

Forward

Highly appreciating your patronage to our Silver SK8-200 Super de Luxe Knitting Machine, let us express our hearty thanks and hope you will like and enjoy this machine.

This Super de Luxe Knitting Machine is the one we designed and produced with great confidence after our technical studies of many years.

Among a number of features the most meritorious is, as it is very simple to operate and very capable, it is good for beginners as well as trained knitters.

This machine is also able to handle all types of yarn, thin or thick, or any novel thread such as lace or vinyl thread. With the special cams, pull-up stitches, knit-in stitches and varied patterns can easily be knit.

Moreover, this machine is produced on a large scale by a thoroughly equipped conveyer system. As each and every machine has to stand against strict tests, the high quality and uniformity are maintained and its durability is insuperable.

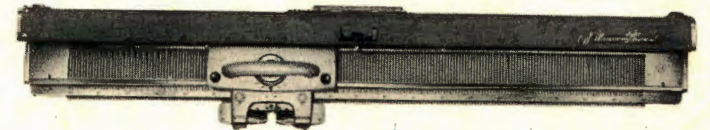
Silver Knitting Machine
Manufacturing Co., Ltd

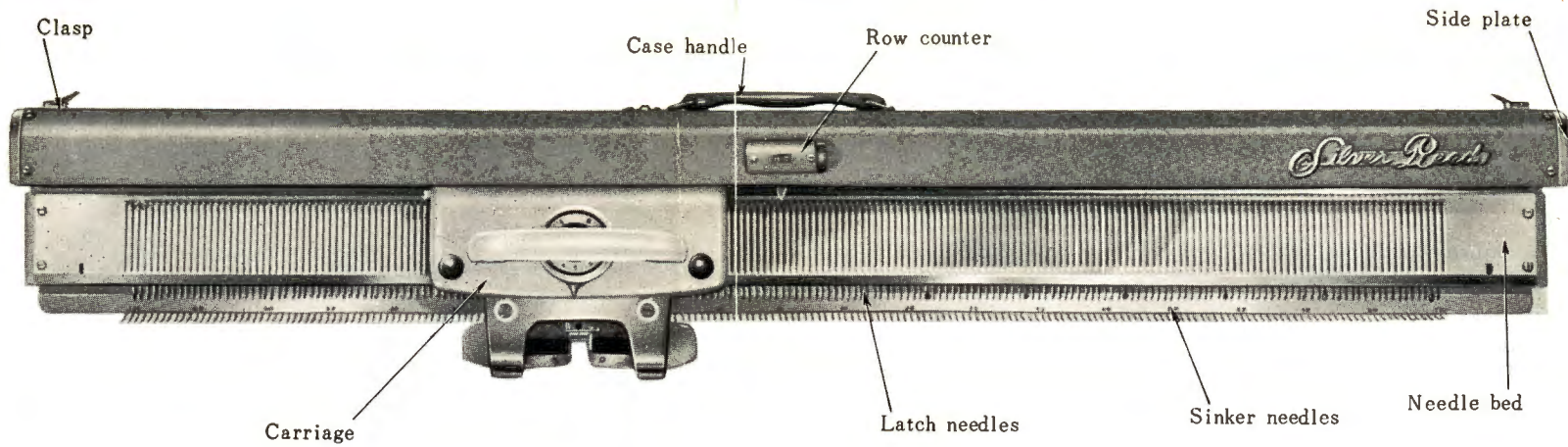
INSTRUCTIONS FOR USING SILVER REED HAND KNITTING MACHINE

Rubber
SR8-200
37
74

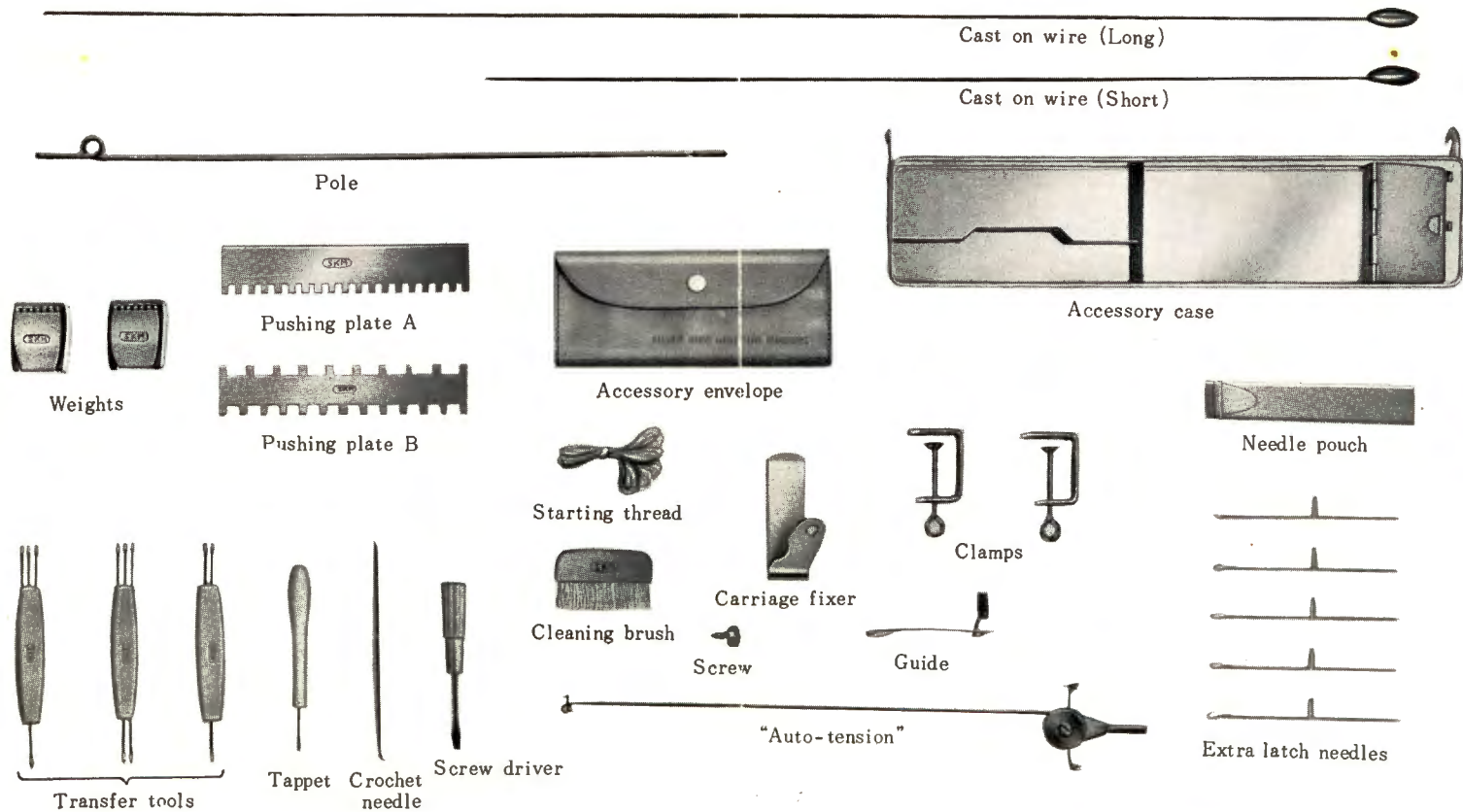


MODEL SK-8





MACHINE AND ACCESSORIES



The Outstanding Features of This Machine

1. Styling—modern contour...soft crystalline finish...lightweight and durable, all accessories selfcontained...truly portable.
2. Speed—200 needles will knit 200 stitches per stroke.
3. Versatility—Shape shoulders, heels, buttonholes, collars with ease. Any established patterns like cable stitch, argyle, lace patterns and hundreds of others and some more hundreds of others you are daily figuring out and, actually, you can think of.
4. Easy tension control and pleasant operation.
5. No cast on comb nor weights necessary. No clamping.
6. Handles all types of thread.
7. Automatic yarn holder "Auto-tension" will save your left hand for smoking.
8. Perfect yarn feeder with yarn lock.
9. Ribbing attachment and garter plates available.

A SILVER SK8-200 and you are equal to one hundred pairs of hands.

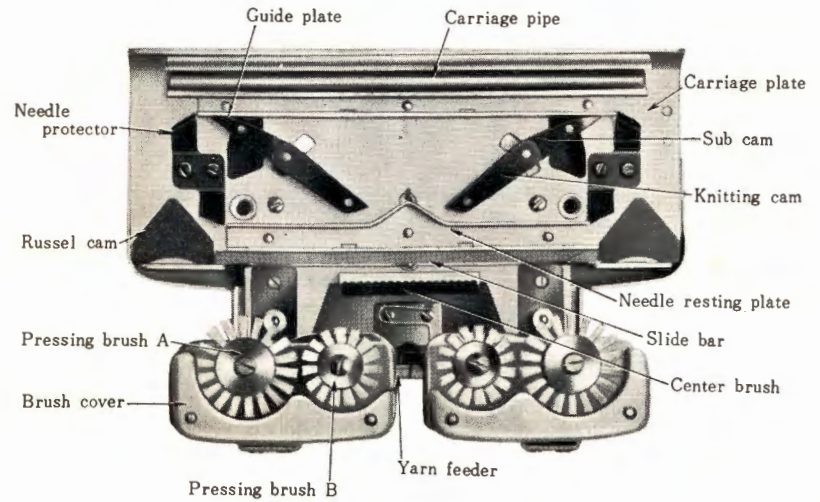
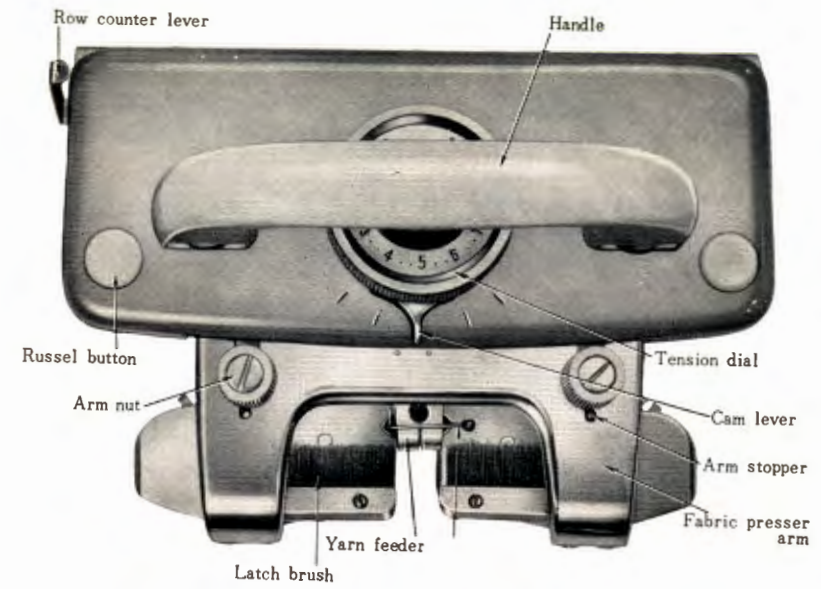
A SILVER SK8-200 is for a hobby for life.

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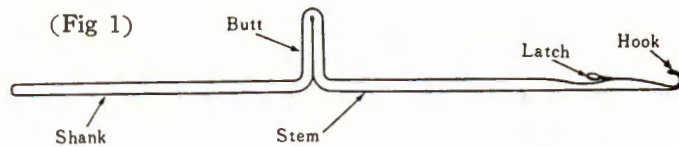
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The Principle of Knitting with the Movable Latch Needle.

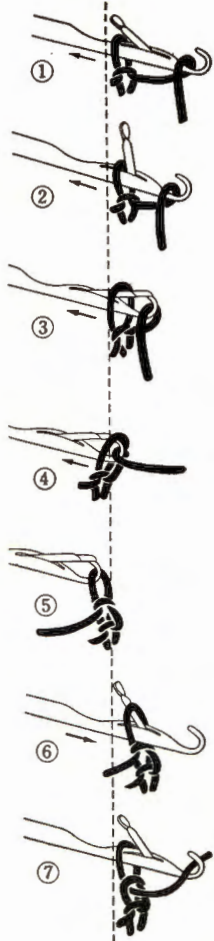
First of all you have to learn the principle of how a single stitch is formed by a latch needle.

