

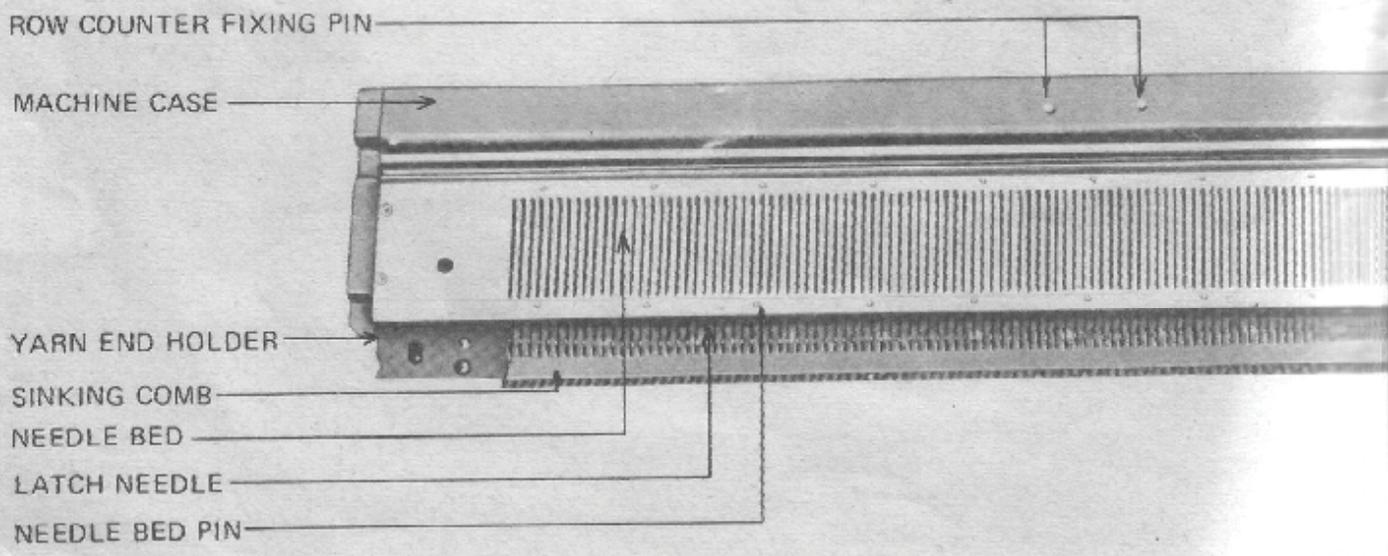
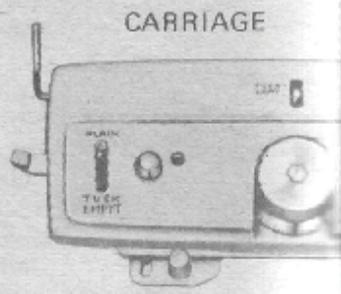
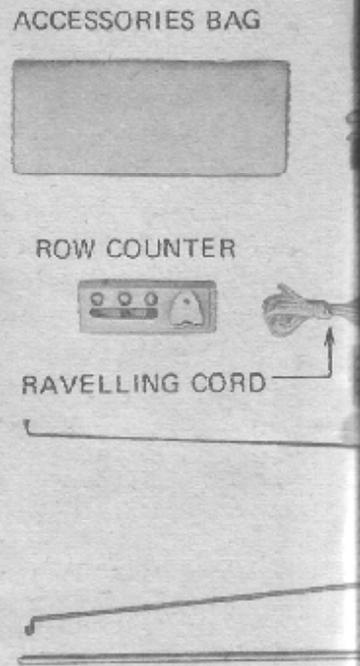
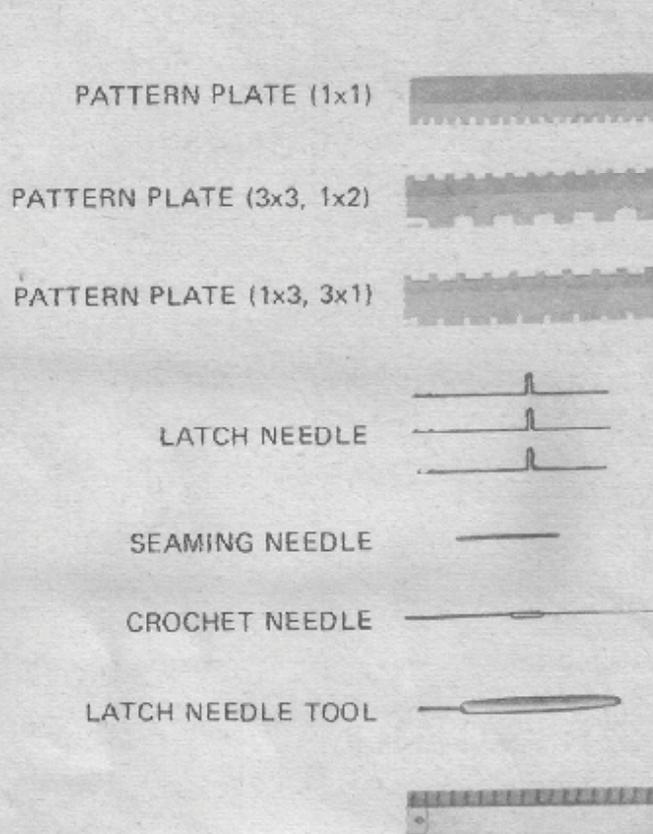
INSTRUCTION MANUAL

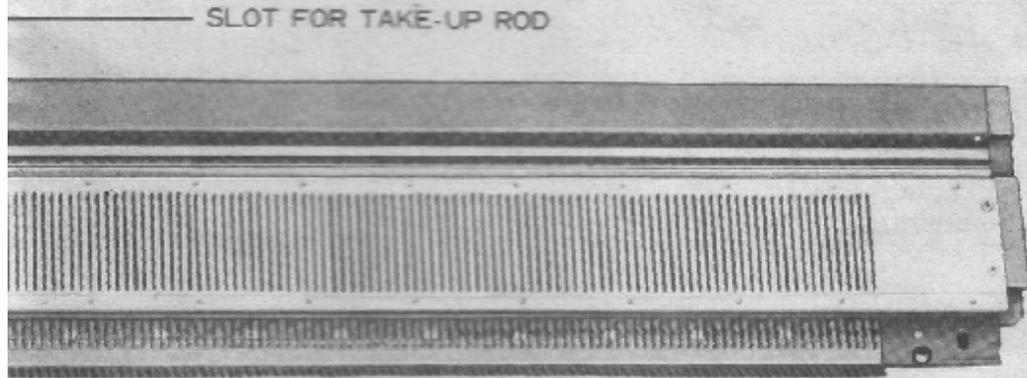
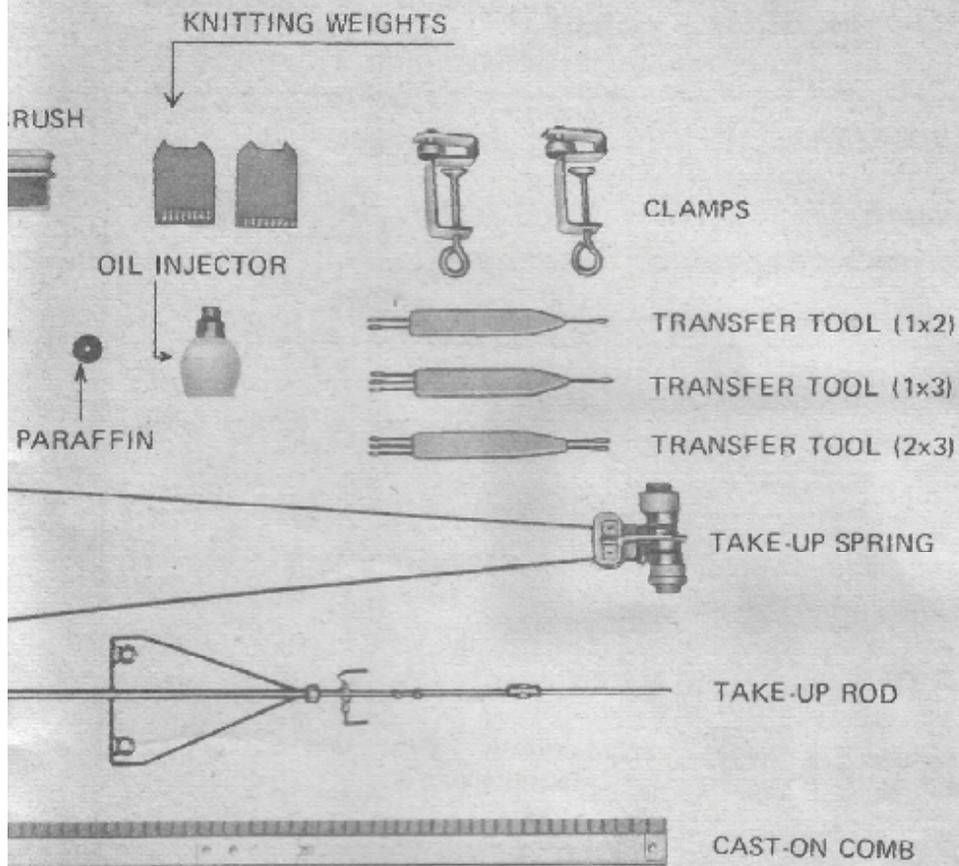
FOR TOYOTA KNITTING MACHINE

MODEL K 510

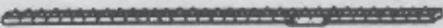
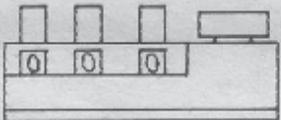
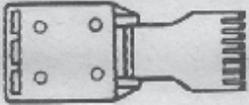
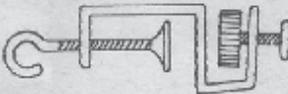
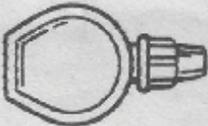
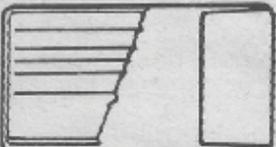
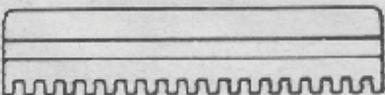
TABLE OF CONTENTS

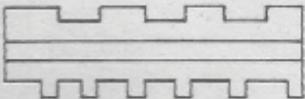
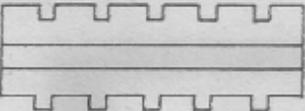
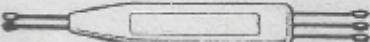
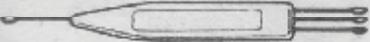
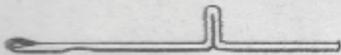
1.	Parts names	1
2.	How to use accessories	3
3.	How to assemble the machine	5
4.	How to operate carriage	8
5.	Preparation before knitting	9
	* Threading machine	
	* Adjusting the take-up	
6.	Start knitting	11
7.	How to knit the pattern knitting	13
	* Thread knitting	
	* Tuck stitch	
	* Tuck stitch color combination knitting	
	* Tuck pattern stitch	
	* Tuck color combination stitch	
	* Raised tuck pattern stitch	
	* Continuous tuck stitch	
	* Slip loop tuck stitch	
	* Slip loop tuck color combination stitch	
	* Open pattern knitting	
	* Manual lace pattern knitting	
	* Rib stitch knitting	
	* Purl stitch knitting	
	* Cord knitting	
	* Cable pattern knitting	
	* Turned-up hem knitting	
8.	Guide for knitting	31
	* Gauging	
	* Drafting	
	* Picking up dropped stitches	
	* Increasing stitch	
	* Decreasing stitch	
	* Dividing the stitches for V neck shaping	
	* Dividing for crew or round neck shaping	
	* Continental or mock rib	
	* To bind off the rib stitches	
	* Seaming	
	* Partial knitting of plain stitch	
	* Partial knitting of tuck stitch	
	* Partial knitting of tuck pattern stitch, slip loop tuck stitch, slip loop tuck color combination stitch and thread knitting	
9.	Remedy for Troubles	48
	* Detaching the carriage while knitting	
	* Unraveling knitting on the machine	
	* How to replace latch needles	
10.	How to store the machine	51
11.	How to keep and maintain the machine	53
12.	Standard stitch signs	54



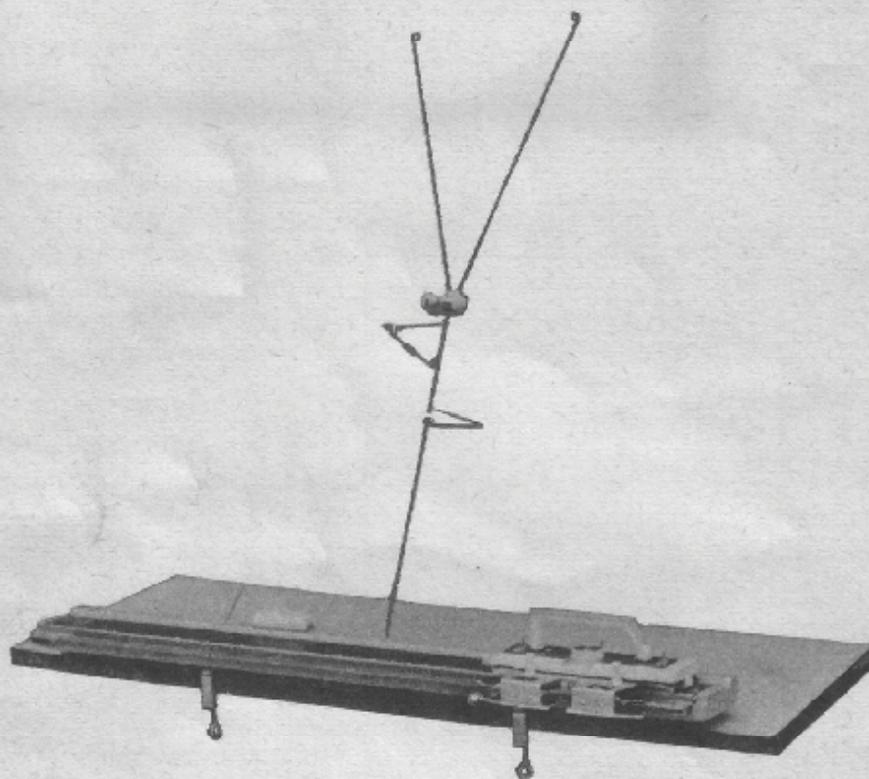


HOW TO USE ACCESSORIES

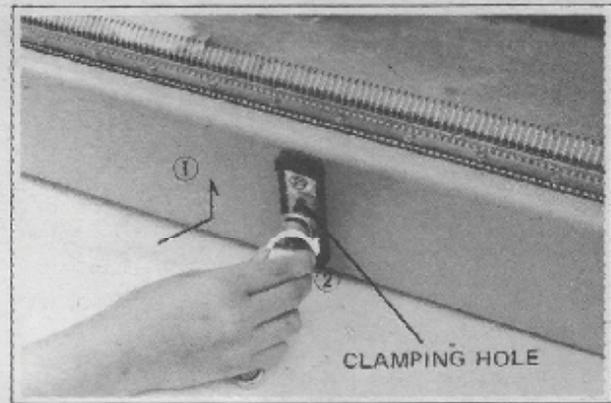
Parts Name	Rough Sketch	Use
Cast-on Comb		Used for casting on.
Row Counter		Used for counting the knitted rows.
Knitting Weight		Used by hanging it to both ends of fabric especially when lace yarn, thin yarn, etc. are knitted.
Clamps		Used for fixing the machine to knitting stand, etc.
Paraffin		Used by attaching to the take-up rod when using very thin yarn, lace yarn or summer yarn.
Oil Injector		For smooth carriage movement, apply oil with brush to the butt of needles and cams in the carriage.
Carriage Handle		Used for sliding the carriage.
Accessory Bag		Used for storing the latch needle tool and transfer tool.
Latch Needle Tool		Used when making rib stitch or purl stitch in the waist or sleeve end of garments.
Pattern Plate(1x1)		Used when moving needles to the working position, returning them to the rest position or making the needle selection 1:1.

Parts Name	Rough Sketch	Use
Pattern Plate (1 x 2, 3 x 3)		Used for making the needle selection 1:2 or 3:3.
Pattern Plate (1 x 3, 3 x 1)		Used for making the needle selection 1:3 or 3:1.
Transfer Tool (1 x 2)		Used when increasing, decreasing or transferring less than 2 or 3 stitches and knitting patterns (lace pattern), etc. Used when cable pattern knitting of 2 or 3 stitches with transfer tool 1 x 2 and 2 x 3, or 1 x 3 and 2 x 3.
Transfer Tool (2 x 3)		
Transfer Tool (1 x 3)		
Brush		Used for raising up the latches.
Raveling Cord		Used for dividing garment knitting from waste knitting.
Latch Needle		After using the machine, examine, needles and replace bent and worn ones with new ones.
Crochet Needle		Used for crochet at the edge of sweater.
Seaming Needle		Used when seaming the fabrics.

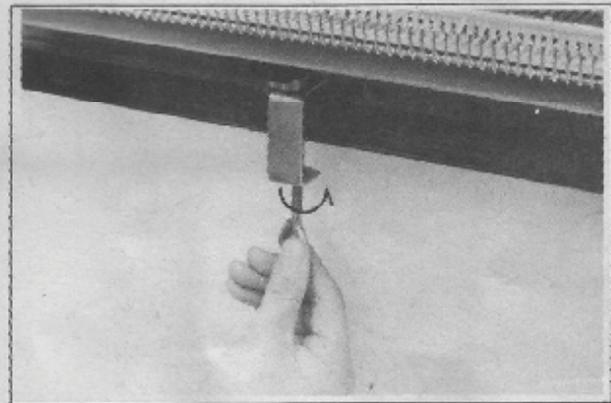
HOW TO ASSEMBLE THE MACHINE



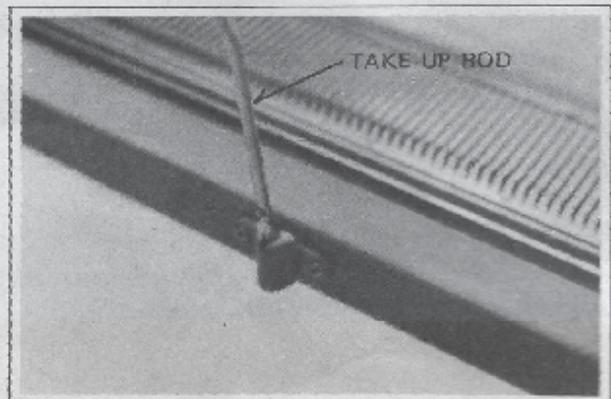
Install a clamp into clamping hole on the bottom of the machine, secure it as indicated by the arrow. Then tighten the screw knob. Do the same with the other clamp.



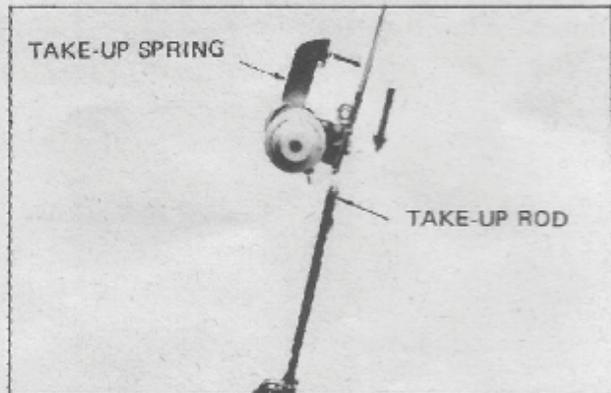
Secure the machine on the table.

