			B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	

YARN USED : Background : 3 or 4 ply fingering
 Weave-in : (B) Double crepe or rayon crochet yarn
 (C) 3 ply fingering or crepe



1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

Markers

Weave-in : with 3 ply wool or a Rayon crochet yarn

FAIR-ISLE AND NORWEGIAN PATTERNS.

With the advent of the PB-8 Knitter, Fair-Isle patterning can now be considered to exist in two categories. In the one a greater or lesser number than 8 needles or stitches recur, e.g. a pattern over 9 or more needles or one in which less than 8 stitches occur, and which cannot be made up to 8 by inserting additional background stitches between the patterns. We shall call this the hand-set category because in this category the needle selector buttons cannot be used to set the needles.

The other category caters for patterns over 8 needles or within regular combinations of 7 and 1, 6 and 2, 5 and 3, 4 and 4, 2 and 2, or 1 and 1 needles, wherein the needles can be set automatically by the needle selector buttons.

In either case the Fair-Isle principle is the same, the only difference being the manner of setting the needles.

If a Fair-Isle Pattern is chosen which is not illustrated in this book it would be wise to check the number of stitches comprising the pattern. If a combination as explained above exists, then the pattern can be worked using the 8 needle selector buttons. If not, two possibilities exist, the first to modify the design and the second to set the needles by hand :-

1. Examine the pattern; it may be possible to add in or deduct one or more stitches to bring it within the scope of an 8 needle pattern without detracting from the design, or possibly add an extra stitch or two between patterns to bring them within the category of 8 needle patterns.

When counting the stitches of a design check carefully the first and last stitches, because often the last stitch of one design is the first of the repeat design; it is possible therefore to be misled into thinking that the design has one more stitch than actually exists.

2. Set the needles by hand; this takes a little longer, but is necessary in certain patterns, particularly of the Argyle type.

In Fair-Isle, the picker performs two important functions. Firstly to raise the needles and whilst doing so to open the latches so that the needles will be ready to receive the patterning yarn and secondly to lower the needles thus closing the latches over the patterning yarn to prevent dropped stitches.

In Fair-Isle Patterning by machine the principle is first to knit in the patterning yarn and then the background stitches. To achieve this the background yarn is threaded through the branch tension arm into the carriage feeder whilst the patterning yarns are hand fed, that is the yarn is laid by hand into the open latches of the respective needles.

Do not always judge the appearance of a Fair-Isle pattern by a drawn graph, because most knitted stitches are horizontally oblong and generally Fair-Isle graphs are drawn on squared paper.

An example of this can be seen in Pattern No. EKD. 201 where six rows of four stitches produce a square. On normal square paper the graph would be oblong.

For greater simplicity, the graphs are drawn according to the operation of the Needle Selector Buttons, therefore certain graphs particularly the irregular ones would seem to be back to front when compared with the illustrated pattern. However when the fabric is seen from the front the pattern takes its correct shape.

The patterns on the following pages are all designed for 8 button operation, choose any one of them and work as follows on a piece of fabric in the knitter :-

1. Main colour or background yarn, in Branch Tension Arm and carriage.

2. Carriage Setting :-

- a) Pattern Selector Buttons : Both on Part (Code 3)
- b) Holding Cam Levers : Both on I
- c) Weaving-in controls : on N
- d) Tension : Suitable for yarn used

3. a) Press in the Needle Selector buttons corresponding with one of the Patterning colours.

(On each of the Fair-Isle charts the first eight squares represent the Needle Selector Buttons as numbered, the extra squares represent repeats of the pattern which occur automatically when the buttons are depressed.

- b) Swivel the set lever to raise to C Position the pre-selected needles.
- c) Pass the Picker across the needle bed from right to left - (The needles are raised to D Position).
- d) Lay the appropriate colour yarn in the open hooks of the raised needles starting from the side on which the saddle is resting.
- e) Pass the Picker across the needle bed from left to right. (The needles are drawn back to C Position and the latches closed over the patterning yarn).
- f) i) Pass the carriage across the knitting to knit in the patterning colour.
ii) Return the carriage across the knitting to be in readiness for the next action (no knitting movement will take place as the needles will now all be in B position and the Part buttons being depressed have no effect on these needles).

g) Release the pre-selected needles (Press the "0" button).

h) Repeat from (a) to (g) for each additional colour.

The next step is to knit in the background colour as follows :-

4. a) Press in all buttons not used in 3(a) to (h) above.

b) Swivel Set Lever.

c) Pass saddle across the knitting (only once) and the background yarn will be knitted in to the needles raised in 4(b) above.

d) Release the needles.

Steps 1 to 4 above must be repeated for each row of knitting - Practise them because once learnt it is actually quicker to knit each row than it is to read these few lines!

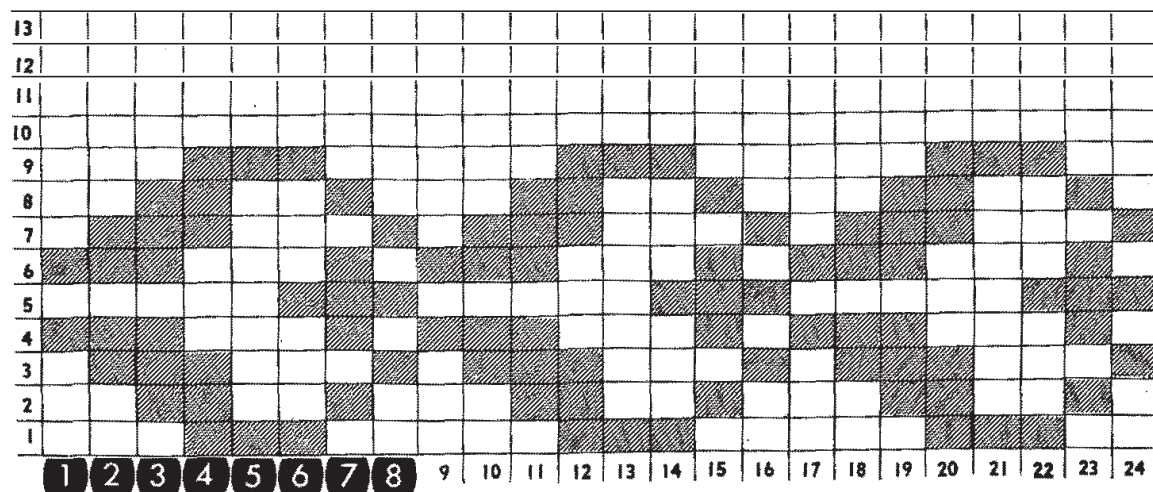
A few hints will help - The above pre-supposes that patterns will be adjacent to each other in groups of 8 needles. If you wish a space of 8 stitches between patterns, after each step 3(b) return to position B each alternate group of raised needles, but see that these needles are then raised manually after step 4(b).

No mention has yet been made of the Slide Dial in Fair-Isling - In certain geometric designs the Slide Dial will save the change over of the buttons between Steps 3 and 4. This is simply effected by moving the slide dial accordingly.

