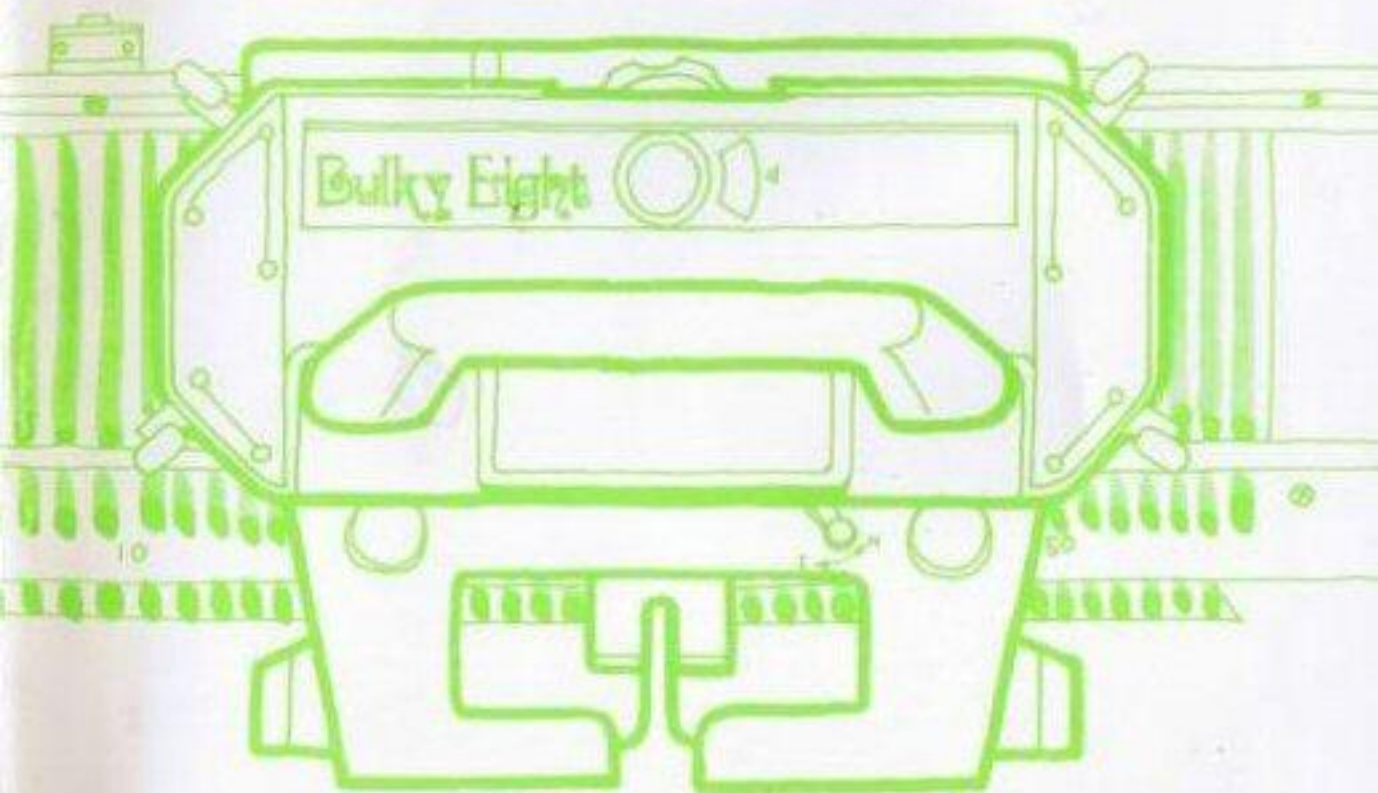


Instruction
Manual
for
Bulky Eight
S-120/S-140



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THE MACHINE

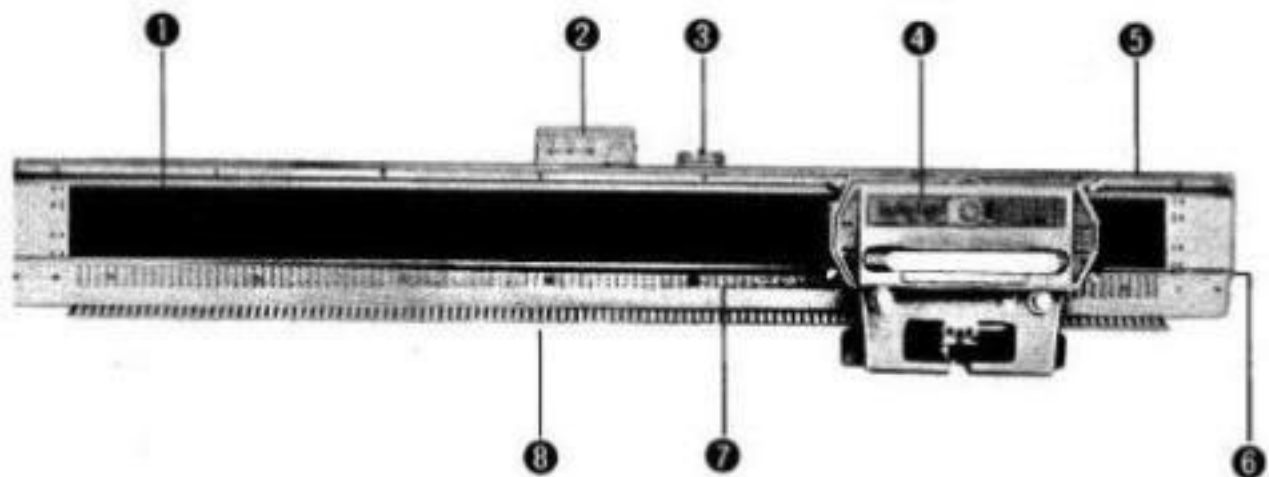
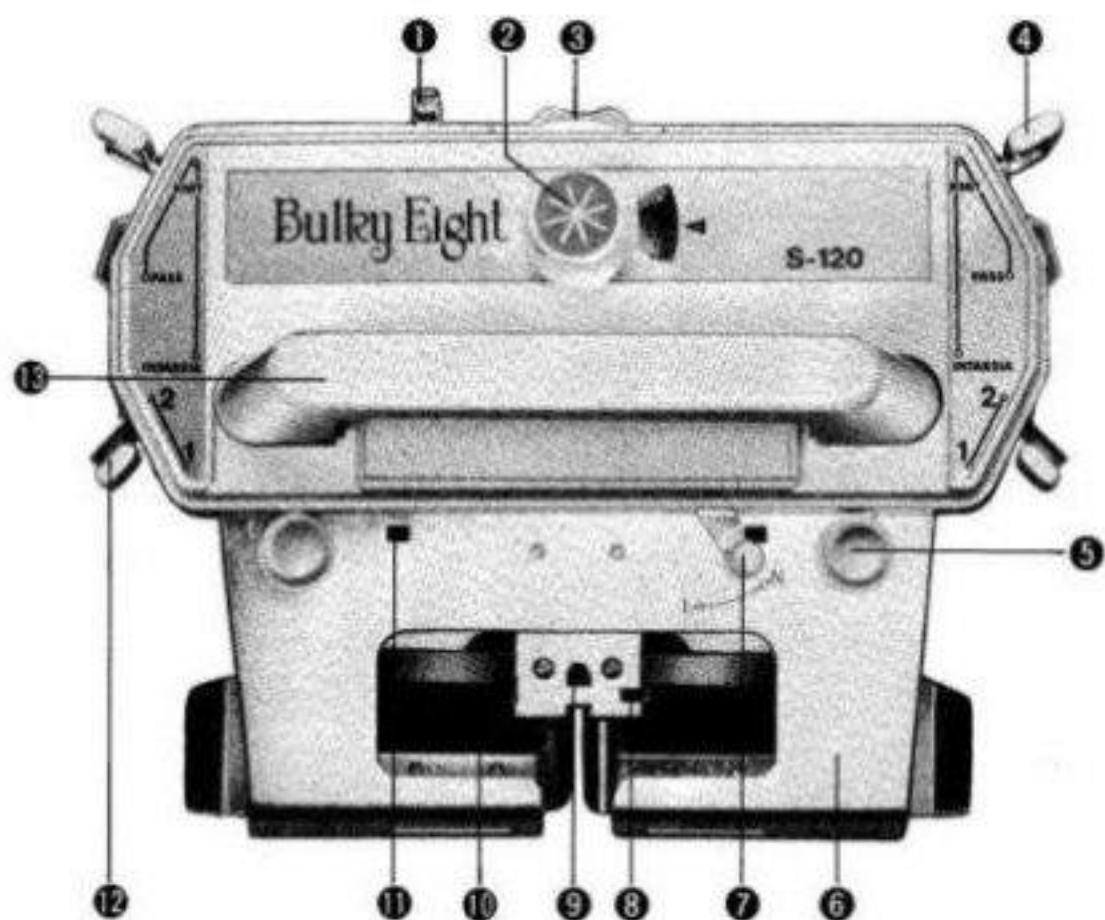


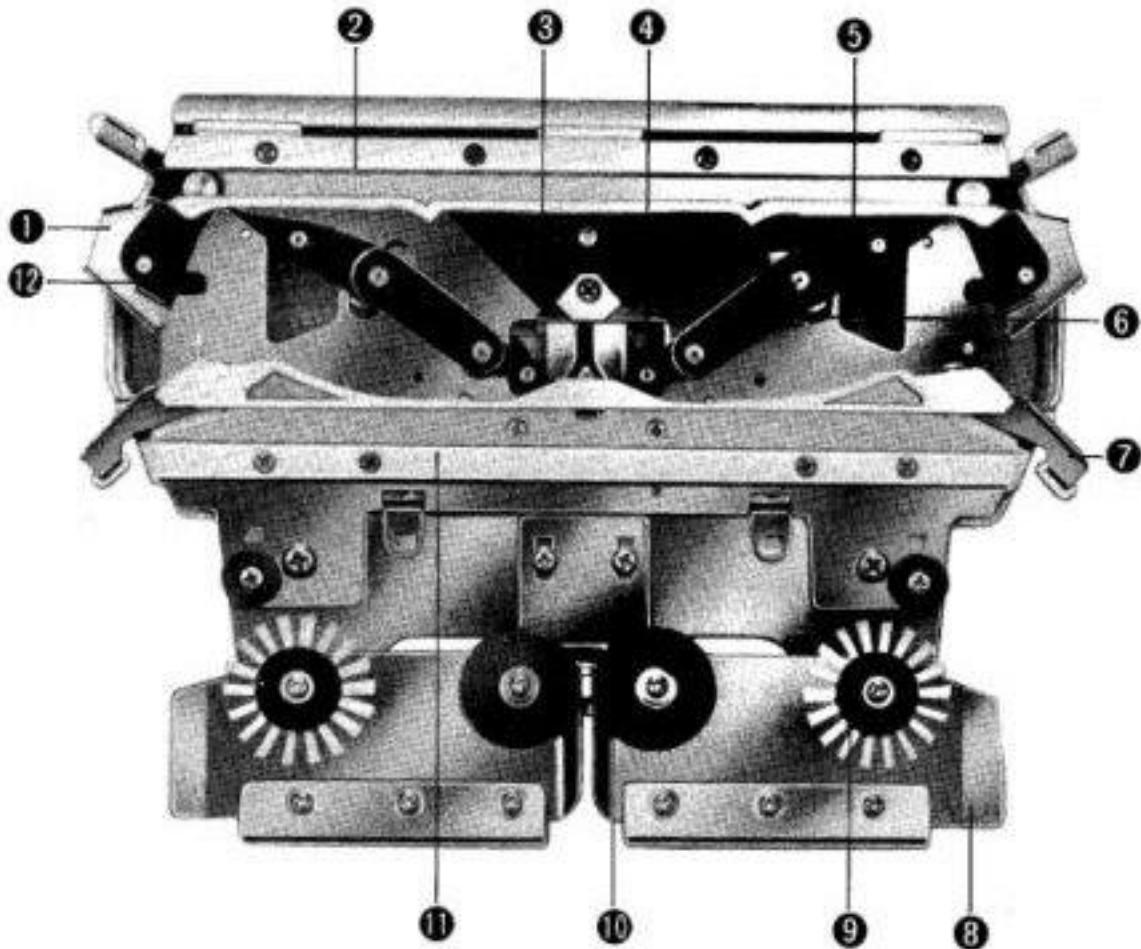
Fig.1

1. Needle bed
2. Row counter
3. Overhead feeder rod socket
4. Carriage
5. Rear runner rail
6. Needle holder rod
7. Latch needle
8. Sinker plate



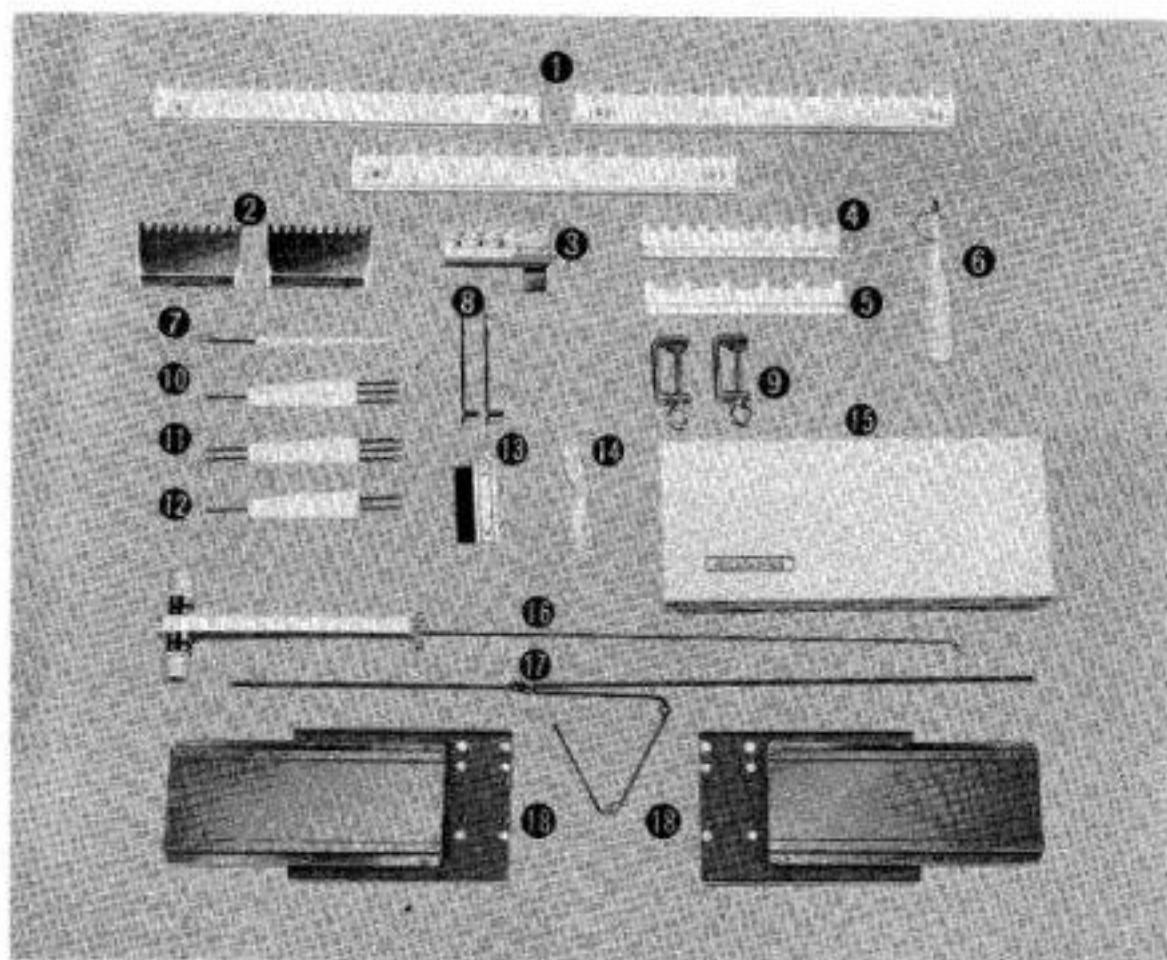
1. Row counter trip arm
2. Tuck knob
3. Tension control dial
4. Shifting cam lever
5. Presser arm securing nut
6. Fabric presser arm
7. Intarsia switch lever
8. Yarn feeder spring
9. Yarn feeder
10. Latch brush
11. Arm locating hole
12. Return cam lever
13. Handle

UNDER VIEW OF CARRIAGE



1. Russel plate
2. Rear slider
3. Tuck cam
4. Intarsia cam
5. Shifting cam
6. Knitting cam
7. Return cam
8. Presser
9. Rotary brush
10. Rubber wheel
11. Front slider
12. Stopper for shifting cam

STANDARD ACCESSORIES



1. Cast-on weight combs
2. Selvedge weights
3. Row counter
4. Selector plate 1 x 1
5. Selector plate 3 x 1
6. Rust-proof lubricant
7. Latch needle tool
8. Spare latch needles
9. Clamps
10. Transfer tool 3 - 1
11. Transfer tool 3 - 2
12. Transfer tool 2 - 1
13. Cleaning brush
14. Divider thread
15. Accessory case
16. Overhead feeder unit
17. Overhead feeder rod with yarn guide wire
18. Extension plate L/H and R/H