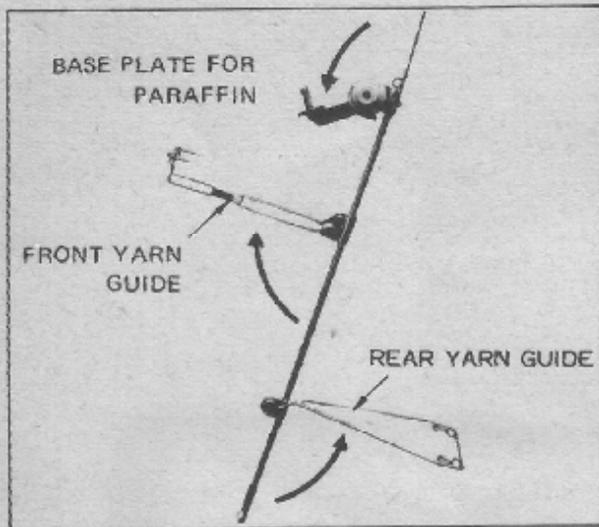


Insert the take-up rod with curved part downwards into the hole at the back center of the machine.



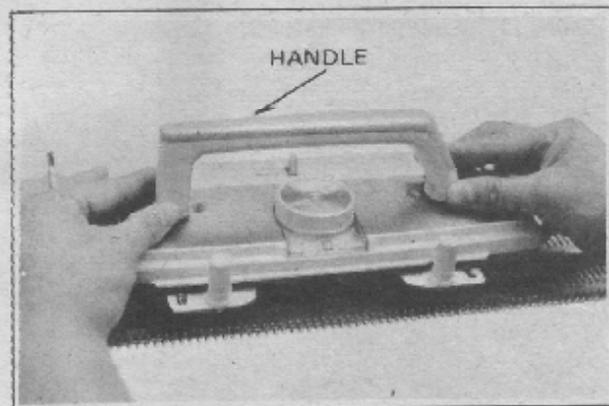
Insert the take-up spring on the tip of the take-up rod.



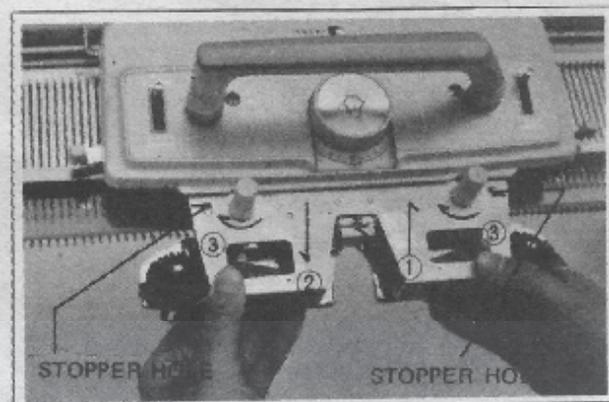


- ▶ Pull out the front yarn guide, the rear yarn guide and the base plate for paraffin until they will stop, as indicated by arrow.

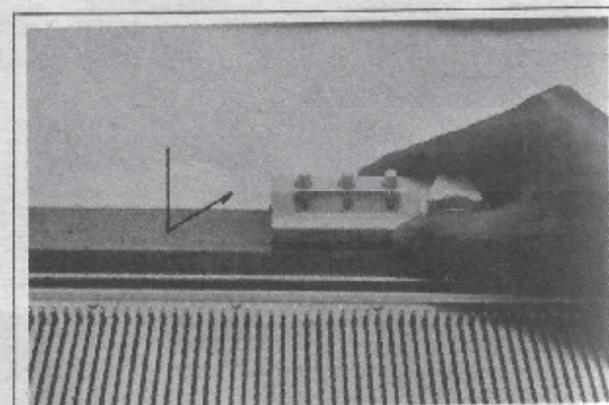
Attach handle to carriage by turning the left and right screws simultaneously. ▶



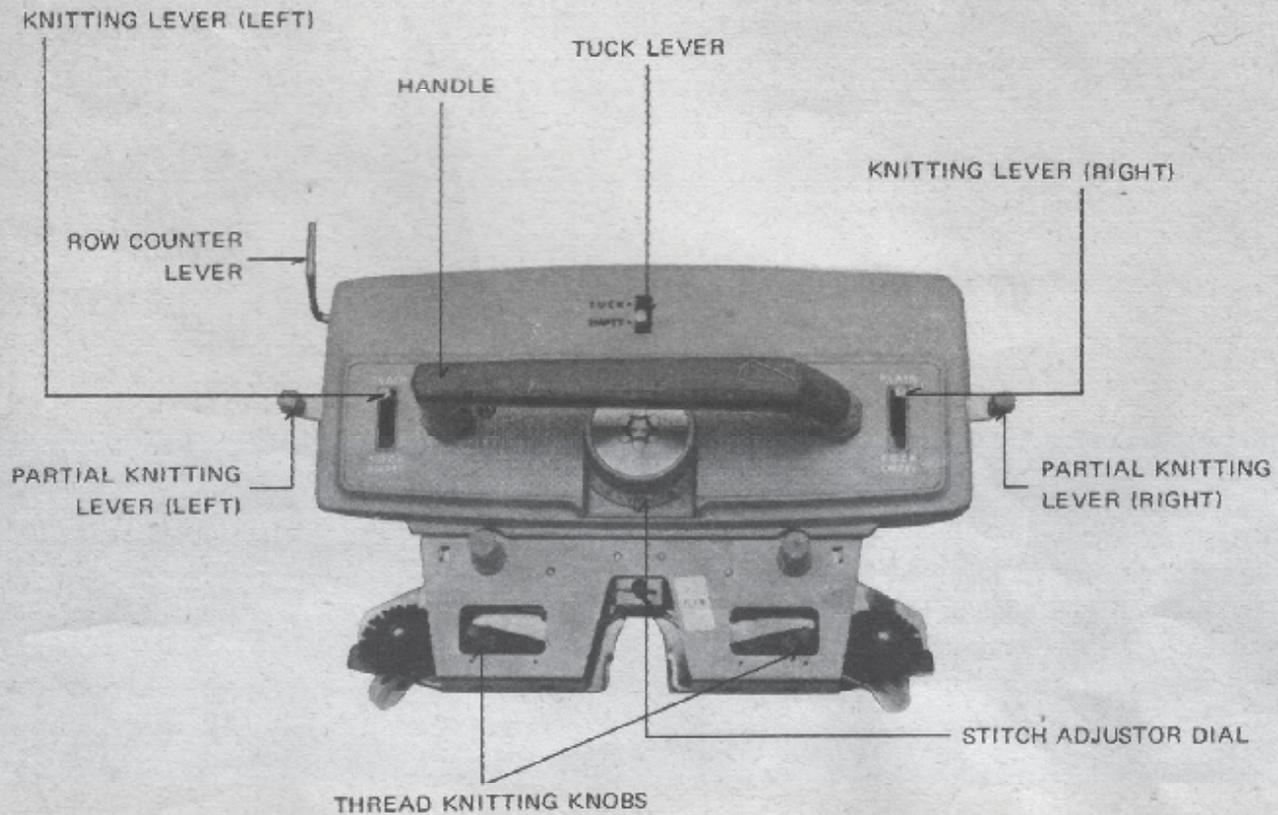
Install the fabric presser on carriage by loosening ▶ the fabric presser screw knobs. Push the fabric presser as indicated by the arrow 1 so that the stopper fits into the stopper hole of the presser. Pull the presser as indicated by the arrow 2 and tighten the screw knobs.



Install the row counter device. ▶



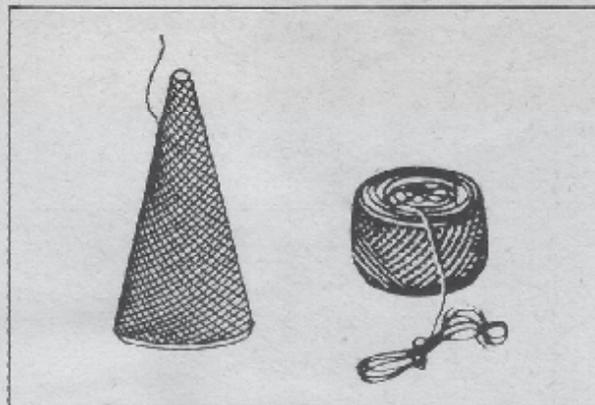
HOW TO OPERATE CARRIAGE



- TUCK LEVER** Used for tuck stitch knitting. Set the Tuck Lever to "TUCK" position for tuck stitch knitting and to "EMPTY" position for slip loop tuck color combination stitch work.
- KNITTING LEVER** Used for plain knitting. Set the knob to "TUCK" or "EMPTY" position for tuck stitch or slip loop stitch knitting, and to "PLAIN" position for plain stitch work.
- PARTIAL KNITTING LEVER** .. Used for tuck stitch knitting and partial knitting. Set the lever to "I" position for the above knitting, and "•" position for removing the needles at B position to E position.
- THREAD KNITTING KNOB** .. Used for thread knitting.
SET THE KNOB TO RED MARKED "•" POSITION FOR THREAD KNITTING, AND BLACK MARKED "•" POSITION FOR ANY OTHER KNITTING.
- STITCH ADJUSTOR DIAL** .. Used to control the size of stitches according to the thickness of the yarn.
- ROW COUNTER LEVER** When the row counter is required, the lever should be turned to its working position.

PREPARATION BEFORE KNITTING

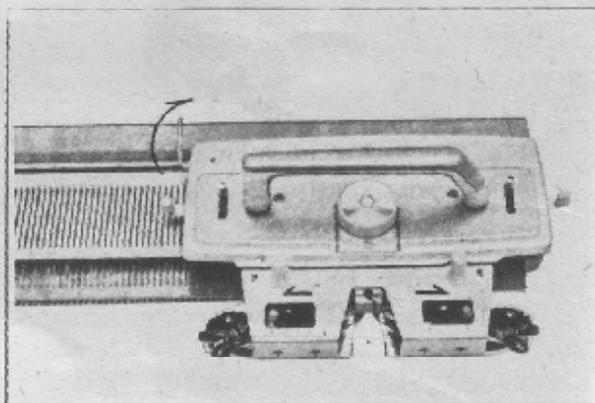
Yarn must feed smoothly without restriction, so ►
rewind on to cones or use a ball winder and feed
the yarn from the center.



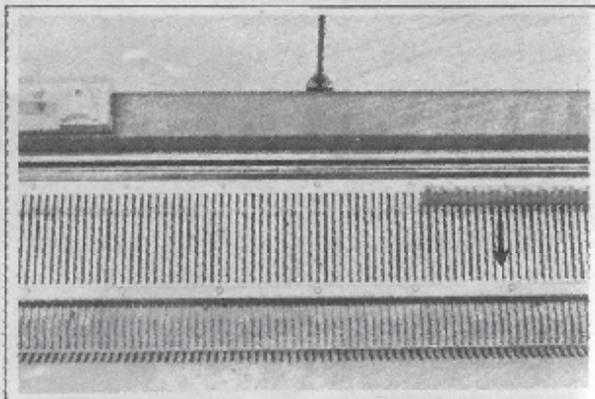
Install the carriage to the right side of the needle ►
bed.

SET THE THREAD KNITTING KNOBS TO
THE BLACK MARK "•" POSITION.

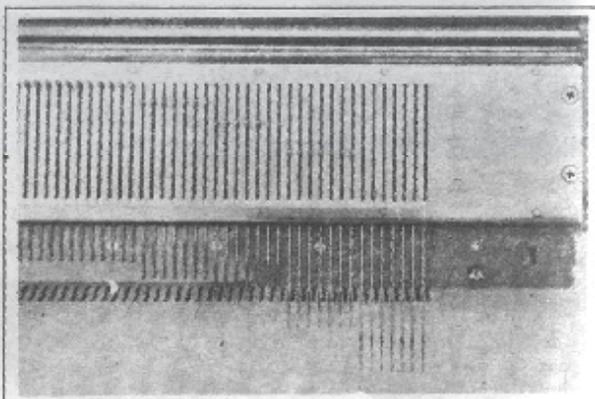
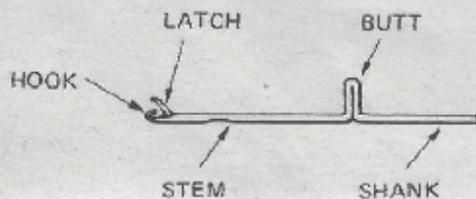
Pull out the row counter lever, as indicated by
the arrow, if you want to use the row counter.



By using the pattern plate move the desired ►
number of needles from A to B position
indicated on both ends of the needle bed.



A, B, C, D marks at both ends of the needle bed ►
indicate the position of the needle butt.

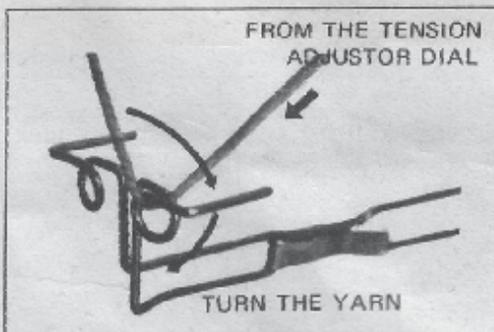
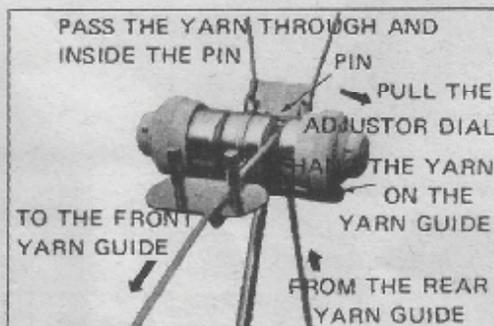
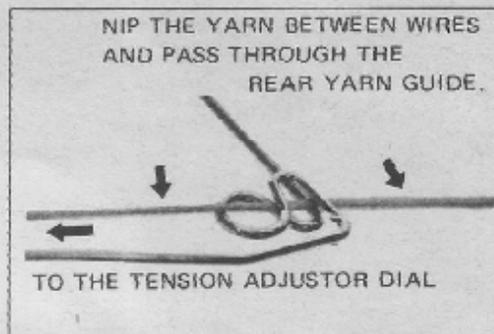
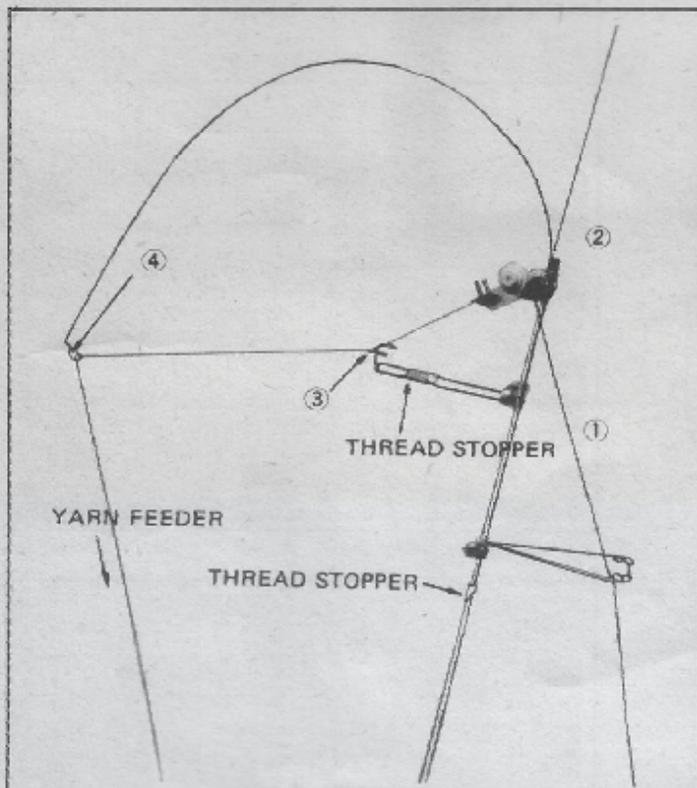


THREADING MACHINE

1. Pass the yarn through the rear yarn guide.
2. Pass it through and between the tension adjustor dials.
3. Pass it through the front yarn guide.
4. Pass it through the take-up spring.

Steps 1., 2., 3., see the photos at right.

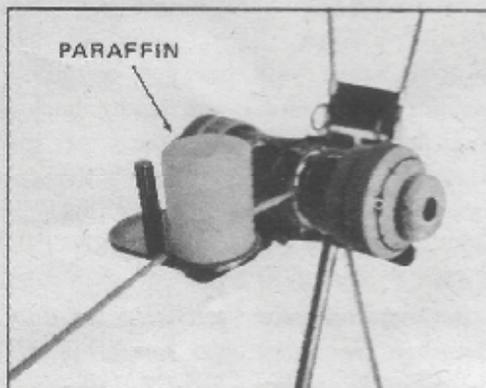
Hook the end of yarn in the thread stopper to adjust take-up after threading procedure is completed.



ADJUSTING THE TAKE-UP

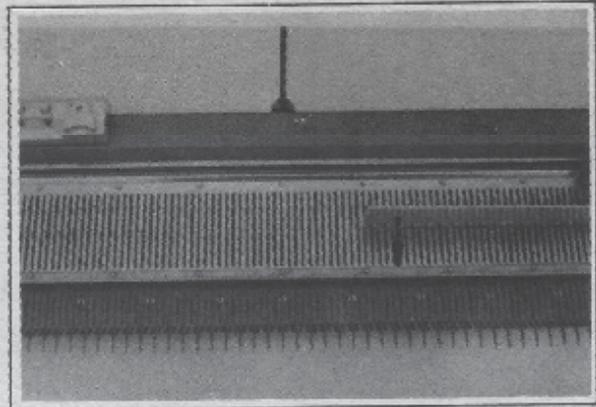
Adjust the take-up according to the thickness of the yarn. Adjust the dial so that the end of the take up spring and the front yarn guide will be same height when the yarn is passed through. Yarn becomes tighter when the dial is turned clockwise.

When three ply yarn is used, set the red line to mark \ominus on the dial. When a thinner yarn than three ply is used, set the red line to mark (+). When a heavier yarn than three ply is used, set the red line to mark (-). Please use paraffin, when using rough yarn such as nylon, synthetic yarns and cotton yarns. Thread waste yarn similarly through left hand feed.



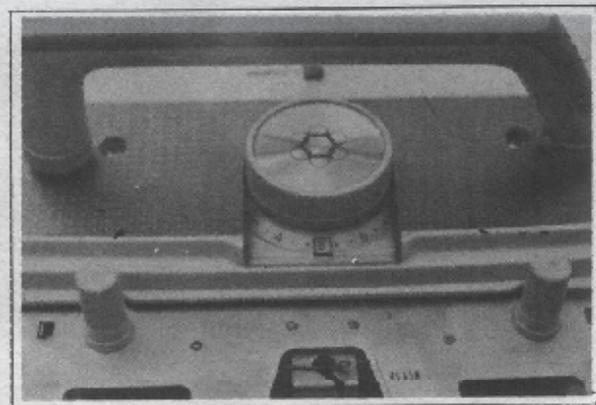
START KNITTING

Using the pattern plate (1 x 1), move the alternate needle to "D" position.

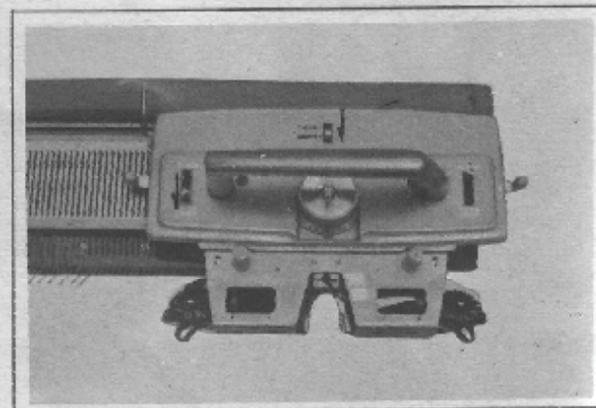


Set the stitch adjustor dial at 5. Adjust the knitting stitches by setting the stitch adjustor dial at the following position according to the thickness of the yarn.