Let us acquaint you now with the parts of each needle:



(Fig 2)

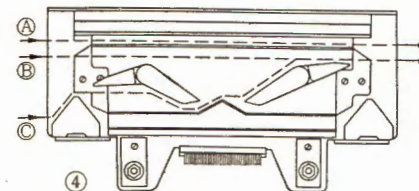
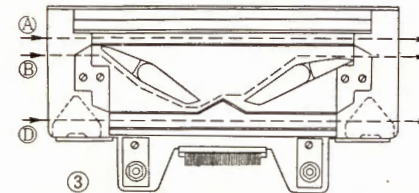
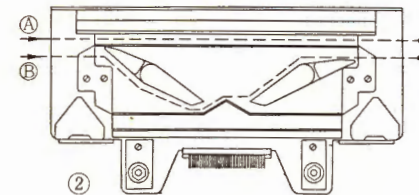
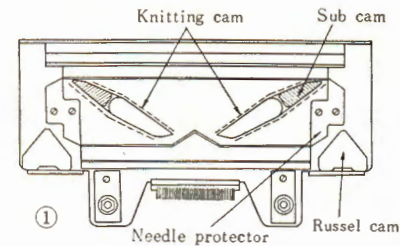
How a single stitch is knit by a single needle:



- ① In starting position the previous stitch is behind the opened latch, the yarn is placed into the hook of the needle. (Fig. 2: ①)
- ② As the needle moves back the "previous stitch" automatically closes the latch of the needle. (Fig. 2: ②)
- ③ As the needle moves further back, the latch is closed, the former stitch is now free to drop over the closed latch and the new stitch is trapped in the hook of the needle. (Fig. 2: ③)
- ④ As the needle continues to move back the former stitch drops over the front of the needle. The front edge of the needle bed holds the trapped new stitch forward. (Fig. 2: ④)
- ⑤ The new stitch is now held in the needle hook. (Fig. 2: ⑤)
- ⑥ As the needle moves forward the new stitch automatically opens the latch. (Fig. 2: ⑥)
- ⑦ As the needle continues to move forward the new stitch moves behind the open latch of the needle. (Fig. 2: ⑦)

This is how a latch needle operates in knitting a single stitch, and as the machine with its 200 needles does the operation at a time with one stroke of the carriage, it is no wonder so many stitches are knit in a twinkling.

(Fig 3)



The Mechanism of Carriage

The bottom parts of the carriage are shown in Fig. 3: ①.

The dotted lines in the picture ②③④ of Fig. 3 indicate the course through which butts of latch needles work.

When needle butts are in course A they are unworkable.

Plain stitch (stockinette stitch):

The needles which are to knit stitches should be in course B so they are pushed back and forth by the cam. Being pushed forward in full they will catch yarn coming through yarn feeder and will knit stitches as they are pushed fully backward. (Fig. 3: ②)

Part knitting: Pull-up knitting:

Even while knitting, any needles may become unworkable if placed in course D and Russel buttons pulled up.

(Fig. 3: ③)

In order to set those needles in action again, you have only to push down Russel buttons and the needles come in course C and start working.

(Fig. 3: ④)

Knit-in patterns:

Needles for contrasting color after having drawn back to course B knit color, while other needles go forward through course C to knit main yarn so that both knit-in stitches and ordinary stitches can be worked at the same time. (Fig. 3: ④)

(Fig 4)



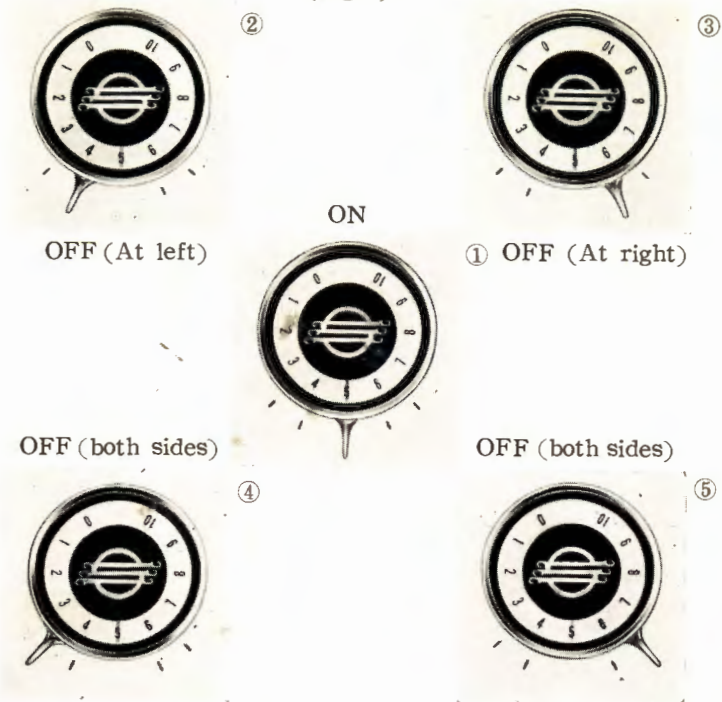
The Relation Between the Needle Positions,
Cams and Russel Buttons

The needles and cams of the machine can knit various stitches and patterns by the combinations of their positions as shown in the following table. If cam lever comes on the middle mark (Fig. 5:①) sub-cam (Fig. 3:① page ②) does work. If it is on a blue mark on the left (Fig. 5:②) the left sub-cam comes off and when it is on another blue mark the right sub-cam comes off (Fig. 5:③) With cam lever on a red mark on either right or left both sub-cams come off. (Fig. 5:④ ⑤)

If needles are in:		They are :	Applications :
Course A.		Inoperative	
Course B.	With cam lever in ON Position	knitting	General knitting
	With cam lever in OFF Position	Non-knitting	
Course C.		Always knitting	Knit in patterns
Course D.	With Russel button down	knitting	
	With Russel button up	Resting(non-knitting)	Partial knitting Pulling up Work (Tucking stitches)

POSITIONS OF CAM LEVER

(Fig 5)



Stitch Adjustment
(Tension dial)

The tension dial adjusts the size of stitches and indicates it by the number on the dial. Fabric can be knit either soft or hard by the adjustment of the dial. The dial gauge also affects the measurements of a finished garment.

(e. g.) With medium size yarn, dial at 3, 100 rows make 6.3"
With medium size yarn, dial at 7, 100 rows make 10.6"

Before you start knitting, be sure to have suitable tension for the yarn you are going to use.

How to adjust tension :

Turn the dial on the center of the carriage around. For rough or loose stitches turn it to the left, and for tight or fine stitches turn it to the right, and try to get a suitable number.

Here is a list of dial number with thickness of yarn.

Dial	0 — 3	3 — 6	6 — 9	9 — 10
Yarn size	thin	medium	thick	very thick



(Fig 6)

Preliminary Knowledge for Knitting

1. Where to seat yourself :

As a beginner, it is better to be seated at the right side of the machine, if you are right handed, and vice versa. (Fig. 6)

2. What material to choose :

It is suggested that beginners use new medium size yarn as it is easier to handle.

3. How to use weights :

You will find two weights among the accessories. They are used only for fancy stitches or when you use fine thread.

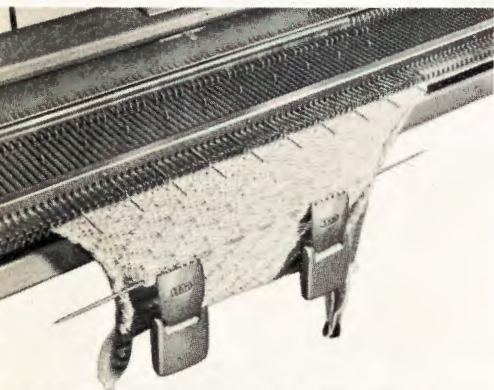
The weights must be hung evenly ; a hand knitting needle will be a help as shown in Fig. 7.

In case edge stitches are not knitting use weights as shown in Fig. 8.

4. How to handle the carriage :

(A) Move the carriage with your right hand while your left hand is gently holding the yarn.

(B) Move the carriage back and forth in slow non-stop movements in both directions.



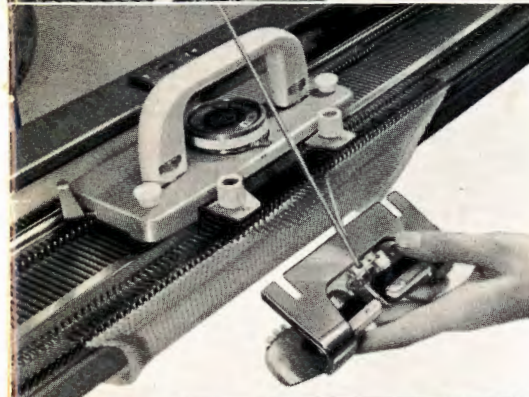
(Fig 7)



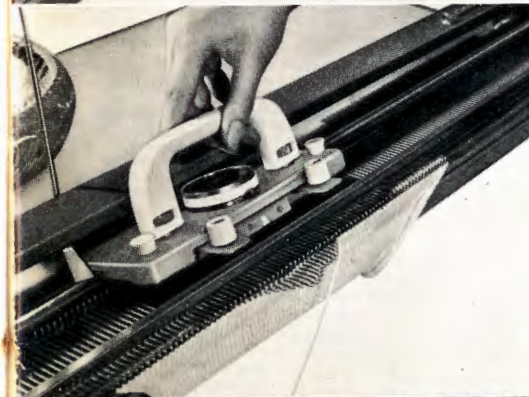
(Fig 8)



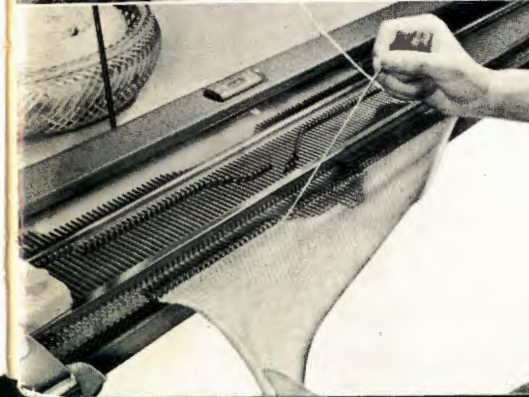
(Fig 9)



(Fig 10)



(Fig 11)



(Fig 12)

Keep the yarn slightly tense at the beginning of your stroke then when the first needle is engaged, relax the yarn.

(C) Never move carriage without threading yarn feeder.

(D) While knitting do not reverse carriage direction. So doing you will damage groove plate.

(E) Once you move carriage keep it going to the end.

How to reverse direction of carriage in case carriage stops with yarn tangled in it:

(A) Lifting the row counter lever, turn it left. (Fig. 9)

(B) Take off the fabric presser arm from carriage.

(Fig. 10) Lift carriage as shown in Fig. 11, replace it on the previous position, at the starting edge of the fabric, and fix the arm to carriage.

Note : Replace row counter lever.

(C) Undo the yarn to the starting edge as in Fig. 12, and begin knitting by feeding the yarn through yarn feeder.

Thus you can move carriage both ways without affecting needles. You will find it very convenient when yarn tangles or when you knit with contrasting color that you can move carriage this way.



(Fig 13)

How to Set up and put away Machine

1. Setting up :

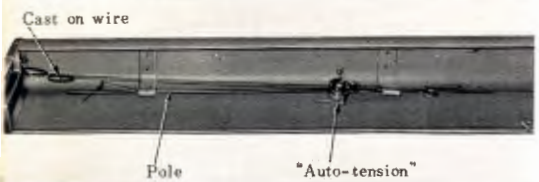
(A) Open the case :

Put the machine with mark-side up on a firmly standing table. Unlock the fastenings on both sides of the case and pull the cover apart. (Fig. 13)



(Fig 14)

Inside the cover there is a yarn holder and a piece of wire which you have to take out. Also a sheet of rust-proof paper (Fig. 14) which should be folded white side in and put in a box. Cover your machine with this paper when you put it away in the case.