HOW TO ASSEMBLE THE MACHINE

Place the machine along the edge of a firm table. (Fig.5)

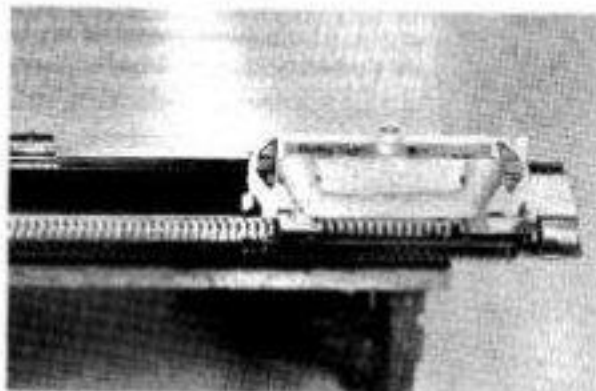


Fig.5

Fit clamps in position at the base of the machine, and clamp the machine to the table edge. (Fig.6)



Fig.6

Lift handle to upright position and push down to engage retaining spring. (Fig.7)

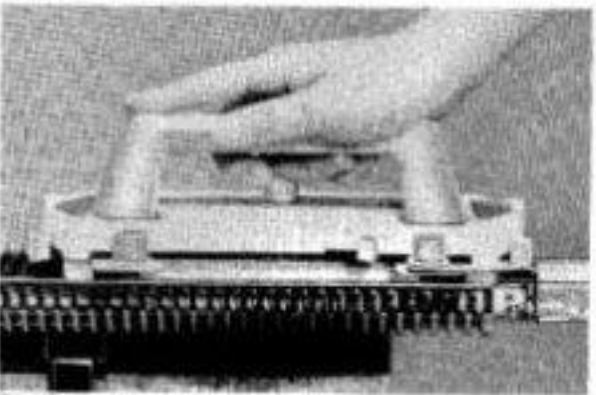


Fig.7

Loosen right hand presser arm securing nut and remove the locking plate. (Fig.8)

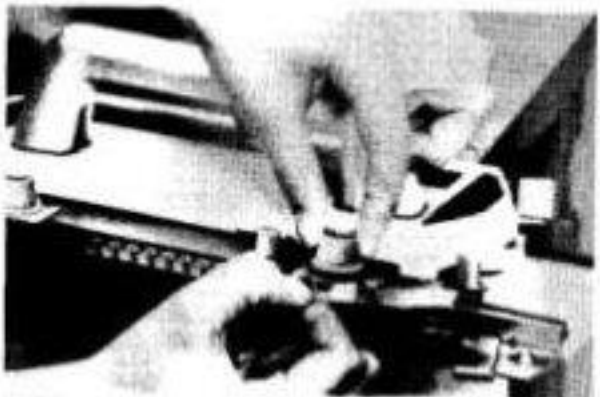
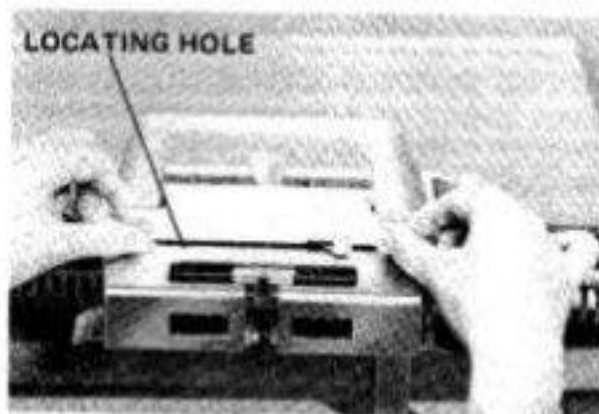


Fig.8

5. Loosen the left hand presser arm securing nut and place in position the fabric presser arm so that the cut-outs in the top of the arm pass beneath the left and right securing nuts. Ensure that the two locating holes in the presser arm are located directly over the positioning studs and tighten the securing nuts firmly.(Fig.9)



6. Insert the row counter in position into the socket to be found at the centre back under the machine.(Figs.10 & 11)
To bring row counter into operation, draw out the row counter trip arm.(Fig.12)

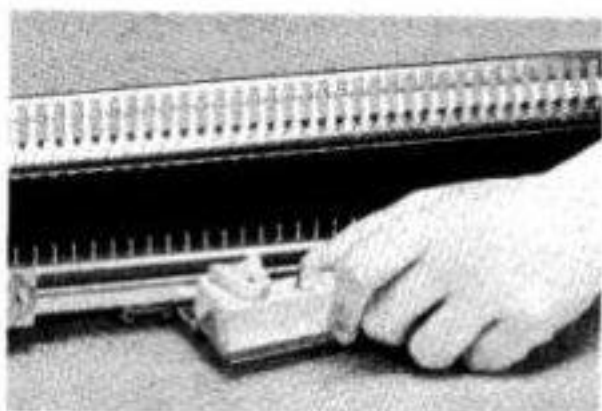


Fig.10

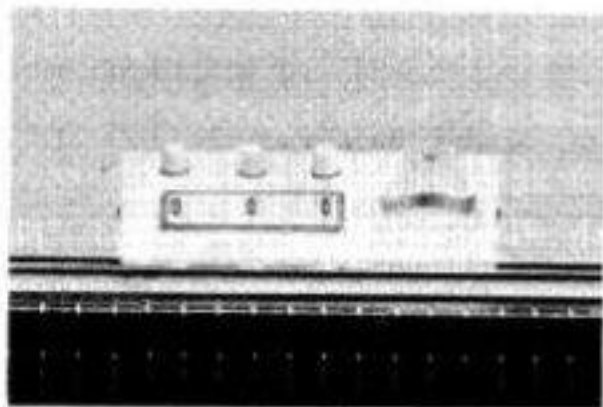


Fig.11

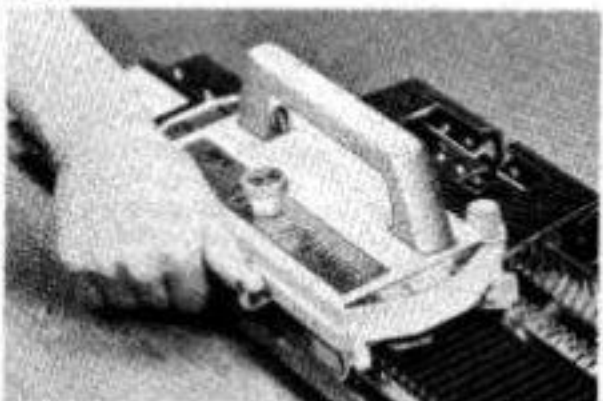


Fig.12

Insert the overhead feeder rod into the small socket at the back of the machine. (Fig.13)

Be sure that the two small protrusions provided near the end of the rod fit in the cut-outs located at the top of the socket – see also Fig.13.

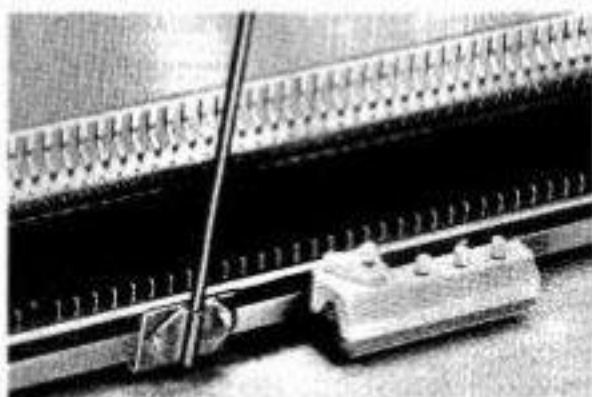


Fig.13

Raise the yarn guide wire to a position at the right angle to the feeder rod. (Fig.14)

Note: The yarn clip to be found on the rod may be used for fastening the loose end of wool not being used in the carriage feeder. (Fig.14)

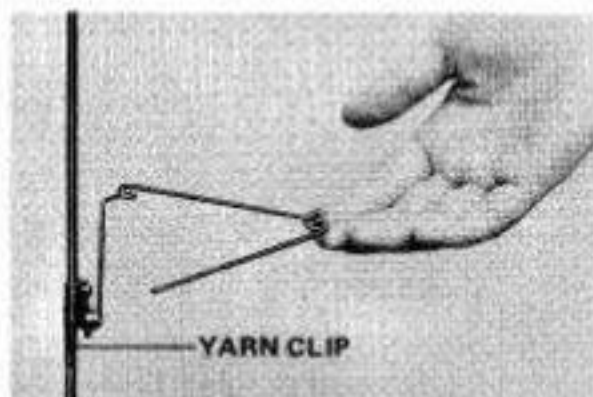


Fig.14

Before placing the overhead tension assembly onto the upper end of the rod, turn back the pair of long yarn take-up wires until they click into position in the groove at the back. Now the feeder unit can be placed on the upper end of the feeder rod so that the small protrusion located near the upper end of the rod will just fit into the cut-out on the under side of the feeder unit. (Fig.15)

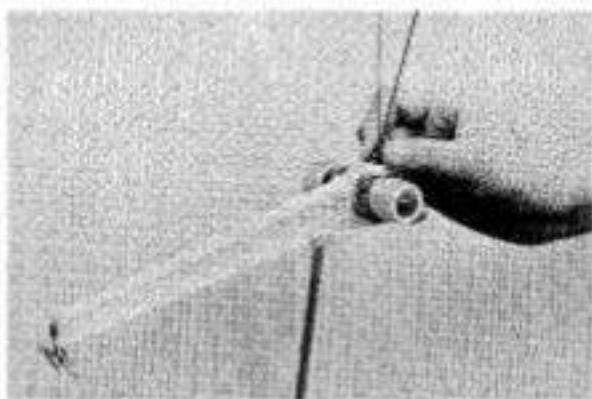


Fig.15

When using the extension plates L/H and R/H, place the needle bed top downward before clamping the machine to the table edge. Loosen four 4 x 5 screws located on the side plates at both ends of the needle bed and remove them. Put the extension plates in position on the side plates and tighten four screws in position on the extension plates. (Fig.16)

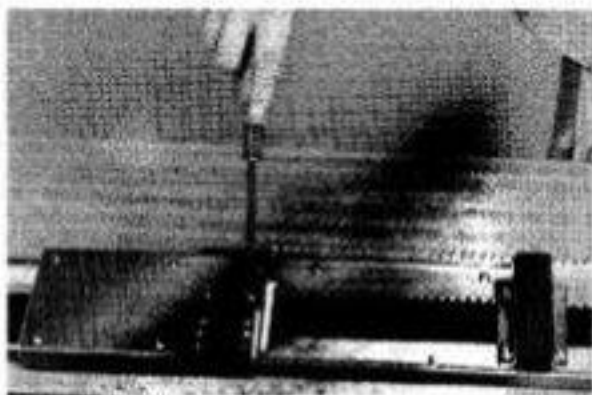
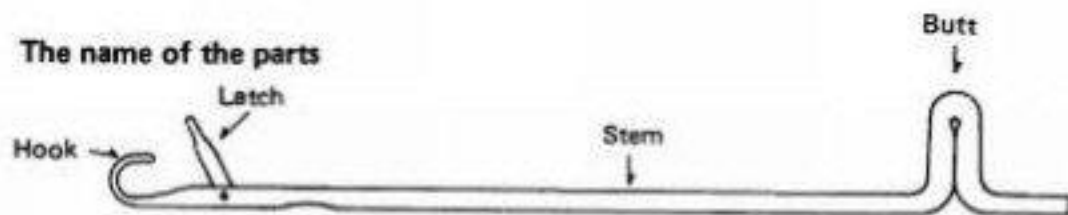


Fig.16

BASIC INFORMATION ABOUT THE MACHINE

1. The Latch Needle

The name of the parts



How a stitch is formed

As the carriage passes over the needles, the cams operate the needles by making contact with the needle butts.

(a) A stitch is held in the hook with the latch closed. (Fig.17-a)

(b) The cam pushes the needle forward. The rotary brush prevents the fabric from coming forward with the needles. The needle is therefore pushed through the stitch and this action opens the latch. (Fig.17-b)

(c) As the needle continues to move forward, the stitch passes behind the latch. (Fig.17-c)

(d) The needle moves back and the new wool is fed into the hook. The previous stitch is going to close the latch. (Fig.17-d)

(e) As the needle continues to move back, the new wool is checked by the sinker plate and, at the same time the previous stitch is pushed forward over the closed latch to form a new stitch. (Fig.17-e)

(f) As the needle moves further back, the previous stitch drops over the front of the needle and the new stitch is now formed in the hook. (Fig.17-f)

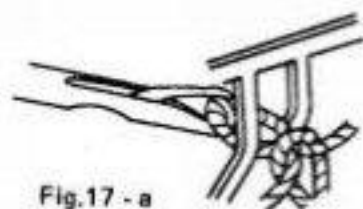


Fig.17 - a

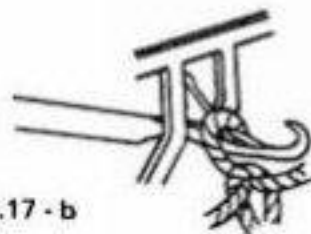


Fig.17 - b



Fig.17 - c



Fig.17 - d

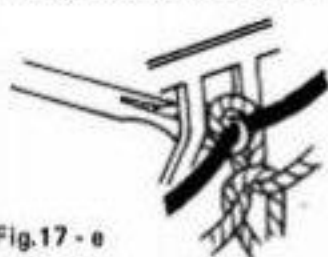


Fig.17 - e

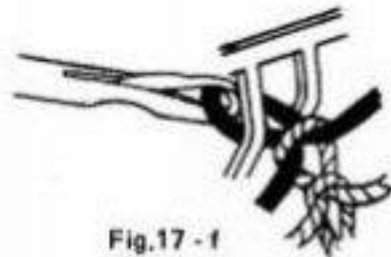


Fig.17 - f

Needle Positions (Fig. 18)

(A) Non-Working Position

Needles not required for knitting should always be pushed back against the rear runner rail.

(B) Working Position

Needles required for knitting should be brought forward into this position before commencing to knit.

(D) Manual Return from Holding Position

Needles will knit when pushed back into this position from holding position (E).

(E) Holding Position

Needles hold stitches but do not knit. Used for pull-up knitting (holding stitches on individual needles), part knitting etc.

Note: See also the table "How the control of the carriage knob and levers operate the needles" shown in page 12.

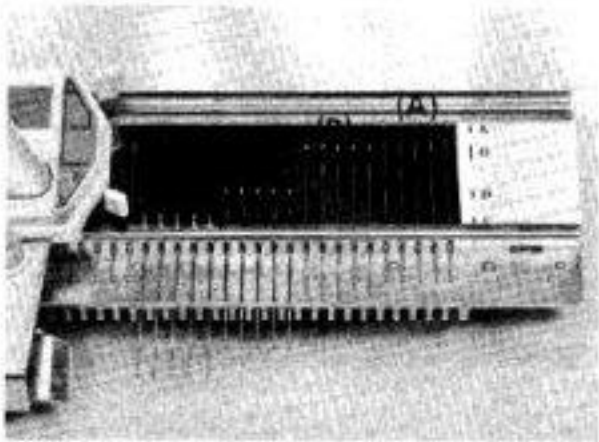


Fig.18

Tension Control Dial

This controls the size of the stitch and is located at the back of the carriage cover. The dial is numbered from 0 to 10 with two intermediate tension settings between each number, and is visible in the window on the carriage cover. (Fig.19)

The higher the number the looser the tension. When knitting extra thick wool use every alternate needle.

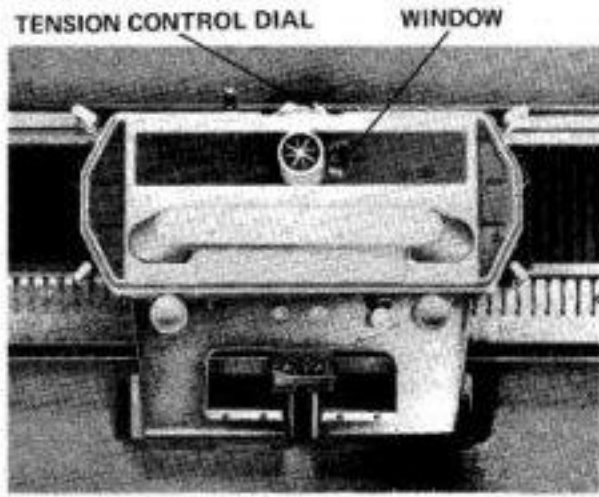


Fig.19

4. Return Cam Levers

These levers are set to two positions, namely "Position 1" and "Position 2".

Each position functions as follows:

"Position 1" (Fig.20)

With the shifting cam lever pushed back as shown in Fig.20, needles in position (B), (D) or also (E) will knit.

Used for knitting in plain stocking stitches.