Figure of Dial	1-3	3-6	6-9	9-10
Yarn Size	Two Ply	Three Ply	Four Ply	Double Knitting



Set the knitting lever at left and tuck lever at "EMPTY" position.



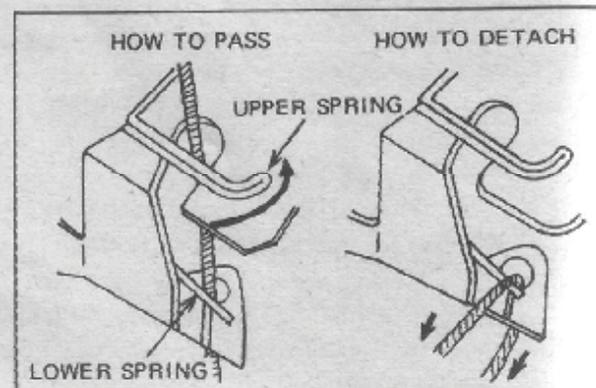
Detach the end of the yarn from the thread stopper and pass it through the yarn feeder.

HOW TO PASS THE YARN THROUGH THE YARN FEEDER.

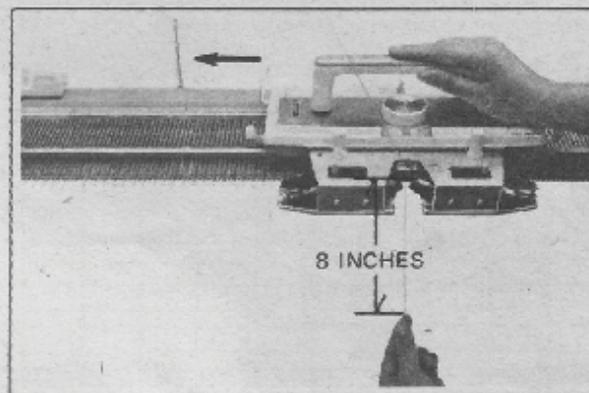
Stretching the yarn between up and down, and pushing it to the lower spring backward, and then pass it through under the upper spring. Start to operate after checking the yarn having entered in the inside of lower spring.

HOW TO DETACH THE YARN FROM THE YARN FEEDER.

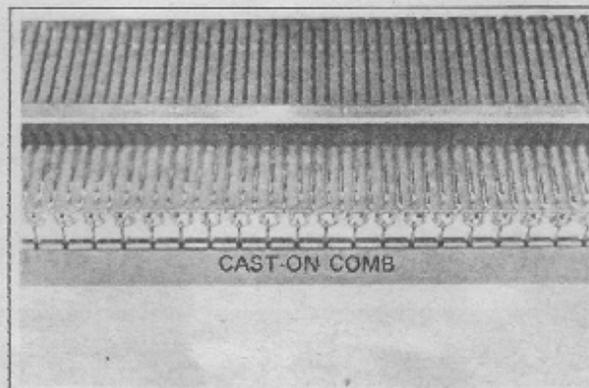
After detaching the yarn from the upper spring, detach it from the lower spring pulling it in the direction by arrow.



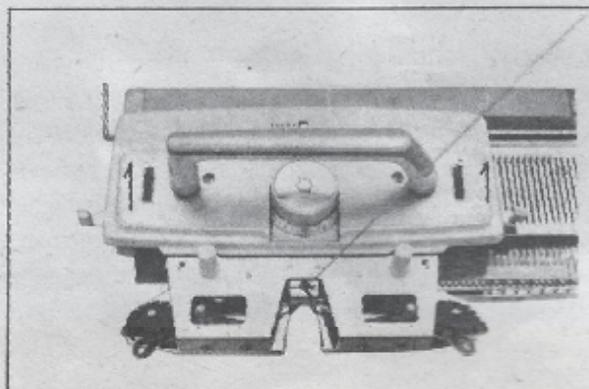
Pull down about 8 inches of the yarn end from ▶
the yarn feeder, hold it with one hand and knit
one row by sliding the carriage to the left.



Yarn will pass over every second needle. Hook ▶
the cast-on comb onto the unknitted yarn in the
front of the sinker hooks.



Set the knitting levers both sides to "PLAIN" ▶
position, so that by sliding the carriage to the
right or left the plain knitting can be done.
Continuing to knit by sliding the carriage to the
right or left, the carriage should be moved
toward one side until a click can be heard and
then moved toward the opposite side.



Note:

SEE PAGE 48 IF THE CARRIAGE GOT STUCK WHILE KNITTING CASTING-ON IS FINISHED BY
ABOVE-MENTIONED OPERATION.

* Use the Cast-On Comb when you knit.

HOW TO KNIT THE PATTERN KNITTING

											" "	" ●		" "	→	12					
											" "	" "		" "	←	11					
											" "	" "		" "	→	10					
●			●				●				" "	" I		" "	←	9					
											" "	" ●		" "	→	8					
											" "	" "		" "	←	7					
											" "	" "		" "	→	6					
		●			●			●			" "	" I		" "	←	5					
											" "	" ●		" "	→	4					
											" "	" "		" "	←	3					
											" "	" "		" "	→	2					
●			●				●				I	PLAIN	PLAIN	I	O A	←	1				
● Needle Bed Pin										Needles					F G H I J		K T L M N				

F: Partial Knitting Lever (Left)
 I: Knitting Lever (Right)
 L: Yarn at Yarn Feeder
 T: Thread Knitting Knob

G: Knitting Lever (Left)
 J: Partial Knitting Lever (Right)
 M: Direction of Carriage

H: Tuck Lever
 K: Thread Knitting Yarn
 N: Number of Knitting Row

Operate the machine referring to the above knitting table, and get any patterns knitted.

Number of Knitting Indicate the order of knitting.

Direction of Carriage Move the carriage in the direction of arrow mark.

Yarn at yarn feeder A and B indicate the yarn at yarn feeder.

A indicates a base yarn and B indicates color yarn.

Thread Knitting Knob (O) indicates to set the knob at "●" black mark and
 (I) indicates to set the knob at "●" red mark.

Thread Knitting Yarn B, C and so on indicate the kinds of thread knitting yarn.

Carriage "PLAIN", "TUCK" and "EMPTY" indicate to set Knitting Lever and
 Tuck Lever. (.) and (I) indicate to set Partial Knitting Lever.

Needle Selection Select the needle indicated with "●" mark.

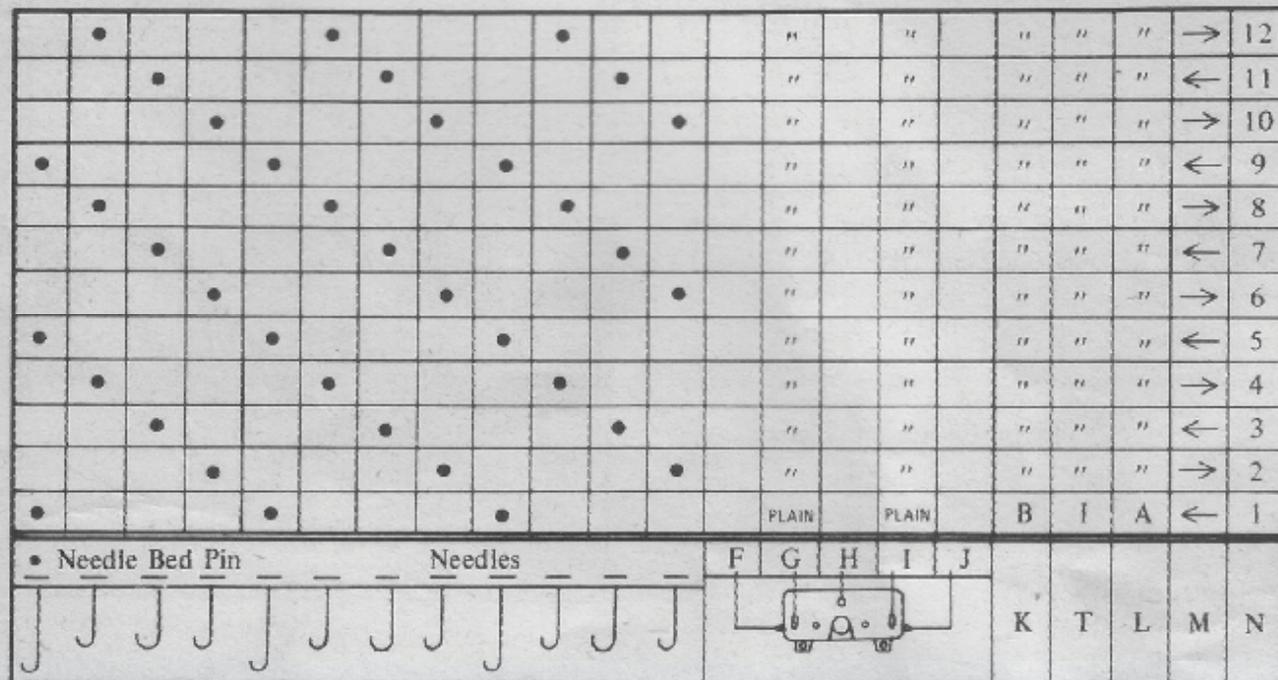
Select and move the needle to "E" position for Tuck Stitch and to "B" position for other knitting.

Knitting tables hereto explained are based on the carriage is always located at the right side of needle bed and to start the operation of carriage from the right position.

THREAD KNITTING

By special combination with the needle selector dial, fabric with less sidewise elasticity which is suitable for knitted suit, can be made easily.

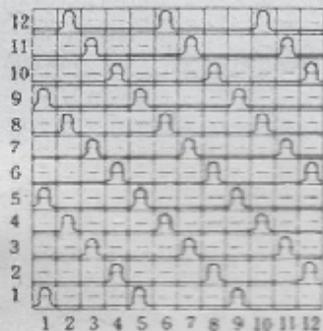
Various kinds of thread knitting can be easily made by the combination of the knitting yarn and the thread. Most beautiful thread knitting will be made by the combination of three ply yarn and the same.



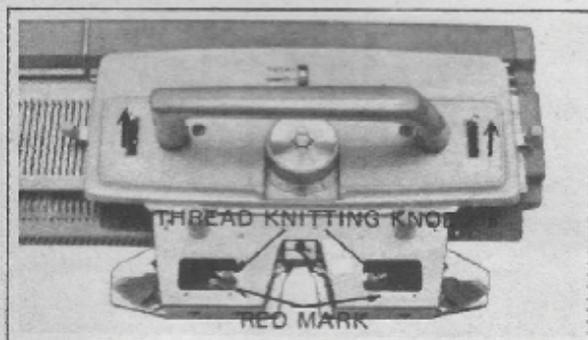
F: Partial Knitting Lever (Left)
 I: Knitting Lever (Right)
 L: Yarn at Yarn Feeder
 T: Thread Knitting Knob

G: Knitting Lever (Left)
 J: Partial Knitting Lever (Right)
 M: Direction of Carriage

H: Tuck Lever
 K: Thread Knitting Yarn
 N: Number of Knitting Row



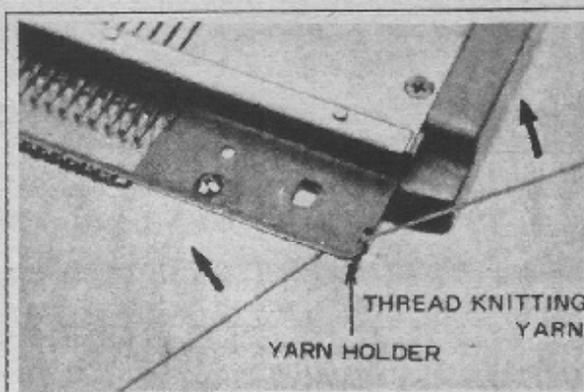
Yarn used: Three ply yarn
 Yarn for thread knitting:
 Three ply yarn
 Stitch adjustor dial: 5
 *Use the Cast-on Comb



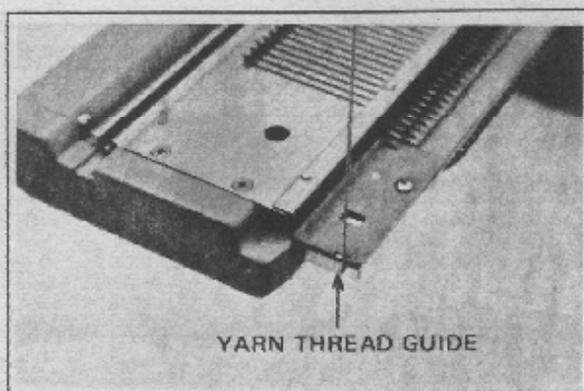
HOW TO KNIT:

- ◀ Move both thread knitting knobs in the direction indicated by arrow, and set at red point "." position.
- Carriage is to set for plain stitch.
- (Carriage is to be positioned at right side.)
- Move the needles at "D" position by using (1:3) pattern plate.

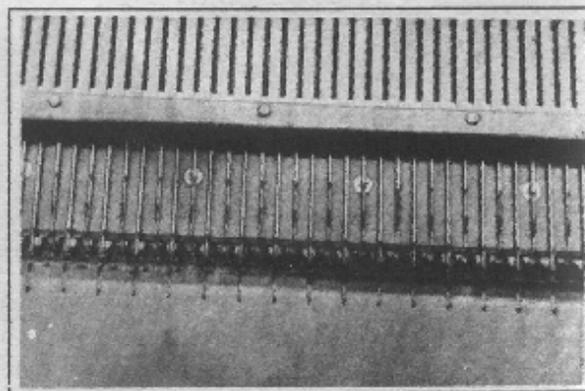
Pass the thread knitting yarn through another take-up spring and insert the end of yarn into the raveling cord holder on the right side of the machine bed.



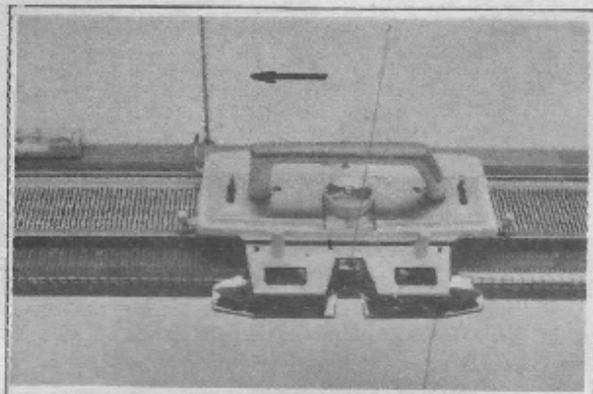
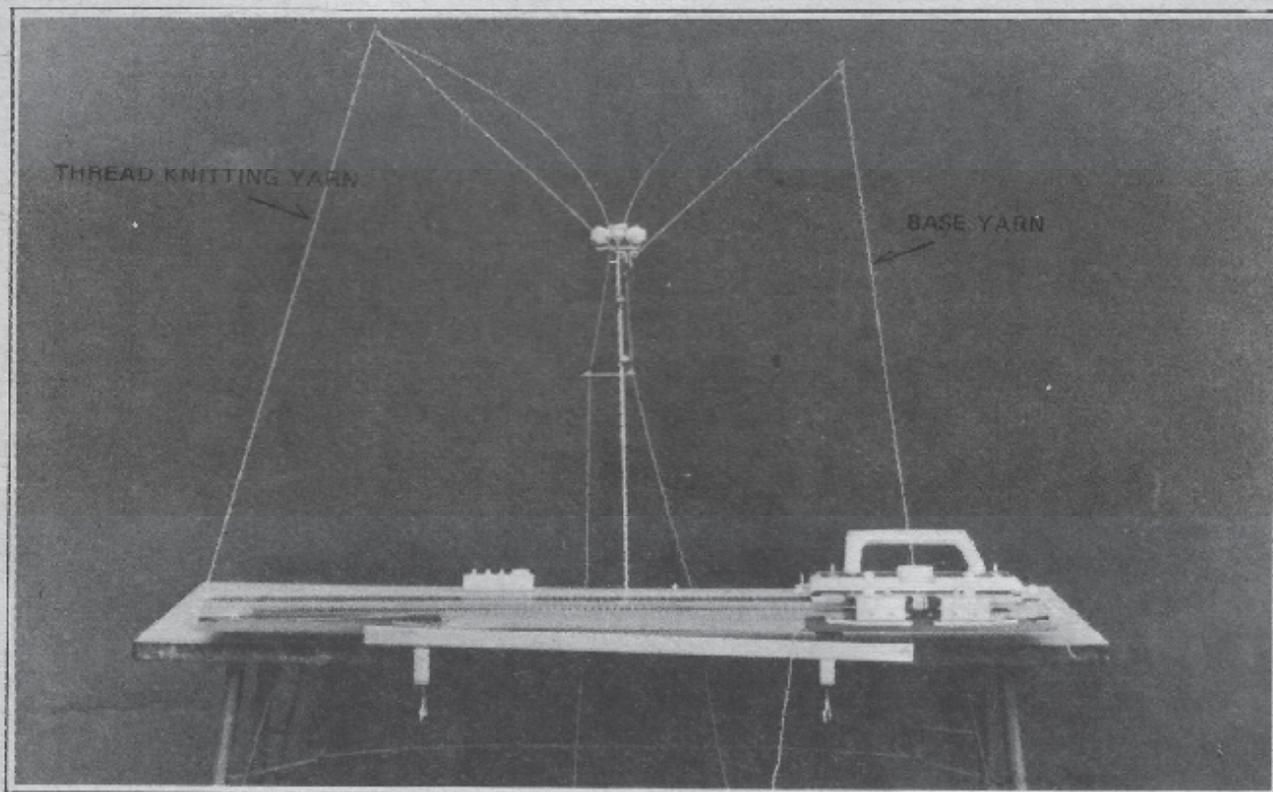
Place the thread knitting yarn on the latches of the needles in D position and hook the end of yarn on the yarn holder.



- * The thread knitting yarn should be placed at the nearest position of the sinking comb.
- * PLACE THE THREAD KNITTING YARN ON THE NEEDLES FROM THE CARRIAGE SIDE AND LEAD TO THE TAKE-UP SPRING.
- * Make sure the needles in B position are in a straight line before placing the thread knitting yarn on the needles.
- * When using heavy yarn for thread knitting, knit by pulling the end of yarn lightly by hand so that good results are achieved.



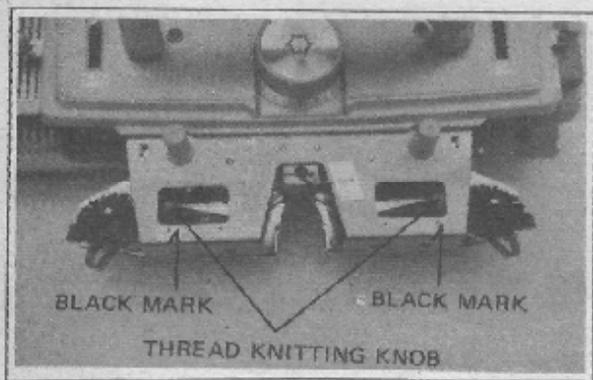
Set Thread Knitting Yarn as follows:



◀ Slide the carriage from right to left to knit the thread knitting (After knitting for one row, pull out the end of yarn from the raveling cord holder.)

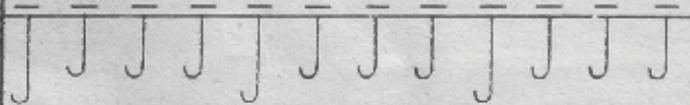
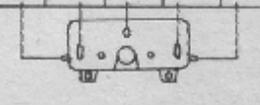
Slide one pitch to left and select needles and place the thread knitting yarn on the latches of the selected needles and knit one row.