(Fig 15)

(B) Take out accessories :

Lift up the accessory case by the left or right front and pull it out to the right along the needle bed. (Fig. 15)



(Fig 16)

(C) Clamp the machine to a table :

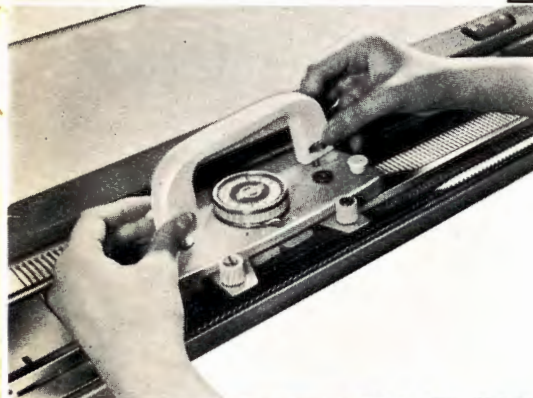
In case a table is narrow, or you use a ribbing attachment fasten the machine to the table by the clamps. (Fig. 16) Otherwise you don't have to clamp it.



(Fig 17)

(D) Unfasten the carriage fixer :

Unfasten the carriage fixer, which is located on the left side of the carriage. To do this remove the screw and then the fixer. Keep the unfastened things in the accessory case.

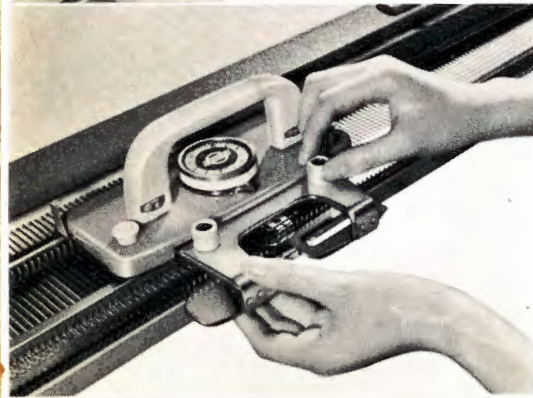


(Fig 18)

(E) Fix handle to carriage :

Put handle ends into the holes on the carriage and screw them firmly turning both knobs at the same time.

(Fig. 18)



(Fig 19)

(F) Fix fabric presser arm to the carriage :

Loosen the arm nuts of the carriage, push in the arm fully and tighten firmly.

(Fig. 19)

Note : If not pushed in fully, stitches will skip.

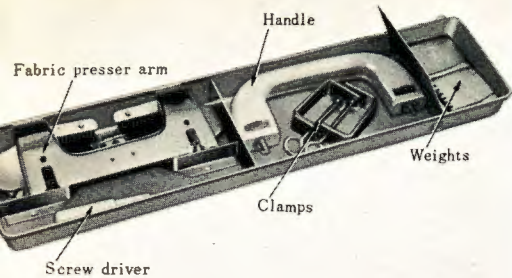


(Fig 20)

(G) Put up yarn holder pole :

Stand the pole in the hole which is on the left fixing metal of case handle.

(Fig. 20)



(Fig. 21)

2. How to close the Machine :

(A) Unfasten carriage arm :

First pull out the fabric presser arm by loosening arm nuts.

Put it in the left section of the accessory case. Screw driver also goes here.

(Fig. 21)

Note: Be sure to tighten arm nuts.

If not, the case cover will not shut.

(B) Remove carriage handle :

Loosen both handle nuts at the same time. Remove handle and put it in the middle section of the case.

(Fig. 21)

(C) Screw carriage to the machine :

Placing carriage fixer into a slot at the left front of the machine, screw it to the left handle hole.

(Fig. 22)

(D) Take clamps off :

Remove the clamps and put them in middle section of the case.

(Fig. 21)

(Fig. 23)

(E) Put weights away :

Two weights should be put in the right section. Shut the lid.

(Fig. 21)

(F) Put away tiny accessories :

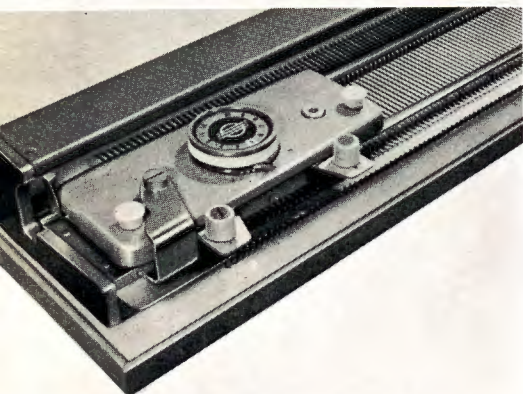
Tappet, crochet needle, 3 transfer tools, 5 latch needles, two pushing plates, cleaning brush, and two pieces of starting thread, should be replaced in their own places respectively.

(Fig. 23)

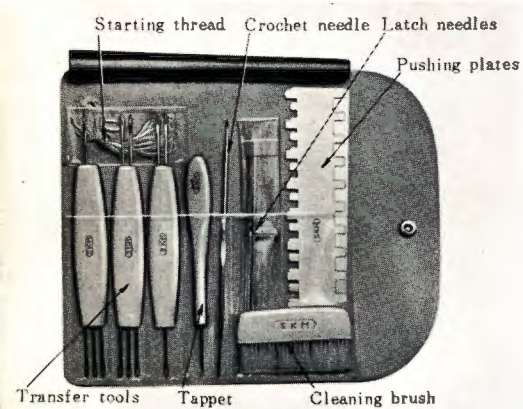
(G) Fasten yarn holder pole and wire :

The yarn holder pole and cast on wire should be placed inside the case cover.

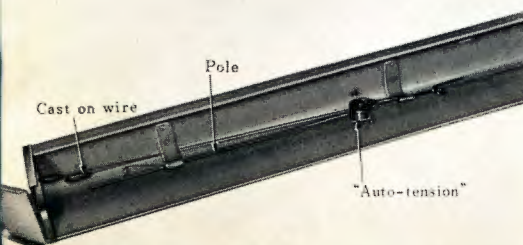
(Fig. 24)



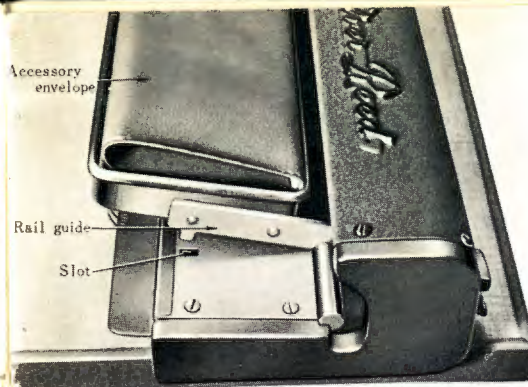
(Fig. 22)



(Fig. 23)



(Fig. 24)



(Fig. 25)

(H) Put away accessory envelope :

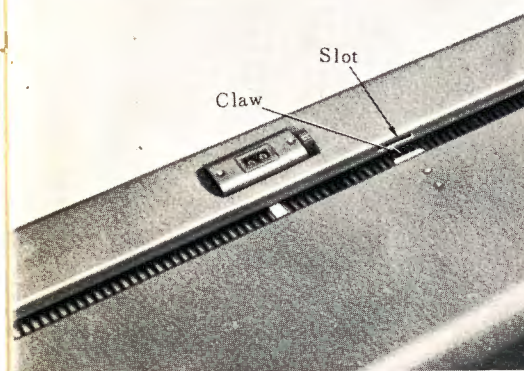
Place the accessory envelope with right-side up, on the accessory case.

(I) Fasten accessory case to the needle bed :

Setting the left side rail guide of the accessory case on the machine rail, slip it along to the left tilting front a little upward.

Fix the case by placing stopper into slot on the needle bed.

(Fig. 25)

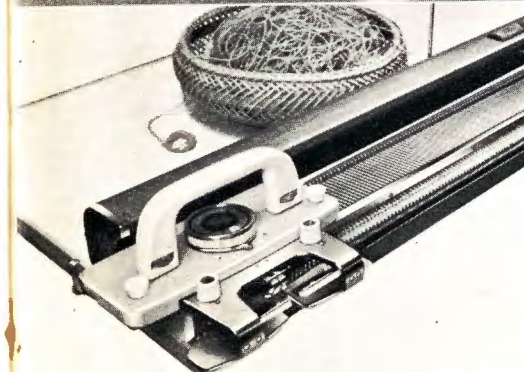


(Fig. 26)

(J) Cover the machine :

Put the sheet of rust-proof paper on the needle bed, cover machine with case lid, thrusting cover claw into a slot of body case.

(Fig. 26)



(Fig. 27)

1. Prepare thread :

Unravel thread or yarn from a skein into a box or a basket to be placed behind the machine.

(Fig. 27)

Note: Do not use yarn in a ball, for it will make stitches uneven.

2. Carriage should be placed on either end of the needle bed.

(Fig. 27)

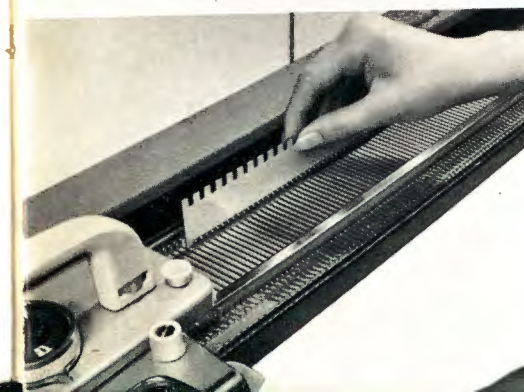
3. Tension dial is to indicate number 6.

(Fig. 28)

4. Needles to be knit excluding one on both ends should be drawn out to workable position, course B.

Refer to Fig. 4 on page 3. For instance, when thirty needles are used, draw out 28 needles, leaving one at each end unworkable.

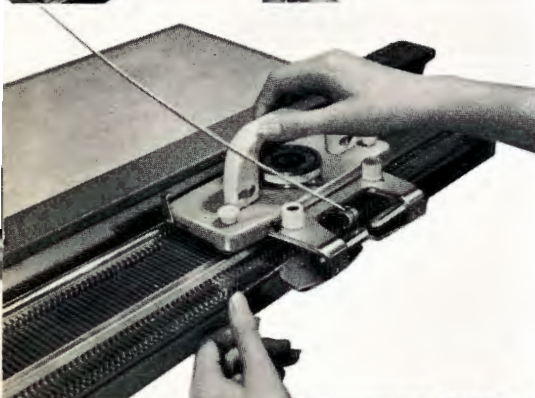
(Fig. 28)





5. Temporary knitting is necessary :
 (Fig 29) (A) Thread medium size yarn into yarn feeder from left to right. (Fig. 29)

Note: For temporary knitting, whatever yarn you are going to use for an actual garment, you should use medium weight yarn. Leave yarn end about five or six inches.



(Fig 30) (B) Hold the yarn gently in one hand, move the carriage with the other. The yarn will cast on needles.

With your finger tip press the yarn at the finishing edge right after carriage completes the casting on. (Fig. 30)

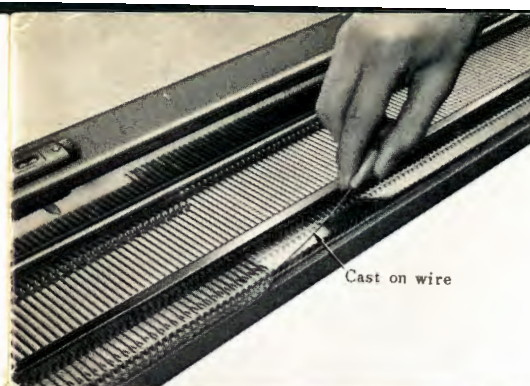


(Fig 31) (C) After knitting one row, lay the cast on wire on the yarn between sinker and latch needles. (Fig. 31)

(D) In order to have the wire stay still, pull out some needles at both ends and in middle to course C, referring to Fig. 4 on page 3.

Draw out edge needle, the one among the required needles but was left behind, on the side where the carriage is and knit one row. (Fig. 32)

(Fig 32) On the opposite side draw out the other edge needle that was left behind and knit back.



(E) After you have knit several rows, pull out the wire. (Fig. 33)

Note: In this way you can start knitting with ease. It is also easy to begin with thick yarn or fine thread.

6. With a starting thread knit one row.

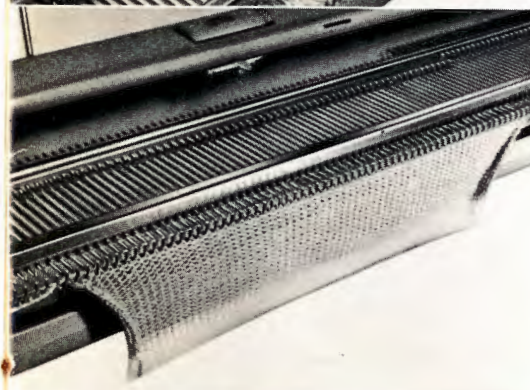
This string helps to cut main fabric off the temporary piece.