"Position 2" (Fig.21)

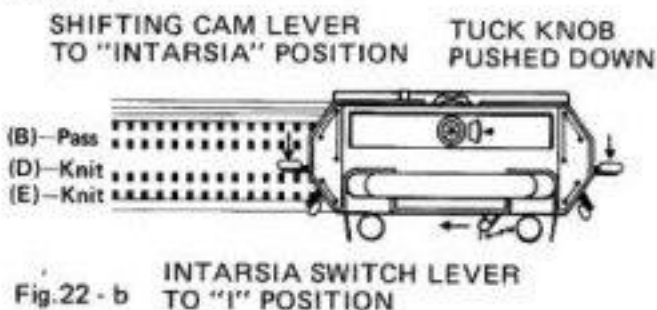
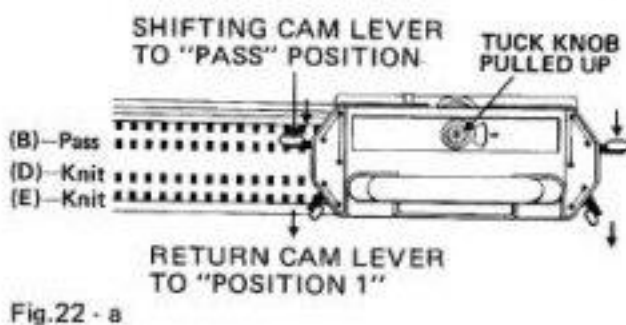
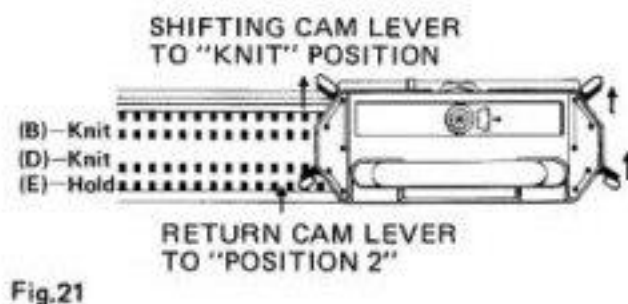
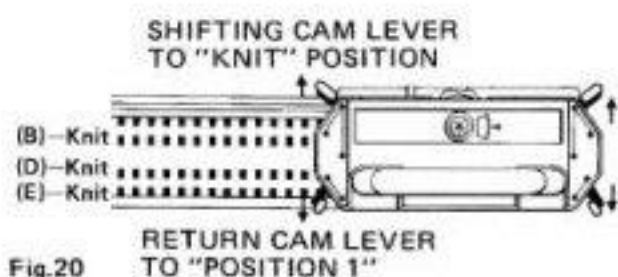
Needles in position (E) will not knit but hold stitches. Needles in position (B) and (D) will knit normally when the shifting cam lever is pushed back as shown in Fig. 21. Therefore, this setting is used for part knitting, pull-up knitting etc.

5. Shifting Cam Levers

These levers control the shifting cam, and can also be set to three positions, namely "PASS", "KNIT" and "INTARSIA". Used in conjunction with the setting of the return cam lever, the two positions have the following functions.

"PASS" Position (Fig.22-a)

With the **tuck knob pulled up**, needles in position (B) will not be operated by the cam and will not knit when the carriage moves across them, while needles in position (D) and (E) will knit normally when the return cam lever is brought forward. Therefore, this position is used when you wish to produce coloured patterns, knitting only on needles in the holding position (E), or you require to move the carriage from one end of the machine to the other during knitting without affecting the knitting on the working needles in position (B).



"KNIT" Position (Figs.20 & 21)

When the return cam lever is brought forward as shown in Fig. 20, needles in positions (B), (D) and (E) will knit. When the return cam lever is pushed backward (Fig.21), needles in positions (B) and (D) will knit while needles in position (E) will not knit but hold stitches.

Tuck Knob

This controls the tuck cam and is located at the top of the carriage. The tuck knob is set to two positions, "upward position" and "downward position". (Fig.23)

Upward Position

When the knob is pulled up the tuck cam will be out of action and with the shifting cam lever in "PASS" position, will not actuate the needles in position (B) when the carriage goes across them – see Fig.22-a.

Downward Position

In this setting, and at the same time with both shifting cam lever in "PASS" position and return cam lever at "Position 1" as shown in Fig.24, needles in position (D) or (E) will knit, while needles in position (B) will come forward and pick up a strand of wool but will not knit the previous stitch.

It should be remembered that this setting is used always when the needles are selected and placed in two needle positions (B) and (E) before commencing to knit. E.g. every alternate needle in position (B) and the other needles in position (E) or every 4th needle in position (B) and the other needles in position (E) etc.

"INTARSIA" Position (Fig.22-b)

With the Intarsia switch lever shifted from "N" position to "I" position being seen on the fabric presser arm, the shifting cam levers are brought forward to "INTARSIA" position which should be used only for Intarsia design knitting. And the tuck knob is set to downward position.

For further details, see the APPENDIX (A), How to knit multi-coloured Intarsia design.

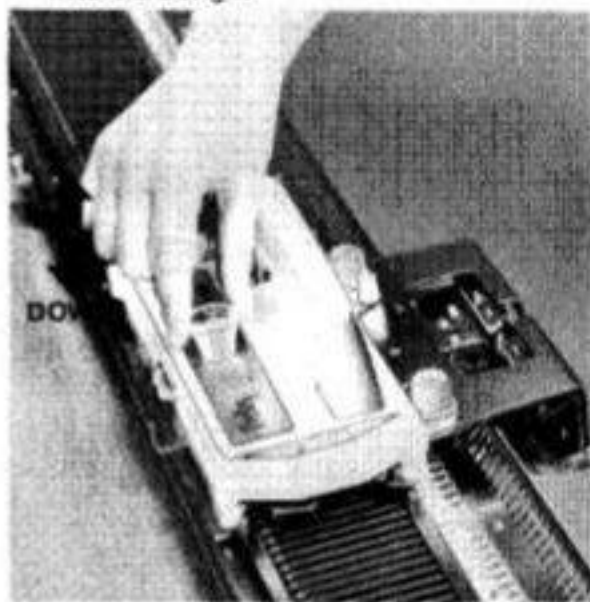


Fig.23

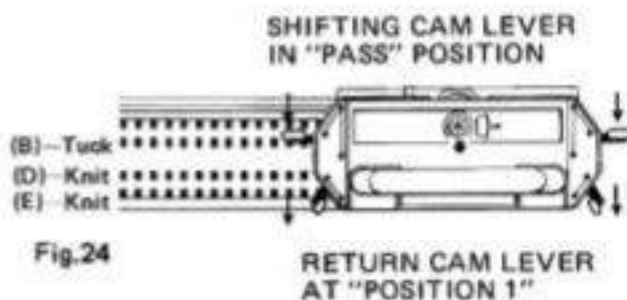


Fig.24

The function of the needles in position (B) is known as 'tucking' which can only be done on single needles and not on adjacent needles simultaneously, e.g. can be done in formation of 1 x 1 but not 2 x 2 etc.

7. How The Controls Of The Carriage Levers And Knobs Operate The Needles When Placed In The Different Positions.

Needles in Positions	Position of:			Control Settings	Needle Action	Purpose	
	Shifting Cam lever	Tuck Knob	Return Cam Lever				
A	Any	Any	Any		Nil	Transporting machine. Needles not required for knitting.	
B	Knit	Any	Any		Knit	Stocking stitches.	
			Pass	Upward	2		Pass
	1				Pass	Carriage passes over without operating needles. Used for coloured pattern while other needles in position (E) knit.	
	Downward	2		Tuck	Needles hold previous stitch, pick up new strand but do not knit.		
1			Tuck	Needles hold previous stitch, pick up new strand but do not knit. Use always single needles while other needles in position (E) will knit.			
D	Knit	Any	2		Knit	For manual return of needles from holding positions. Needles automatically returned to position (B) and knit. Used for part knitting.	
			1		Knit	Needles automatically returned to position (B) while other needles in position (E) also returned to (B) and knit.	
	Pass	Upward	2		Knit	These needles knit while others in position (B) are not operated and pass. Used for part knitting during colour pattern making.	
			1		Knit	These needles knit and the others in position (E) also knit, while needles in position (B) are not operated and pass.	
	Downward	2		Knit	These needles knit while others in position (B) tuck.		
		1		Knit	These needles knit and others in position (E) also knit. Remaining needles in position (B) tuck.		
	E	Knit	Upward	2		Hold	These needles hold stitches while other needles in position (B) will knit. Used for part knitting, pull-up pattern etc.
				1		Knit	Needles are automatically returned from holding position and knit.
Downward			2		Hold	These needles hold stitches while other needles in position (B) will knit.	
			1		Knit	Needles are automatically returned from holding position and knit.	
Pass		Upward	2		Hold	For holding stitches. Only needles in position (D) will knit. All others passed by carriage and not operated.	
			1		Knit	These needles knit while other needles in position (B) are passed. Used for coloured pattern.	
		Downward	2		Hold	Stitches held, single needles in position (B) tuck, and only others in position (D) will knit.	
			1		Knit	These needles are automatically returned from holding position and knit while single needles in position (B) tuck.	

HOW TO CAST-ON AND KNIT

Threading Up The Overhead Feed Control Unit and Carriage Feeder

- (a) Pass the wool through one of the eyelets of the yarn guide wire, (Fig.25-a)
- (b) upwards between the rear yarn guide bar and friction discs, (Fig.25-b)
- (c) over and between the friction discs, (Fig.25-c)
- (d) forward through the one of the front eyelets, (Fig.25-d)
- (e) forward again through the pigtail at the end of the spring wire, (Fig.25-e),
- (f) then finally down to the carriage feeder. (Fig.26)
- (g) Slide the wool under the feeder spring plate, to allow the wool to enter the feeder eye. (Fig.26)
- (h) Turn the yarn feed control dial to an appropriate number for the thickness of wool you are going to use. (Fig.27)

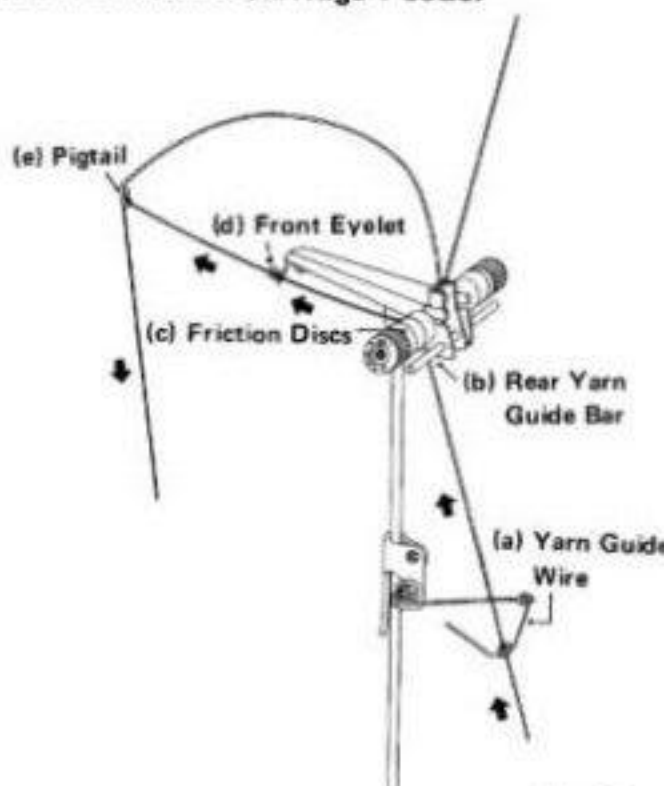


Fig.25

For finer yarn turn the dial in the plus (+) direction opposite the pointer and for thicker yarn turn in the minus (-) direction.

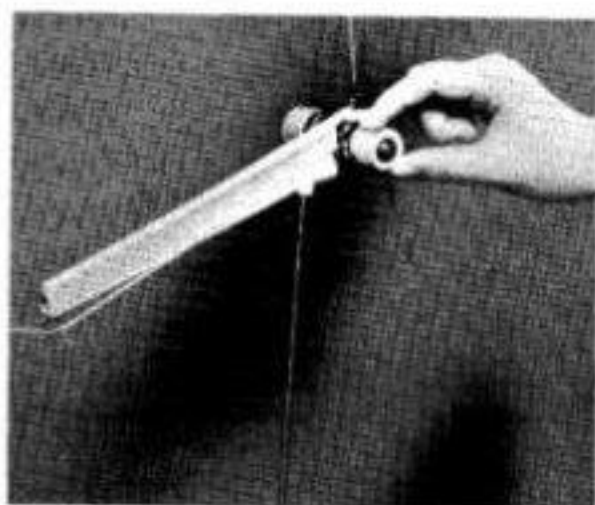
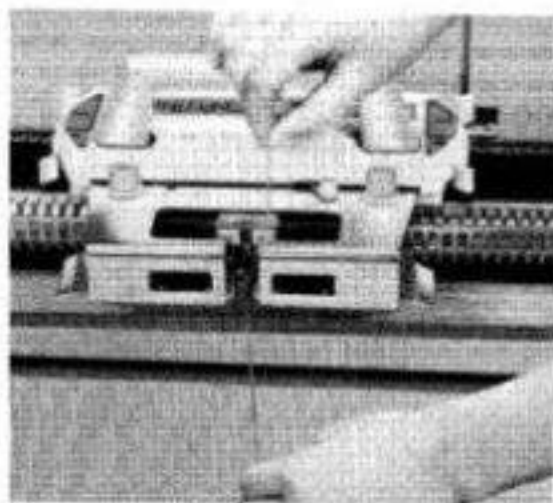


Fig.27

2. Casting-On

A. Using the divider thread

- (a) With the carriage on the right, bring both shifting cam levers back to "KNIT" position, set both return cam levers at "Position 1" and push downward the tuck knob. (Fig.28)

PUSH DOWN TUCK KNOB

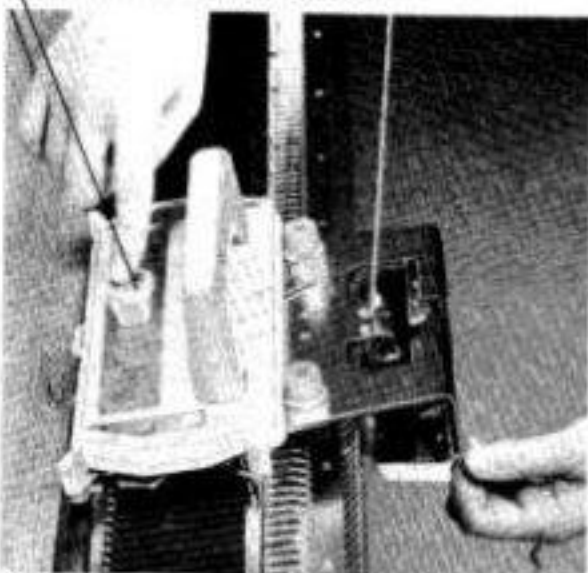


Fig.28

- (b) Bring forward into working position (B) using the straight edge of the selector plate, the number of needles required. (Fig.29)

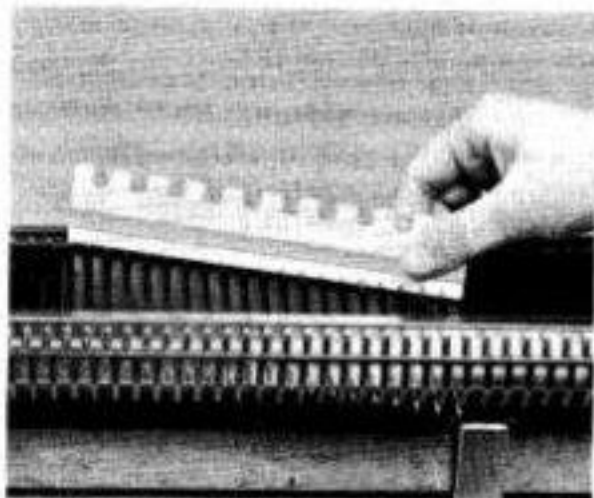


Fig.29

- (c) Holding down the loose end of the wool directly below the carriage feeder, move the carriage slowly from the right to the left across the working needles. (Fig.30)

Note : The carriage should be pushed until it clicks and has passed the last working needle.

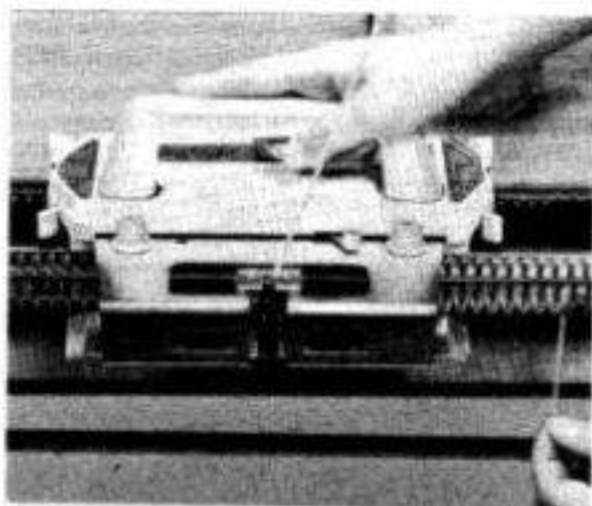


Fig.30

- (d) Take the end of the divider thread and pass it between the slot in the sinker plate immediately to the right of the last needle on the right hand side of the machine, and then lay it along the inside of the sinker plate over the yarn loops but clear of the hooks of the needles as shown in Fig.31, and then pass between the slot in the sinker plate immediately to the left of the last needle.