Continue knitting selecting the needles in every row by sliding one pitch to left or right.



◀ BOTH THREAD KNITTING KNOBS MUST BE MOVED OUT (SET TO THE BLACK MARK) AGAIN AFTER COMPLETING THREAD KNITTING.

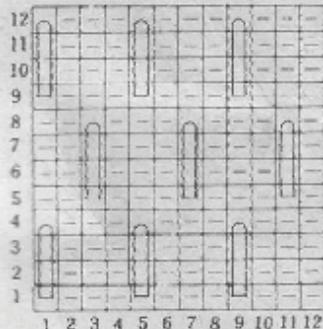
TUCK STITCH

																"	"	"	●		"	"	→	12	
																"	"	"	"		"	"	←	11	
																"	"	"	"		"	"	→	10	
●				●												"	"	"	I		"	"	←	9	
																"	"	"	●		"	"	→	8	
																"	"	"	"		"	"	←	7	
																"	"	"	"		"	"	→	6	
																"	"	"	I		"	"	←	5	
																"	"	"	●		"	"	→	4	
																"	"	"	"		"	"	←	3	
																"	"	"	"		"	"	→	2	
●				●												I	PLAIN		PLAIN	I		O	A	←	1
● Needle Bed Pin												Needles				F	G	H	I	J					
																K	T	L	M	N					

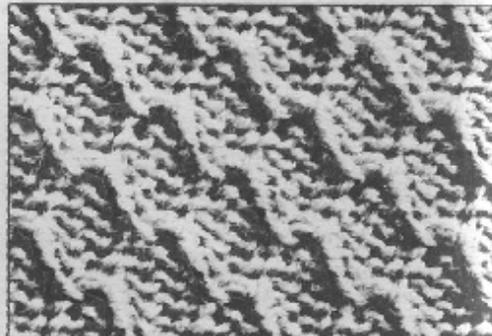
F: Partial Knitting Lever (Left)
 I: Knitting Lever (Right)
 L: Yarn at Yarn Feeder
 T: Thread Knitting Knob

G: Knitting Lever (Left)
 J: Partial Knitting Lever (Right)
 M: Direction of Carriage

H: Tuck Lever
 K: Thread Knitting Yarn
 N: Number of Knitting Row



Yarn Used: Three Ply
 (Plain yarn feeder)
 Stitch Adjustor Dial: 5
 * Use the Cast-on Comb.



HOW TO KNIT:

1. Set both Partial Knitting Levers at "I" position.
2. Select and move the needles to "E" position using 1/3 pattern plate.
3. Slide the carriage and knit three rows.
4. Remove the Partial Knitting Lever at right on the carriage at "●" position, and knit one row.
5. Select the needles and move to "E" position at interval of two needles from second step, by using 1/3 pattern plate.
6. Reset the Partial Knitting Lever at right on the carriage at "T" position.
7. Slide the carriage and knit three rows.
8. Remove the Partial Knitting Lever at right on the carriage at "●" position, and knit one row.
9. Reset the Partial Knitting Lever at right on the carriage at "I" position.

Repeat the above steps from 2 - 9, and knit tuck stitch.

TUCK COLOR COMBINATION STITCH

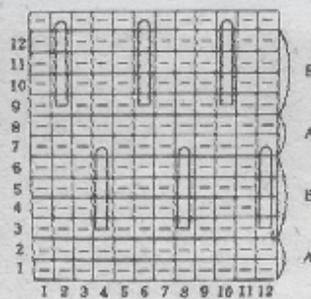
●		●	●	●		●	●	●		●	●		"	"	"		"	"	→	12
●		●	●	●		●	●	●		●	●		"	"	"		"	"	←	11
●		●	●	●		●	●	●		●	●		"	"	"		"	"	→	10
●		●	●	●		●	●	●		●	●		TUCK	"	TUCK		"	B	←	9
													"	"	"		"	"	→	8
													PLAIN	"	PLAIN		"	A	←	7
●	●	●		●	●	●		●	●	●			"	"	"		"	"	→	6
●	●	●		●	●	●		●	●	●			"	"	"		"	"	←	5
●	●	●		●	●	●		●	●	●			"	"	"		"	"	→	4
●	●	●		●	●	●		●	●	●			TUCK	TUCK	TUCK		"	B	←	3
													"		"		"	"	→	2
													PLAIN		PLAIN		O	A	←	1

● Needle Bed Pin				Needles				F	G	H	I	J					

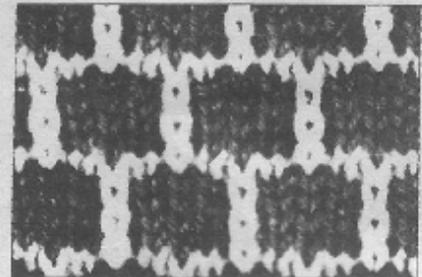
F: Partial Knitting Lever (Left)
 I: Knitting Lever (Right)
 L: Yarn at Yarn Feeder
 T: Thread Knitting Knob

K: Knitting Lever (Left)
 J: Partial Knitting Lever (Right)
 M: Direction of Carriage

H: Tuck Lever
 K: Thread Knitting Yarn
 N: Number of Knitting Row



Yarn Used:
 A ... Three Ply Yarn (Plain Yarn Feeder)
 B ... Three Ply Yarn (Plain Yarn Feeder)
 Stitch Adjuster Dial: 5
 * Use the Cast-on Comb.



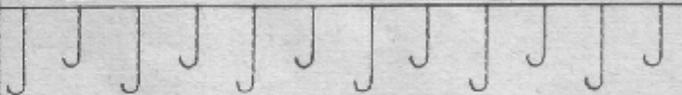
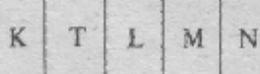
HOW TO KNIT:

1. Knit plain stitch for two rows with base yarn A.
2. Set knitting Levers both sides and tuck lever to "TUCK" position.
3. Select and move the needles to "D" position by using 3/1 pattern plate.
4. Change the base yarn to color yarn B and knit four rows selecting the needles in every row.
5. Reset the Knitting Levers at both sides to "PLAIN" position.
6. Change the color yarn to base yarn A and knit plain stitch for two rows.
7. Reset the Knitting Levers at both sides to "TUCK" position.
8. Select and move the needles to "D" position at interval of two needles from third procedure by using 3/1 pattern plate.
9. Change the base yarn to color yarn B and knit four rows selecting the needles in every row.
10. Set the Knitting Levers at both sides to "PLAIN" position.

Repeat the steps 1 – 10 to knit the required number of rows.

RAISED TUCK PATTERN STITCH

●		●		●		●		●		"	"	"	"	●		"	"	→	12
●		●		●		●		●		"	"	"	"	I		"	"	←	11
●		●		●		●		●		"	"	"	"	●		"	"	→	10
●		●		●		●		●		"	"	"	"	I		"	"	←	9
●		●		●		●		●		"	"	"	"	●		"	"	→	8
●		●		●		●		●		"	"	"	"	I		"	"	←	7
●		●		●		●		●		"	"	"	"	●		"	"	→	6
●		●		●		●		●		"	"	"	"	I		"	"	←	5
●		●		●		●		●		"	"	"	"	●		"	"	→	4
●		●		●		●		●		"	"	"	"	I		"	"	←	3
●		●		●		●		●		"	"	TUCK	TUCK	●		"	"	→	2
●		●		●		●		●		I	PLAIN			I		O	A	←	1

● Needle Bed Pin	Needles	F	G	H	I	J	K	T	L	M	N
											

F: Partial Knitting Lever (Left)

I: Knitting Lever (Right)

L: Yarn at Yarn Feeder

T: Thread Knitting Knob

G: Knitting Lever (Left)

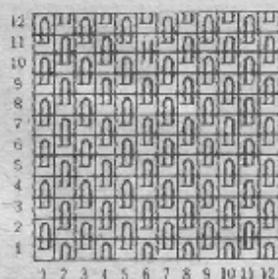
J: Partial Knitting Lever (Right)

M: Direction of Carriage

H: Tuck Lever

K: Thread Knitting Yarn

N: Number of Knitting Row

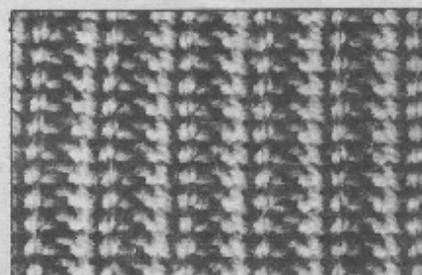


Yarn Used:

Three Ply Yarn (Plain Yarn Feeder)

Stitch Adjustor Dial: 5

* Use the Cast-on Comb.

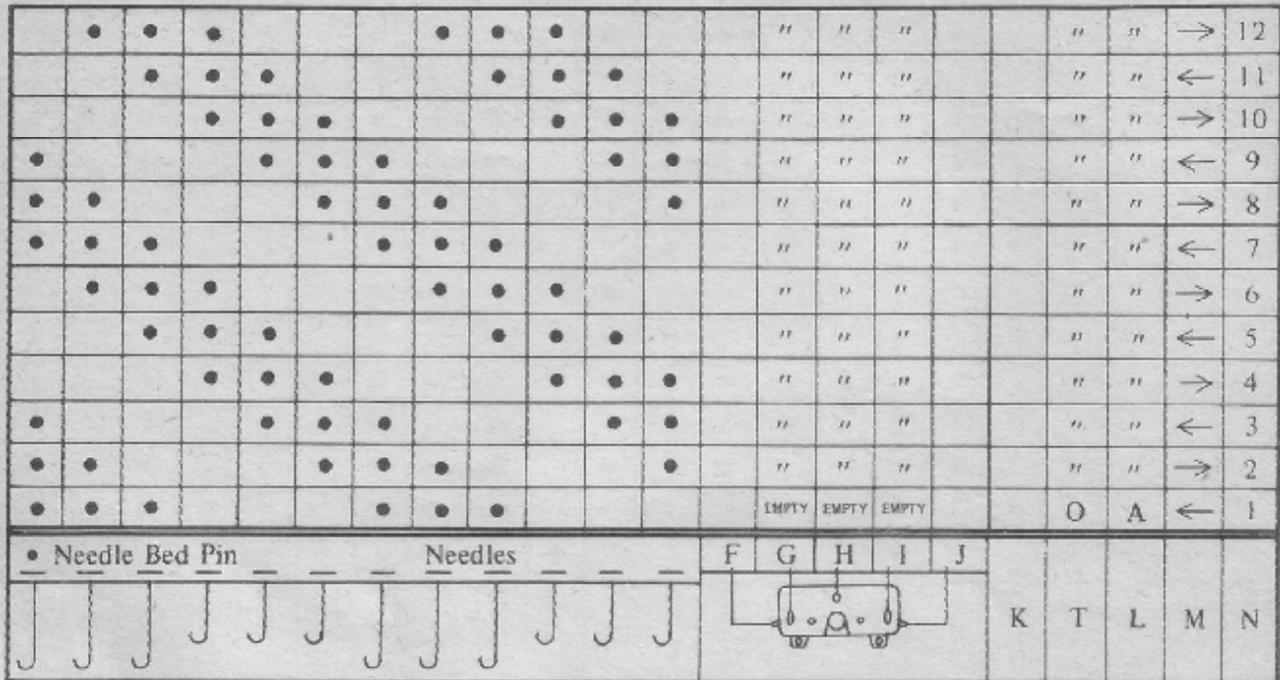


HOW TO KNIT:

1. Set the Partial Knitting Levers at both sides to "I" position and Knitting Lever at left side to "PLAIN" position.
2. Select and move the needles to "E" position by using 1/1 pattern plate.
3. Slide the carriage and knit one row.
4. Set the right side Knitting Lever and tuck lever to "TUCK" position and the Partial Knitting Lever at right side to "●" position.
5. Slide the carriage and knit one row.
6. Reset the Partial Knitting Lever at right side to "I" position.
7. Select and move the same needle of the last proceeding to "E" position by using 1/1 pattern plate.

Repeat the steps 3 – 7 to knit the required number of rows.

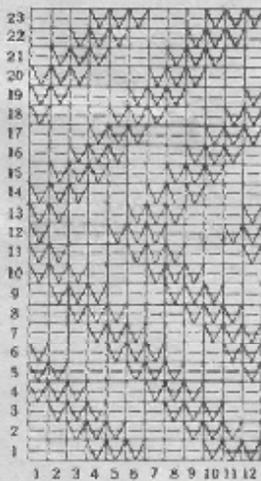
SLIP LOOP TUCK STITCH



F: Partial Knitting Lever (Left)
 I: Knitting Lever (Right)
 L: Yarn at Yarn Feeder
 T: Thread Knitting Knob

G: Knitting Lever (Left)
 J: Partial Knitting Lever (Right)
 M: Direction of Carriage

H: Tuck Lever
 K: Thread Knitting Yarn
 N: Number of Knitting Row



Yarn Used:
 Three Ply Yarn (Plain Yarn Feeder)
 Stitch Adjustor Dial: 5
 * Use the Cast-on Comb.

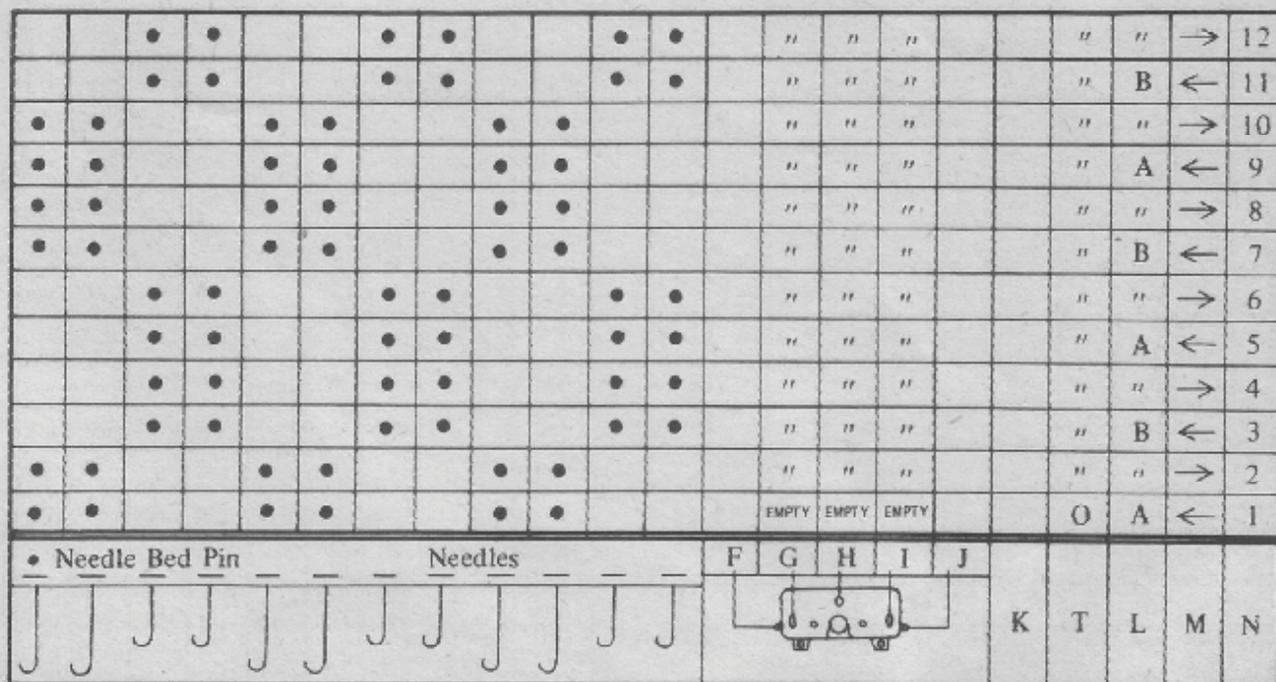


HOW TO KNIT:

1. Set the Tuck Levers and Knitting Levers at the both right and left sides to "EMPTY" position.
2. Select and move the needles to "D" position by using 3/3 pattern plate.
3. Slide the carriage and knit one row. (Only the needles moved to "D" position can be knitted.)
4. Select and move the needles to "D" position at interval of one needle from the above second step by using 3/3 pattern plate.
5. Slide the carriage and knit one row.
6. Move the same direction by one needle after knitting every one row.
7. After knitting 12 rows, change the direction and knit 12 rows by moving one needle to the same direction by every one row.

Repeat the above steps and knit according to the diagram.

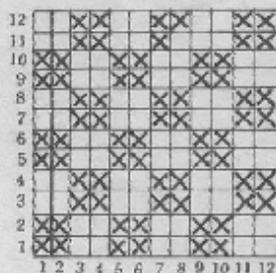
SLIP LOOP TUCK COLOR COMBINATION STITCH



F: Partial Knitting Lever (Left)
 I: Knitting Lever (Right)
 L: Yarn at Yarn Feeder
 T: Thread Knitting Knob

G: Knitting Lever (Left)
 J: Partial Knitting Lever (Right)
 M: Direction of Carriage

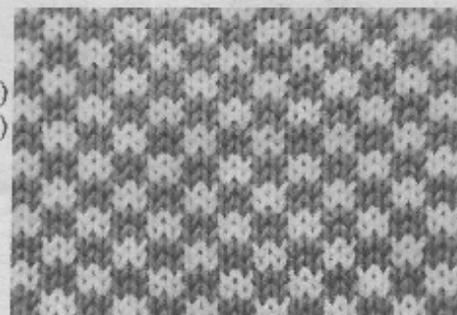
H: Tuck Lever
 K: Thread Knitting Yarn
 N: Number of Knitting Row



Yarn Used

A: . . Three Ply Yarn (Plain Yarn Feeder)
 B: . . Three Ply Yarn (Plain Yarn Feeder)
 Stitch Adjustor Dial: 5

* Use the Cast-on Comb.



HOW TO KNIT:

1. Set the Knitting Levers at both sides and Tuck Lever to "EMPTY" position.
2. Select and move the needles to "D" position by using 1/3 pattern plate.
3. Slide the carriage and knit one row using base yarn A and repeat the same after selecting the needles again.
4. Select the needles at interval of two needles to the left.
5. Replace the base yarn with color yarn B and slide the carriage and knit two rows by selecting the needles in every row.
6. Select two needles every two needles at the same position of step 4 and move them to "D" position.
7. Replace color yarn with base yarn and knit two rows.
8. Select two needles every two needles at the same position of step 2 and move them to "D" position.
9. Replace the color yarn with base yarn and knit two rows.
10. Select the needles with same ways in step 8.
11. Repeat the above steps 2 – 11 to knit the required number of rows.

Note: Select one needle every three needles by using 1/3 pattern plate at first and slide one pitch after knitting and second select two needles every two needles and proceed the above steps.

OPEN PATTERN KNITTING

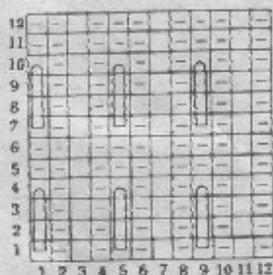
												"	"		"	"		"	"	→	12
												"	"		"	"		"	"	←	11
												"	"		"	●		"	"	→	10
												"	"		"	"		"	"	←	9
												"	"		"	"		"	"	→	8
●				●								"	"		"	I		"	"	←	7
												"	"		"	"		"	"	→	6
												"	"		"	"		"	"	←	5
												"	"		"	●		"	"	→	4
												"	"		"	"		"	"	←	3
												"	"		"	"		"	"	→	2
●				●								I	PLAIN		PLAIN	I		O	A	←	1

● Needle Bed Pin				Needles				F	G	H	I	J	K	T	L	M	N

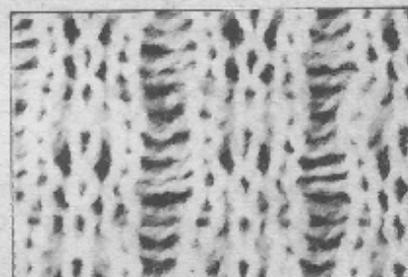
F: Partial Knitting Lever (Left)
 I: Knitting Lever (Right)
 L: Yarn at Yarn Feeder

G: Knitting Lever (Left)
 J: Partial Knitting Lever (Right)
 M: Direction of Carriage

H: Tuck Lever
 K: Thread Knitting Yarn
 N: Number of Knitting Row



Yarn Used:
 Three Ply Yarn (Plain Yarn Feeder)
 Stitch Adjustor Dial: 4
 * Use the Cast-on Comb.