(Fig 34) 7. Set the row counter at 0.

The row counter automatically counts the number of rows and you should start actual knitting with zero on it.

Turn the knob on the right side of row counter toward you, and stop turning when you get 00. (Fig. 34)

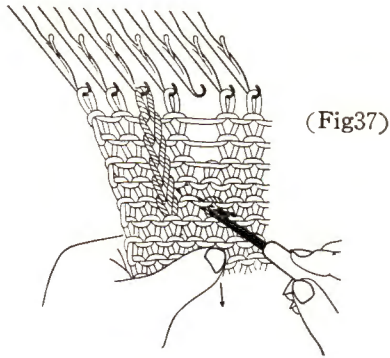


8. Actual Knitting :
 Adjust tension dial according to yarn size and kind of garment, referring to page 4. Change to the main yarn and thread yarn feeder. Move carriage back and forth and stitches are knit as a fabric. (Fig. 35)

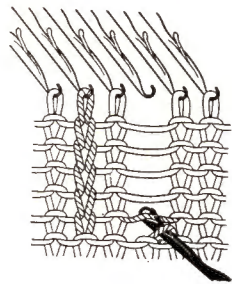
If edge stitches are too loose, fabric will not be well finished, Fig. 36 shows how the yarn is slacking.



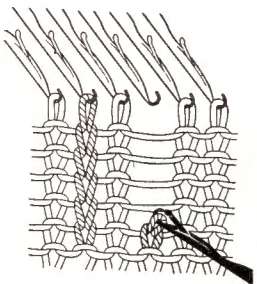
(Fig 36) When you use "AUTO-TENSION" refer to the illustration on page 42.



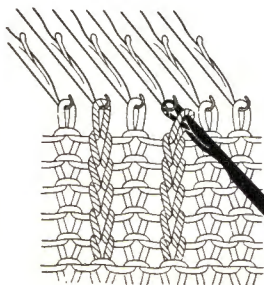
(Fig 37)



(Fig 38)



(Fig 39)



(Fig 40)

Rib Knitting

Rib knitting is a kind of pattern stitch which consists of knit and purl stitches vertically, arranged. There are 1k-1p, 2k-2p and other ribbing stitches.

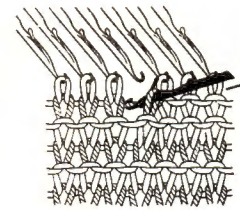
For ribbing, tension should be one graduation less than for plain stitches. (For instance, if you knit plain stitches with tension at 5, make it 4 for ribbing stitches.)

1. Knit fabric plain as many rows as required for ribbing.

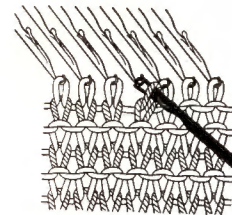
Drop a loop from a latch needle with a tappet end and holding the fabric with one hand undo stitches down to a few rows above the bottom of ribbing part.

2. Inserting tappet into the last row, undo stitches down to where rib knitting is to begin. (Fig. 37)

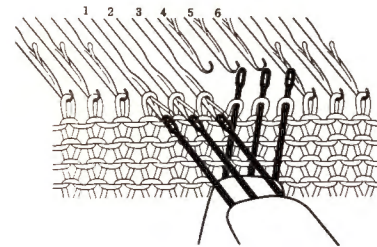
3. Referring to Fig. 76 to Fig. 78 on page 21, make knit stitch with tappet as shown in Fig. 38 and 39 and put the last loop onto the vacant needle as shown in Fig. 40.



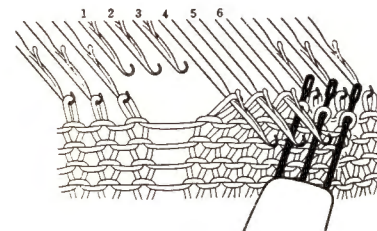
(Fig 41)



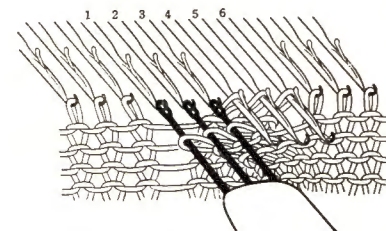
(Fig 42)



(Fig 43)



(Fig 44)



(Fig 45)

Garter Knitting

A ridge of garter is formed with one row of knit and one row of purl stitches.

Knit two rows in plain, open all needle latches and change purl into knit across one row. Repeat this.

(Fig. 41 and 42)

Cable Pattern with Three Stitches

A pattern of crossed stitches appears like a twisting rope which may also look as in relief if purl stitches are on both sides of cable.

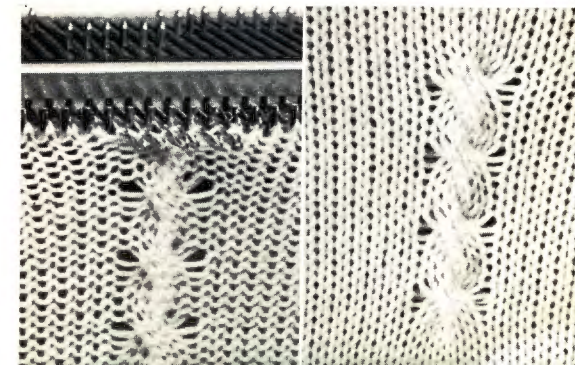
1. Use two three eye transfer tools. Take three loops onto one tool, with the other take next three loops and replace them on the first vacant three needles (Fig. 43) which should be drawn out to course C (as shown in Fig. 4 on page 4) with loops behind opened latches. (Fig. 44)

Next transfer the first three loops to the empty needles which should also be pulled out to course C and knit as many rows as you choose. (Fig. 45)

Repeat this and you will knit three stitch cable pattern. (Fig. 46) Fig. 47 is the pattern seen on knit side.

(Fig 46)

(Fig 47)



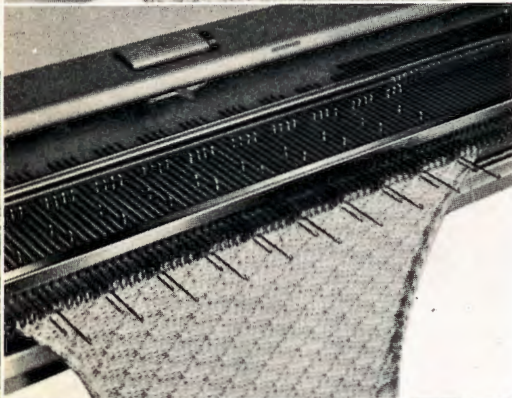


(Fig) 48

Pull-up Knitting (Tuck)

With one color or several contrasting colors, you can knit various patterns changing a unit of stitches and rows in various ways.

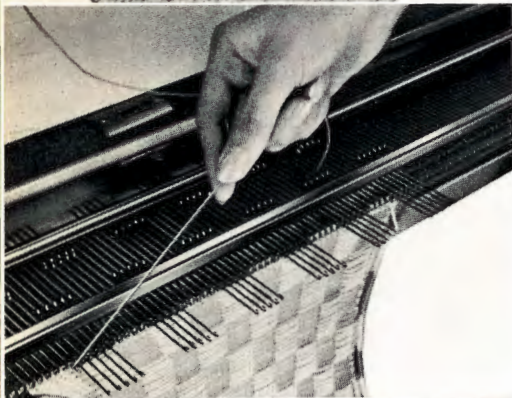
1. For pull-up stitches continued to plain stitches :
 - a. Pull up the Russel buttons. With pushing plate B draw out the needles for pull-up stitches to course D (Fig. 4 on page 3) and knit required rows. (Fig. 48)



(Fig) 49

- p. Push down the button at the advancing side; move carriage and it will knit all stitches. Repeat this and you will knit pull-up pattern. (Fig. 48)

2. To knit pull-up stitches successively :
 - a. Pull up the buttons, draw out needles for pull-up stitches to course D with pushing plate B. Operate the carriage (you are pulling up with the needles in course D) and knit one row less than required for the pulling up stitches.



(Fig) 50

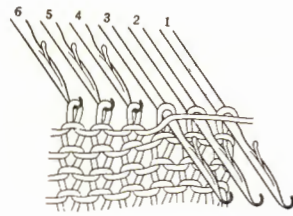
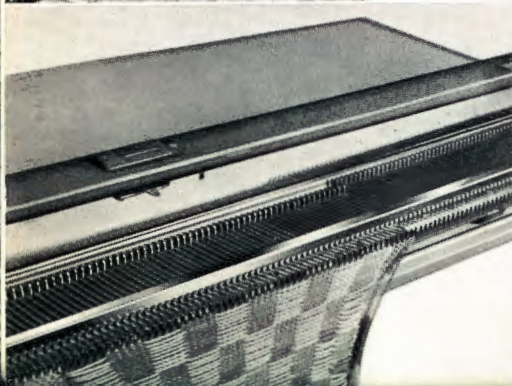
- b. Push down Russel button on opposite side of proceeding direction and knit one row.

- c. Next draw out needles for pull-up stitches to course D and repeat from a to b. (Fig. 49)

Knit-in Pattern

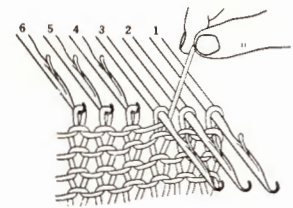
While knitting stockinette fabric you can also knit a pattern with contrasting color in it. Push down the buttons on both sides, cam lever should be on red point either on the right or the left.

(Fig) 51



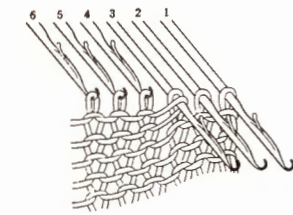
(Fig52)

1. Draw out needles for contrasting color to line D (refer to Fig. 4 page 3), thread color yarn into yarn feeder and knit-one row.



(Fig53)

2. Next row, remove the color yarn from yarn feeder and carry back the carriage without knitting. Draw out needles for main color to course D and with main yarn through yarn feeder knit one row. This completes the stitches of one row.



(Fig54)

3. Draw out needles for contrasting color to course D. Hang the yarn end of contrasting color of the previous row over the next needle of main color, (the same idea of handling yarn end at the end of every row in part-knitting) and knit a row in color. (Fig. 50)

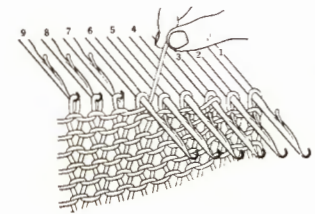
4. Next row, knit with main color as described above. Repeat these two rows. (Fig. 51)

When you want to use several contrasting colors, knit with each color yarn in the same way described in article 1, and then knit with main yarn.

Part-Knitting (Part-knitting in every second row)

Pull up the buttons on both sides.

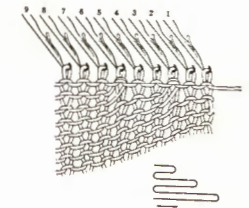
1. Part-knitting back ward : This is applicable to shoulder line.



(Fig55)

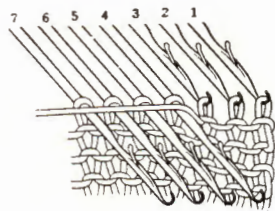
- a. Needles on opposite side to carriage, and which are to be unknit, should be drawn out to course D with pushing plate and knit one row. (Fig 52)

- b. Next, the yarn end should be brought out from under the next needle and knit back a row as shown in Fig. 53. Now you have knit two rows and have done first part-knitting. (Fig. 54)

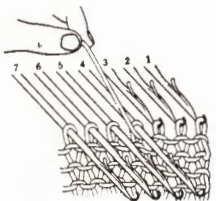


(Fig56)

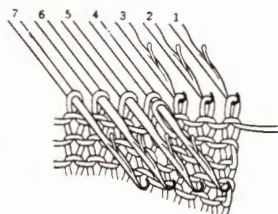
If you forget to place the yarn end under the next needle, there will be a hole left where you change the row.