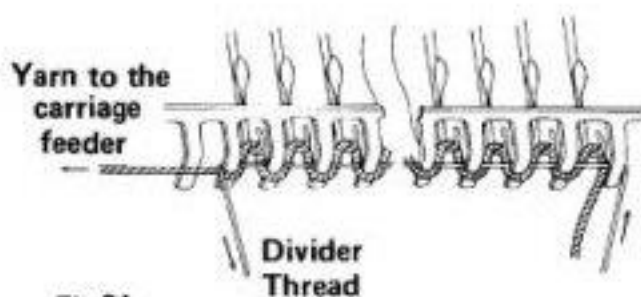


Fig.31

Pull down both ends of the divider thread to ensure that it lays neatly along the machine between the sinker plate and the hooks of the needles.

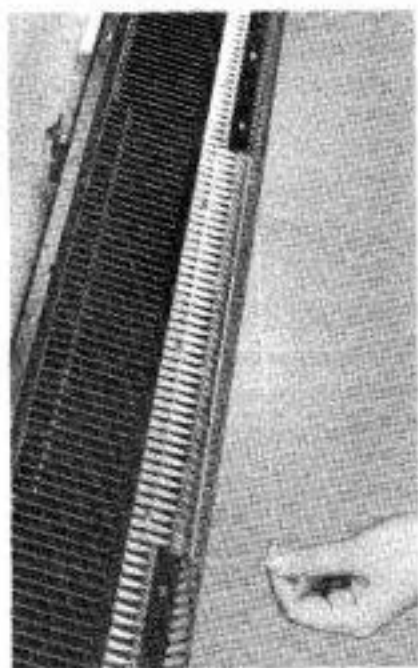


Fig.32

- (e) Still holding both ends of the divider thread together and pulling tightly downwards, bring forward to position (E) two or three working needles at both ends over the Divider thread. (Figs. 32 & 33)

- (f) Continue to hold the divider thread firmly, and move the carriage back to the right. Knit 6 or more rows by moving the carriage across needles.

- (g) Pull out the divider thread. (Fig.34)

Move the carriage backwards and forwards across the working needles.

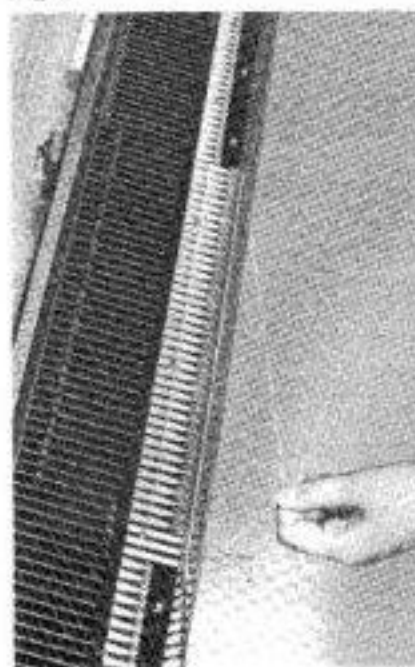


Fig.33

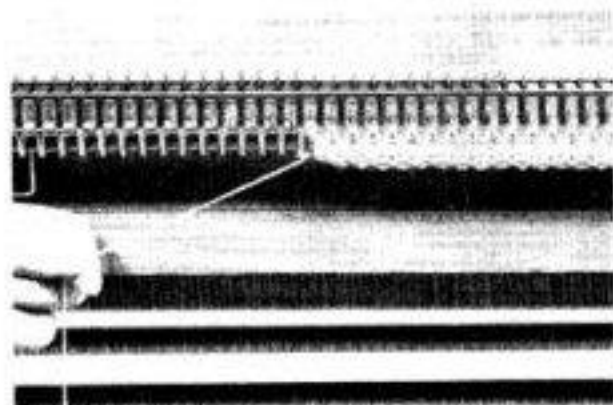


Fig.34

B. Using the cast-on weight comb

This method will ensure safe casting-on particularly when knitting with extra heavy yarn or with inelastic material like man-made fibre etc.

- (a) With the carriage on the right, push both shifting cam levers back to "KNIT" position, set both return cam levers at "Position 1" and push downward the tuck knob. (Fig.28)
- (b) Bring forward the number of needles required into working position (B).
- (c) With the 1 x 1 selector plate, push back into rest position (A) every alternate needle. (Fig.35)
- (d) Holding down the loose end of the wool directly below the carriage feeder, move the carriage slowly across the needles from right to left.

It will be seen that every alternate needle has picked up the yarn (Fig.36)

- (e) Hook the cast-on comb over the yarn so that the comb hangs in front of the sinker plate. Make sure that the comb is suspended in a horizontal position. (Fig.37) The yarn on the carriage side of the machine should be placed under the hook of the comb immediately to the left of the last needle and then brought to the front of the comb, so that it feeds freely into the needles when the carriage is moved to the right. (Fig.38)

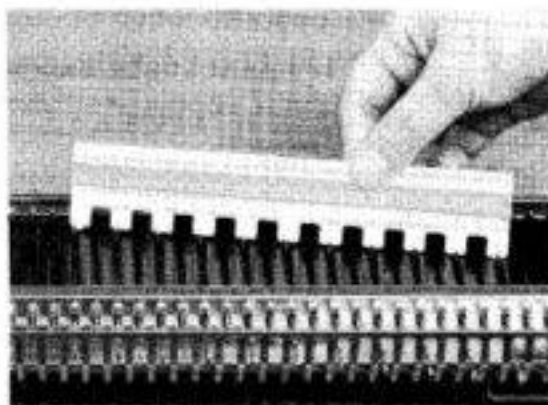


Fig.35

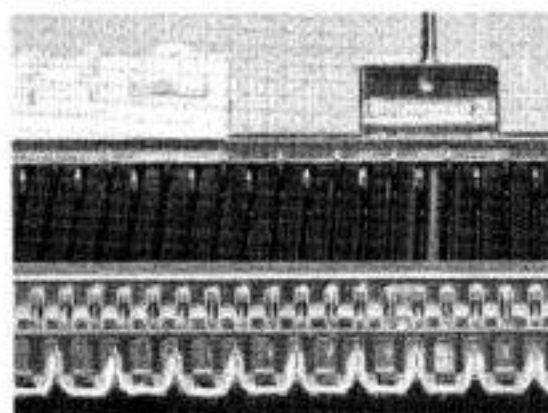


Fig.36

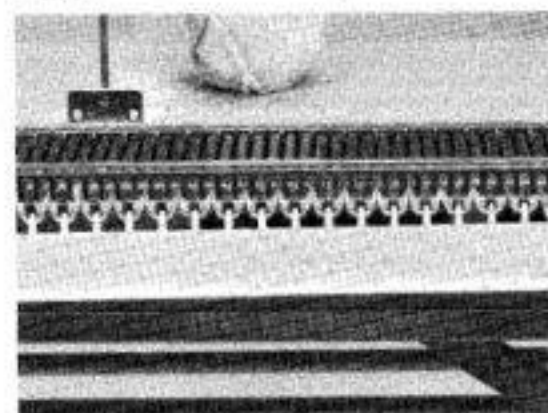


Fig.37

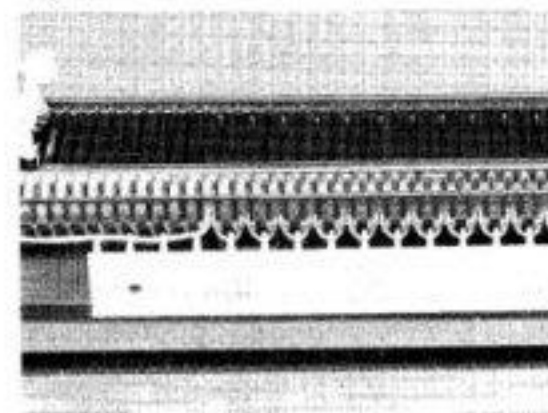


Fig.38

Note: For knitting on more than 40 needles, hook two cast-on combs at the same time over the yarn. (Fig.39) And, for knitting on full width of the machine three combs should be used.

- (f) Fasten the loose end of the wool around the round peg on the right hand end of the comb. (Fig.40)
- (g) Using the straight edge of the selector plate bring forward from the rest position (A) into position (B) every alternate needle, so that all the working needles are now aligned in position (B).
- (h) Move the carriage back to the right, and all needles will engage the wool. Move the carriage backwards and forwards across the working needles.

Note: When knitting with extra heavy yarn, it is advisable to use the selvedge weights all the time during knitting. The weights should be moved up the knitted fabric after every 15 to 20 rows as the knitting proceeds. (Fig.41)



Fig.39

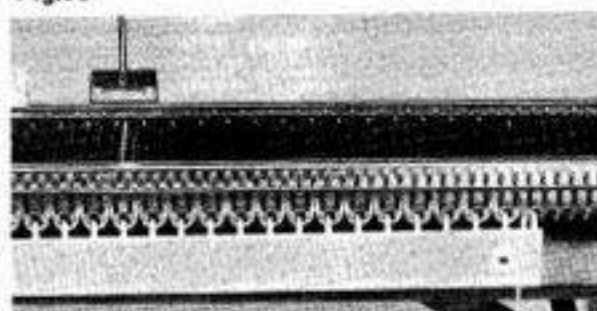


Fig.40

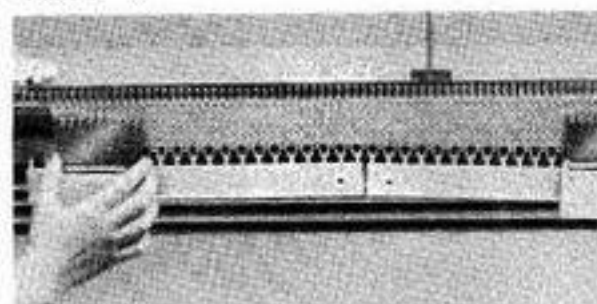


Fig.41

3. Waste Knitting

- (a) Cast-on with old yarn by either of the preceding methods and knit 5 or more rows.
- (b) Remove the yarn from the feeder, and re-thread feeder with the divider thread.
- (c) Knit one row only with the divider thread feeding it with your left hand, then take it out of the feeder.
- (d) Remove divider thread from feeder and re-thread feeder with the new yarn.

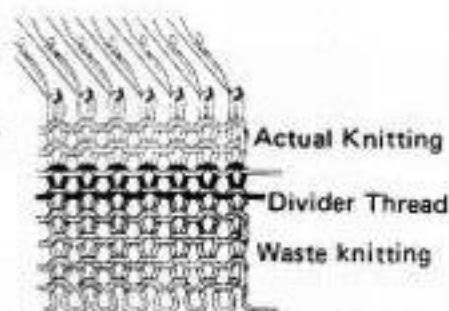


Fig.42

- (e) Turn the tension control dial to suit the thickness of new yarn, and knit with the new yarn.
- (f) After completing the piece of knitting, pull out the divider thread. This will separate the waste knitting piece from the main piece, leaving a neat cast-on edge. (Fig.42)

BASIC INFORMATION FOR SUCCESSFUL KNITTING

1. Knitting A Measurement Sample Swatch

Before attempting to knit a garment it is advisable to knit a sample swatch from which you can check the tension of the fabric, i.e. the number of stitches and rows per inch. The measurement sample swatch should be knitted over a convenient number of needles, say 30, and to a length of 60 or 70 rows for accuracy.

Now, remove the swatch from the machine and allow it to relax for at least 8 hours (overnight is better).

Count the number of stitches and rows within a 4" square at the centre of the swatch but avoid stretching. If it counts 20 stitches and 28 rows per 4" square, then 20 divided by 4 equals 5, and 28 divided by 4 equals 7.

Therefore your tension is 5 stitches and 7 rows to 1 inch.

2. Use Of The Transfer Tool

A. For moving a stitch from one needle to the next

- Place the eye of the tool into the open needle hook. (Fig.43-a)
- Draw the needle forward by pulling the tool until the stitch is behind the open latch. (Fig. 43-b)
- Push the needle back until the stitch slides off the needle onto the stem of the tool. (Fig.43-c)
- Lift the eye of the tool out of the needle hook and place it into the hook of the next needle. (Fig. 43-d)
- Tilt the tool upward so that the stitch will slide down the stem and into the needle hook.

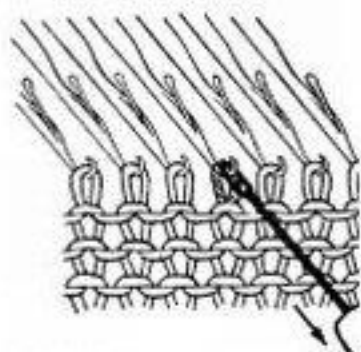


Fig.43 - a

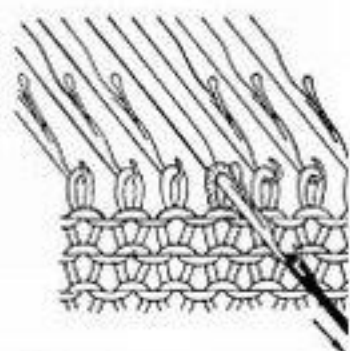


Fig.43 - b

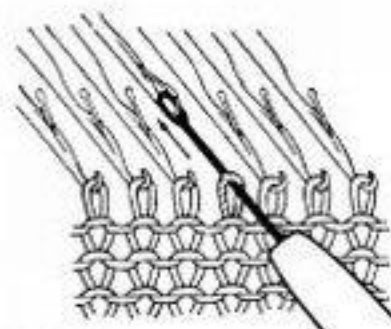


Fig.43 - c

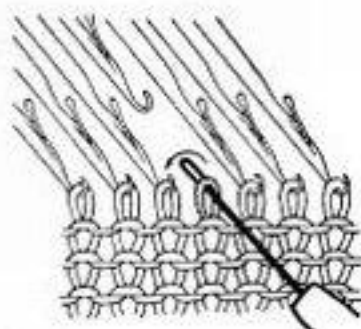


Fig.43 - d

B. For picking up a dropped stitch one row

(a) Push the single eye transfer tool through the loop of the dropped stitch. (Fig. 44-a)

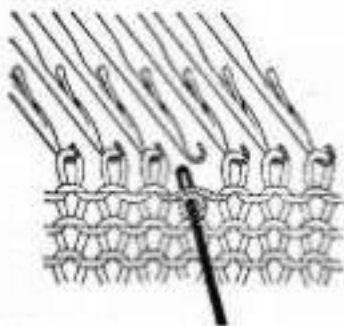


Fig.44 - a

(b) Pick up the stitch together with the loose strand of yarn and place them into the empty needle hook. (Fig. 44-b)

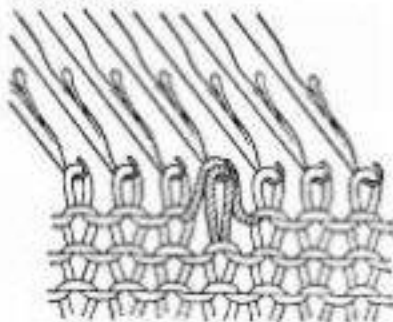


Fig.44 - b

(c) Hold up the loose strand of yarn with the tool and push the machine needle forward until the loop passes behind the latch, and leave the loose strand in the hook. (Fig. 44-c)

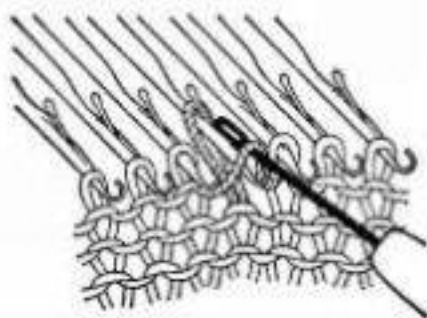


Fig.44 - c

(d) Push the needle back until the loop passes over the closed latch and re-forms the stitch. (Figs. 44-d & e)

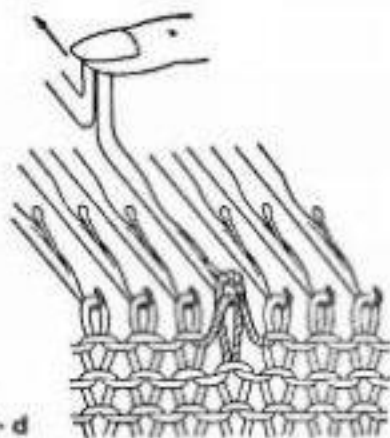


Fig.44 - d

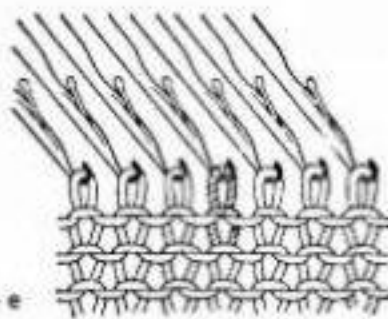


Fig.44 - e

3. Use Of The Latch Needle Tool

A. For ribbing

- (a) Drop a stitch from the machine needle down to one row above where the ribbing is to start, and insert the latch needle tool. (Fig. 45-a)
- (b) Push the tool forward under the strand above the loop until the loop is behind the latch. (Fig.45-b)
- (c) Pull the tool back, and the loop closes the latch over the strand caught in the hook. (Fig. 45-c)
- (d) Continue to pull the tool back until the strand is pulled through the loop forming a new loop. (Fig. 45-d)
- (e) Repeat and knit up the stitch. (Figs. 45-e & f)
- (f) Place the final loop back on the empty needle (Fig. 45-g)