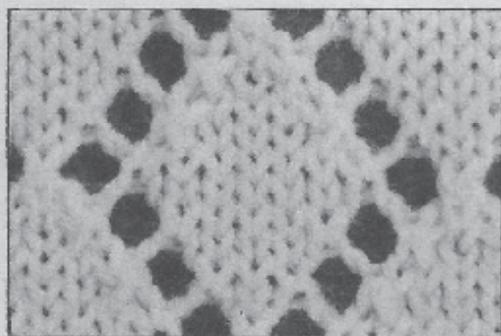


HOW TO KNIT:

1. Transfer the pattern stitch every three needles (1) to adjacent needles removing the empty needles to "A" position by using the transfer tool.
2. Select and move the needles to "E" position by using 1/3 pattern plate.
3. Set the Partial Knitting Levers at both sides to "I" and Knitting Levers at both sides to "PLAIN" position.
4. Slide the carriage and knit three rows.
5. Reset the Partial Knitting Lever at right side to "●" position.
6. Slide the carriage and knit three rows.
7. Select the same needles in step 2 and move to "E" position.
8. Reset the Partial Knitting Lever at right side to "I" position.

Repeat the steps 4 – 8 to knit required number of rows.

MANUAL LACE PATTERN KNITTING



HOW TO KNIT:

1. Carriage is set as for plain knitting.
2. To make a hole. Transfer pattern stitches to adjacent needles leaving the empty needle in working position and knit two rows. (stitches are transferred every 2nd row.)
3. Different design can be produced by changing the position of holes.
4. When using lace yarn or synthetic yarn, more beautiful and easier knitting can be accomplished by using knitting weights and attaching knitting Paraffin to take-up spring.

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

Yarn Used: Three Ply Yarn (Plain Yarn Feeder)
Stitch Adjustor Dial: 5

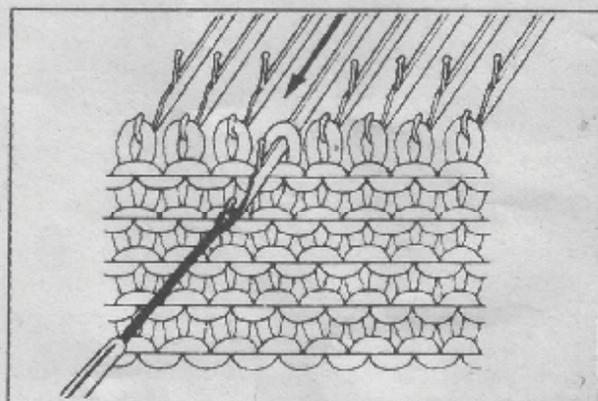


Fig. 1

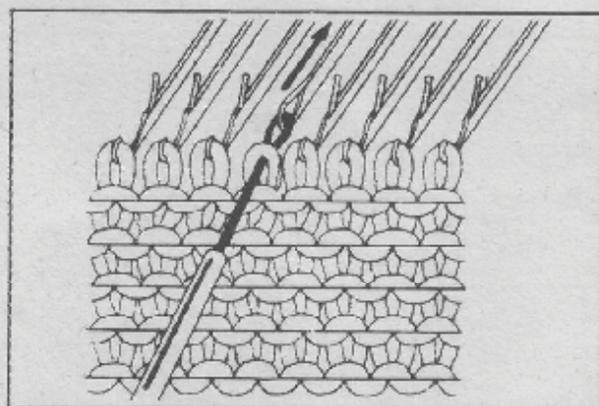


Fig. 2

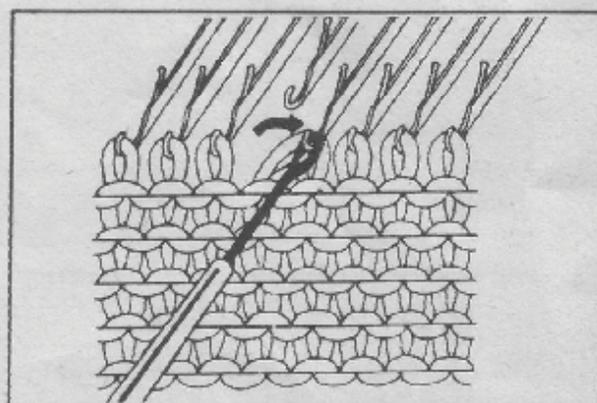


Fig. 3

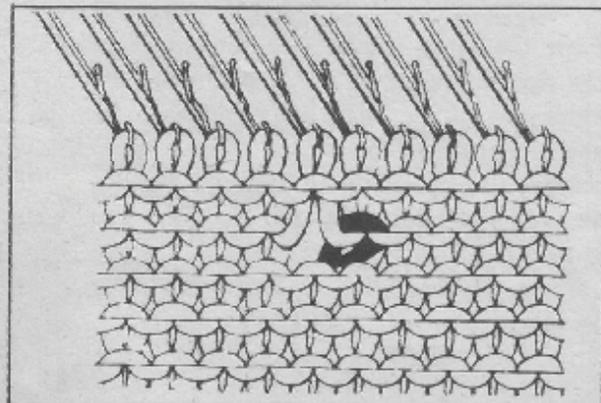


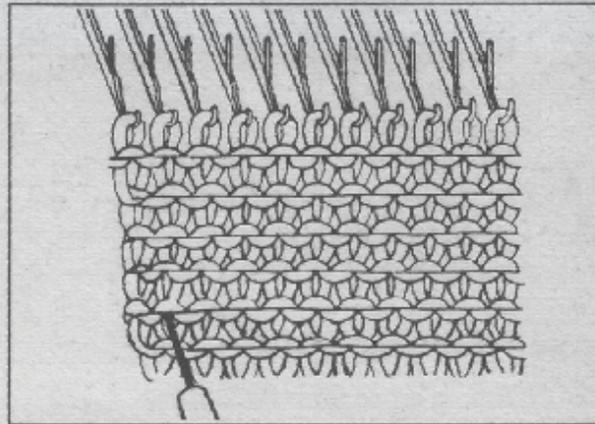
Fig. 4

RIB STITCH KNITTING

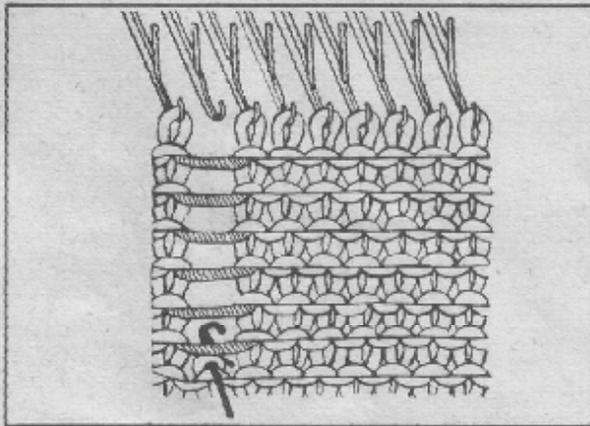
HOW TO KNIT:

Insert the latch needle tool into the stitch from ► the purl side.

(Make rib stitch knitting from the next needle on the left end.)

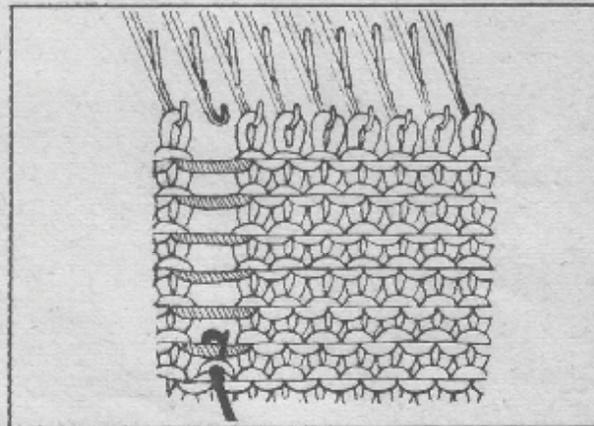


- ◀ Unhook the knitted stitch on the latch needle with the needle tool inserted, and rip the stitches until just before the row on the latch needle tool by pulling down the fabric lightly with one hand and then by pulling down the latch needle tool with it inserted in the stitch firmly.

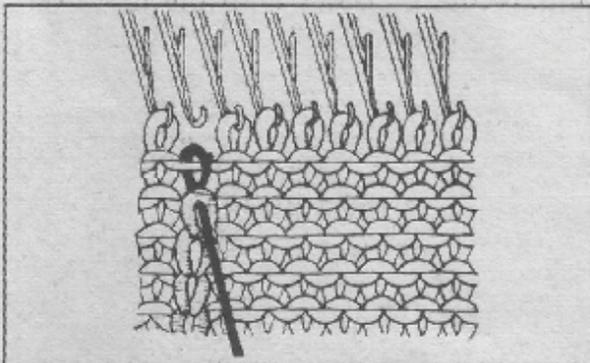


Hook the ripped strand at bottom with the latch ► needle tool.

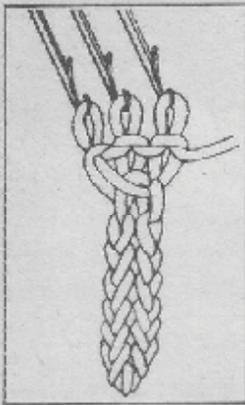
Pull the tool towards you, and the latch will close and a new stitch will be made.



- ◀ Push the latch needle tool forward underneath the ripped strand. Hook the strand with the needle tool and pull the tool towards you. Repeat this operation to knit row by row up to the top row and hook the last loop back onto the needle. Repeat this operation to knit every other stitch in rib stitch work. (1 knit - 1 purl rib)

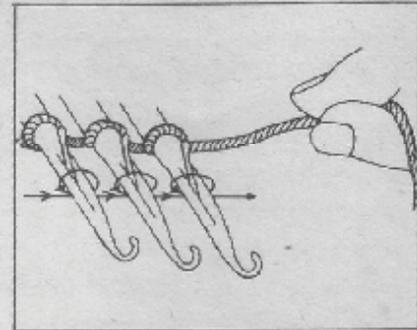


CORD KNITTING

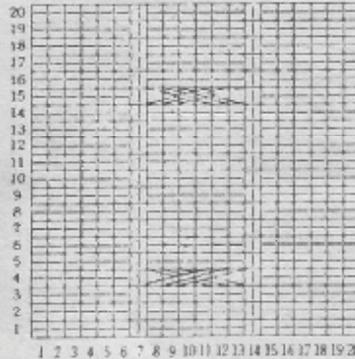
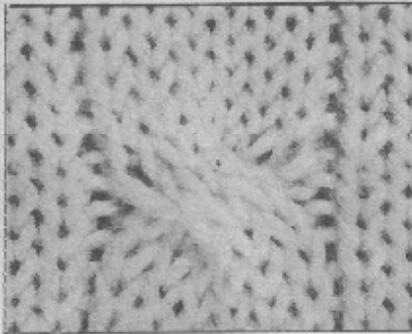


HOW TO KNIT

1. Wind yarn around three needles and pull these needles through to E position.
2. Push in right EMPTY button.
3. Hold end of wool below cast on and knit. Set tension to suit yarn.



CABLE PATTERN KNITTING



Yarn Used: 3 Ply Yarn (Plain Yarn Feeder)
Stitch Adjustor Dial: 5

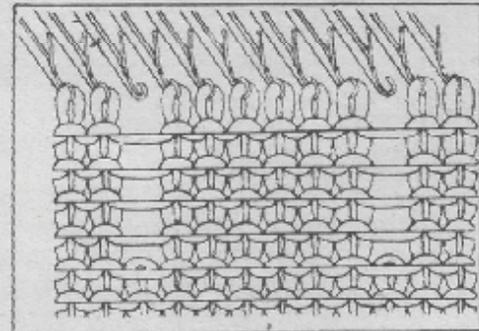


Fig. 1

HOW TO KNIT:

1. Stitch is made by crossing loops. As shown in Fig. 1, unhook the loops on both sides of the stitches to be crossed for several rows, and place on holding pins. Return empty needles to A position.

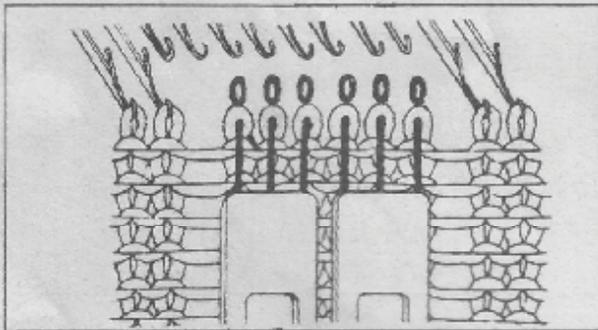


Fig. 2

2. Transfer loops onto two transfer tools. (Fig. 2)
Transfer tools to be shown as parallel, not crossed.

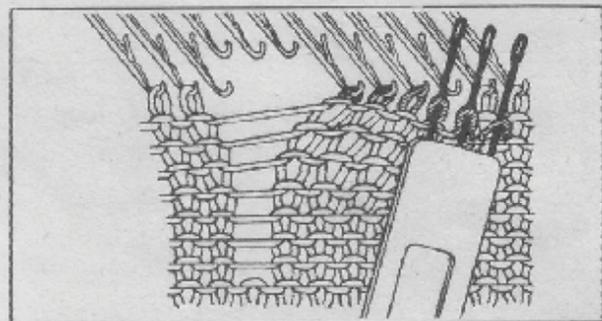


Fig. 3

3. Loops on the left transfer tool are hooked on the empty latch needles at the right. (Fig. 3)

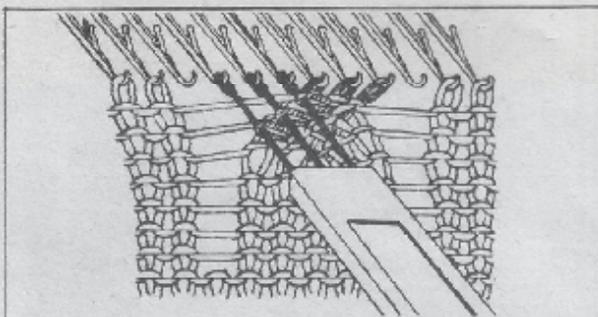


Fig. 4

4. Loops on the right are hooked on the empty needle at the left. (Fig. 4)
5. Leave empty needles on each side of cable in A position until cabling is completed. Knit up purl stitch with latch needle tool if required.

When knitting the next row after crossing, knitting can be made more easily by pulling out to E position the needles on which the stitches are crossed.

TURNED-UP HEM KNITTING

This stitch is often used for sleeve ends, skirts, or flyleaf. Knit plain stitch for 8 rows with waste yarn, and one row with raveling cord. Then, with base yarn, knit 20 rows. (Fig. 1)

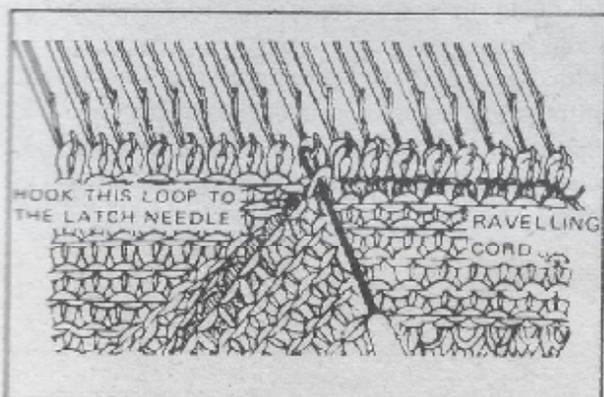


Fig. 2

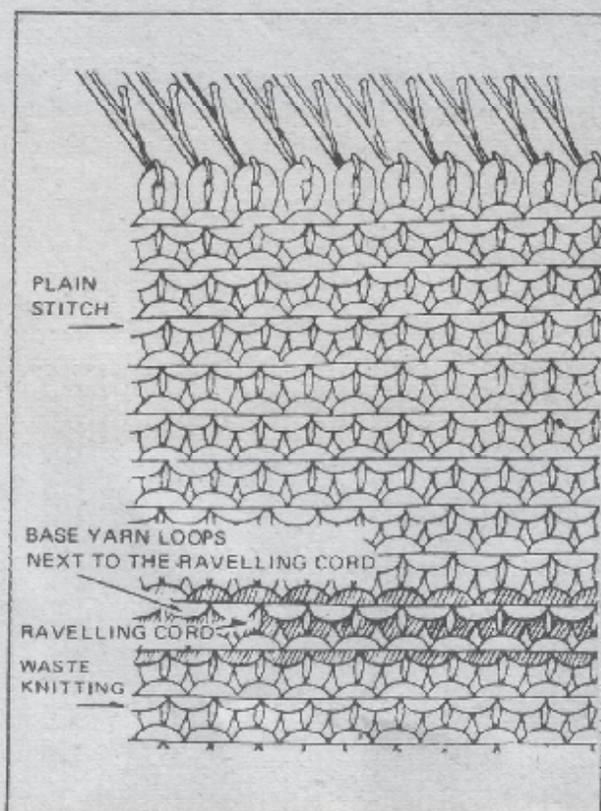


Fig. 1

◀ Hold the fabric by hand slightly and pick up the loops next to the raveling cord. (Fig. 2)

Adjust tension one number higher and knit one ▶ row. Continue to knit from the second row with the adjusting dial back to its original position. Pull out the raveling cord sideways to disconnect the waste knitting. (Fig. 3 & 4)

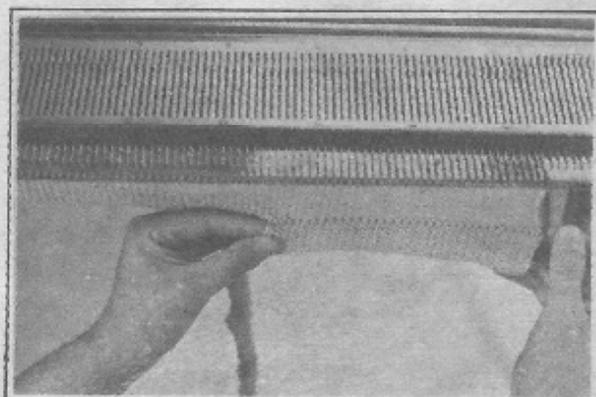


Fig. 3

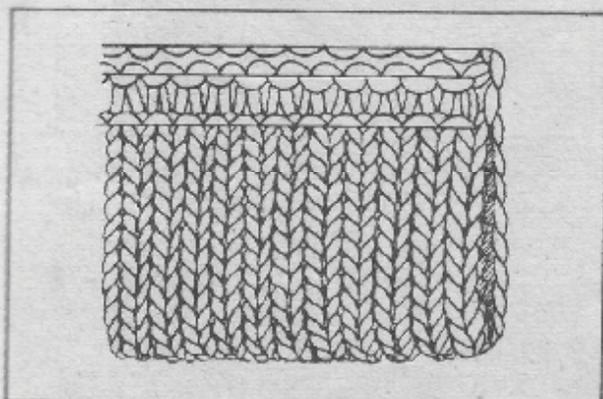


Fig. 4

GUIDE FOR KNITTING

GAUGING

Gauge in knitting is number of stitches and number of rows per 2 inches of fabric when knitted by proper adjustment of stitch tension dial.