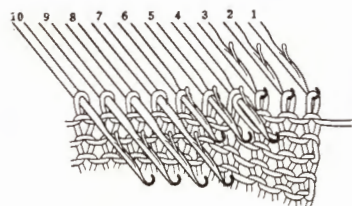
(Fig57)



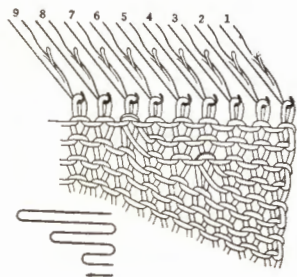
(Fig58)



(Fig59)



(Fig60)



(Fig61)

c. Place needles to be unknit to course D and knit a third row.

d. Repeat the way shown in Fig. 55, a fourth row is knit having done second part-knitting.

e. When you have part-knitted as many Rows as required, push down Russel button, and knit one row to make edge of fabric smooth. (Fig. 56)

2. Part-knitting forward :

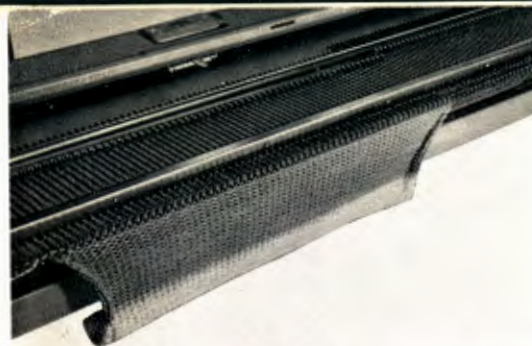
This is applicable to sleeve cap.

a. Draw out all the needles on opposite side of carriage, to course D with a pushing plate and knit a row. (Fig. 57)

b. Next, place yarn end under the next needle and knit a second row as shown in Fig. 58, and this makes first part-knitting. (Fig. 59)

c. Push back needles to be knit on next row to course C (Fig. 60) and knit a third row.

d. Knit a fourth row as shown in Fig. 58 and knit back to make second part-knitting. Continue as many times as required. (Fig. 61)



(Fig 62)

Doubled Hem
How to turn up edge and knit it :

1. First, knit fabric for edge band twice as wide as actual band width requires as Fig. 62. Open needle latch, and with transfer tool place all the loops of the row next to starting thread onto needles (Fig. 63). Turn tension dial to a number two graduations higher and knit a row.



(Fig 63)

2. Return the dial to previous gauge and knit next row. When you pull out starting thread (Fig. 63), undo a stitch on both edges and pull the thread out. (Fig. 64)



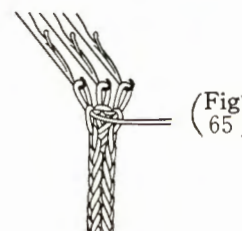
(Fig 64)

How to Knit a Cord

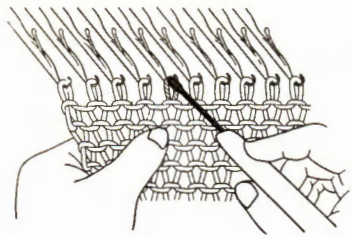
A cord of this kind is used for a cape or hood.

1. Cast on a few stitches, three to five, by wrapping yarn around needles and knit a row.

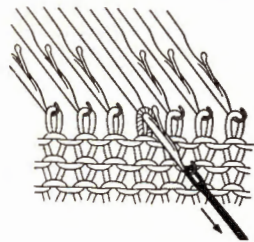
2. For second row, put the cam lever to green point on the advancing side, bring back the carriage. In this position carriage knits only one way and returns without knitting so that a cord is knit doubled. (Fig. 65)



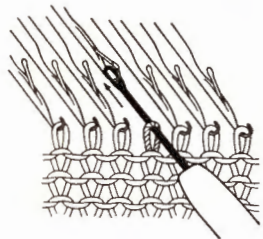
(Fig 65)



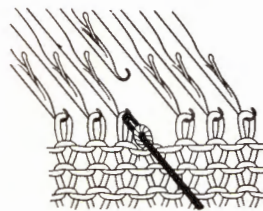
(Fig66)



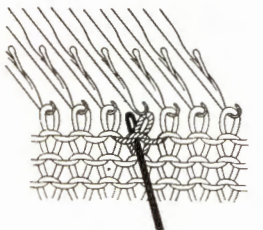
(Fig67)



(Fig68)



(Fig69)



(Fig70)

How to Use a Transfer Tool

There are three kinds of transfer tools: one eye, two eye and three eye. They are used to transfer stitches from one needle to another. They are also used for knitting patterns, decreasing, increasing, and picking up stitches. Hold the fabric in one hand and use the tool with the other hand.

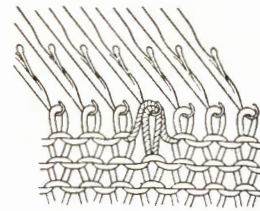
1. Hang transfer tool on needle hook. (Fig. 66)
2. Draw out the needle and let loop slip behind the latch. (Fig. 67)
3. Push back needle and the loop slides onto tool. (Fig. 68)

NOTE: Use straight forward and straight back motion

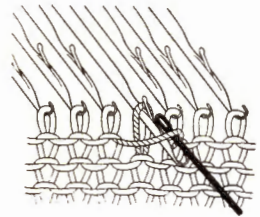
4. Put loop onto next needle on either side. (Fig. 69)

How to Pick up Dropped Stitches

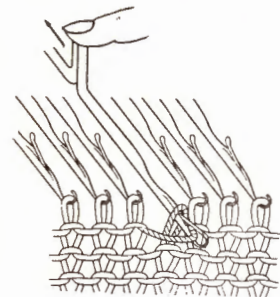
1. In case stitches drop one row :
(A) Insert one eye tool into a loop of last knitted stitch. (Fig. 70)



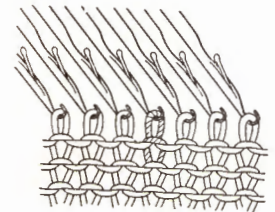
(Fig71)



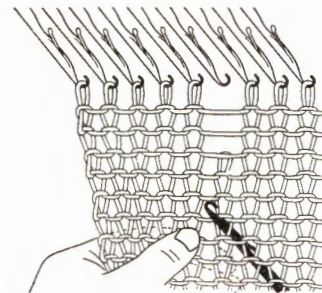
(Fig72)



(Fig73)



(Fig74)



(Fig75)

Hang it on the hook along with undone yarn. (Fig. 71)

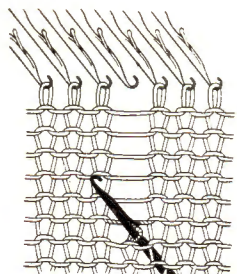
(B) Pull out the needle to have the stitch slip behind latch and leave the yarn in the hook. (Fig. 72)

(C) Push back the needle by butt (Fig. 73) and the stitch behind latch will slip from hook and knit a new stitch. (Fig. 74)

2. In case stitches drop several rows :

(A) Insert tappet into loop a few rows below dropped stitch. Insert from back. (Fig. 75)

Hold fabric gently and drop stitch down to tappet.

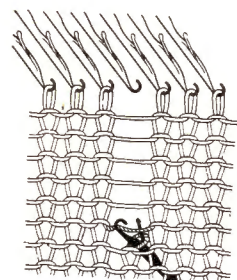


(Fig76)

(B) Push tappet toward you to get the stitch behind tappet latch as in Fig. 76, catching the upper horizontal yarn by hook.

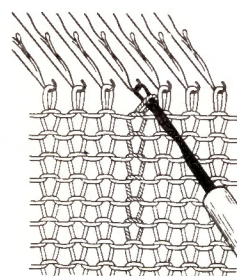
(Fig. 77)

(C) Pull back tappet; a new loop is formed in the hook, the old one slipping down and knitting. Repeat this up to the top row.



(Fig77)

(D) Pull the last loop a little longer and let it go from tappet; bring tappet to the front and hang the loop on needle hook as in Fig. 78.

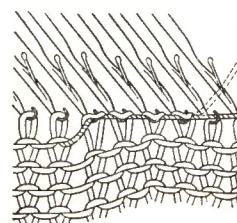


(Fig78)

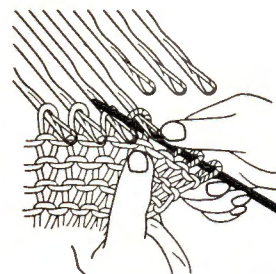
How to Rip out Stitches on the Machine

It may happen that you have to rip out stitches of a row or even several rows. First, open all needle latches. Pull fabric down gently with one hand. Pull the yarn slightly, drawing it out of the stitches. The stitches of the row below will slip into the needles automatically. Just repeat this till you have undone required rows. (Fig. 79)

Note: When you start knitting after ripping out rows, put carriage where the yarn end is.



(Fig79)



(Fig80)

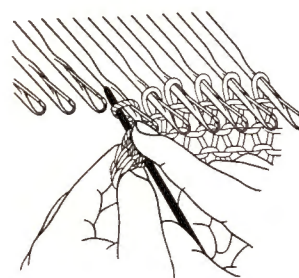
How to Remove Stitches from and to Machine with a Holder

1. From machine to a holder :

A

(1) Hold the fabric with one hand. With the other hand, push the needles to course D with pushing plate so loops go behind the latches.

(2) Start from right side. Holding the fabric with one hand, thrust a knitting needle into a stitch from back toward you; pushing back the hook with your thumb, take the loop onto holder as in Fig. 80. Repeat this across the row.

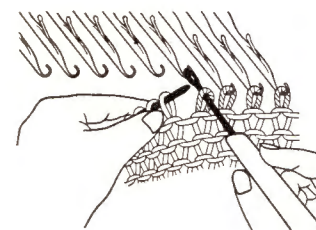


(Fig81)

B

(1) Pull forward needles to course D with a pushing plate, holding the fabric with one hand so loops go behind the latches.

(2) Starting from left side; hold the fabric with one hand. Thrust a knitting needle into a stitch from this side toward the back. Pushing back needle hook with your first finger, take the stitch onto a holder. (Fig. 81) Repeat this across the row.



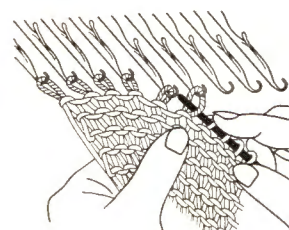
(Fig82)

2. From a holder to machine :

A Method # 1

(1) Open needle latches.

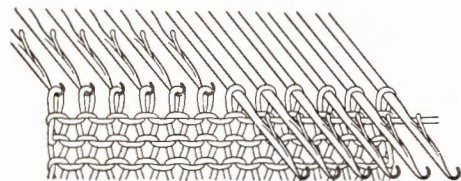
(2) Starting from right side, thrust a transfer tool into a loop from front to back. Take it off the holder and slip it onto hook. (Fig. 82)



(Fig83)

Repeat this, pushing back each needle you have put a loop on.
B Method # 2

- (1) Draw out as many needles as required and open latches.
- (2) Start from left side. Holding the fabric downward with one hand, slip a stitch directly from holder to machine needle. (Fig. 83)
 After putting a stitch on a needle, push the needle back.



(Fig84)

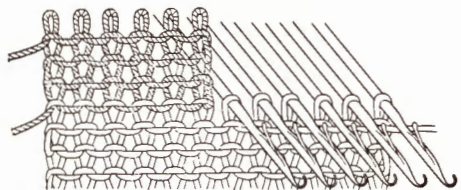
How to Hold Stitches with Temporary Knitting

In order to transfer stitches from machine, or to hold stitches before they are transferred, do it with a few rows of temporary knitting.

This is much easier for a beginner to work with as there is no fear of missing a stitch.

1. How to hold stitches :

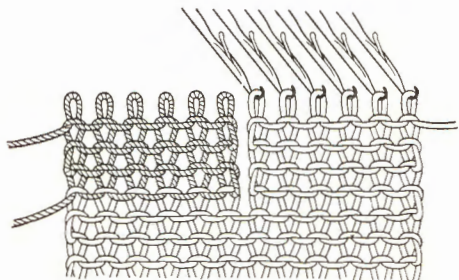
a. When you have finished knitting and want to hold those stitches for a while, knit several rows with waste yarn continuing on the main fabric. Unthread yarn feeder and move the carriage across and fabric comes off the machine.