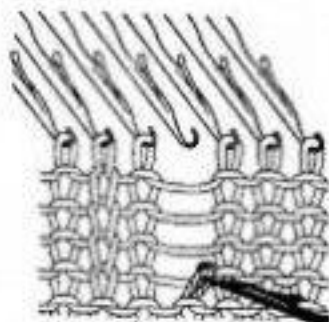


Fig.45 - a

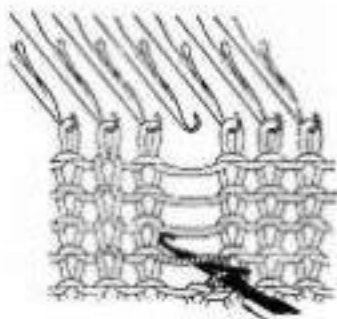


Fig.45 - b

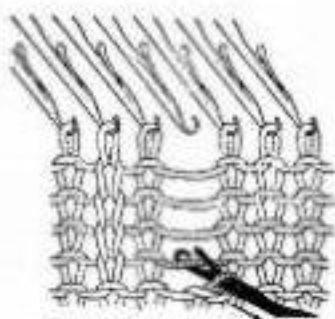


Fig.45 - c

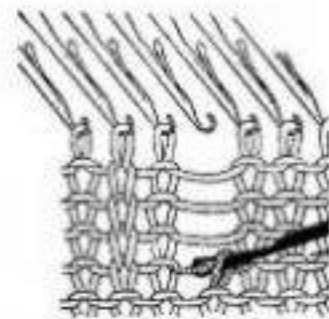


Fig.45 - d

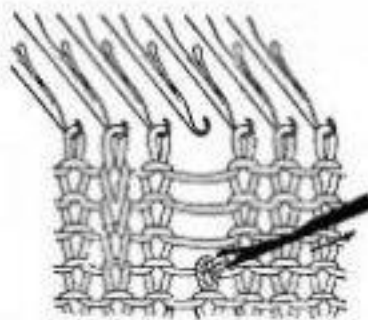


Fig.45 - e

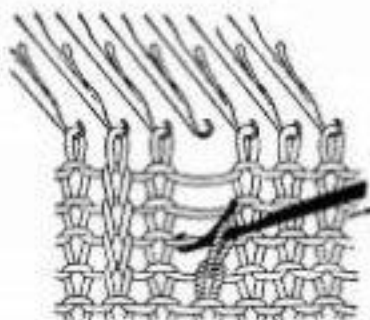


Fig.45 - f

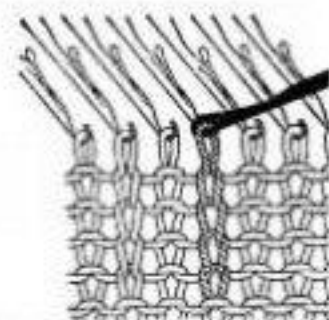


Fig.45 - g

(B) For picking up a dropped stitch more than one row

- (a) Insert the tool from the back of the work into the loop below the dropped stitch. Push the tool towards you so that the hook passes under the strand of yarn and the loop is behind the latch. (Fig. 46-a)

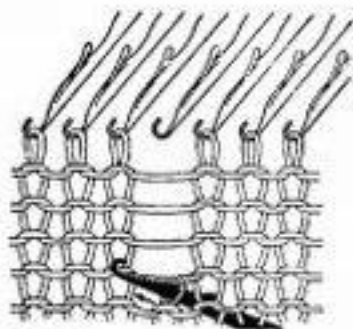


Fig.46 - a

- (b) Pull the tool back so that the latch closes over the strand of yarn in the hook. (Fig.46-b & c)

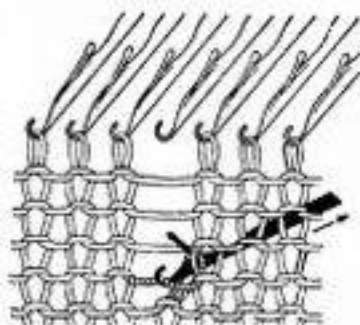


Fig.46 - b

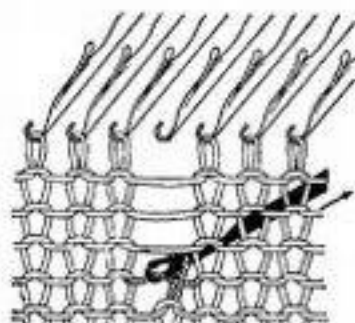


Fig.46 - c

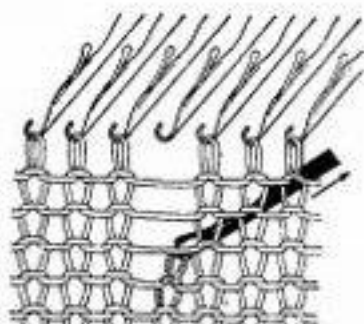


Fig.46 - d

- (c) Continue to pull the tool back until the strand is drawn through the loop forming a new loop. (Fig.46-d)
- (d) Repeat and continue to knit up until the last strand has been re-knitted. Place the final loop onto the empty needle. (Fig. 46-e)

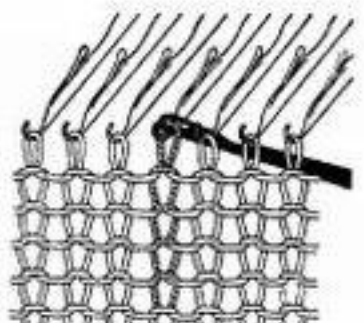


Fig.46 - e

How To Make A Hem

- (a) Cast-on and knit until the piece is twice as long as the depth of the hem.
- (b) Turn the knitting up towards you, and using the transfer tool place the cast-on loops onto the corresponding needles.
- (c) When all the loops have been placed onto the needles, pull the needles forward into holding position (E), at the same time keeping the knitting back against the sinker plate so that all the loops are behind the open latches.
- (d) Bring forward the return cam levers to "Position 1" and knit the first row slowly to complete the double hem.
- (e) Continue to knit.

5. How To Make A Hem With Picot Edge

- (a) Cast-on and knit half the number of rows required for the hem, i.e. if 30 rows knit 15.
- (b) Transfer with the single eye transfer tool the stitch from the 2nd needle on to the 3rd needle and from 4th to 5th, and so on to the end, leaving a stitch on each end needle.
- (c) Bring forward empty alternate needles with other all working needles into position (E), and knit the remaining number of rows for the hem, i.e. 15 rows if the total is 30.
- (d) Now, complete the hem by turning up and hooking onto the needles the cast-on loops.
- (e) Knit one row slowly, and continue to knit.

6. Increasing

A. Increasing one stitch at the start of a row

At the same end nearest the carriage, bring forward from position (A) into position (B) the next empty needle, and knit. (Fig.47)

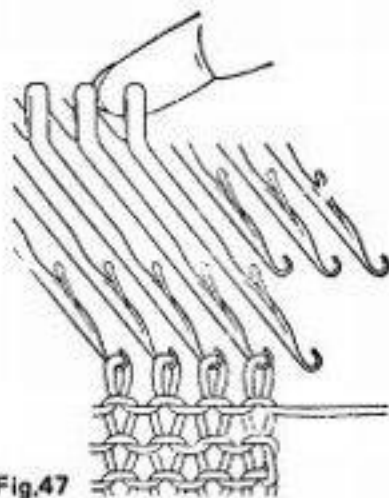


Fig.47

B. Increasing one stitch at either or both ends simultaneously

(a) Push out the next empty needle into the position (B).

(b) Using the double eye transfer tool, transfer the first two stitches so that the first stitch is on the empty needle and the second stitch is on the adjacent needle, leaving the third needle empty. (Fig.48-a)

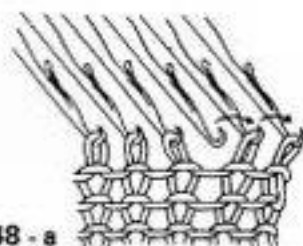


Fig.48 - a

(c) With the single eye transfer tool pick up a loop from the next stitch one row below, and place it in the empty third needle. (Fig.48-b)

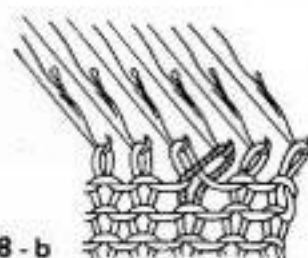


Fig.48 - b

C. Increasing one stitch in the middle of a row

- (a) Bring forward one empty needle from position (A) into position (B) at the end nearest to the point of increase.
- (b) With the treble eye transfer tool move three end stitches outwards leaving 4th needle empty.
- (c) Continue to move the stitches outwards until you have an empty needle at the point where you wish to increase. (Fig.49-a)
- (d) Pick up a loop from the previous row, and place it on the empty needle. (Fig.49-b)

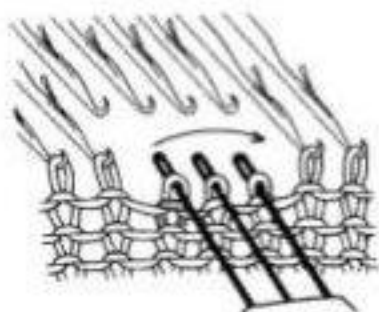


Fig.49 - a

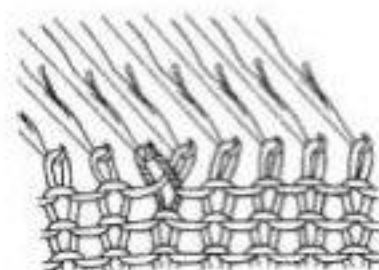


Fig.49 - b

D. Increasing more than one stitch at the same time

- (a) At the same end as the carriage, bring forward from position (A) into holding position (E) the required number of needles.
- (b) Wind the yarn from the carriage feeder once around the stems of each of these needles. Be sure that the newly formed loops are behind the open latches. (Fig.50)
- (c) Pull forward the leading return cam lever to "Position 1" and move carriage slowly across the working needles for the next three or four rows. It is advisable to hang the selvedge weight on the increased stitches. (Fig.51)



Fig.50

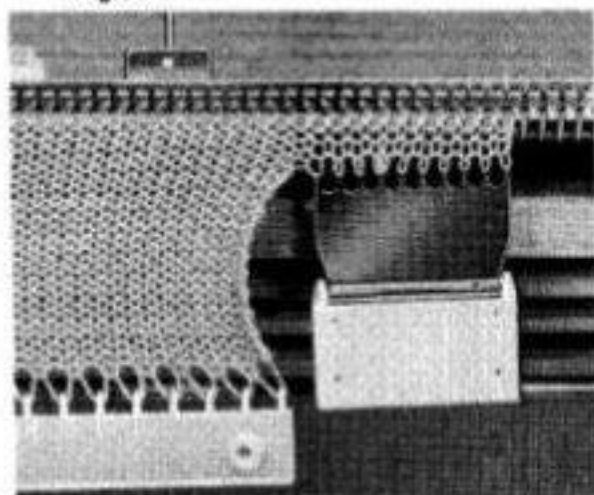


Fig.51

7. Decreasing

A. Decreasing one stitch at either or both ends simultaneously

METHOD 1

- (a) With the single eye transfer tool, transfer the stitch from the end needle onto the 2nd needle. (Fig.52)
- (b) Push the empty needle back to position (A).

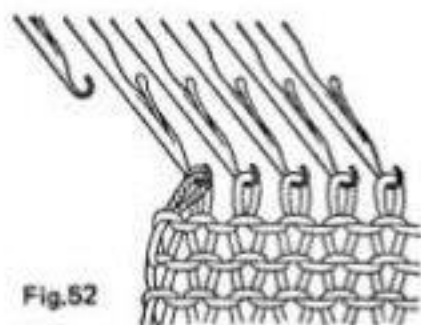


Fig.52

METHOD 2

- (a) With the single eye transfer tool, transfer the stitch from the 3rd needle onto the 2nd needle from the end. (Fig.53-a)
- (b) With the double eye transfer tool, transfer the stitches from the two end needles onto the 2nd and 3rd needles. (Fig.53-b)
- (c) Push the empty needle back to position (A).

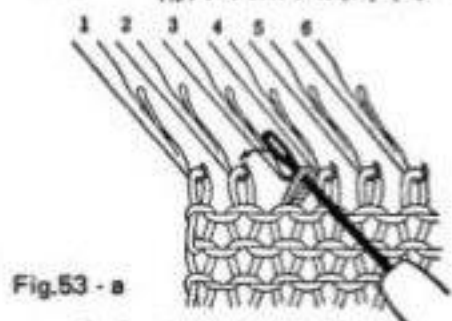


Fig.53 - a

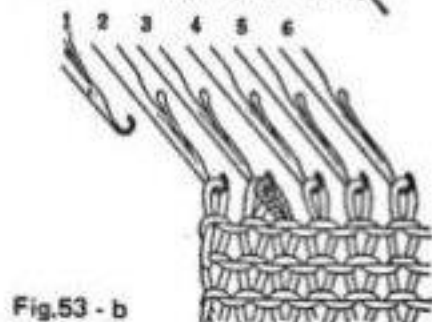


Fig.53 - b

B. Decreasing one stitch in the middle of a row

- (a) Using the single eye transfer tool, transfer the stitch from the needle where you wish to decrease onto the next needle towards the centre. (Fig.54-a)
- (b) With the treble eye transfer tool, move all the stitches over until the end needle is empty. (Fig.54-b)
- (c) Return the empty end needle to position (A).

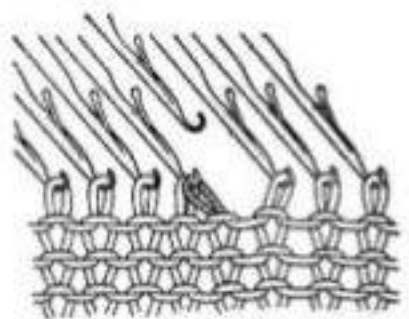


Fig.54 - a

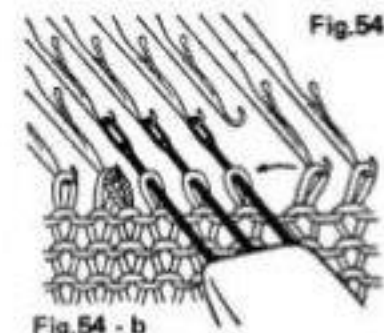


Fig.54 - b

C. Decreasing more than one stitch at the same time

- (a) At the same end as the carriage, transfer the stitch with the single eye transfer tool from the 2nd eye needle onto the 1st needle. (Fig.55-a)
- (b) Bring forward the 1st needle until the two stitches on it are behind the latch and place the yarn from the carriage feeder into its hook. (Fig.55-b)
- (c) Push the needle back until the two stitches pass over the closed hook and form a single stitch. (Fig.55-c)
- (d) Transfer this single stitch onto the empty 2nd needle. (Fig.55-d)
- (e) Repeat until the desired number of stitches have been decreased. Push empty needle back to position (A).



Fig.55 - a



Fig.55 - b



Fig.55 - c



Fig.55 - d

8. Part Knitting

A. Increasing slope

- (a) Push back the shifting cam levers to "KNIT" position and also the return cam levers to "Position 2" on each side. (Fig.56)
- (b) At the opposite end to the carriage, keep the fabric back against the sinker plate and at the same time bring forward into holding position (E) from working position (B) the number of needles not required for the increase. (Fig.56) Knit one row.

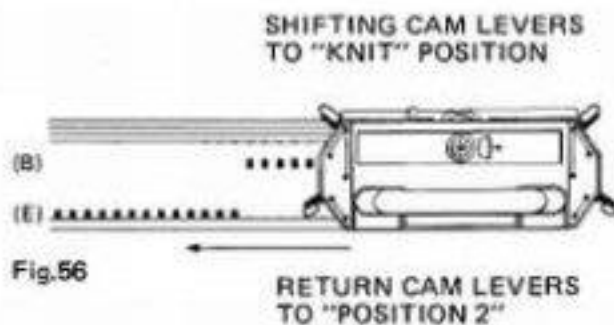


Fig.56

- (c) Pass the yarn under the end needle in position (E) nearest the needles in position (B), leaving it over the other needles in position (E). (Figs.57 & 58)

Knit one row.

Note: Failure to do this will cause a hole in the fabric.