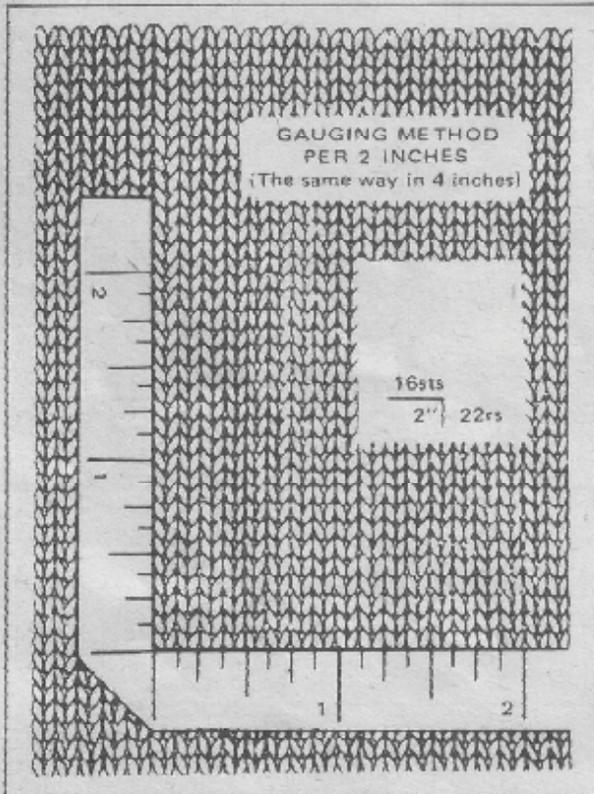


Fig. 2

DRAFTING

Make a pattern of the piece you are going to knit. (This differs according to the design of the knitting.)

Take measurements and write them on the pattern. (length, bust, shoulder length, sleeve length etc.)

(Refer to gauging method)

Example .

Gauge: 16 Stitches,
22 rows (per 2 inches)
Length: 22 inches
22 x 11 (per inch) = 242 rows
Bust: 33 inches
37 x 8 (per inch) = 296 stitches

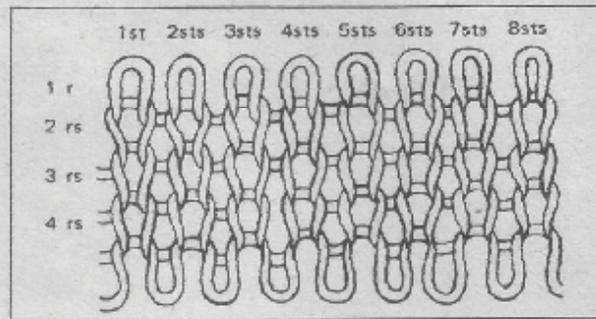


Fig. 1

◀ By using the same yarn with which you are going to knit, make a sample piece of about 40 stitches and 40 rows.

Put the sample on a flat surface and count the rows and stitches.

In doing this, be careful not to stretch it or wrinkle it.

With tape measure determine the number of stitches and rows to two inches of knitting. Use this guide to calculate the number of stitches and rows over the knitted garment as shown in EXAMPLE and Fig. 3.

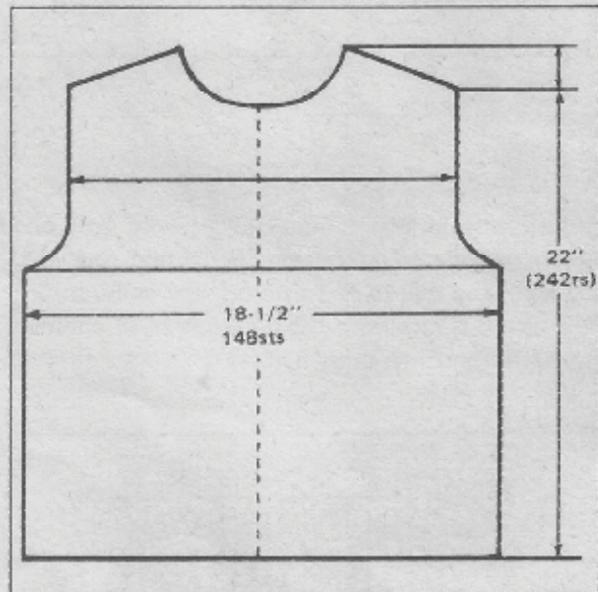


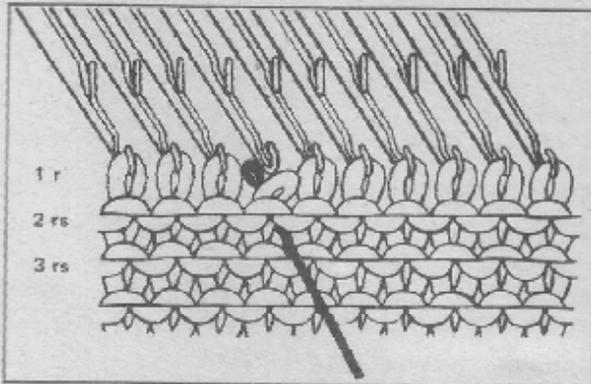
Fig. 3

Note:

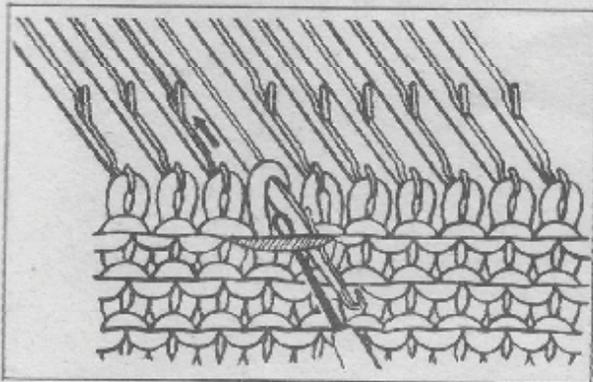
Length and sleeve length are calculated in rows. Bust and shoulder width are calculated in stitches.

PICKING UP DROPPED STITCHES

To pick up a dropped stitch on one row.

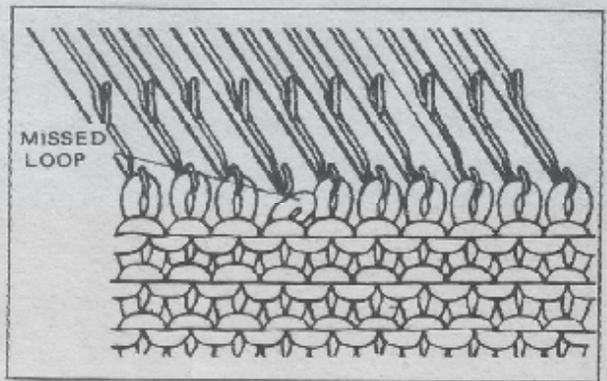
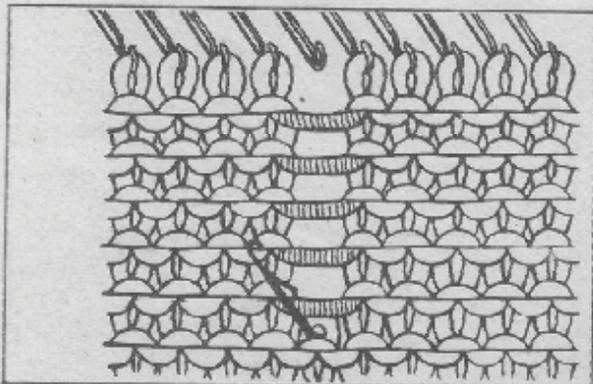


Pull out the needle to D position.

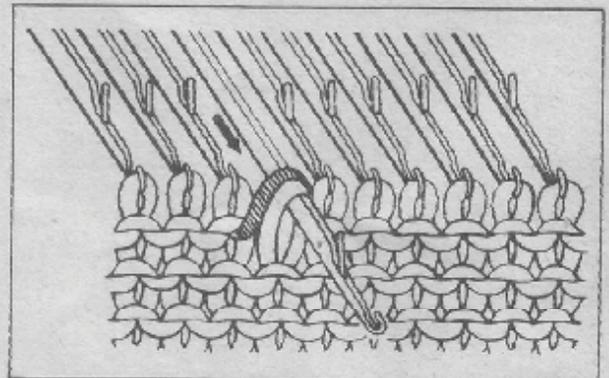


To pick up a missed loop more than two rows below,

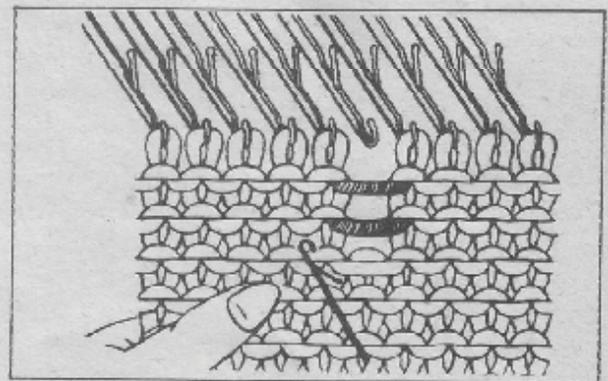
From the back side of the knitted fabric, insert a latch needle tool two or three loops below the missed loop.



- ◀ Insert a transfer tool into the loop just below the missed loop. Hook it on the empty latch needle together with the missed loop.

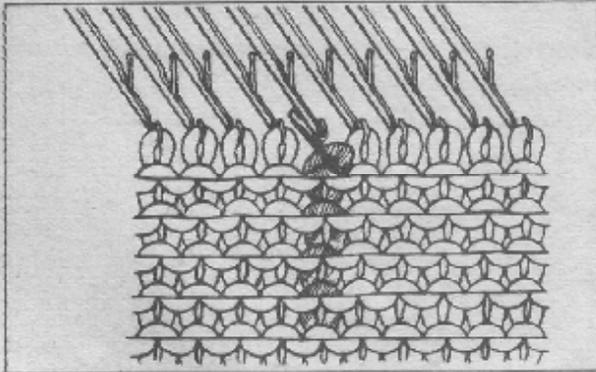


- ◀ Move the needle at D position to C position. Then, hook the missed stitch on the needle hook and push the needle to B position to pick up the new loop.

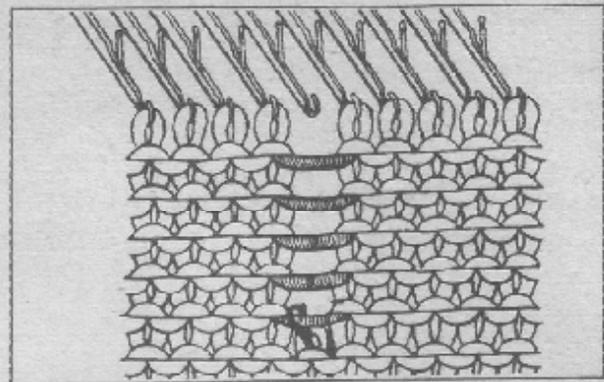


- ◀ Unravel the stitches down to the tool.

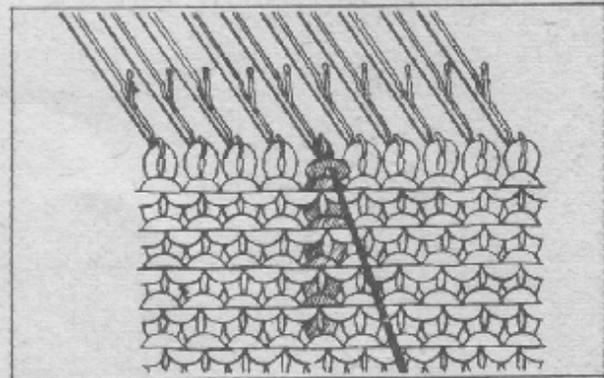
Withdraw the latch needle tool slowly and pick ► up the cross thread immediately above the loop in the hook of the latch needle tool making certain the latch closes. This will knit one stitch.



Unhook the latch needle tool, and pick up the ► loop with a transfer tool from the front and hook it on the needle.



◀ Push the latch needle tool through the knitted fabric from the back again forcing the loop on the hook back over the latch and onto the latch needle tool shaft. Again withdraw the tool picking up the cross thread above it and continue until all the stitches are knitted.

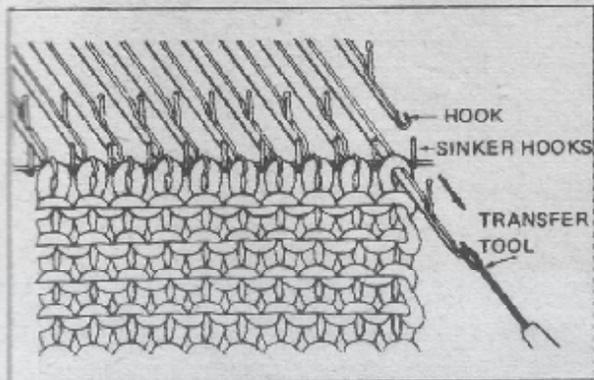


INCREASING STITCH

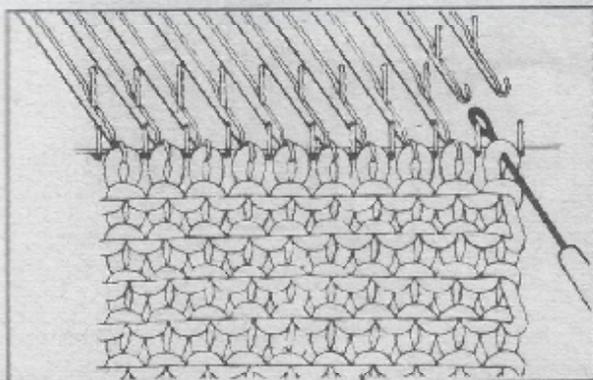
To increase one stitch

Method 1 (Simple increase)

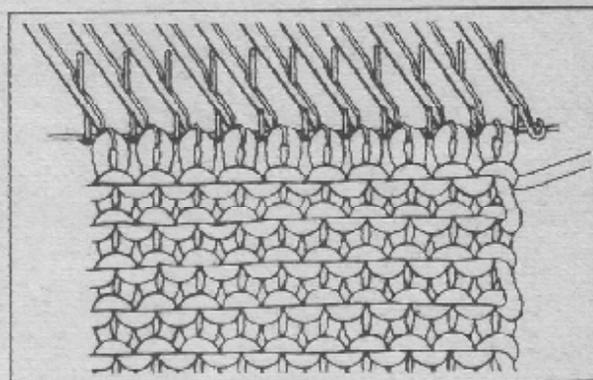
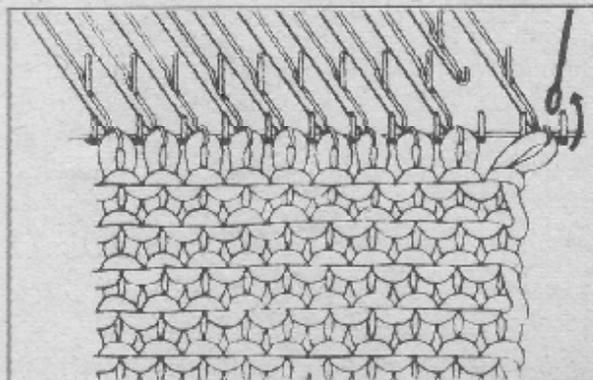
Bring forward to B. position the next empty needle to the knitting at the carriage end. This will make one stitch at the beginning of the row.



Push the needle back until the stitch is transferred to the transfer tool.

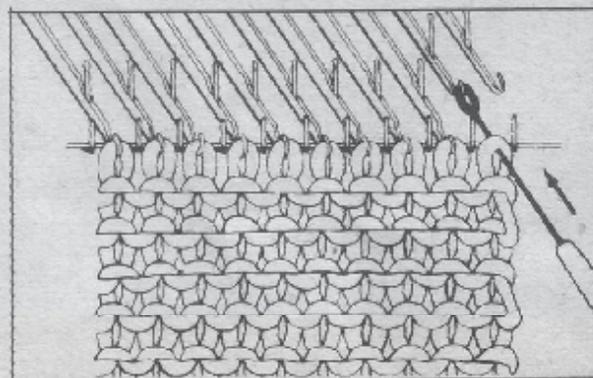


Hook the transfer tool to the next latch needle by moving the tool as indicated by arrow (1) and then pull it out slightly arrow (2).

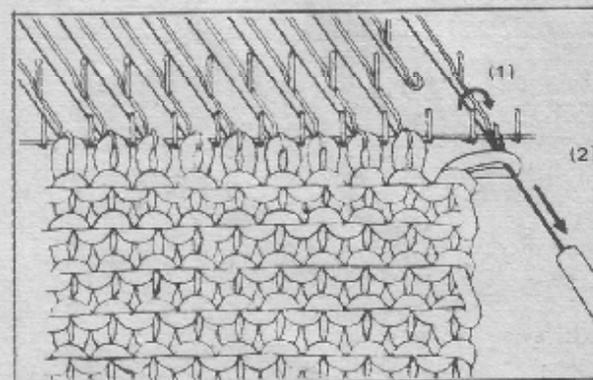


Method 2

Hook the transfer tool on the end needle and pull toward you until the stitch falls behind the latch.

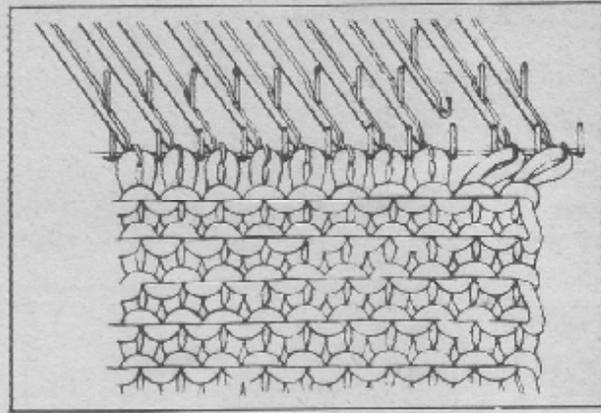


Unhook the transfer tool carefully not to drop the transferred stitch.

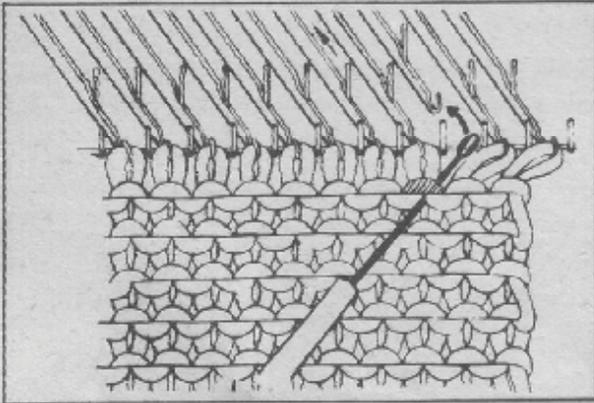


Slant the transfer tool slightly away from you. This transfers the stitch on the empty needle.

Repeat this operation to transfer the second ► stitch.