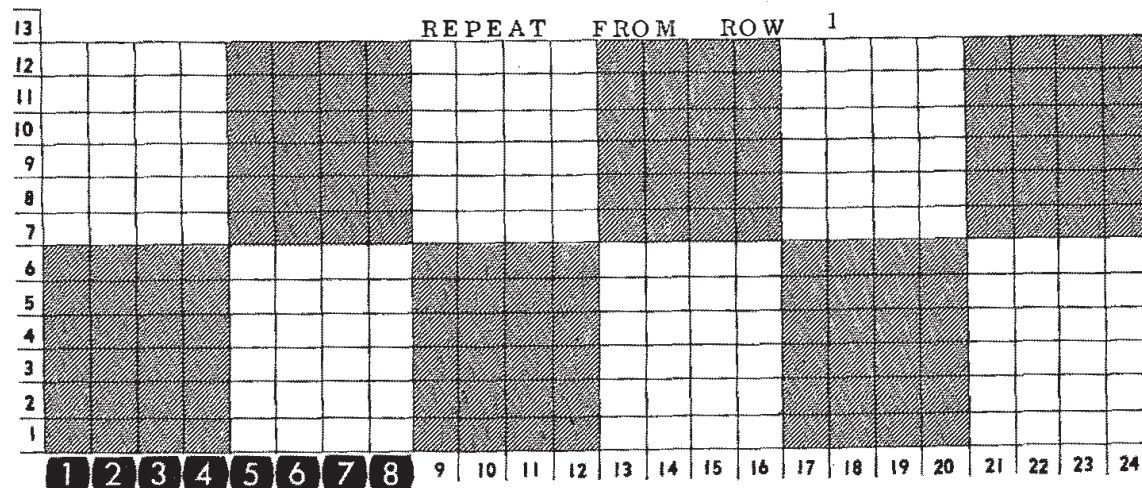
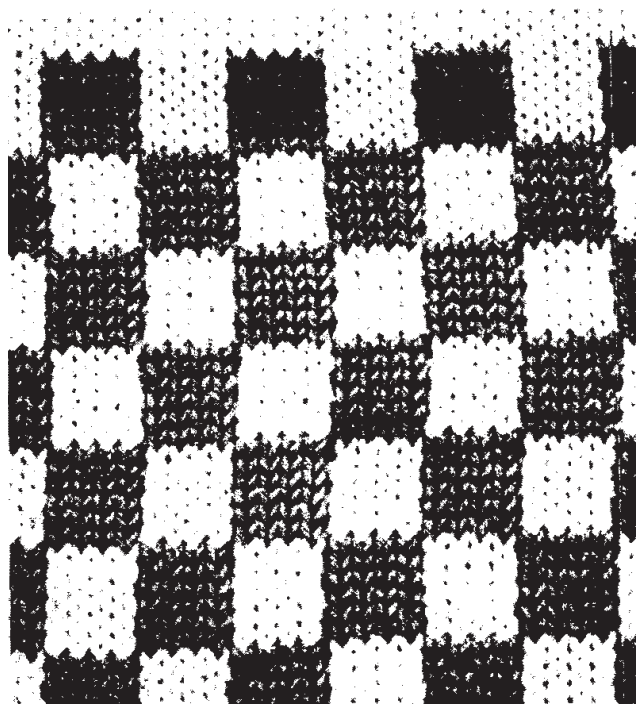
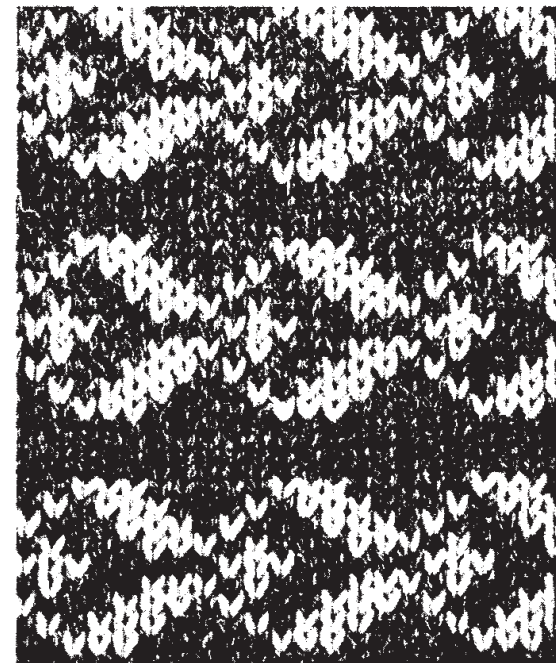
Familiarize yourself with the position of the raised needles in Steps 3(b) and 4(b) because in the hand-set category of patterns (where the needle selector buttons cannot be used) it is to this position that needles must be raised; the best method being to place the single transfer tool behind the butt of the required needle and push it forward.

FAIR ISLE: A basic principle to follow when doing 2-colour only Fair Isle is:-

- 1. When colour is used, Picker is used.
- 2. Reverse dial on plus for colour.
- 3. Reverse dial on minus for background.