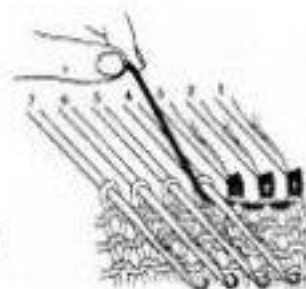


Fig.57

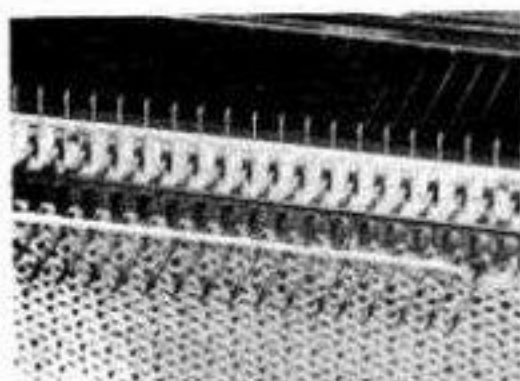


Fig.58

- (d) Push back from position (E) into position (D) the number of needles according to the degree of slope required. Knit one row. (Fig.59) It will be seen that the needles pushed back to position (D) will knit and, will be automatically returned to position (B).

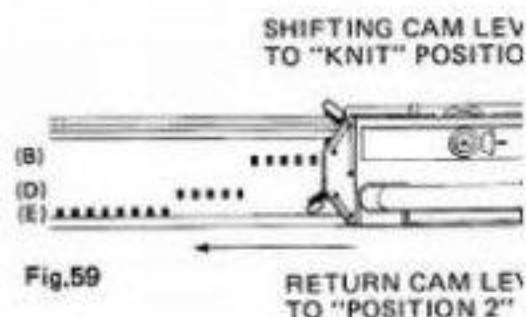


Fig.59

- (e) Repeat from (c) to (d) until increasing slope has been completed. Bring forward both return cam levers to "Position 1" and knit one row to form a neat edge.

Note: If the fabric leans sharply, it is advisable to hang the selvedge weight below the end needles. (Fig.60)

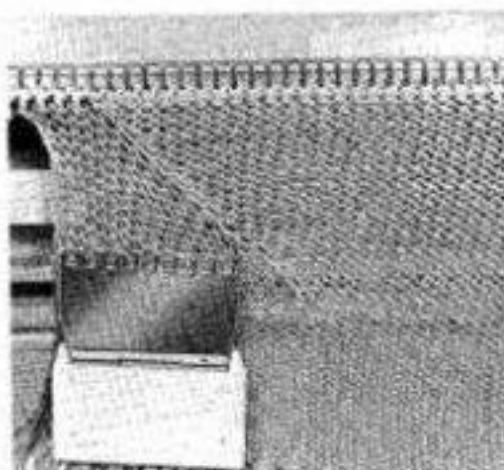


Fig.60

B. Decreasing slope

- Push back the shifting cam levers to "KNIT" position and also the return cam levers to "Position 2" on each side. (Fig.61)
- At the opposite end to the carriage, bring forward into position (E) from position (B) the required number of needles. (Fig.61)
Knit one row.
- Pass the yarn under the end needle in position (E) nearest the needles in position (B). (Fig.62)
Knit one row.
- Bring forward from position (B) into position (E) the required number of needles farthest from the carriage. (Fig.63)
Knit one row.
- Repeat from (c) to (d) until you have completed the slope. Bring forward the return cam levers to "Position 1" on each side and continue to knit.

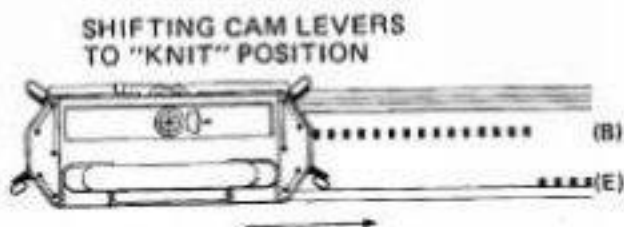


Fig.61 RETURN CAM LEVERS TO "POSITION 2"

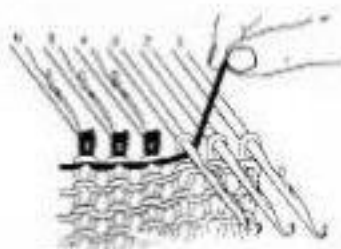


Fig.62

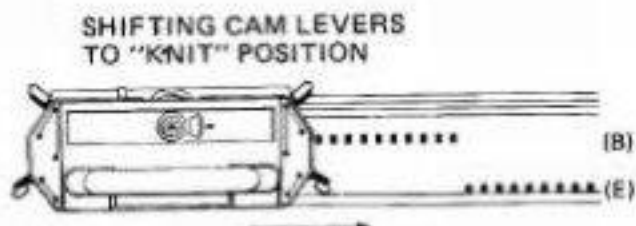


Fig.63 RETURN CAM LEVERS TO "POSITION 2"

9. How To Pull Back A Row Of Knitting

- Hold the fabric down gently with one hand.
- With the other hand pull the yarn in line with the needle bed until it forms a straight line across the needle hook. (Fig.64)
- Still holding the fabric, continue to pull the yarn in a sideways and upwards direction and the yarn will lift out of the needles bringing the loops of the previous row into the needle hooks.
- Bring all working needles into position (E), and with return cam levers in forward position, "Position 1", knit first row slowly.

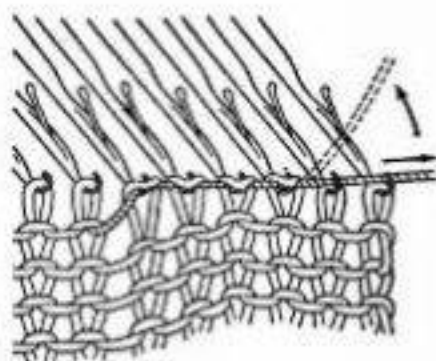


Fig.64

10. How To Release Carriage Clear Of Needles

Force must never be used to operate the carriage. In the event of the carriage jamming, do not use force to free it but proceed as follows:

- Unscrew the two plastic nuts, and remove the fabric presser arm. (Fig.65)
- Lift front of the carriage clear of front runner rail and needles. (Fig.66)
Move the carriage to the end of the machine.
- Locate and remedy cause of carriage jamming, and if necessary pull back one row of knitting.
- Replace carriage and fabric presser arm. Continue to knit.

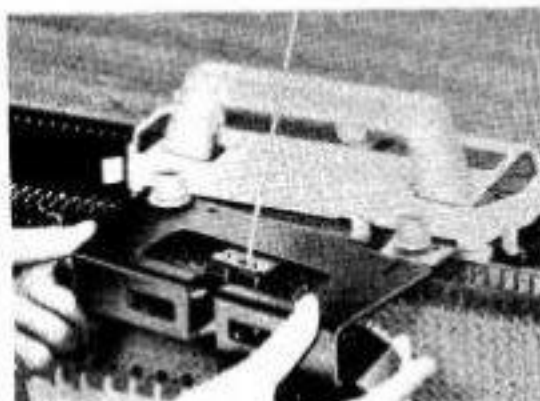


Fig.65

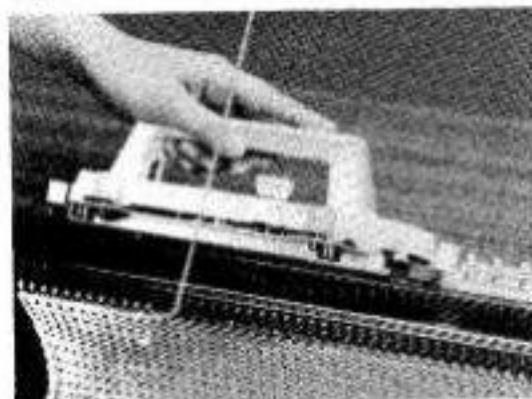


Fig.66

11. How To Change A Needle

- Pull out the needle holder rod until the opposite end is clear of the needle you wish to change. (Fig.67)
It is not necessary to withdraw the rod completely.
- Bring the needle forward and, lift up by the needle butt and press down slightly on the needle hook so that the tail of the needle comes up through the slot. Push the needle back until the tail passes over the rear runner rail and the hook end comes out through the slot. (Fig.68)
- Replace the new needle by reversing the process, and push the rod back into position.

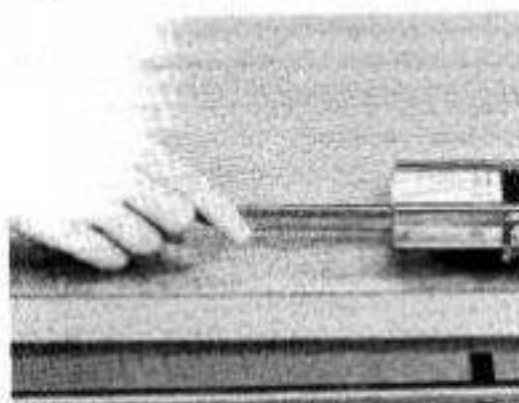


Fig.67

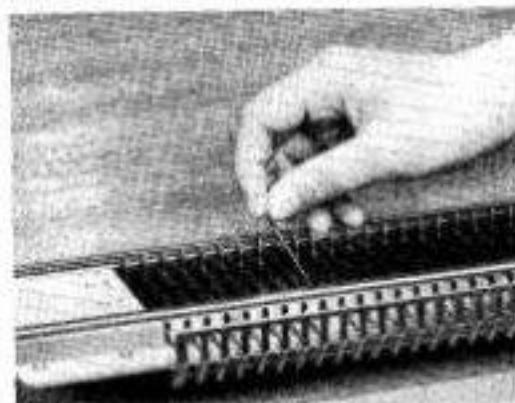









Fig.68

FANCY PATTERNS

Knitting Symbols On The Pattern Chart

	Tucking Stitch	Needle picks up a strand of wool but does not knit the previous stitch.
	Holding Stitch	Needle holds the stitch and does not knit.
	Knit Stitch	Face loop of stocking stitch.
	Purl Stitch	Back loop of stocking stitch.
	Cross Stitch	Transfer the stitches with the left stitch over the right.
	Cross Stitch	Transfer the stitch with the right stitch over the left.
	Colours	'A' is the 1st colour and 'B' the 2nd colour.

Abbreviations In The Instruction & Illustration

SCL — Shifting Cam Lever

RCL — Return Cam Lever

TK — Tuck Knob

M.C. — Main Colour

C.C. — Contrasting Colour



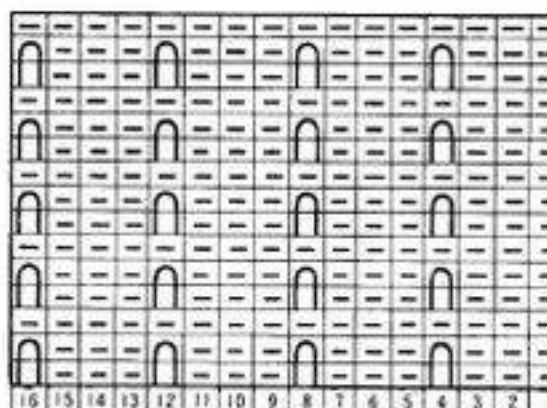
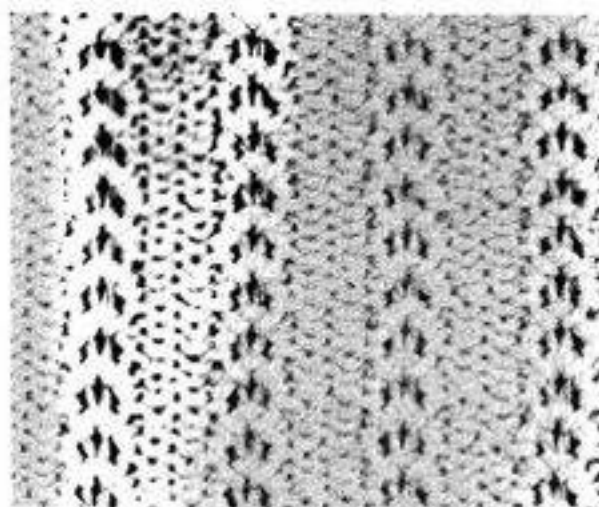
— Tuck knob in upward position



— Tuck knob in downward position

Pattern 1

Pull-up Knitting In One Colour



(PURL S

- Set both SCLs in "KNIT" position and at the same time set both RCLs as "Position 2". (Fig.70)
- With the carriage on right. Using 3 x 1 selector plate, push forward into position (E) every 4th needle from right end. (Fig.69)
Move carriage across needles from right to left. (Fig.70)
- With carriage on left. Move the carriage back to right to knit 2nd row.
- With carriage on right, pull forward the leading RCL (left hand) to "Position 1", and knit 3rd row. (Fig.71)
It will be seen that all needles are aligned in position (B). Return the left hand RCL to "Position 2".
For pattern repeat from (b) to (d).

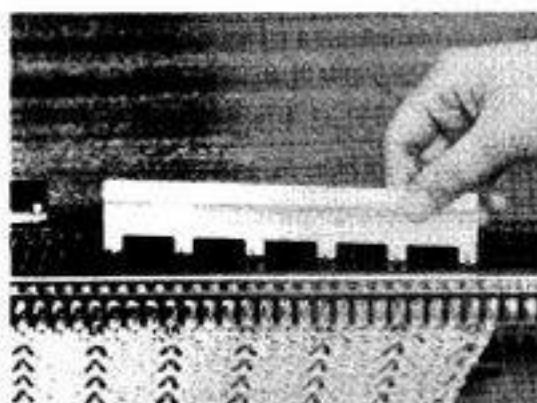


Fig.69

SCLs TO "KNIT" POSIT

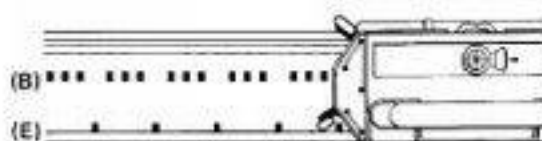


Fig.70

RCLs TO "POSITION

SCLs TO "KNIT" POSIT

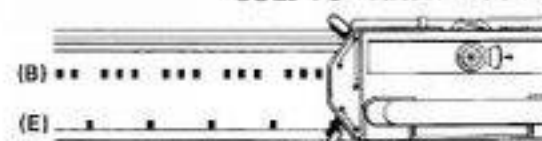
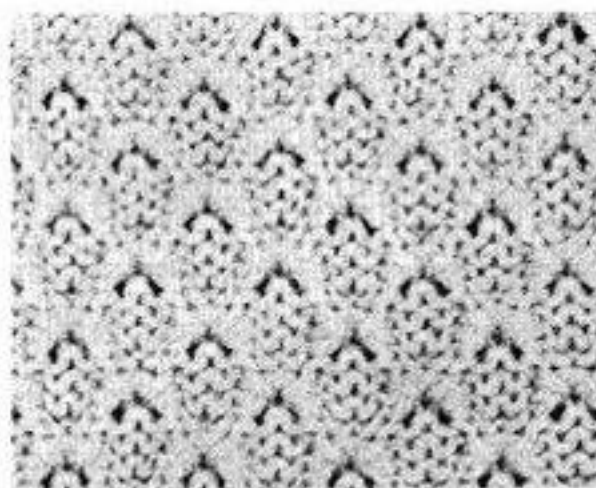


Fig.71

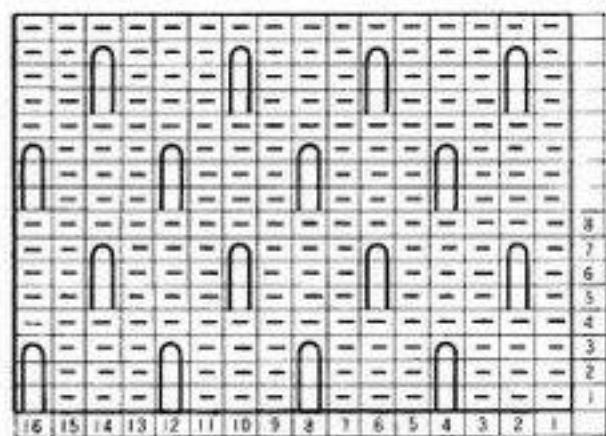
LEFT HAND RCL TO "POSITION
RIGHT HAND RCL TO "POSITIO

Pattern 2

Pull-up Knitting In One Colour



- Set both SCLs in "KNIT" position and at the same time set both RCLs at "Position 2". (Fig.72)
- With carriage on right. Using 3 x 1 selector plate, bring forward into position (E) from position (B) every 4th needle from right end. (Fig.72)
Move carriage across needles from right to left to knit 1st row.
- With carriage on left. Move carriage back to right to knit this row.
- Knit one row from right to left.
- With carriage on left, pull forward the leading (right hand) RCL to "Position 1". (Fig. 73)
Knit one row. All the needles now knit stitches and are aligned in position (B).
- With carriage on right, return the trailing RCL (right hand) to "Position 2". (Fig.74)
Push forward into position (E) every 4th needle starting with 2nd needle from right end needle. Knit one row from right to left.