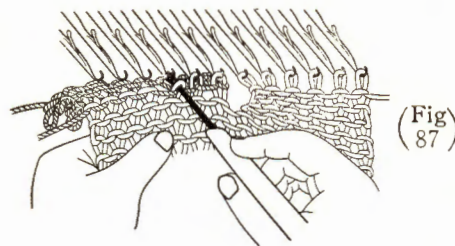
(Fig85)

b. If you want to hold a part of stitches in the row, pull out the needles which are to be knit continually to course D and knit with the remaining needles (the same idea described in article "a" with temporary thread) and remove from the machine. (Fig. 85)

Thread main yarn through yarn feeder in order to continue knitting. The carriage should be on the side of yarn end, with the Russel button pushed down so needles on course D will knit as many rows as required. (Fig. 86)



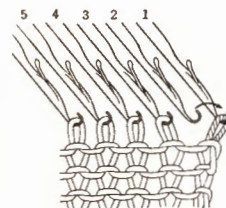
(Fig86)



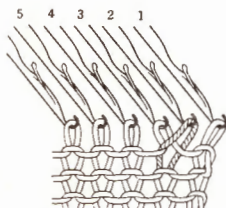
(Fig 87)

2. How to return stitches onto machine

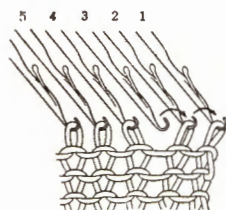
Open required number of needle latches. With transfer tool, put the loops of the last row of main fabric onto machine needles. (Fig. 87) After all are returned remove temporary knitting.



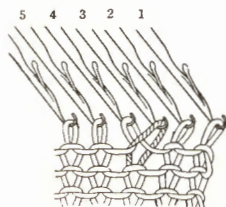
(Fig88)



(Fig89)



(Fig90)



(Fig91)



(Fig92)

How to Increase Stitches

1. To increase at fabric edge :

To increase one stitch :-

(1) First method.

Pull out needle next to the edge needle to course B (refer to Fig. 4 on page 4) and knit one row ; one stitch is increased.

(2) Second method.

a. With a one eye transfer tool move the edge loop onto next needle emptying the first needle.

(Fig. 88)

b. Take back loop of the second stitch and put it onto the vacant needle.

(Fig. 89)

(3) Third method.

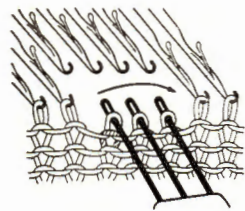
a. With two eye transfer tool shift two edge stitches over one needle to have the third needle emptied.

(Fig. 90)

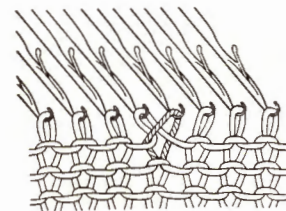
b. Take back loop from the next stitch and put it into vacant needle.

(Fig. 91)

You can pick up back loop in another way shown in Fig. 92.



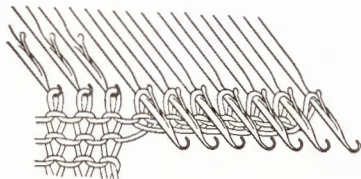
(Fig93)



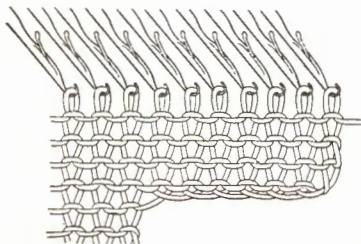
(Fig94)



(Fig95)



(Fig96)



(Fig97)

2. To increase in the middle of a row :

(1) To increase one stitch in the middle, with three eye transfer tool shift stitches to either side of the stitch you want to increase.

(Fig. 93)

(2) Pick up back loop of the next stitch and put it onto the vacant needle. (Fig. 94)

3. To increase stitches evenly across the row :

When you want to increase several stitches evenly across the row, first calculate the number of stitches in order to make increasing at equal spaces. Then remove whole stitches onto a holder; replace stitches on needles leaving a needle vacant for a new loop at even intervals and thus continue until you have transferred all the stitches. Take each back loop from stitch next to the empty needle and put it on the vacant needle across the row.

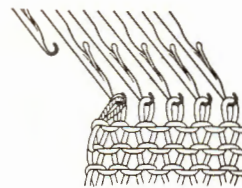
To increase two or more stitches :

(1) On the side where yarn end is free, pull out as many needles as required. (refer to Fig. 4 on page 3)

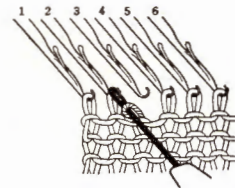
(2) Wrap yarn around needles, behind latch, toward center of machine. As shown in Fig. 95.

Push down the button on the proceeding side and move the carriage across.

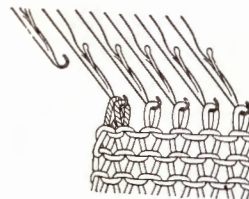
On the following rows, with Russel button pulled up pull out the needles with increased stitches to course C, knit a few rows (Fig. 96), and then knit in ordinary way. (Fig. 97)



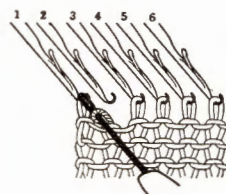
(Fig 98)



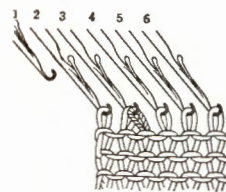
(Fig 99)



(Fig 100)



(Fig 101)



(Fig 102)

How to Decrease Stitches

Wherever you have vacant needles by decreasing stitches, be sure to push them back to course A (refer to Fig. 4 on page 3).

1. In order to decrease at edge :

To decrease one stitch :-

(1) Method # 1

The easiest way is to transfer one edge stitch to next inside stitch with a transfer tool. (Fig. 98)

(2) Method # 2

With one eye transfer tool double the first stitch with the second stitch (Fig. 99), and replace them on the vacant needle. (Fig. 100)

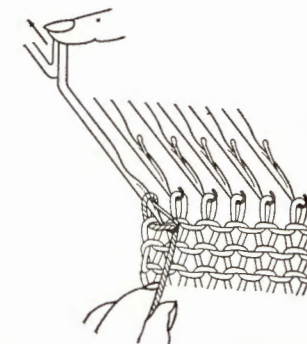
(3) Method # 3

With one eye transfer tool double the second stitch with the third stitch (Fig. 101), and then with two eye transfer tool shift the doubled stitches and the edge stitch together over one needle. (Fig. 102)

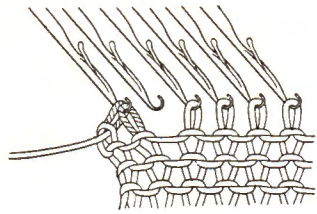
2. In order to decrease two or more stitches :

(1) Method # 1

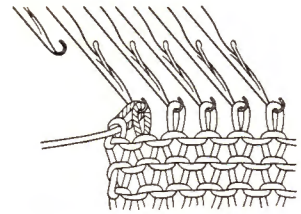
Do this on the side where yarn end is free.



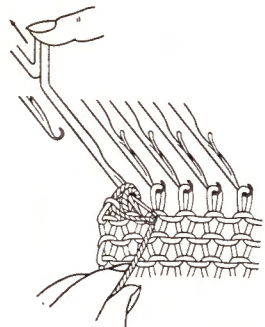
(Fig 103)



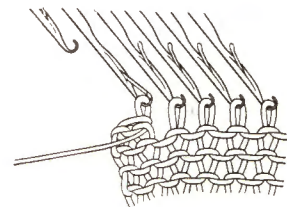
(Fig104)



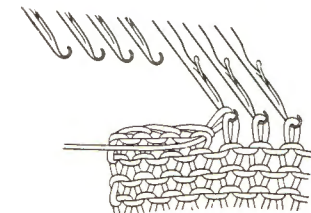
(Fig105)



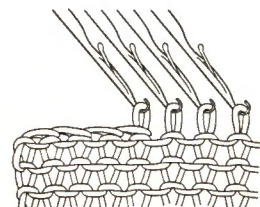
(Fig106)



(Fig107)



(Fig108)



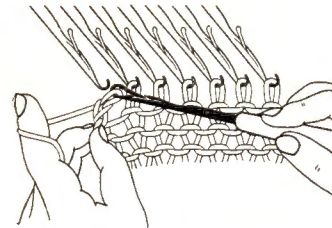
(Fig. 109)

a. The edge stitch should be behind the latch, the yarn in its hook; push back the needle butt with your finger and you will knit a row. (Fig. 103)

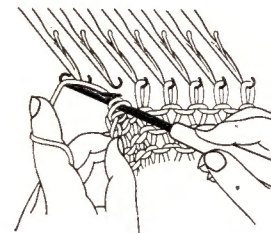
b. With one eye transfer tool, double the edge stitch with the second loop as in Fig. 104, remove them to the vacant one. (Fig. 105)

c. Pulling out the needle to get two stitches to go behind latch, bring the yarn in its hook push back the butt as in Fig. 106; double stitches drop down and knit a row, leaving a single loop. (Fig. 107)

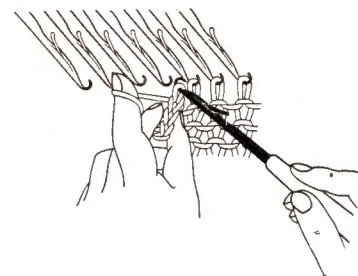
d. Repeat this with all the stitches except the last one that you want to decrease (Fig. 108); then move carriage with the last loop being doubled on the needle. (Fig. 109)



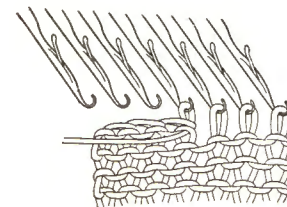
(Fig110)



(Fig111)



(Fig112)



(Fig113)

(2) Method # 2 (by using tappet)

Do this on the side where yarn end is free.

a. Take the edge stitch onto tappet. Slipping it behind the tappet latch and putting yarn in the hook, pull back the tappet to knit a stitch. (Fig. 110) Take the second stitch onto tappet.

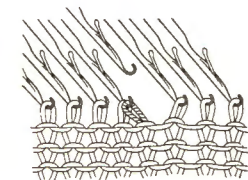
b. Slipping these two stitches behind the latch, take yarn in the hook and knit another stitch in the same manner. (Fig. 111)

c. Repeat as far as the second stitch from the last of the stitches to be decreased. (Fig. 112) Slip the loop on the empty edge needle (Fig. 113) and double it with next stitch; again slip the two stitches on the previous needle (refer to Fig. 108, page 27) and move the carriage to knit on (refer to Fig. 109, page 27).

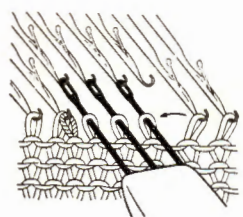
2. In order to decrease in the center :

To decrease one stitch :-

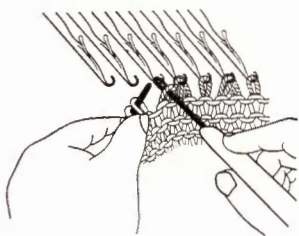
(1) With a transfer tool, slip the stitch you want to decrease onto next needle. (Fig. 114)



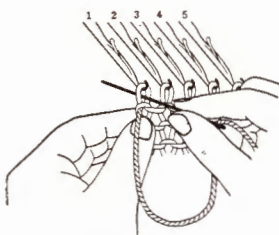
(Fig114)



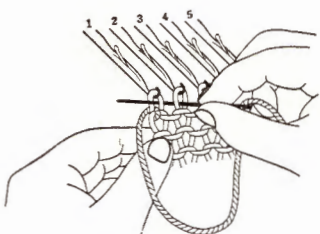
(Fig116)



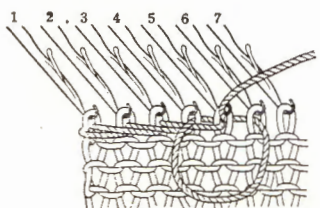
(Fig117)



(Fig118)



(Fig115)



(Fig119)

(2) With three eye transfer tool, shift all stitches over to fill empty needle.