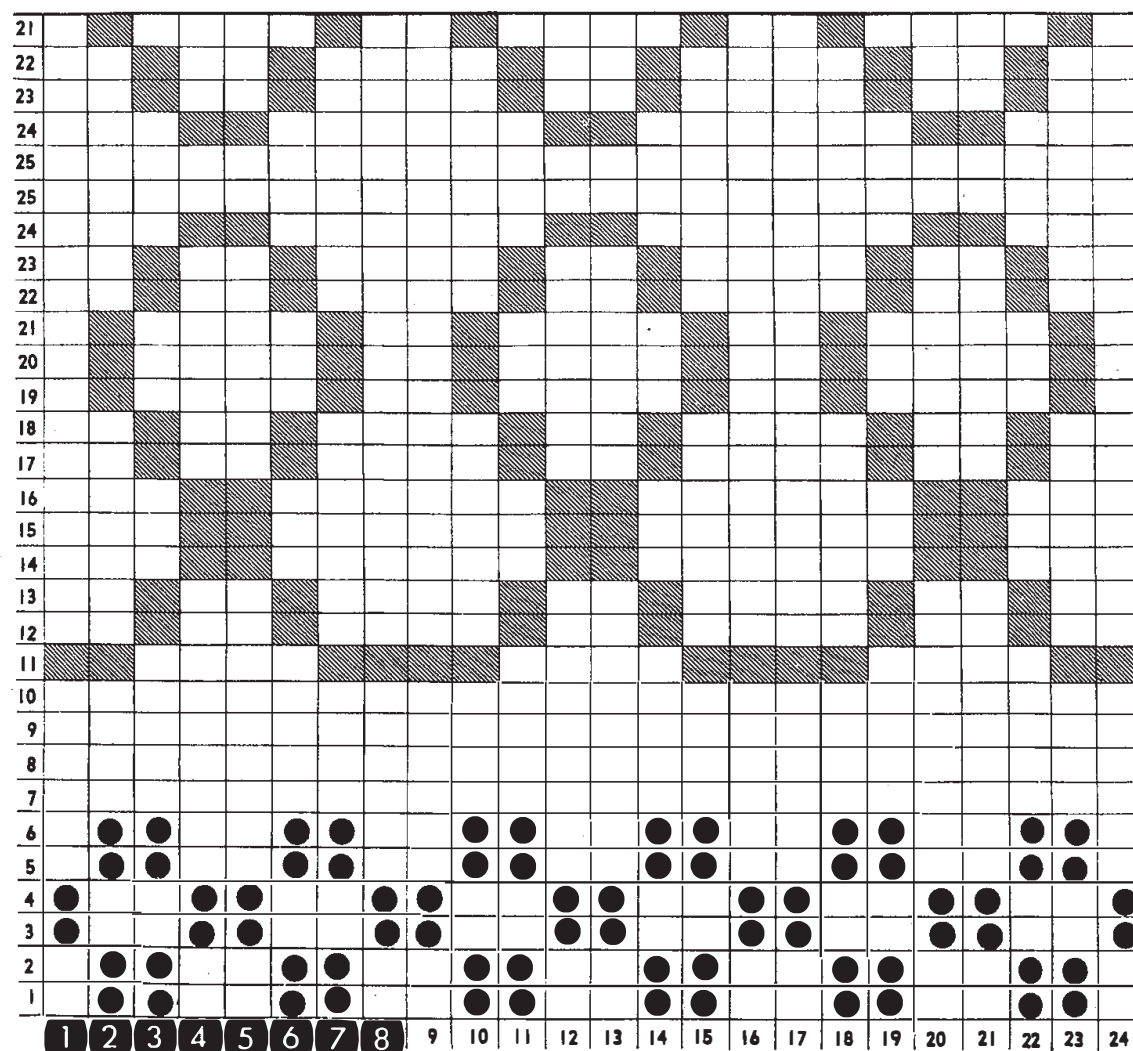
EKD 195



EKD 201



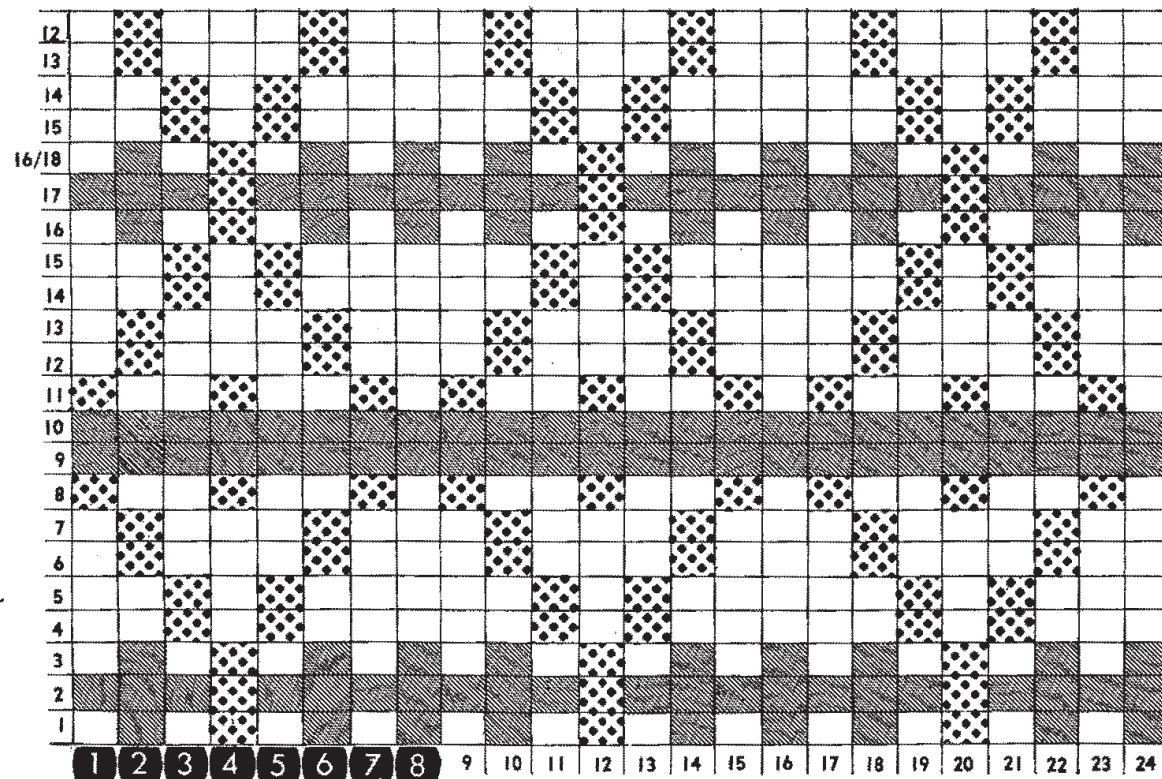
EKD 171



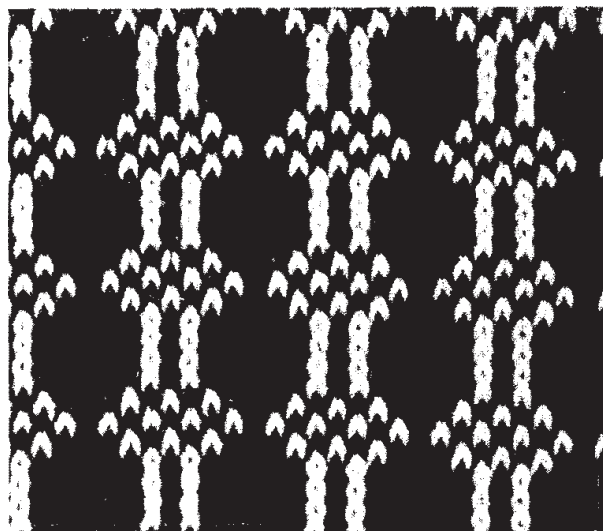
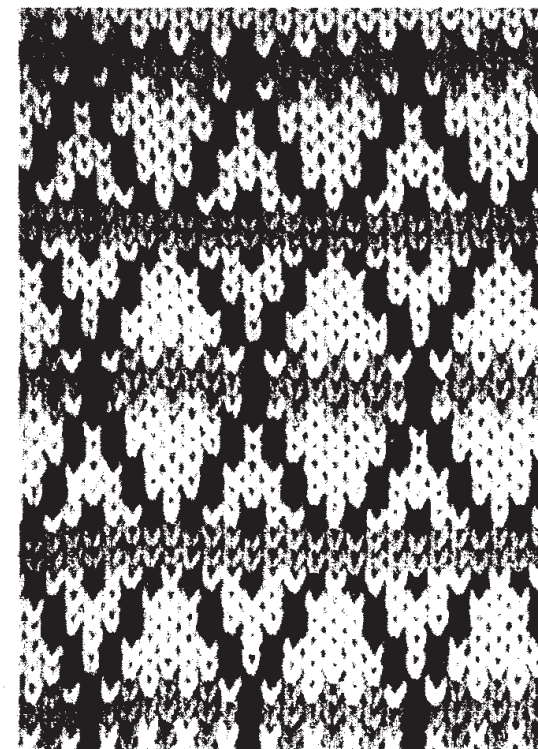
EKD 171

Although drawn for two colours this pattern is equally effective using only one patterning colour.