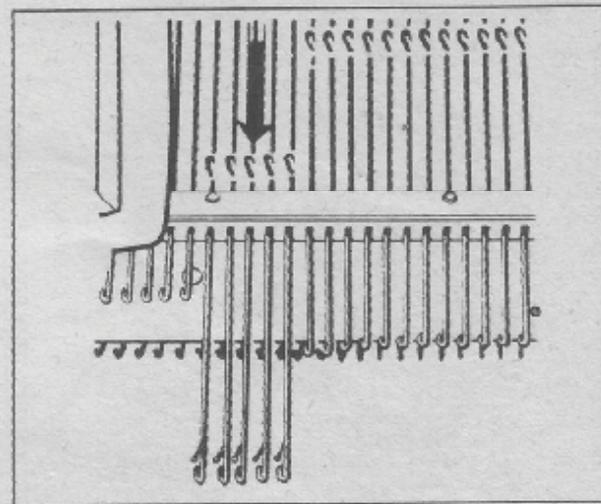


◀ Pick up the stitch on the second row of the third stitches and transfer it to the empty needle. This increases one stitch.

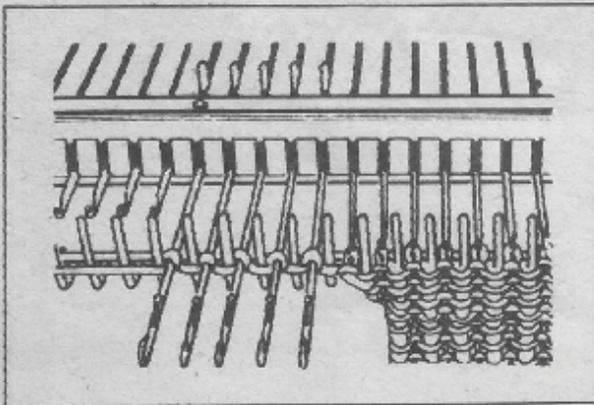


To increase more than 2 stitches.

Pull out the required number of needles, next to ► the yarn end, to E position.



◀ Wind the yarn round the respective needles pulled out to E position.



Knit one row

While knitting 3 – 4 rows, pull out the needles wound with yarn to E position in every row knitted.

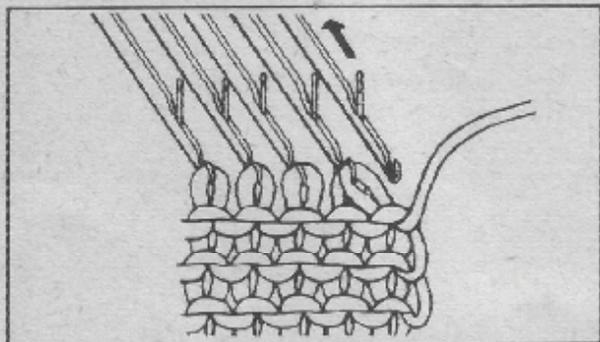
DECREASING STITCH

To decrease one stitch

Method 1 (Simple decrease)

Hook the transfer tool on the end needle and pull toward you until the stitch falls behind the latch.

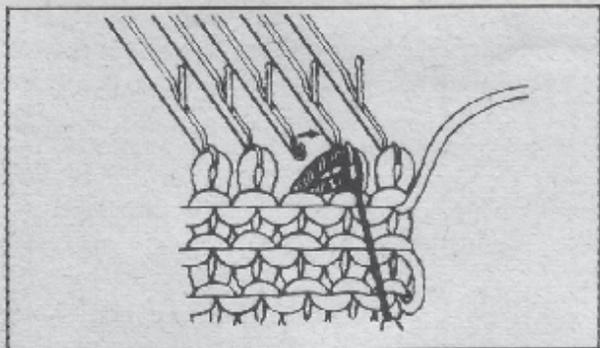
Push the needle back until the stitch is transferred to the transfer tool.



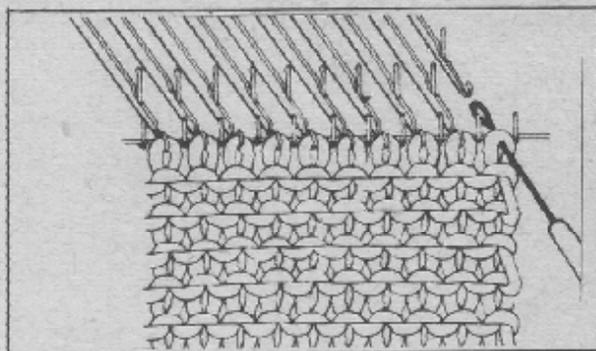
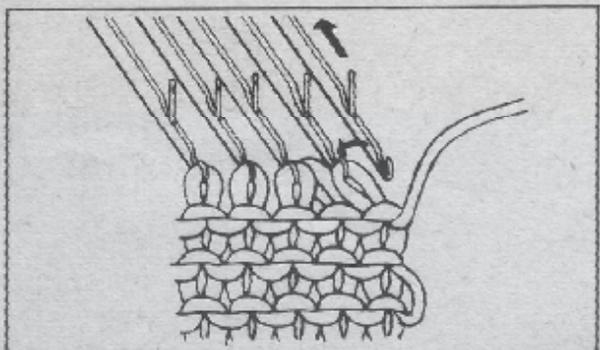
Method 2

Hook the transfer tool on the third needle from the end and pull toward you until the stitch falls behind the latch.

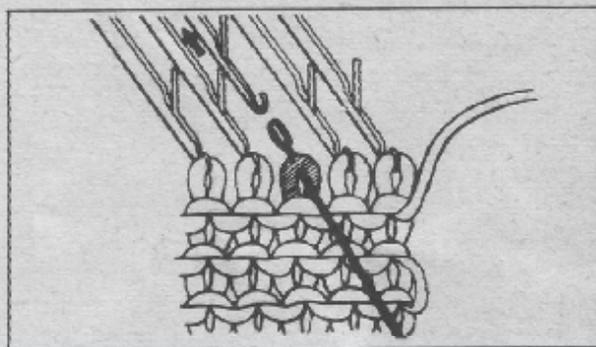
Push the needle back until the stitch is transferred to the transfer tool.



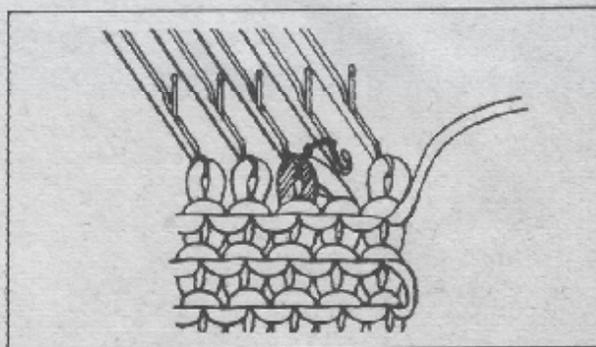
Hook these two stitches onto the third needle from the end.



◀ Hook this stitch onto the next inside needle. Push empty needle to A position. These will knit into one stitch as the carriage is moved across the row.



◀ Hook this stitch onto the second needle from the end.

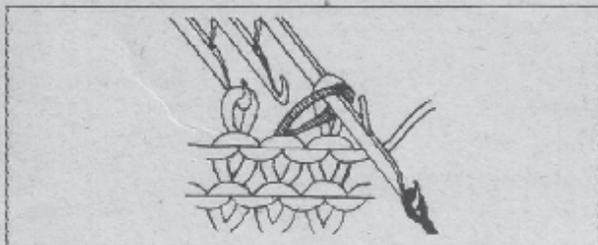


◀ Hook the end stitch onto the second needle from the end. Push empty needle to A position.

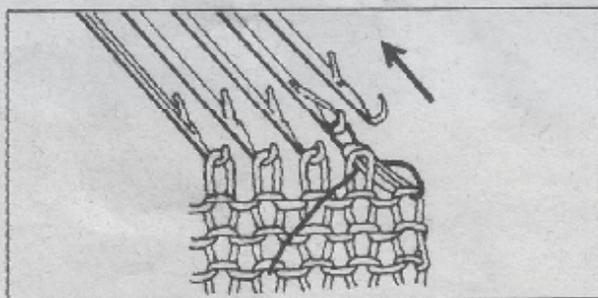
To decrease several stitches

Method 1. (Casting off)

1. Hook the transfer tool on the second needle ► from the end pull toward you until the stitch falls behind the latch.
2. Push the needle back until the stitch is transferred to the transfer tool.

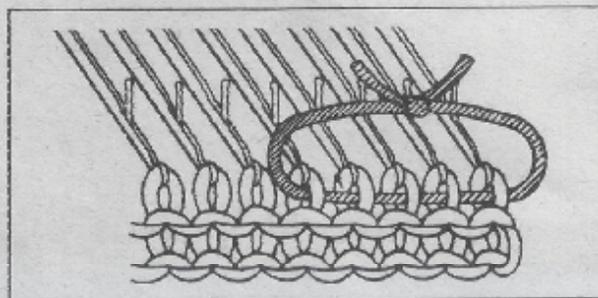


4. Wind yarn around hook of this needle ► loosely, then by hand push the needle back to B position, thus making one stitch.



Method 2

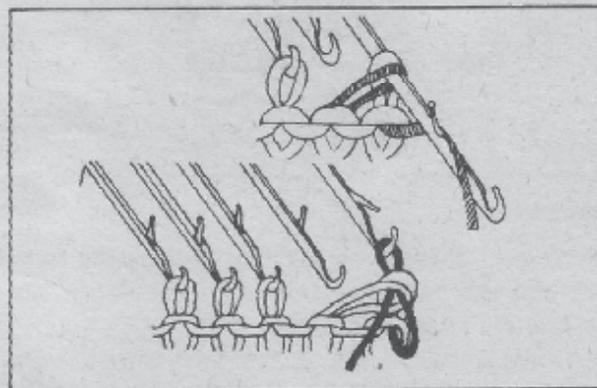
Thread another yarn into the seaming needle and ► pass the needle through stitches as shown in right.



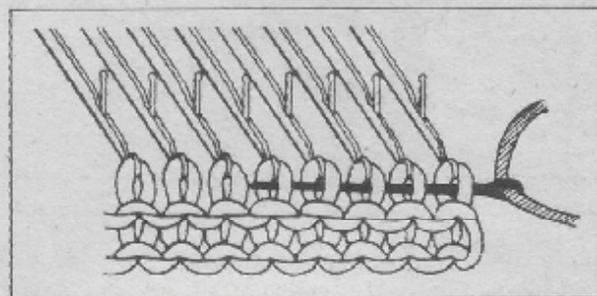
Remove stitches from the needles and push the ► empty needles to A position.



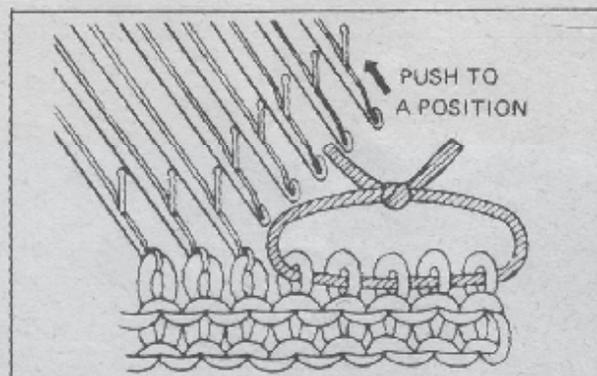
3. Hook this stitch onto the end needle and pull this needle through to E position.



5. Transfer this stitch to the next inside needle, and push the empty needle to A position. Repeat above steps 4 – 5 as required.



- ◀ Tie both ends of the yarn passing through the stitches securely.



Method 3.

1. Set the both Knitting Levers and Tuck Lever onto "EMPTY" position. Set the both Partial Knitting Levers onto "•" positions (Carriage on right).
2. Using the Transfer Tool (1x2), lift off the outside stitch next to the carriage. Bring forward the empty needles to "A" position.
3. Hook this stitch onto the next inside needle and pull this needle forward to "E" position. (Fig. 1)
4. Move the carriage across this needle sufficiently to clear it, then move the carriage back to the right side. The "E" positioned needles will have knitted the two stitches together leaving one, but the other needles will not have knitted. (Fig. 2)

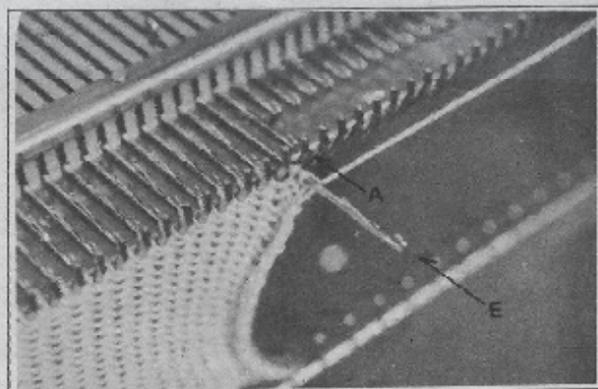


Fig. 1

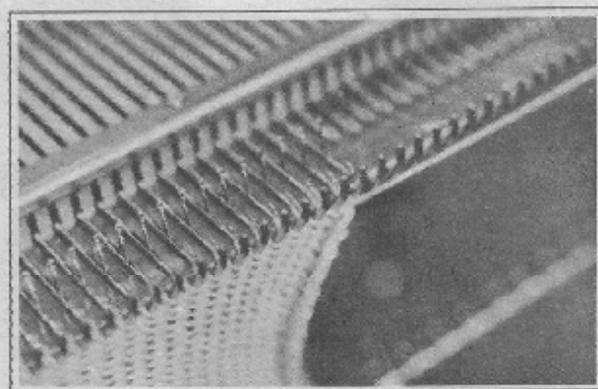


Fig. 2

Repeat the steps 2 - 4 as required.

NOTE:

Use the Method 1, when casting off for the beginning of armholes, etc., and Method 3, using the carriage, which is very quick, for a large number of stitches.

DIVIDING THE STITCHES FOR V NECK SHAPING

Install the carriage on the right side.

1. With the flat side of the pattern plate (1x1), pull forward all the needles to "E" position on the left side of the center O mark. (Fig. 1)

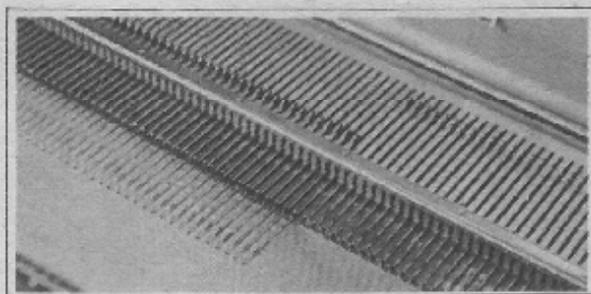


Fig. 1

2. Set the both Partial Knitting Levers "I" position.

3. Move the carriage across the right side needles. The needles at "E" position will not be knitted. It is not necessary to take the carriage right across the needles at "E" position.

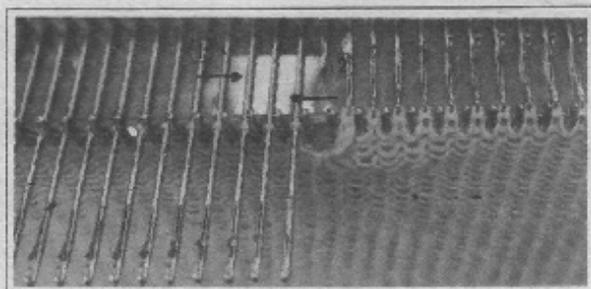


Fig. 2

4. Decrease on stitch at the V neck edge by using the Transfer Tool (1x2) to lift the stitch off the needle (①, Fig. 2) and hook it onto the next inside needle (②, Fig. 2), leaving this needle in "B" position and pushing the emptied needles back to "A" position. (Fig. 2)

5. Continue knitting and decreasing according to your pattern directions.

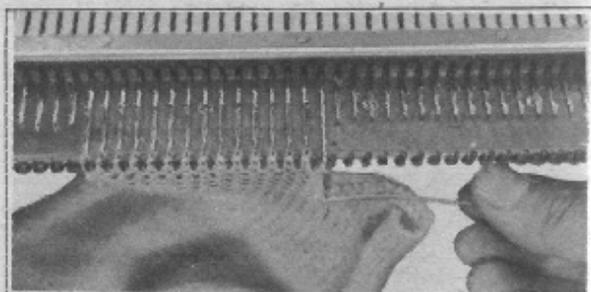


Fig. 3

6. When shaping is completed, cast off the shoulder stitches using Method 1 or 3. (Fig. 3)

7. If raglan styled, there will probably be three stitches left between the neck line edge and arm hole edge. And then break off wool. (Fig. 4)

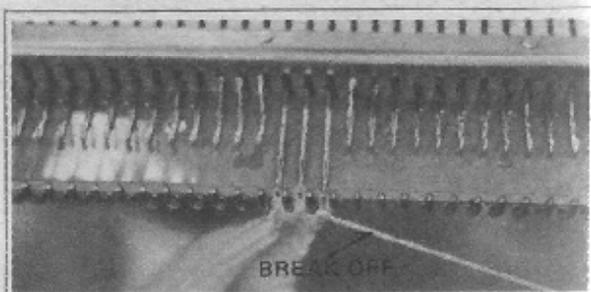


Fig. 4

8. Thread another yarn through carriage yarn feeder and knit five or six rows. Break off the wool and remove this fabric from the needles. (Fig. 5)

Knitting for the right side arm hole and neck line is finished.

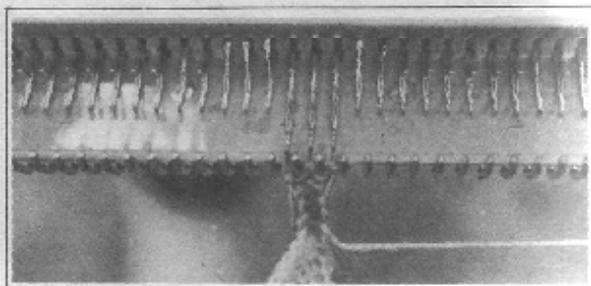


Fig. 5

If you install the carriage on the left side, you can knit the left side arm hole and neck line.

DIVIDING FOR CREW OR ROUND NECK SHAPING

Install the carriage on the right side.

1. Lift off the center stitches required to be held onto a holding pin, and push the emptied needles back to "A" position. (Fig. 1)

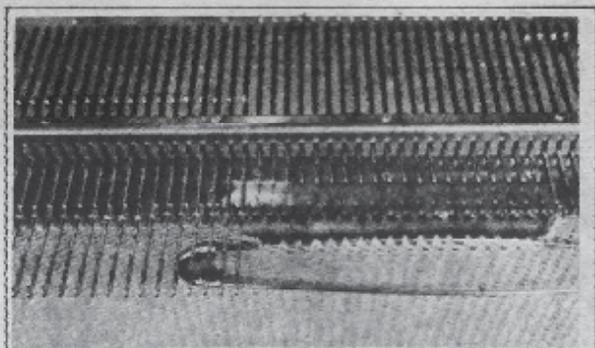


Fig. 2

5. Where shaping is completed, cast off the shoulder stitches using Method 1 or 3. (Fig. 3)

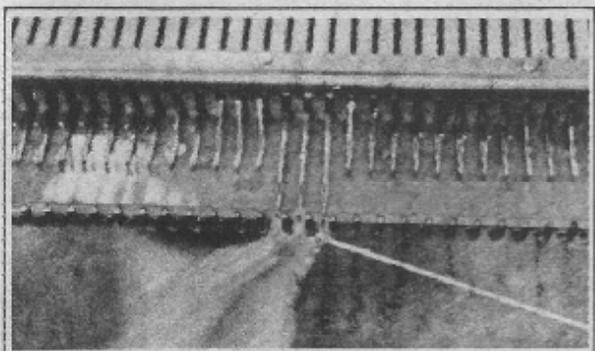


Fig. 4

7. Thread another yarn through the carriage yarn feeder, knit five or six rows, and break off wool. (Fig. 5)

Remove this fabric from the needles.

Knitting for the right side arm hole and neck line is finished.

If you install the carriage on the left side, you can knit the left side arm hole and neck line.