(Fig. 115)

3. In order to decrease evenly across the row :

(1) Take all the stitches onto a holder.

(2) Calculate the number of stitches in order to decrease at equal spaces.

(3) With a transfer tool, put stitches onto needles from holder, with two or three loops together on a single needle where stitches are to be decreased as shown in Fig. 116.

How to Bind off Stitches

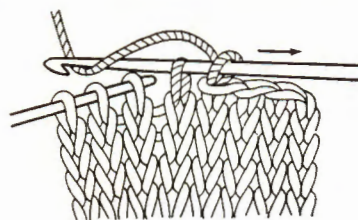
1. To bind off by wrapping :

This way is used mostly for binding off garter stitch.

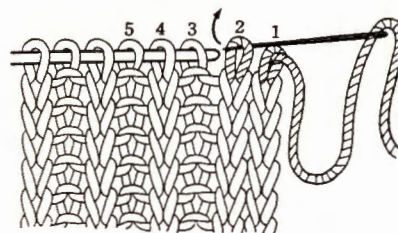
a. Break off yarn, leaving three times actual length of the fabric. Thread it into embroidery needle and thrust the needle into the first loop from the front to the back. (Fig. 117)

b. Next, thrust needle into second loop from front to back as if for knitting and bring it through the first loop from back to front as if for purling. (Fig. 118)

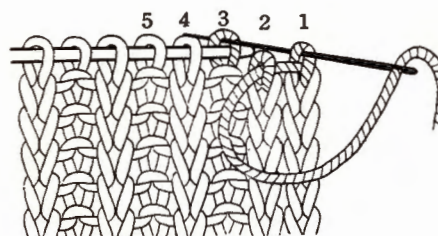
c. When you have finished the row, take the fabric off the machine.



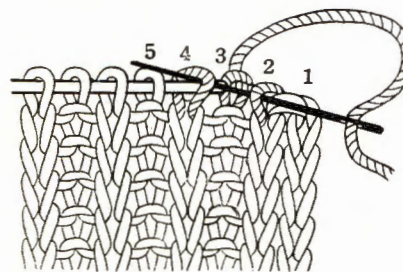
(Fig120)



(Fig121)



(Fig122)



(Fig123)

2. To bind off by using crochet needle :

a. When you want to bind off a few stitches, do it in the same way described in article "How to decrease two or more stitches."

b. When you bind off all the stitches after the work is completed, take the stitches onto a holder and bind each stitch with crochet needle as shown in Fig. 120.

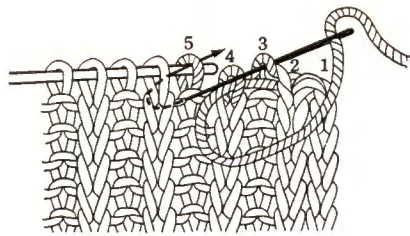
3. How to bind off one stitch ribbing :

Take all stitches onto a holder; break off yarn leaving three times actual length of the fabric and thread it into embroidery needle. Usually the first two stitches are knit plain.

a. Following Fig. 121, draw the yarn through the first stitch as if to purl. The second stitch is also the same.

b. Following Fig. 122, draw the yarn through the first stitch again as if to knit and the third stitch the same.

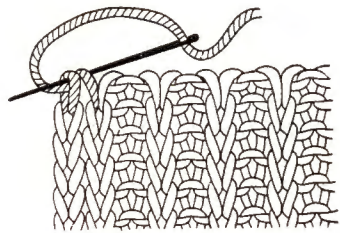
c. Following the Fig. 123, draw the yarn through the second stitch as if to knit and the fourth stitch as if to purl.



(Fig124)

d. As shown in Fig. 124, draw the yarn through the third stitch as if to purl and through the fifth stitch as if to knit. Repeat from Fig. 123 and Fig. 124.

e. Referring to Fig. 125, bind off the last stitch drawing yarn through two end stitches together. Thus yarn goes twice through each stitch across the row.

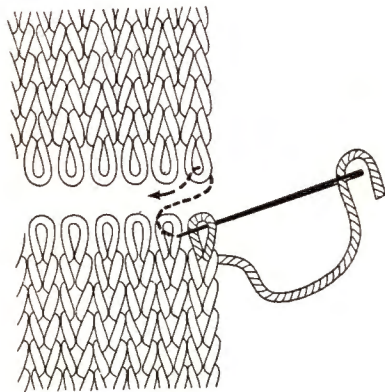


(Fig125)

How to Seam Knit Pieces of Fabric

1. To seam in stockinette stitches

Two pieces of stockinette should be brought edge to edge with knit side out. (Fig. 126) Break off yarn, leaving three times actual length of the fabric and thread it into an embroidery needle.



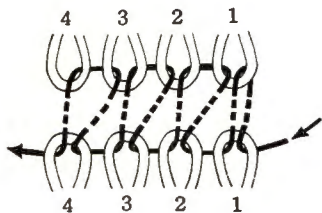
(Fig126)

As shown in the Fig. 127 dart yarn just following the dotted line: draw yarn through the first stitch of this side and of the other side as if to purl; draw it through first yarn as if to knit and through next stitch as if to purl. Repeat across the row.

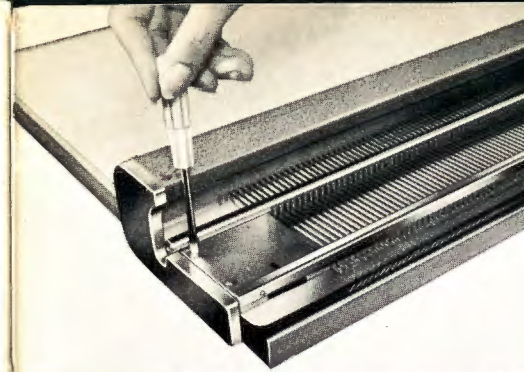
2. To seam on the machine

This method is good for shoulder seams because of its being inflexible.

Put two pieces of fabric together with knit side in and place it on machine needles and bind stitches of two pieces together in wrapping way as shown in Fig. 117, 118 and 119.



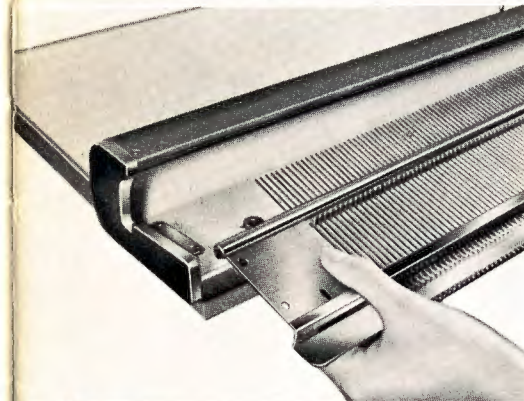
(Fig127)



(Fig 128)

How to Replace Latch Needles

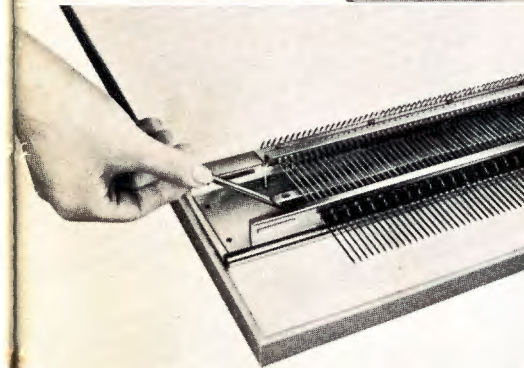
(A) Remove carriage from the machine and unscrew the four screws on the corners of needle bed. (Fig. 128)



(Fig 129)

(B) Draw out the bed toward you to take it off the case. (Fig. 129)

(Fig. 129)



(Fig 130)

(C) Turn the bed wrong side up, pushing up needle holder with a screw driver pull out the holder as far as its end comes to damaged needle. (Fig. 130)

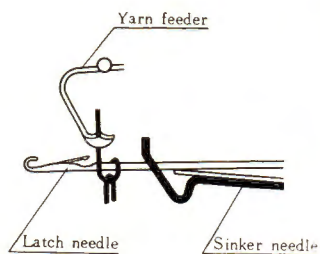
(Fig. 130)



(Fig 131)

(D) Pull out damaged needle by the hook so the needle comes off easily. (Fig. 131)

Change needle and replace needle bed.



(Fig 132)

How to Correct Errors in Knitting

1. Why edge stitches fall :

- (A) Yarn feeder may be damaged.
- (B) Yarn feeder may be set too far backward.

As shown in Fig. 132, if yarn feeder is set too far backward, yarn goes behind latch of a needle and its hook cannot catch the yarn. If the carriage is used in this condition, stitches will slip off the needles.

As shown in Fig. 133, bring the yarn feeder a little forward so that yarn goes on the latch to be knit correctly.

- (C) Carriage may have been turned back without completing the previous row.
- (D) Yarn feeder may be too high.

Correct the position of yarn feeder: as in Fig. 134. Yarn feeder should be just above the needle hook.

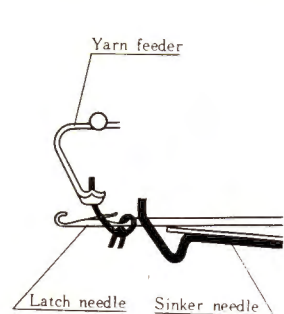
2. Why there appear tucked stitches or uneven stitches in fabric :

- (A) There is too much space between fabric presser and sinker needle.

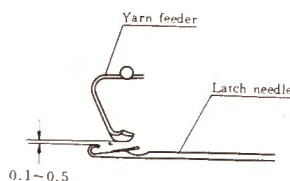
In such case, fabric is apt to cling to needles and stitches will not go completely behind latches.

If fabric presser is too low, the results are the same because the fabric comes over the presser.

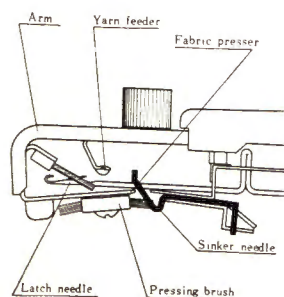
Correct the position of the carriage arms: fabric presser should be slightly touching sinker needle and back of the needle stem. (Fig. 135)



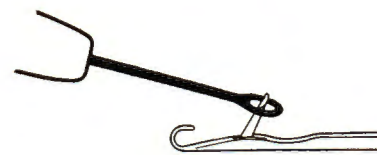
(Fig 133)



(Fig 134)



(Fig 135)



(Fig136)

- (B) Needle latch may be bent.

If latch is bent, correct it carefully as shown in Fig. 136.

- (C) Gauge may be too small for the yarn.

Gauge should be set properly according to yarn size.

- (D) It may be that either the yarn tension is uneven or the carriage runs irregularly.

3. Why uneven vertical lines appear in fabric :

- (A) Needles which knit those stitches may be bent.

You can mend by straightening latch, but if latch sticks into hook, or either latch or hook is broken, you will have to replace the needle with a new one.

- (B) Sinkers corresponding to those stitches may be damaged.

When sinker needles are broken, new ones should be replaced; if they are only bent, correct them with pinchers.

4. Why uneven rows appear in fabric :

- (A) Carriage works unequally on both sides.
- (B) Gauge dial is wrong.

5. Why stitches are uneven on both edges :

- (A) Tension on yarn is uneven.

6. Why the edge length differs right and left :

- (A) This may be on account of the knitter's habitual way of handling machine.
- (B) When both edges are uneven in the length even when you use yarn tension equipment, it may be that the yarn is not feeding smoothly.

7. Why stitches skip while knitting :

(A) Brushes :

Note : (1) Needle brush opens latch ; latch may sometimes spring shut by itself, and brush is to keep it opened.

(2) Center brush keeps needles from irregular movement as carriage goes back and forth.

If the brush is not fixed firmly, dusty with yarn or if bristles are damaged, it will not work properly.

(B) Yarn feeder may be too high.

(C) Some needles may be imperfect.

8. Why carriage feels heavy :

(A) Not being oiled it cannot move smoothly.

(B) Fabric presser is too far pushed in.

Note : If you drop the carriage arm or hit it against something, see if anything has been damaged.

(C) Yarn may be tangled somewhere.

(D) Needle hook may stick into yarn.

(E) Fabric may catch on sinker needles.

(F) Tension may be either too tight or too loose.

(G) Needle latch may be crooked.