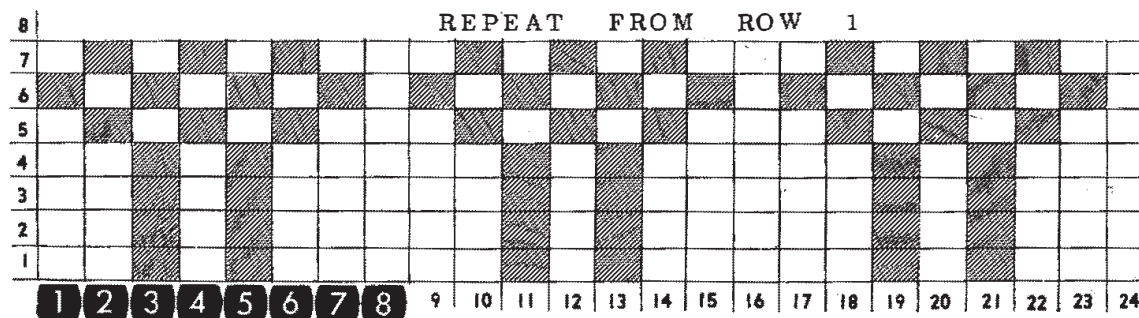
Note that Row 25 is repeated and thereafter the numbers read downwards - This indicates the pattern is repeated reading downwards.



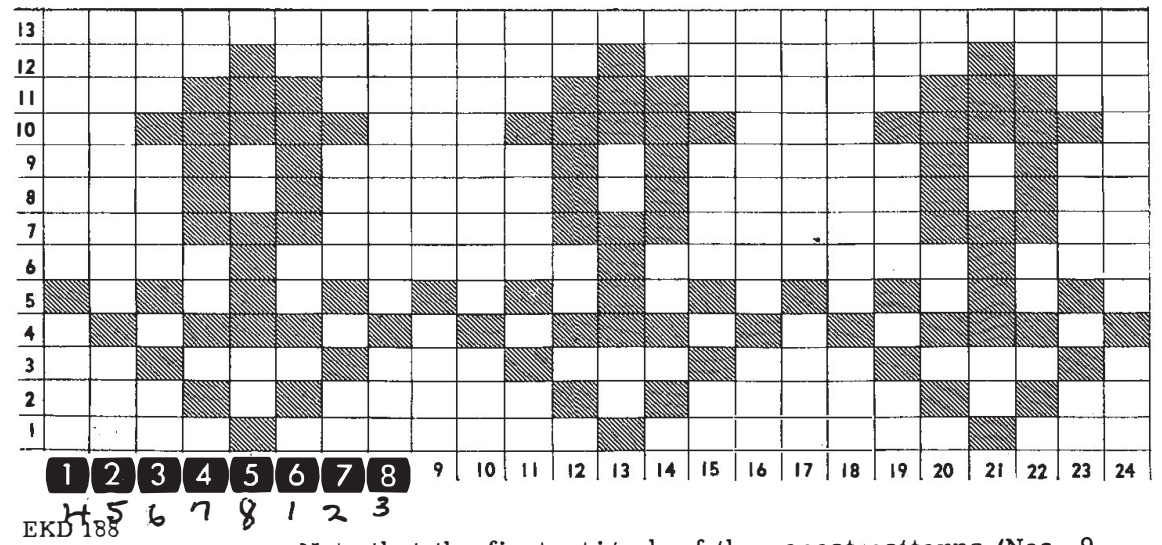
EKD 202



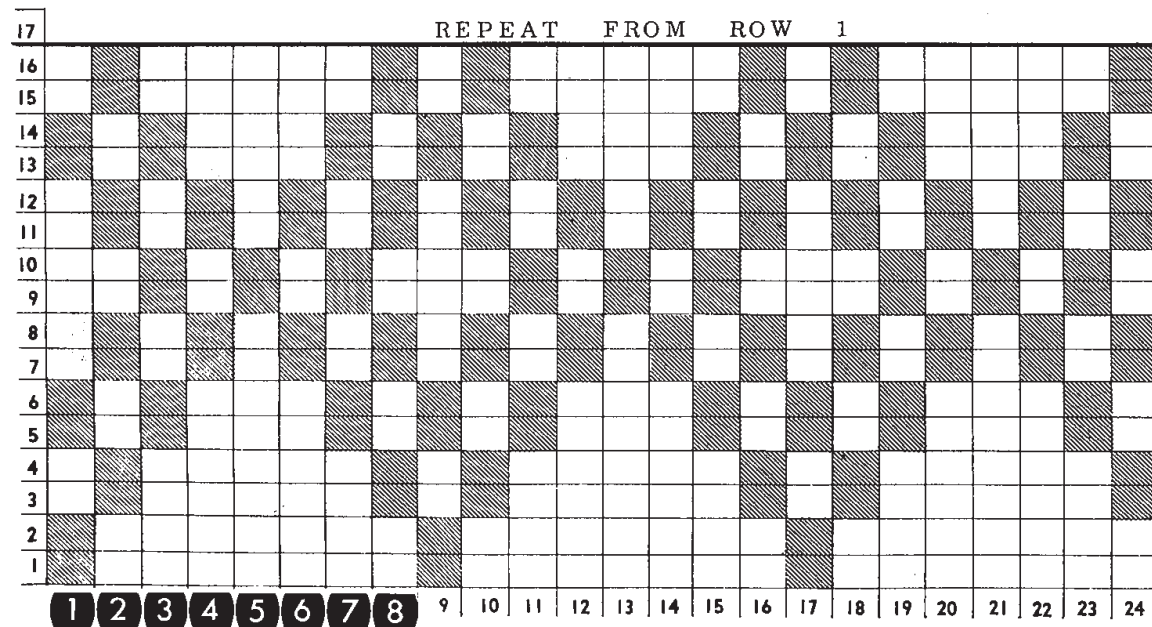
Note: For an all over pattern work from Row 1 to Row 17 then back to Row 2 and return to 17 for as often as needed. The pattern ends either at Row 1 or Row 18.