(PURL SIDE)

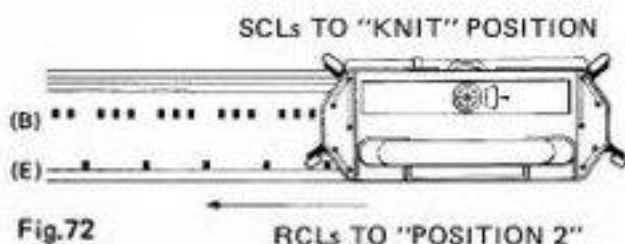


Fig.72

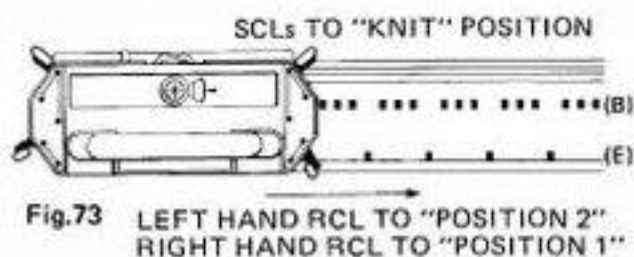


Fig.73

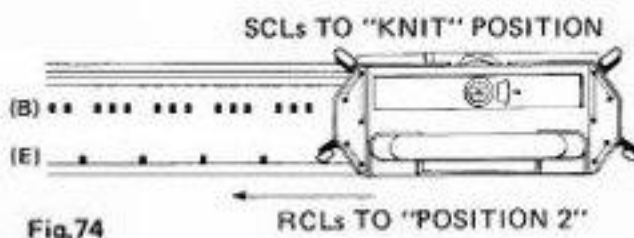


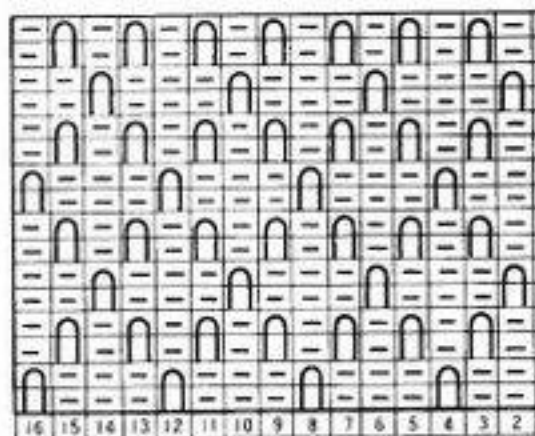
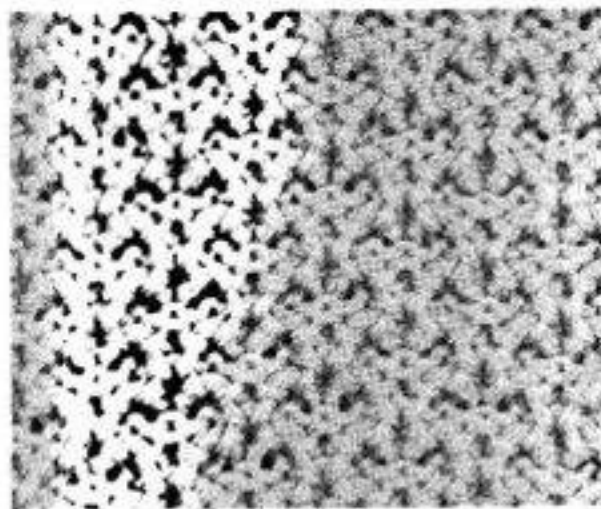
Fig.74

- With carriage on left. Knit one row.
- With carriage on right. Knit one row.
- With carriage on left, pull forward the right hand RCL to "Position 1".
Knit one row.

Repeat from (b) to (i).

Pattern 3

One Colour Pull-Up Knitting On Successive Rows



(PURL 1

- Cast-on using the cast-on comb. Pull both SCLs back to "KNIT" position and set both RCLs at "Position 2".
- With carriage on right, using 3 x 1 selector plate bring forward into position (E) every 4th needle starting with 4th needle from right end needle. Move carriage from right to left and back to right to knit 1st and 2nd row. (Fig.75)
- With carriage on right, using the straight edge of 1 x 1 selector plate push back into position (D) from position (E) every 4th holding needle, and now with the teeth of 1 x 1 selector plate draw forward into position (E) from position (B) every alternate needle starting with the extreme end needle on the right. (Fig.76)

To draw out the needles in 1 x 1 formation to position (E) with the 1 x 1 selector plate, it is advisable at the same time to hold with your left hand the knitting back against the sinker plate. (Fig.77)

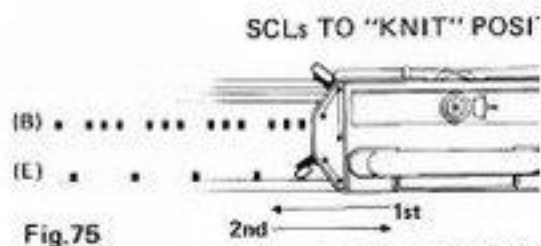


Fig.75

RCLs TO "POSITION 2

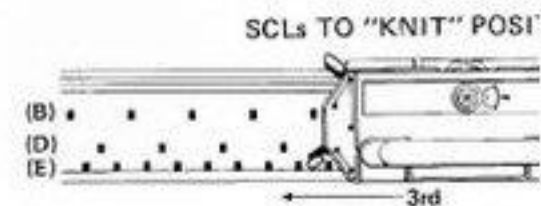


Fig.76

RCLs TO "POSITION

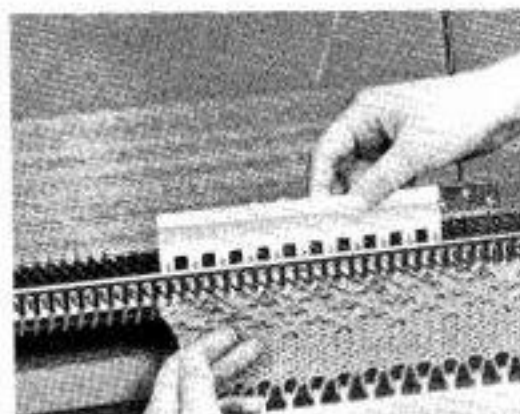


Fig.77

Move the carriage across needles from right to left.

It is seen that every 4th needle pushed back to position (D) before commencement of the last row has now automatically returned to position (B).

- (d) Move the carriage to the right to knit 4th row.
- (e) Carriage now on right. With the straight edge of the 3 x 1 selector plate push back into position (D) from position (E) every alternate holding needle.

Keeping the fabric back against the sinker plate, at the same time push forward into position (E) from position (B) every 4th needle starting with 2nd needle from right end. (Fig.78)

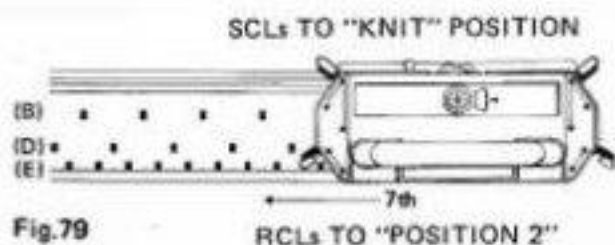
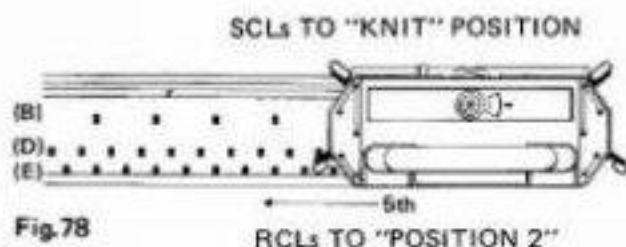
Knit 2 rows. (5th and 6th row)

- (f) With the carriage on right, using the straight edge of 1 x 1 selector plate, push back from position (E) into position (D) every 4th holding needle, and bring forward into position (E) from position (B) every alternate needle starting with right end needle. (Fig.79)

Knit 2 rows. (7th and 8th row)

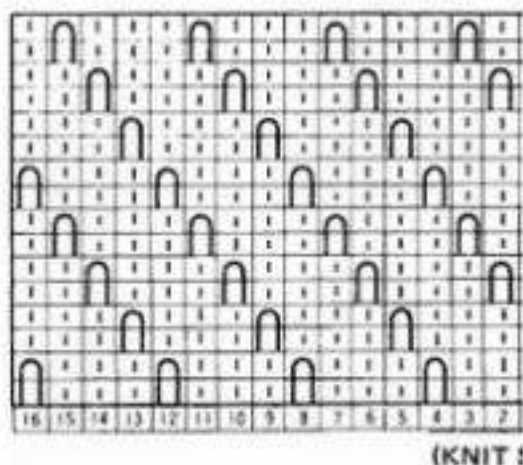
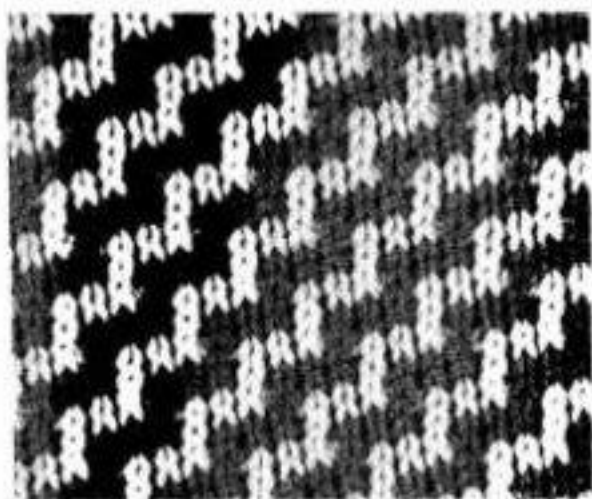
- (g) With carriage on right, push back into position (D) from position (E) every alternate holding needle.

Repeat from (b) to (g). Cast-on weight comb should be moved up the knitting after every 15 to 20 rows as the knitting proceeds.



Pattern 4

Two Colour Pull-Up Knitting On Successive Rows



- (a) Thread up two strands of yarn (M.C. and C.C.) through the overhead feeder unit. Hook C.C. to yarn clip on the feeder rod. (Fig.80)
Set both SCLs in "KNIT" position and push both RCLs back to "Position 2".
- (b) With carriage on right, thread M.C. through the carriage feeder. Using 3 x 1 selector plate bring forward into position (E) from position (B) every 4th needle starting with 4th needle from right end. (Fig. 81)
Knit 2 rows with M.C.

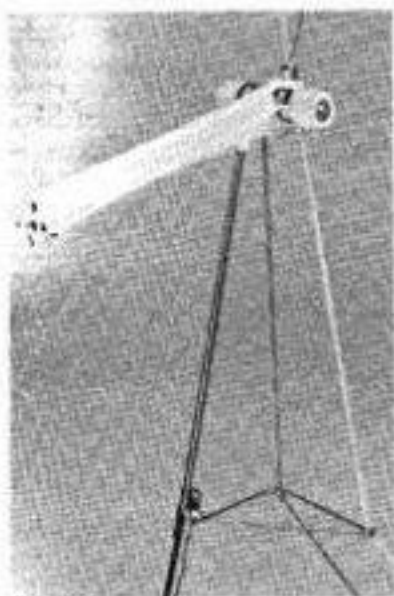


Fig.80 SCLs TO "KNIT" POSI

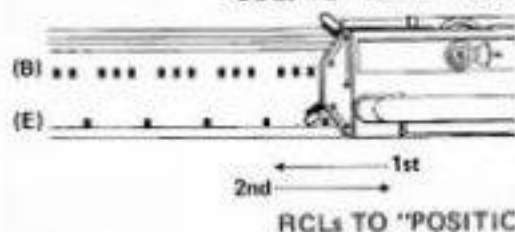


Fig.81

- (c) With carriage on right, remove M.C. from carriage feeder, pull and place it at the right end of the needle bed. (Fig.82)

Re-thread feeder with C.C.

Push back into position (D) from (E) every 4th holding needle, and push forward from (B) to (E) every 4th needle starting with extreme end needle on the right. (Fig.83)

Knit 2 rows with C.C.

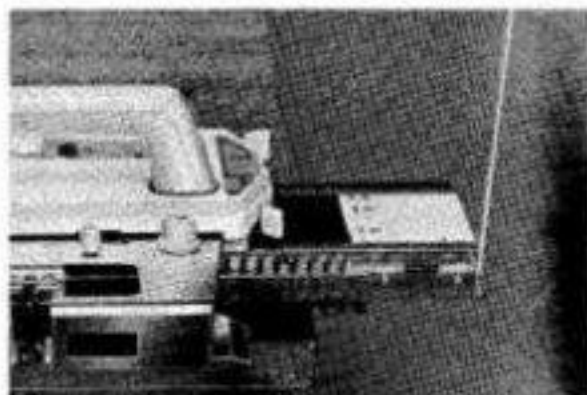


Fig.82 SCLs TO "KNIT" POSITION

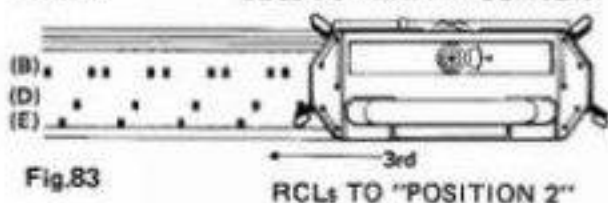


Fig.83

RCLs TO "POSITION 2"

- (d) With carriage on right, replace C.C. with M.C. Push back into position (D) from position (E) every 4th holding needle and, bring forward from position (B) into position (E) every 4th needle starting with 2nd needle from right end. (Fig.84)

Knit 2 rows with M.C.

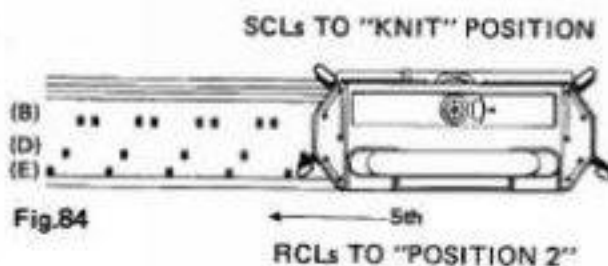


Fig.84

RCLs TO "POSITION 2"

- (e) With carriage on right, change to C.C. Push back needles to position (D) from (E), and bring forward from (B) to (E) every 4th needle starting with 3rd needle from right end. (Fig.85)

Knit 2 rows with C.C.

Repeat from (b) to (e).

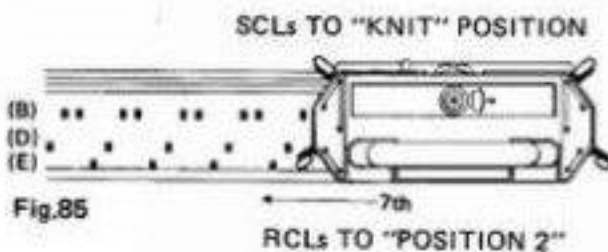
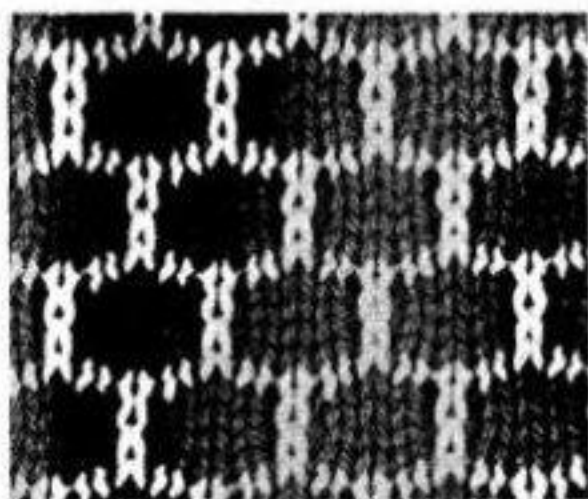