(H) Bent groove may prevent needle from moving smoothly.

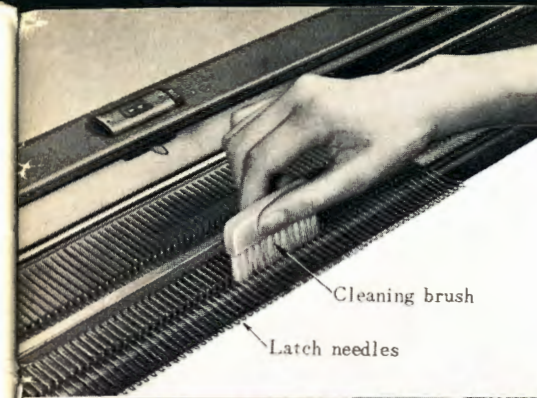
(I) Carriage pipe may not be straight or rail is damaged.

Note : When you drop carriage examine it carefully.

9. Why carriage stops working while knitting :

(A) If carriage direction is reversed before it has completed one row cam tip of the carriage stops against needle butt.

(B) There may be too big a knot in yarn to go through needle hook.

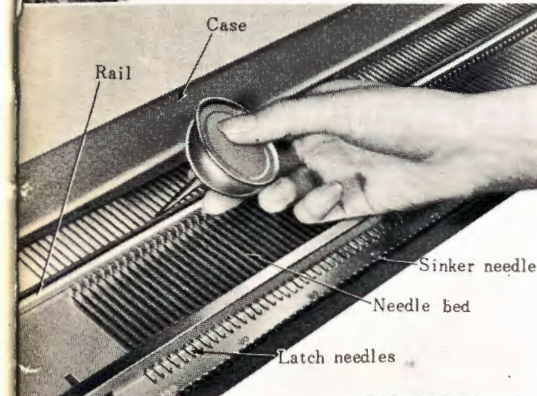


(Fig 137)

How to Take Care of Machine

Without oiling, any good machine can not work well. Please take good care of your knitting machine and oil it well. After your knitting is done, brush needles carefully (Fig. 137), clean the whole machine with oiled cloth and store it in a dry place.

How and Where to Oil



(Fig 138)

Oil the machine with a small brush dipped in machine oil or rust proof oil.

1. Rail :

Oil the rail every time you use machine ; the rail is where the carriage pipe slides on. (Fig. 138)

2. Grooves of needle bed :

Oil grooves constantly ; needle butts are always working against them.

(Fig 139)

(Fig. 139)

3. Back of carriage :

The cams of the carriage are always rubbing against needle butts and should be oiled on the parts which Fig. 140 shows with dotted lines.

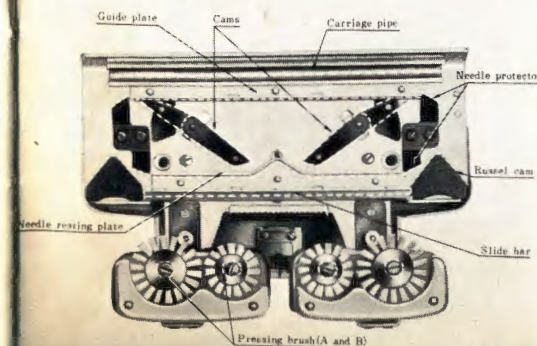
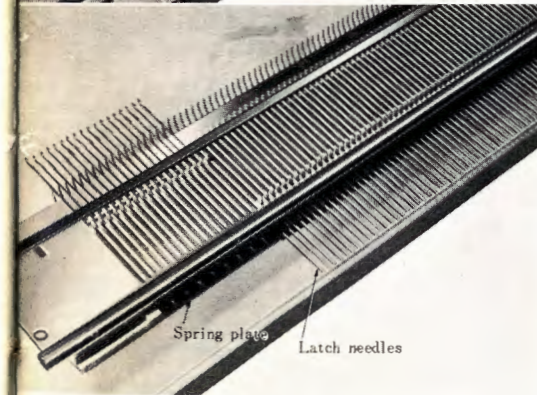
4. Spring plate :

It rubs against back of needles and should be oiled from behind the rail.

(Fig 140)

(Fig. 139)

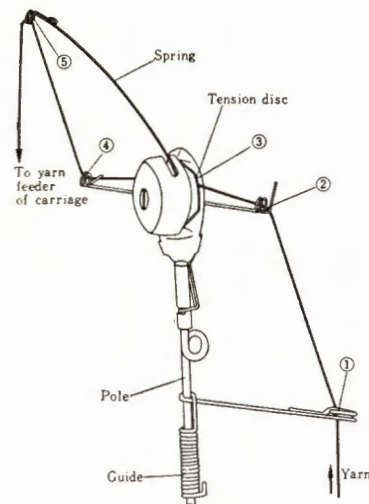
Note : Before you use the machine clean oily part thoroughly.



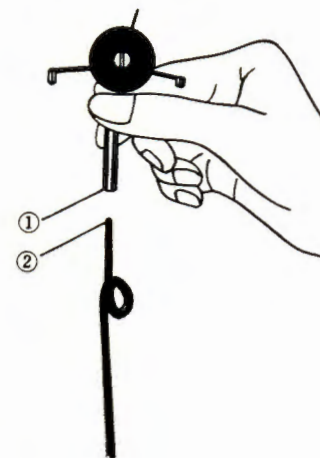
Knitting symbols

The following set of symbols has been adopted to help you understand your patterns at a glance and to save countless lines of description for each stitch.

I	Knit stitch	Face loop of plain stitch.
┌	Purl stitch	Back loop of plain stitch.
O	Empty stitch	Hole made by transferring the stitch to the next needle.
└	Two stitches together	Transfer left stitch to the adjacent right needle.
┘	Two stitches together	Transfer right stitch to the adjacent left needle.
┐	Lean stitch to the right	Transfer the stitch to the right
┑	Lean stitch to the left	Transfer the stitch to the left
└┘	Three stitches together	Right stitch on top
┐┑	Three stitches together	Left stitch on top
└┘┐┑	Three stitches together	The center stitch on top of the left and right stitches
-└	Increased stitch to the right	Increase one stitch to the right
-┐	Increased stitch to the left	Increase one stitch to the left
└┘	Crossing, left over right	Cross the stitches with the left stitch over the right
┐┑	Crossing, right over left	Cross the stitches with the right stitch over the left
┐┑┐┑	Tucking stitch	Several unknitted stitches with the loops on one needle
□	Skipped stitch	A skipped stitch has its needle in inoperative position
∇	Float stitch	Several unknitted stitches the first one of which is over the needle, the others under the needle and with the loops protruding out the knit side
⌘	Twisted stitch	Stitch formed by removing the stitch from the needle, twisting the loop, and then replacing it.
⌘	Twisted tucking stitch	Drop a stitch, twist its loop, and replace on the needle.
⊗	Rolled stitch	Wind the yarn around the needle in a roll similar to the illustration.
↳	Three stitch increase	Increase three stitches out of one stitch.



(Fig141)



(Fig142)

How to Use "AUTO - TENSION"

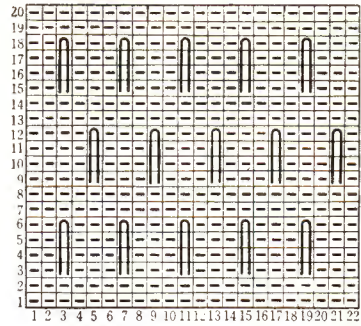
- How to set it :
 - Attach the guide to the pole. (Fig. 141)
 - Put the pole into a hole beside the case handle.
 - Put the "AUTO-TENSION" ① on top of the pole ② (Fig. 142)
- How to thread it :
 - Unwind yarn into a basket or a box and put it behind the machine.

Note : Do not use balled yarn as it is and do not make a big knot of yarn.

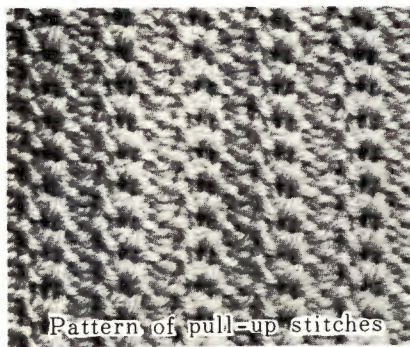
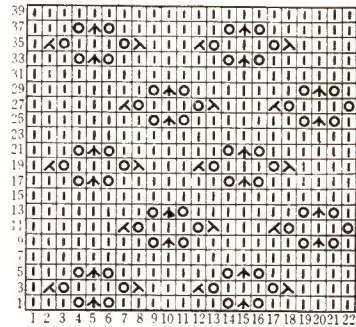
 - Hold yarn with both hands and draw the yarn end as shown in Fig. 141, following the number.
 - Draw the yarn from the right side of yarn lock through yarn feeder.
 - Holding yarn end of several inches in your left hand, move the carriage one way, then next row will be easily knit without holding yarn.
- How to put away :
 - Pull the guide out of the pole and put it in the accessory case.
 - Set the "Auto tension" to the holder fixed inside the case cover as shown in Fig. 14 on page 7.



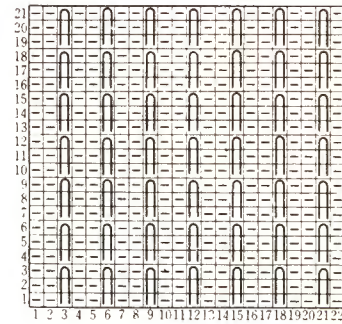
Pattern of pull-up stitches



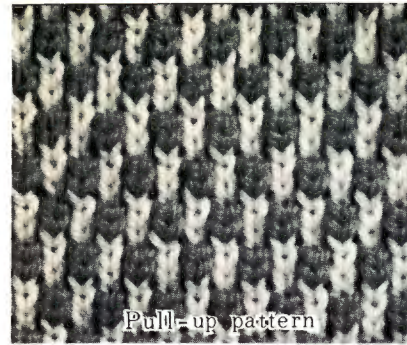
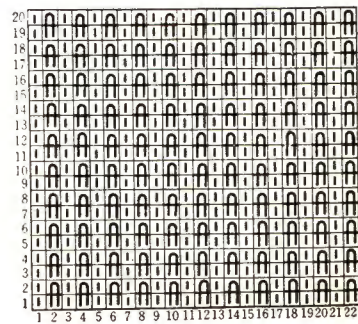
Lace pattern



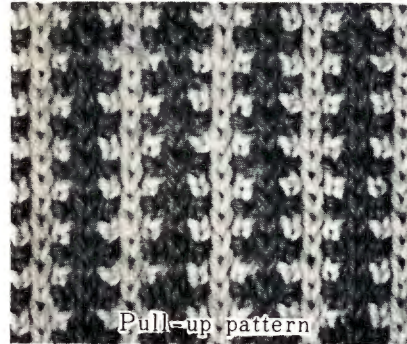
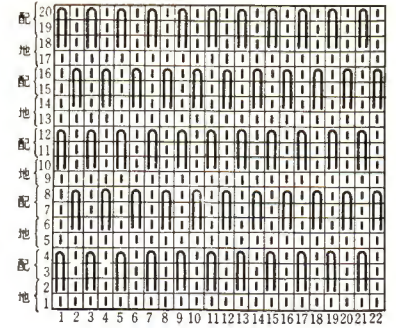
Pattern of pull-up stitches



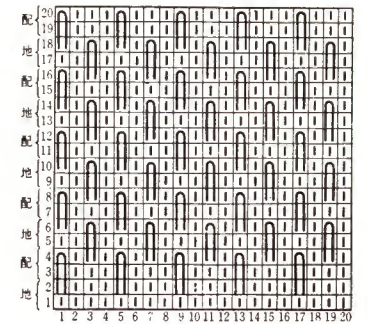
Fancy ribbing stitches



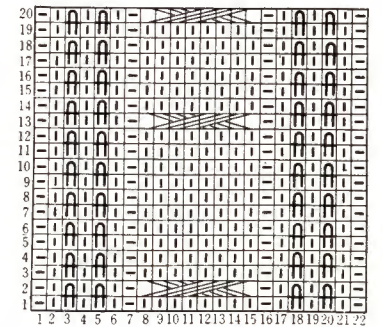
Pull-up pattern



Pull-up pattern



Cable pattern, 4 st crossed



Pull-up pattern