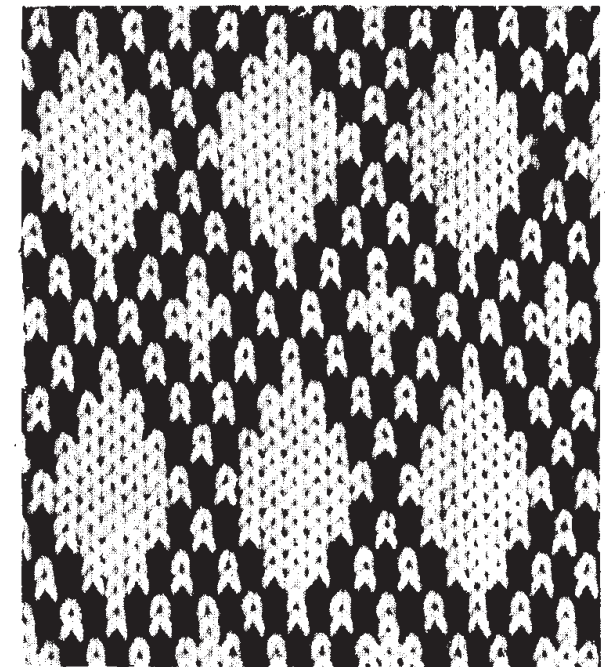
EKD 196

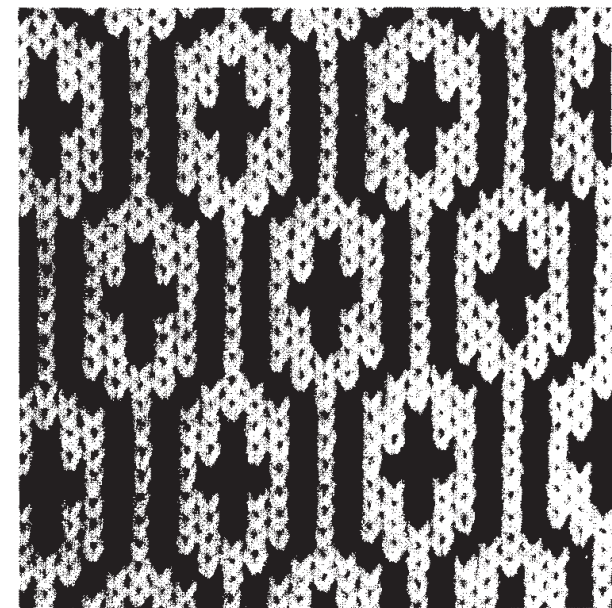
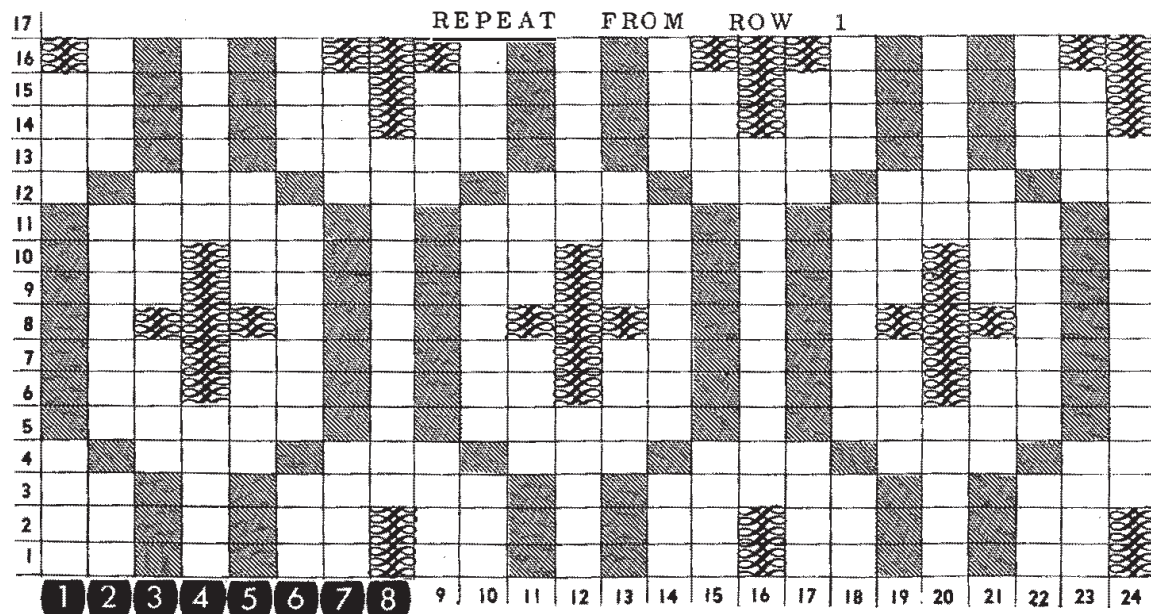


Note that the first stitch of the repeat patterns (Nos. 9 and 17) are linking stitches; without them the previous patterns would not seem complete.

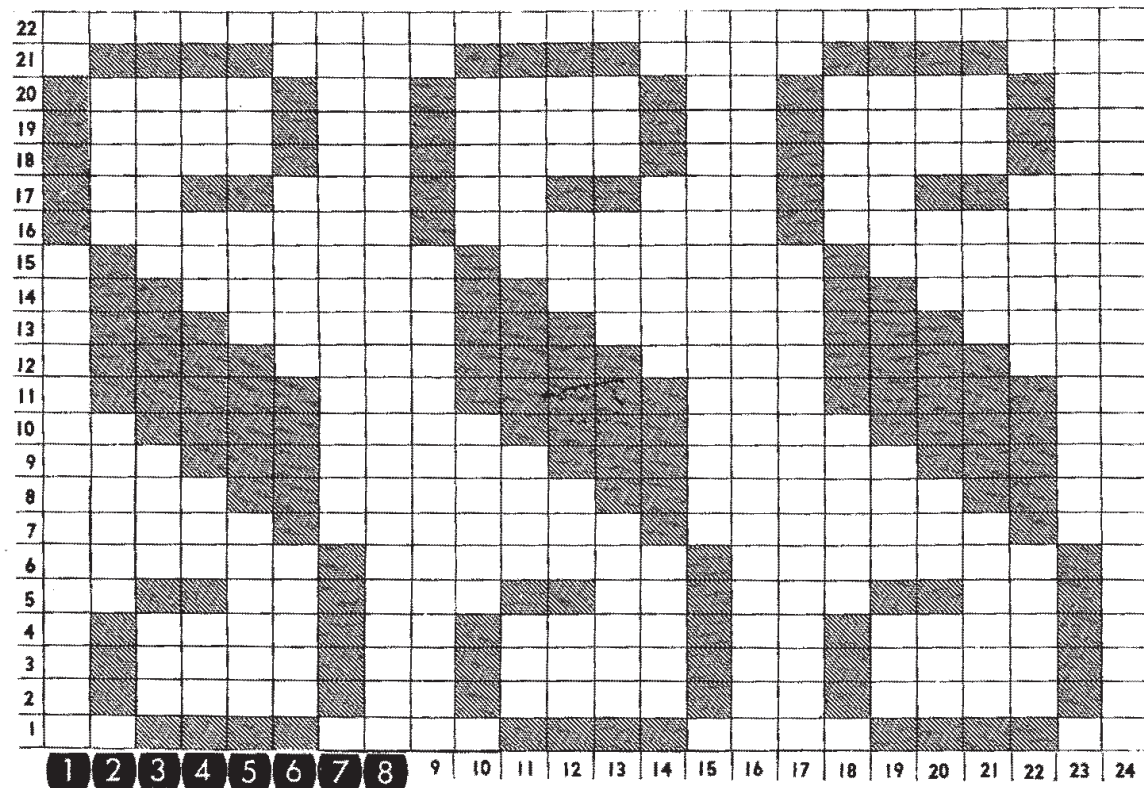
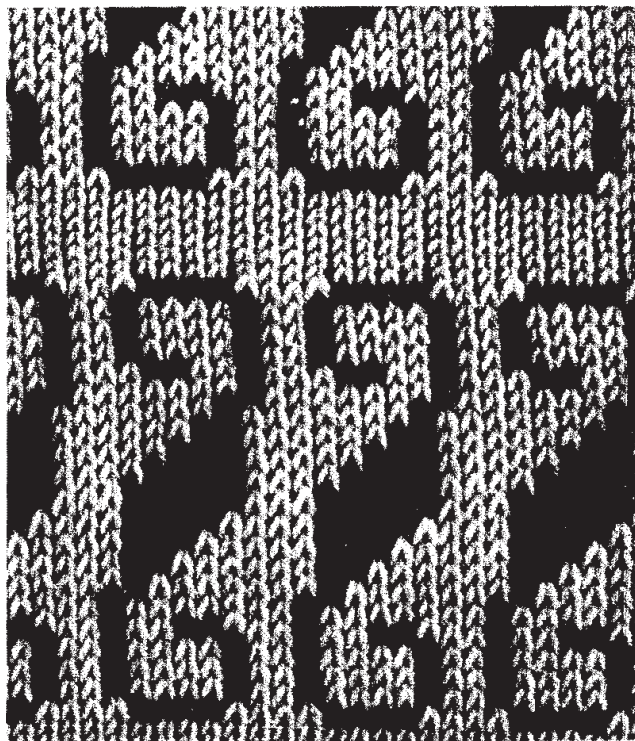