Fig.85

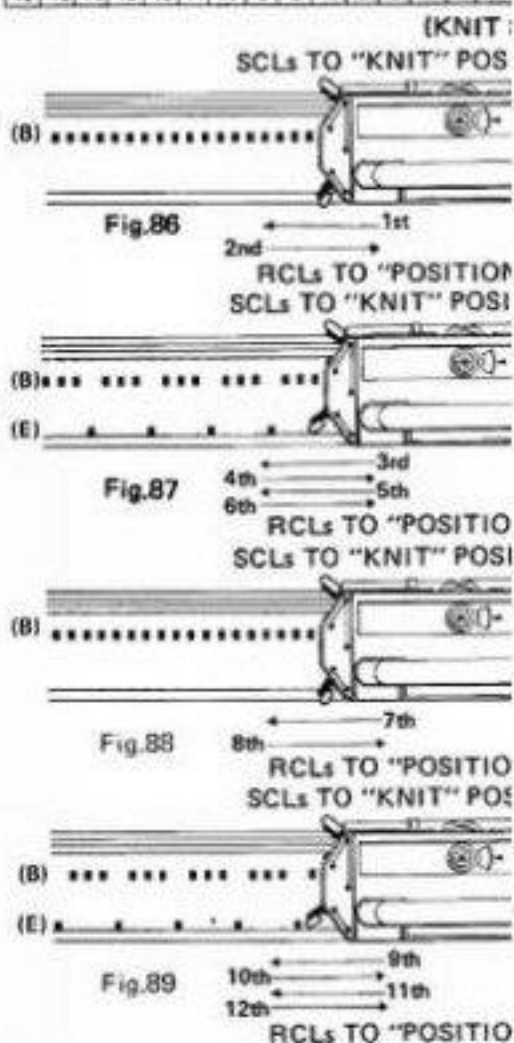
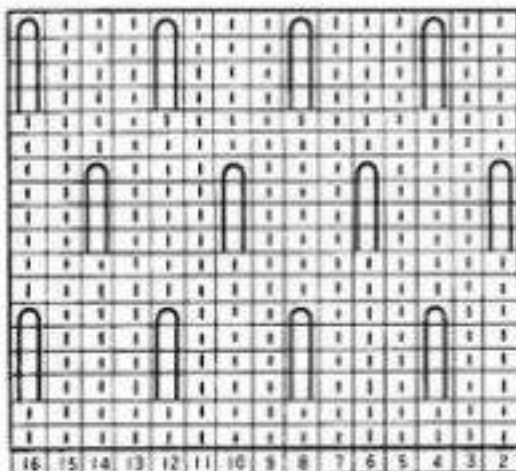
RCLs TO "POSITION 2"

Pattern 5

Pull-Up Knitting In Two Colours



- (a) Thread up two strands of yarn (M.C. and C.C.) through the overhead feeder unit. Hook C.C. to yarn clip on the feeder rod.
- (b) With carriage on right, set both SCLs to "KNIT" position and both RCLs to "Position 1". (Fig.86)
Knit two rows of stocking stitches with M.C. across all working needles in position (B) from right to left, and back to right. (Fig.86)
- (c) With carriage on right, push back both RCLs to "Position 2". Using 3 x 1 selector plate, bring forward into position (E) from position (B) every 4th needle starting with 4th needle from right end. (Fig.87)
Change M.C. with C.C. Knit 4 rows with C.C. (Fig.87)
- (d) With carriage on right. Push forward both RCLs to "Position 1". Change to M.C. Knit two rows of stocking stitches with M.C. (Fig.88)

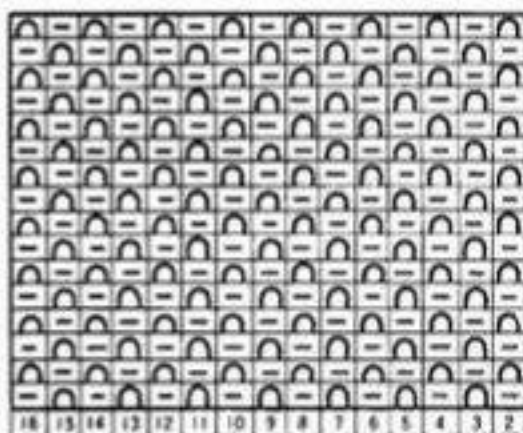
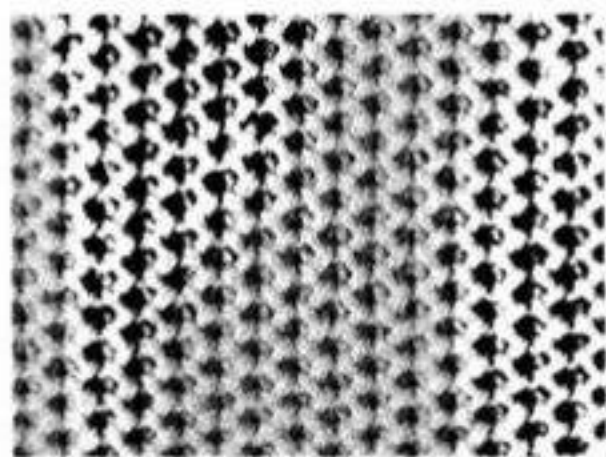


- (e) With carriage on right, set both RCLs to "Position 2" and change M.C. with C.C. Bring forward position (E) every 4th needle starting with 2nd needle from right end, and knit 4 rows with C.C. (Fig.89)

For pattern repeat from (b) to (e).

Pattern 7

Tucking Stitches On Successive Rows – Fishermans Rib



(PURL 1)

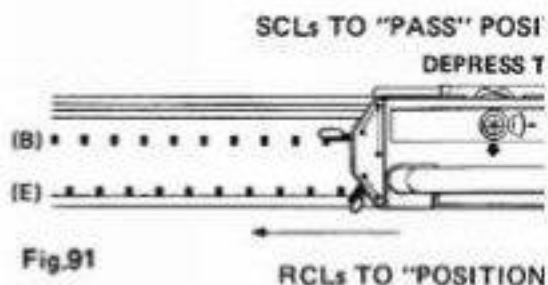
(a) With the carriage on right, set both SCLs to "PASS" position and depress the TK. (Fig.91)

- * Bring forward into position (E) from position (B) every alternate needle starting with 2nd needle from right end.

Knit one row from right to left.

(b) With the carriage on left, bring forward from (B) to (E) every alternate needle starting with the right end needle. Knit one row. *

Repeat from * to *.



Then, with the teeth of the selector plate return into position (B) every 4th needle leaving other needles in position between (B) and (D). (Fig.94)

Finally with the straight edge of the selector plate draw out to position (E) needles placed in between (B) and (D). (Fig.95)

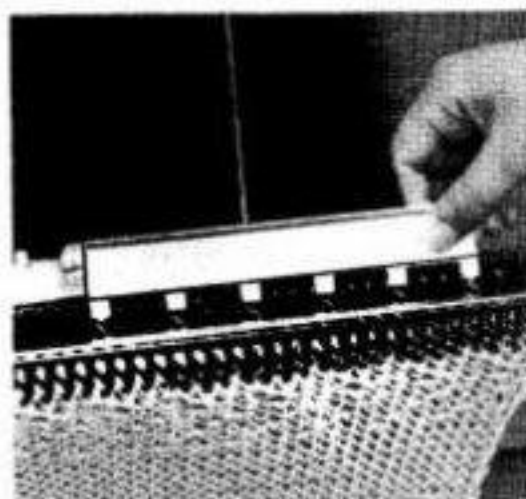


Fig.94

Knit one row from right to left, and the needles in position (E) will have returned and aligned along with the others in position (B).

- (b) With the carriage on left. Proceed in the same manner as explained in (a) above, and draw out the needles to position (E) leaving every 4th needle in position (B). But every 4th needle to remain in position (B) should start with the 2nd needle from right end needle, which means that the tucking stitch formation is moved to each left adjacent needle.
Knit one row.

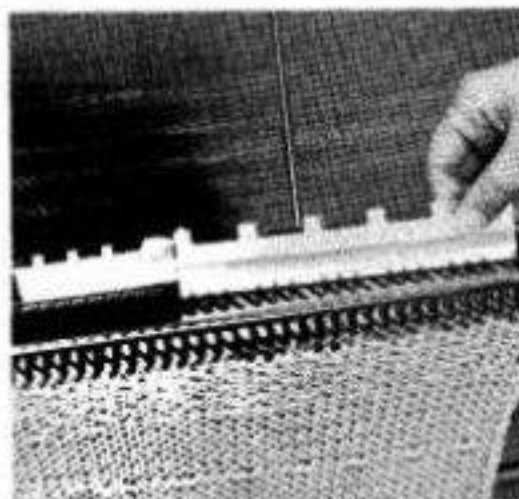


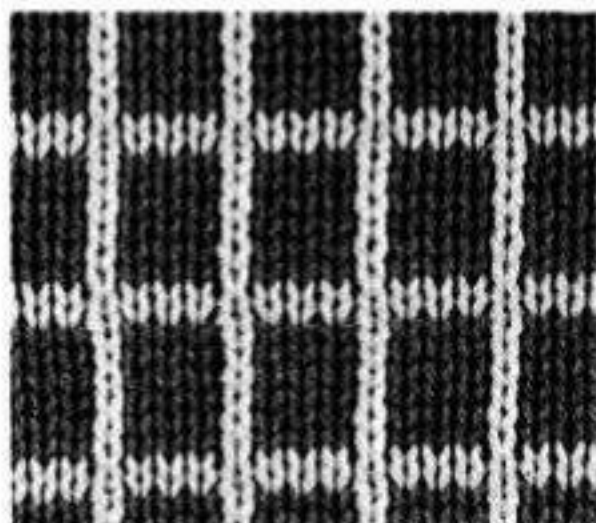
Fig.95

Repeat and knit upto 7th row, but moving the position of tucking needles to each left adjacent needle each row, and from 8th to 12th proceed in reverse order.

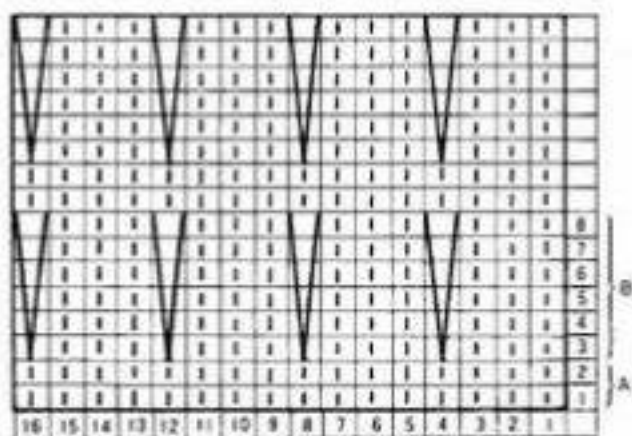
Repeat the above procedure for complete pattern.

Pattern 9

Slip Stitch Pattern In Two Colours — Large Check Pattern



- With carriage on right, set SCLs to "KNIT" position. Bring forward RCLs to "position 1" and pull upward TK. (Fig.96)
- Knit two rows of plain stocking stitches with M.C.
- With carriage on right. Change to C.C. and move both SCLs to "PASS" position.
 - Leaving every 4th needle from right end in position (B) push forward into position (E) all other needles. (Fig.97-a) Knit one row.
- With carriage on left, unthread the C.C. from the carriage feeder and move the carriage from left to right across the working needles. Using 3 x 1 selector plate, push forward into position (E) every 4th needle from the right end, leaving all other needles in position (B). (Fig.97-b) Re-thread the M.C. through the feeder and Knit one row. *



(KNIT SIDE)

- Repeat from * to * further 3 times.
- With carriage on right, set SCLs to "KNIT" position. Repeat from (b) to (f).

SCLs TO "KNIT" POSITION



Fig.96

RCLs TO "POSITION 1"

BOTH SCLs TO "PASS" POSITION

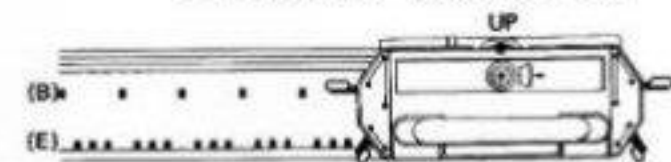


Fig.97-a

BOTH RCLs TO "POSITION 1"

BOTH SCLs TO "PASS" POSITION

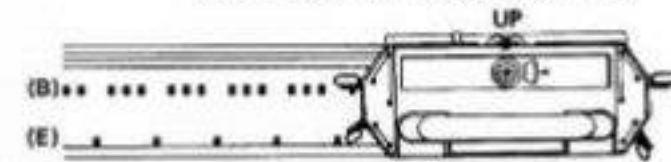
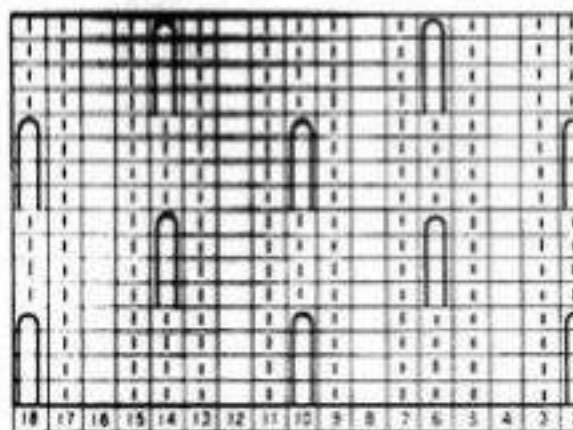
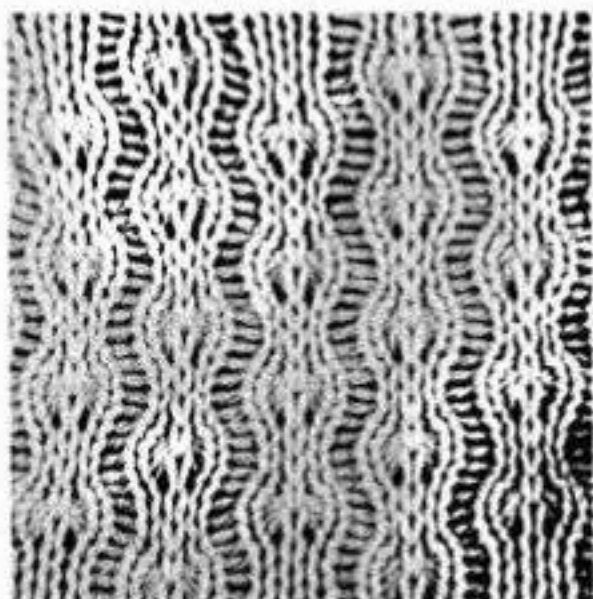


Fig.97-b

BOTH RCLs TO "POSITION 1"

Pattern 10

Pull-Up Stitches – Mock Cable



(KNIT)

- (a) Before commencing to knit, transfer every 4th stitch, starting with 4th needle from right end, to each adjacent needle, and those empty needles should be pushed back to the rest position (A).

Push back SCLs to "KNIT" position and RCLs to "Position 2".

- (b) Push forward into position (E) with your finger every 8th needle starting with 2nd needle from the right end. (Fig.98)

Knit 4 rows.

- (c) Push back into position (D) from position (E) every 8th holding needle, and bring forward from position (B) into position (E) another series of every 8th needle starting with 6th needle from the right end. (Fig. 99) Knit 4 rows. Push back into position (D) from position (E) every 8th holding needle.

Repeat from (b) to (c) above.

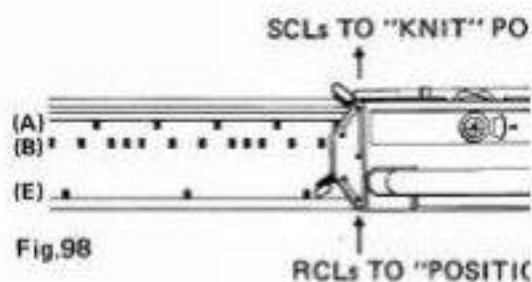


Fig.98

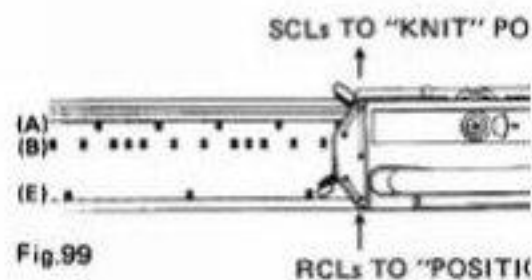


Fig.99

Pattern 11

Cable Pattern



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

(KNIT SIDE)

- Set both SCLs to "KNIT" position, and pull forward RCLs to "Position 1".
- Using a pair of treble eye transfer tools, take three stitches from three needles onto one of the tools, and drop the right adjacent stitch from the needle hook, by moving the needle forward with the hand until the loop passes behind the latch, then move needle back to position (A), so that the stitch passes over the closed hook. Run this stitch down to 2 or 3 rows below the beginning of the cable pattern.
- Take the left adjacent three stitches from three empty needles onto the second tool, and drop also left adjacent stitch from the needle hook.

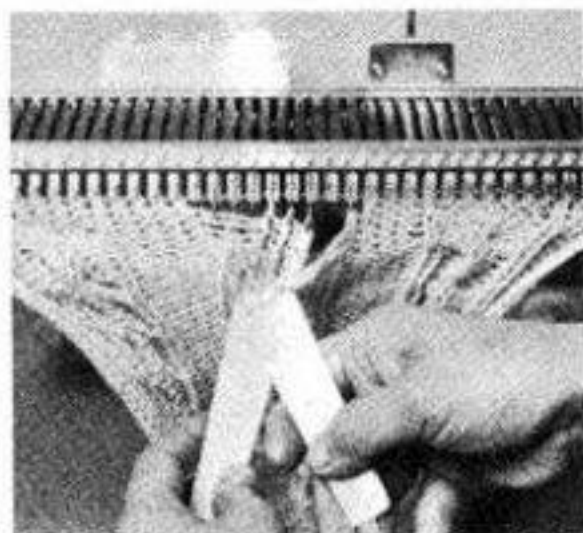


Fig.100

- Place the stitches from the first tool onto the second three empty needles.
- Place the three stitches from the second tool onto the first three empty needles. These two sets of three stitches will now be crossed over each other. (Fig.100)