EKD 190

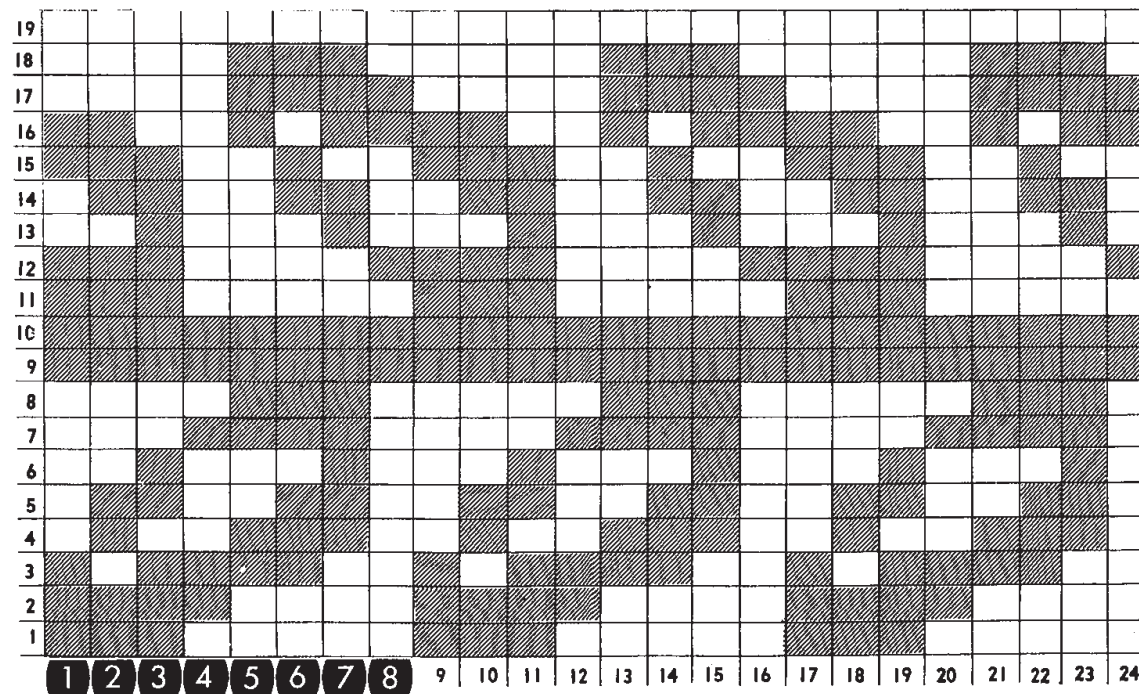




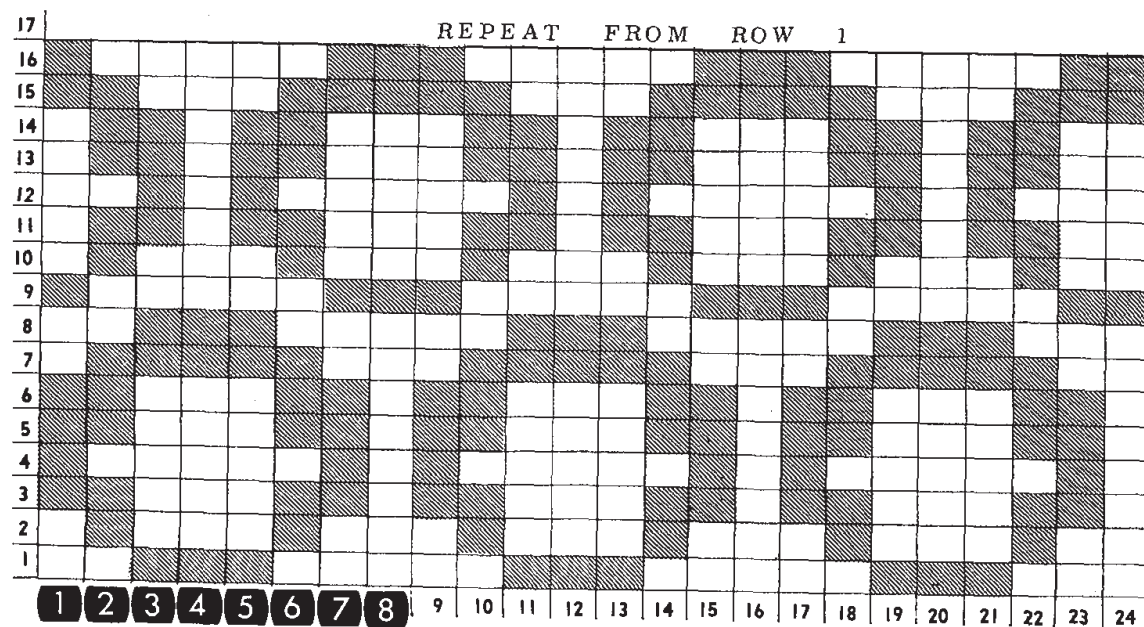
EKD 197



EKD 189

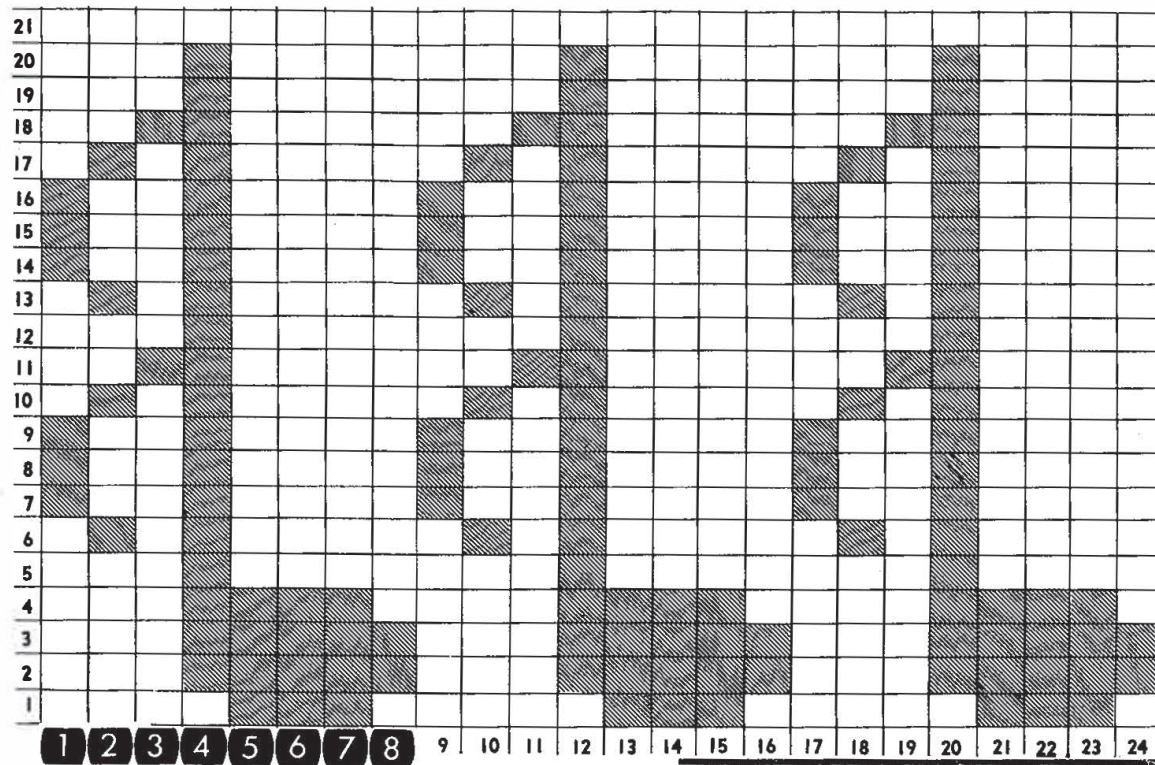


EKD 192

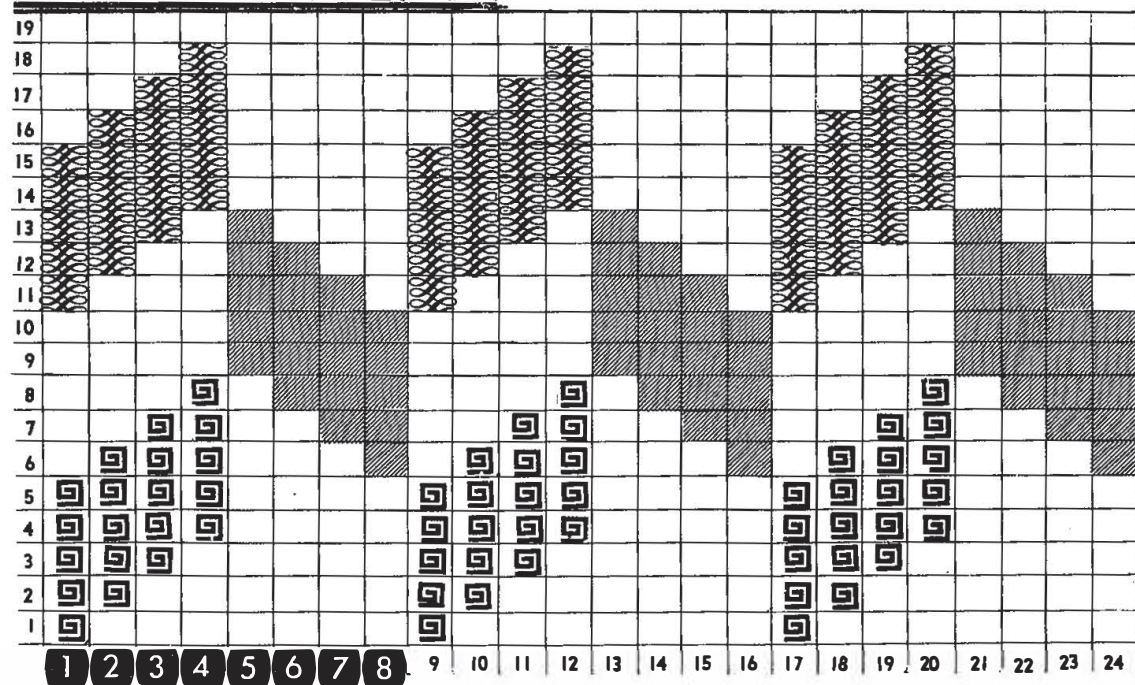
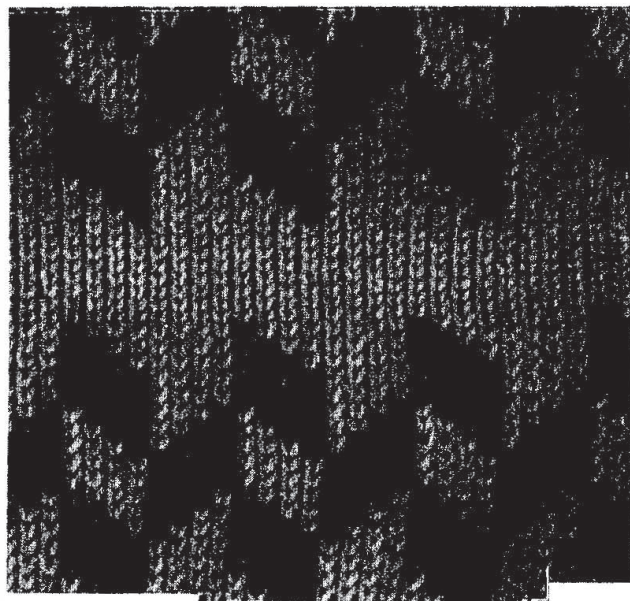
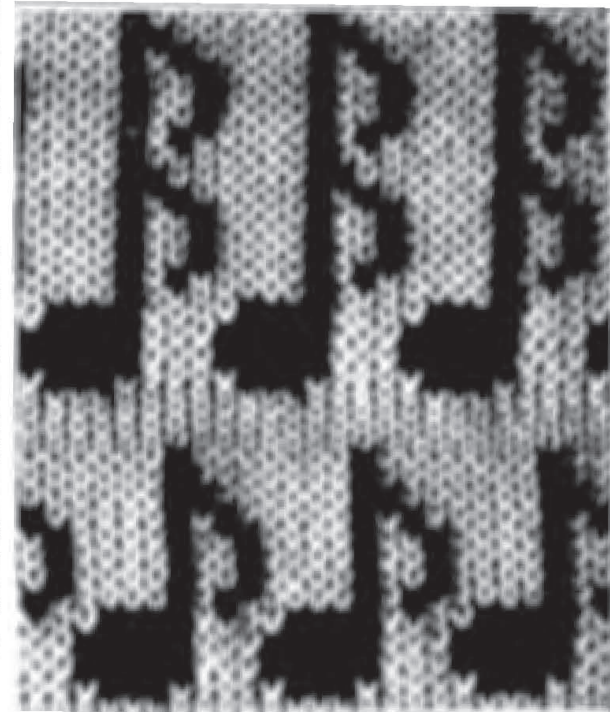


EKD 191

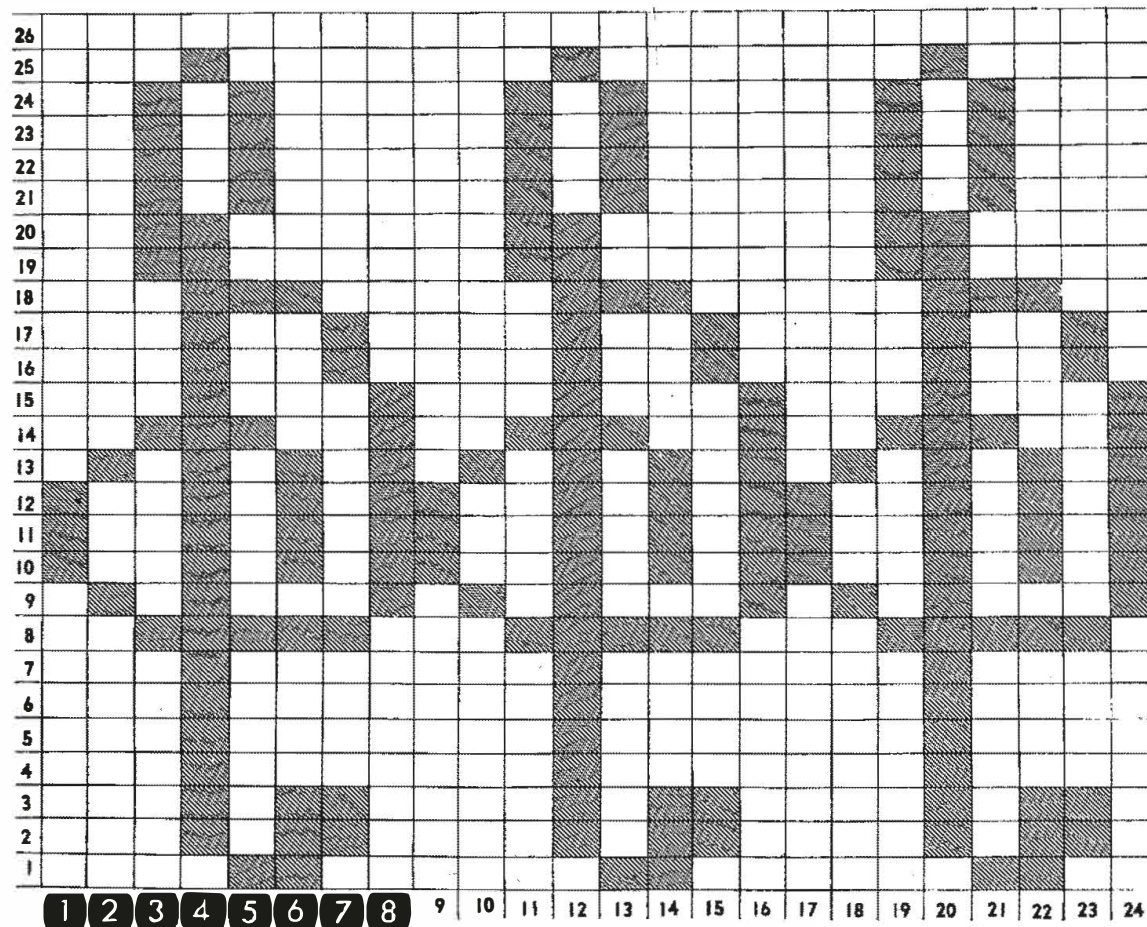




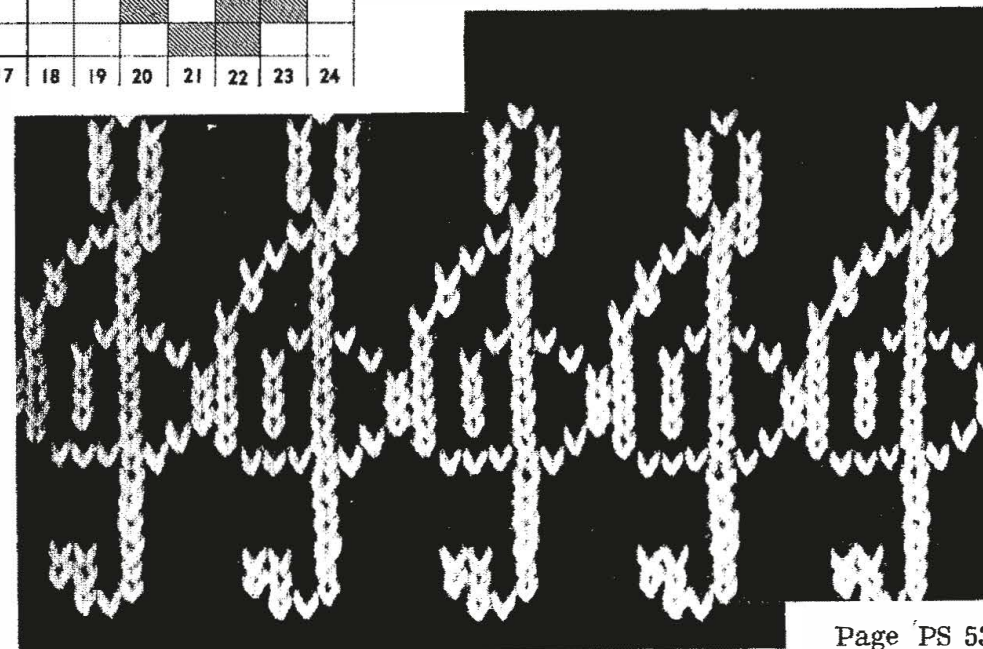
EKD 193



EKD 194 This pattern is equally effective when only one patterning colour yarn is used.

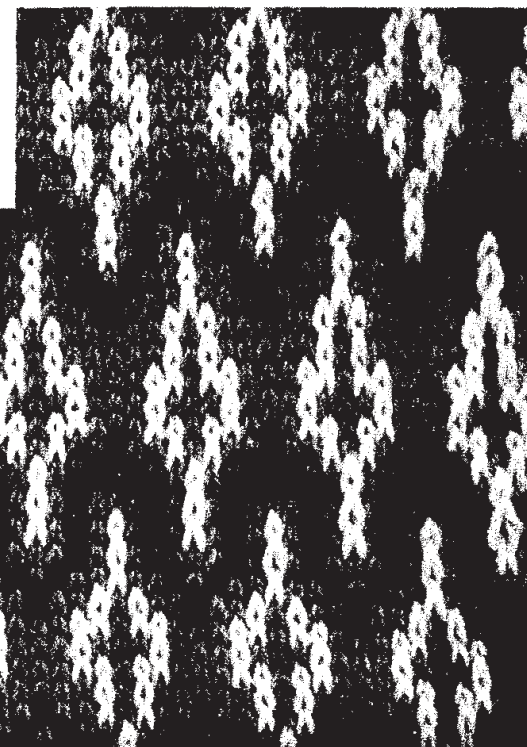


EKD 172



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EKD 198



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EKD 200.