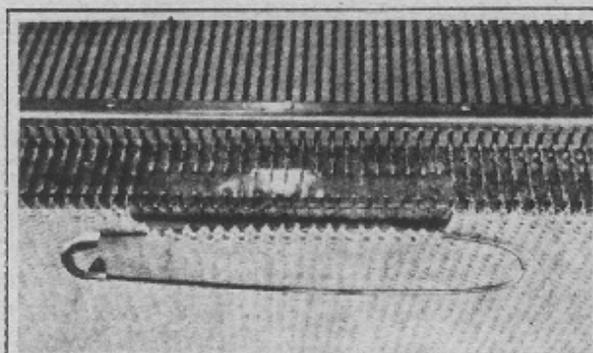


Fig. 1

2. Using the flat side of the pattern plate, pull forward the needles on the left side on holding pin to "E" position. (Fig. 2)
3. Set the right and left Partial Knitting Levers onto "I" position.
4. Continue knitting and decreasing according to your pattern instructions.

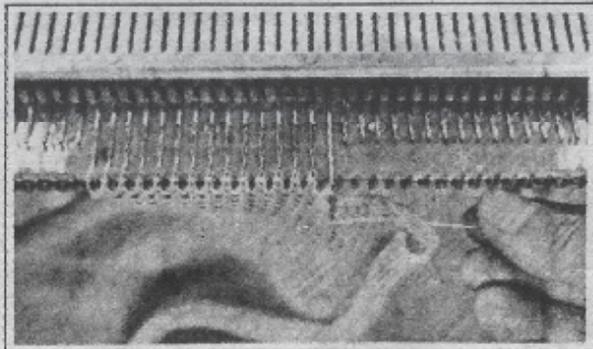


Fig. 3

6. If raglan styled, there will probably be three stitches left between the armhole edge and neck line, and break off wool. (Fig. 4)

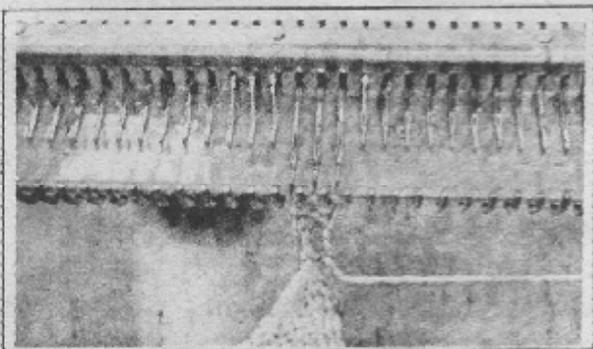


Fig. 5

CONTINENTAL OR MOCK RIB

1. Using the pattern plate (1x1), alternate the required number of needles onto "A" and "B" position and do the waste knitting. (Fig. 1)
2. After the waste knitting, remove the waste yarn from the carriage yarn feeder and knit one row using the ravelling cord.
3. Remove the balance of the ravelling cord and thread the main yarn which you want to knit into the carriage yarn feeder.
4. Set Stitch Adjustor Dial at 3 and knit until twice the depth required has been knitted. (Fig. 2)
5. Using the single eyelet tool and holding the fabric lightly, pick up the loops lying next to the ravelling cord and hook these loops onto the opposite empty needles at "A" position. All working needles will now have a stitch. Bring forward these needles to "B" position. (Fig. 3)
6. Set Stitch Adjustor Dial at 7 and knit one row.
7. Pull the ravelling cord out sideways and discard the waste yarn. (Fig. 4)

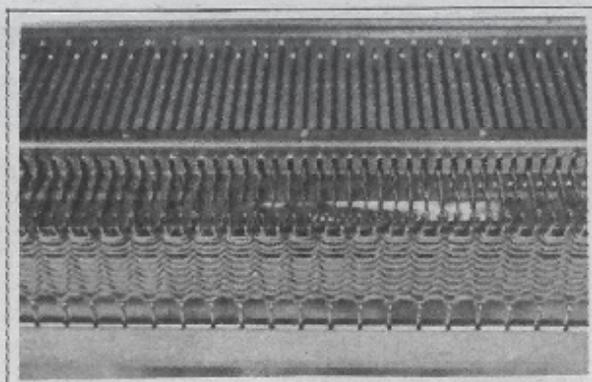


Fig. 1

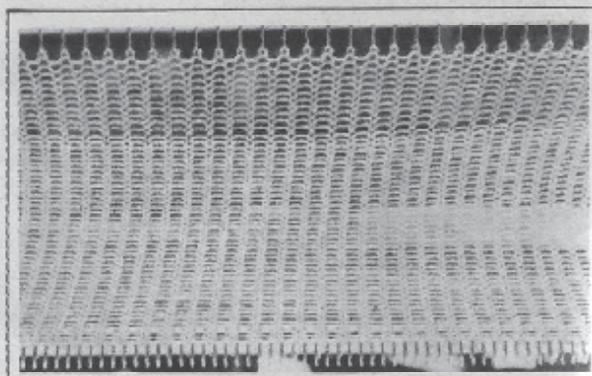


Fig. 2

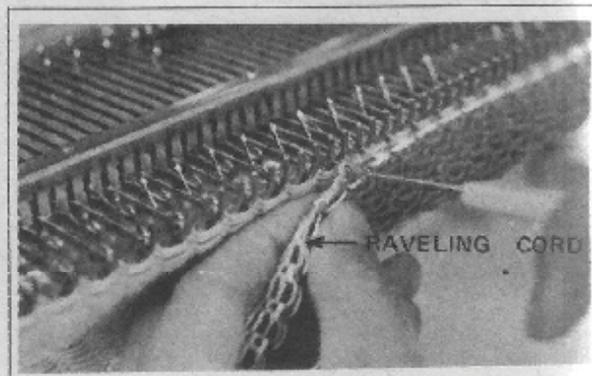


Fig. 3

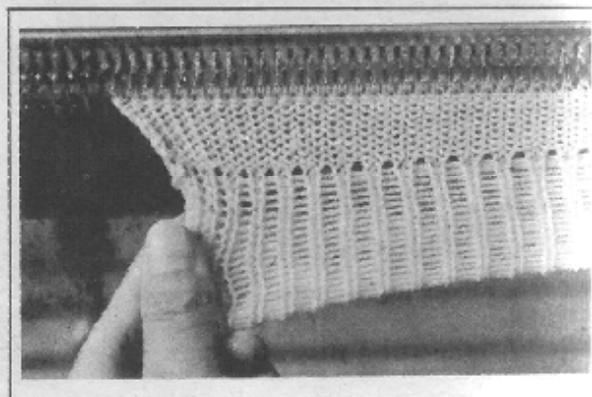
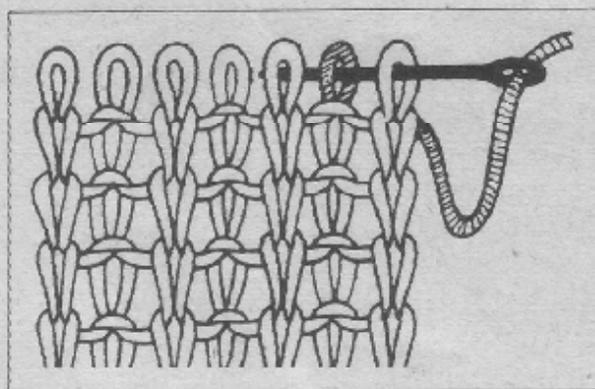


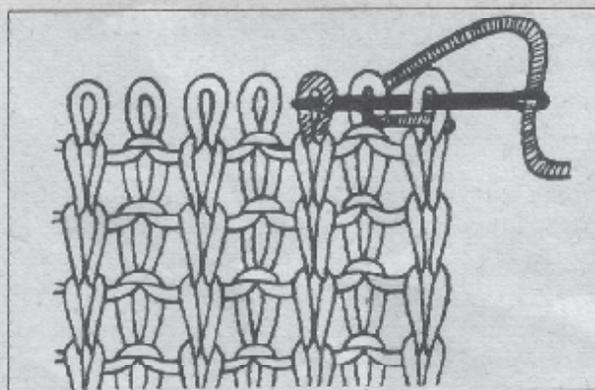
Fig. 4

TO BIND OFF THE RIB STITCHES

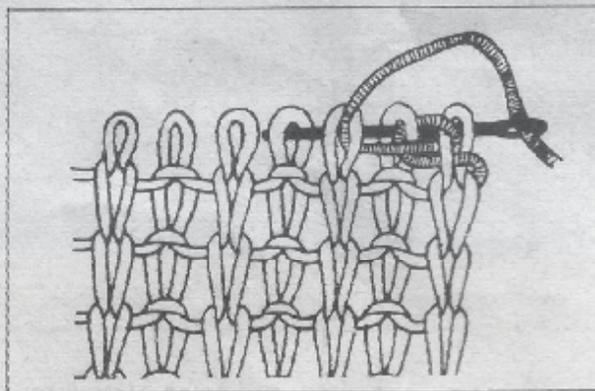
Turn the stitch with the yarn end toward you, and pass the seaming needle through the first and the second stitch from the end.



Pass the needle through the first and the third stitch.

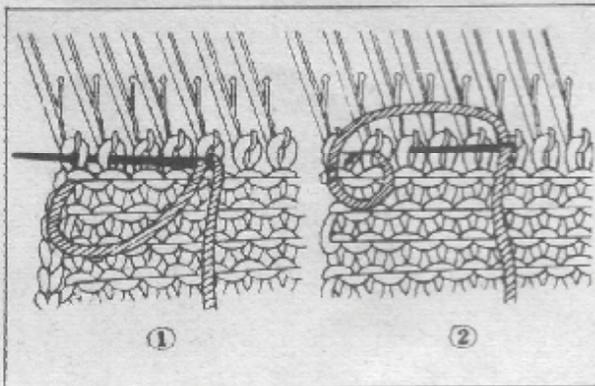


Then pass the needle through the second and the fourth stitch. Repeat this operation to bind off the rib stitch.

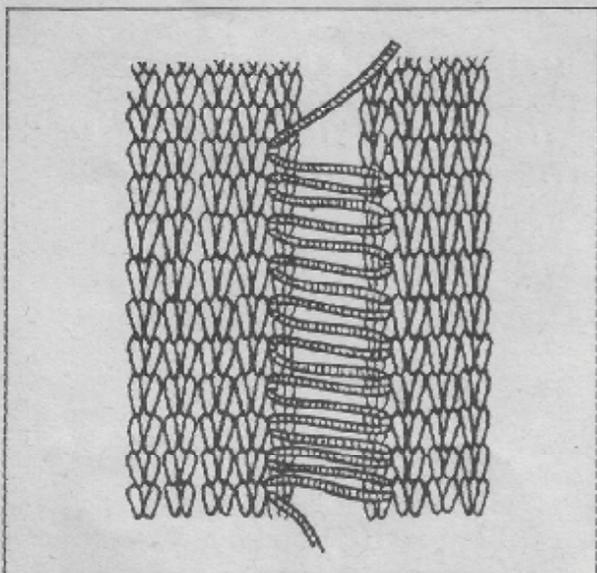


TO BIND OFF THE STITCHES

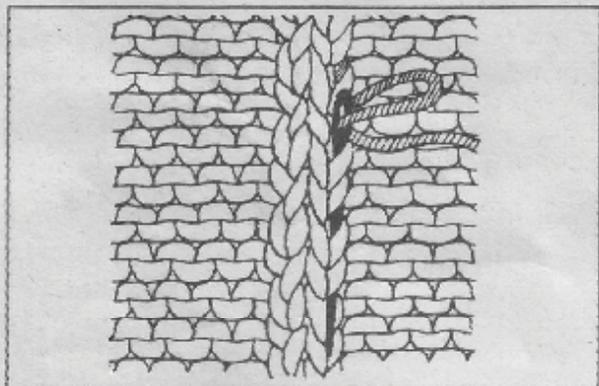
To bind off the stitches on the needles, use the method shown in right.



SEAMING



While seaming never pull the seaming yarn too tight, otherwise the seaming yarn will break or the seam will pucker. ▶

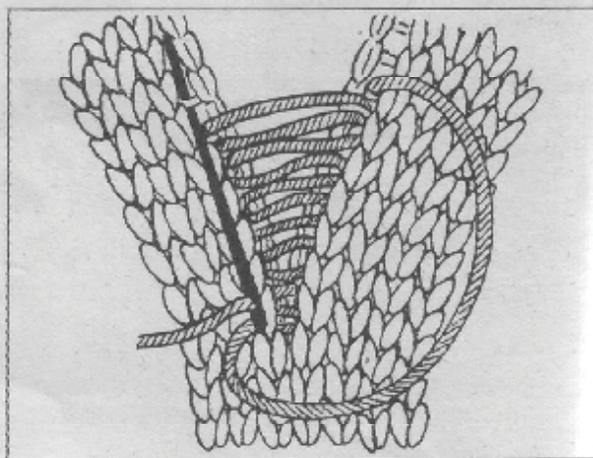


To seam rib stitch:-

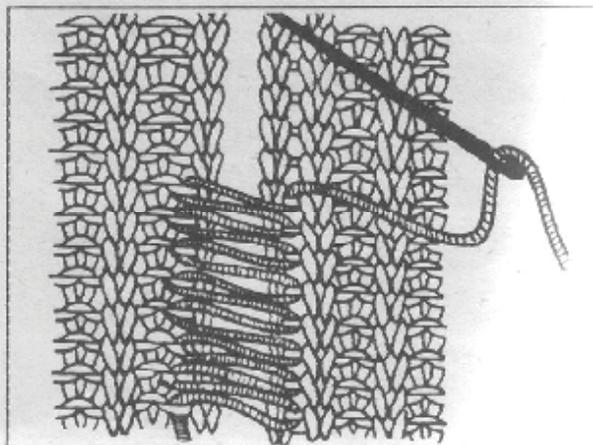
Seam through one stitch at a time row by row. ▶

◀ **To seam plain stitch: -**

Seam through one stitch at a time row by row.



◀ **Weave the surplus ends into the seams.**

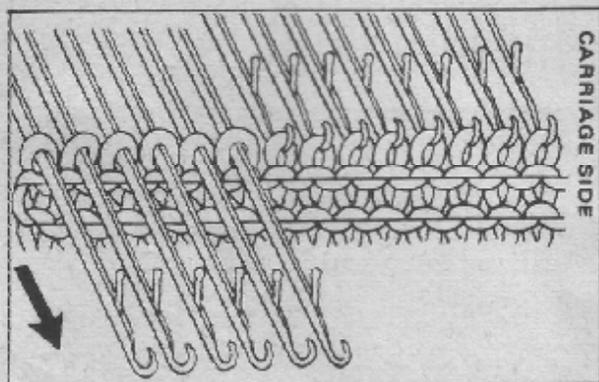


PARTIAL KNITTING OF PLAIN STITCH

When knitting the shoulder lines, sleeve tops, etc. for a garment, only part of a row is knitted.

Method 1. (Decreasing of knitting part)

1. Set the both right and left Partial Knitting Levers to "I" position.

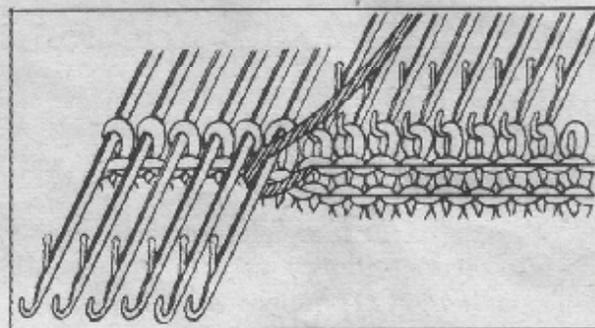


2. Pull out the required needles not to be knitted opposite the carriage to E position, and knit one row.
(The number of needles pulled out to E position depends upon slant of the shoulder lines, sleeve tops, etc.)

3. Pass the knitting yarn underneath the needle next to the last needle knitted as shown in the right and knit one row.
After repeating steps (2) – (3) and knitting required even-numbered rows, return the right and left (1) buttons and knit one row.
You have completed partial knitting.

Making darts

After pushing in both right and left (1) buttons, repeat above steps 2 and 3 at right and left side of garment in each row according to the patterns, and continue to knit the required number of rows.

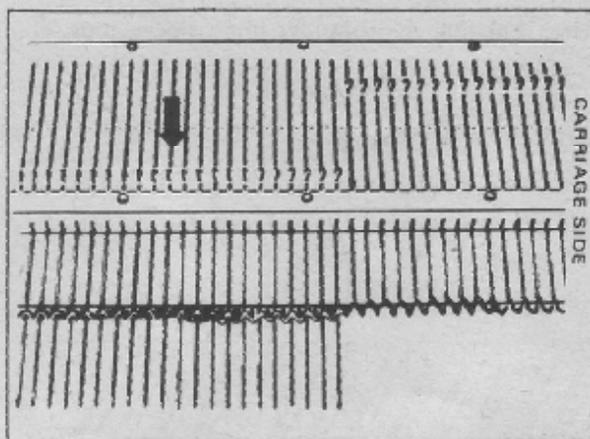
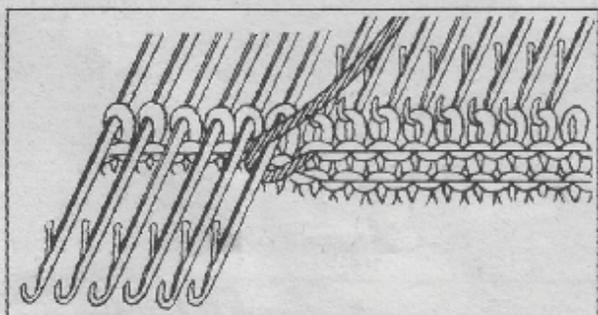


Note:

When returning to plain knitting aftermaking a dart shaping, make sure to return the (1) buttons when the carriage is positioned on the opposite side to the needles pulled out to E position.

Method 2. (Increasing of knitting part)

1. Set the both right and left Partial Knitting Levers to "I" position.
2. Pull out the required needles not to be knitted and opposite the carriage to E position, and knit one row.

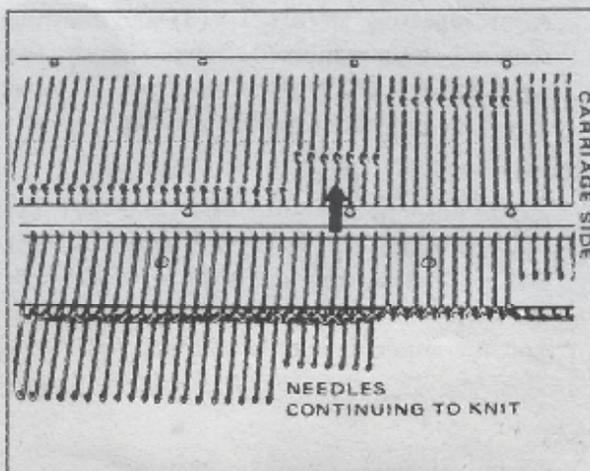


3. Pass the knitting yarn underneath the needle next to the last needle knitted as shown in left and knit one row.

4. Return a desired number of needles from E position to D position as shown in right and knit one row.

When all needles are returned to B position after repeating steps (3) - (4), return the right and left (1) buttons and knit one row.

You have completed partial knitting.



PARTIAL KNITTING OF TUCK STITCH

Method 1. (Decreasing of knitting part)

Set the both right and left Partial Knitting Levers to "I" position.

1. Pull out the required needles not to be knitted and opposite the carriage to E position.
2. Select the needles according to the relative knitting diagram and knit one row. (Fig. 1)
3. Pass the knitting yarn underneath the needle next to the last needle knitted, and knit one row.
4. Pull out next group needles not to be knitted to E position, and knit one row.
5. After passing the knitting yarn underneath the needle next to the last needle knitted, push the needles which have tucked stitches at E position to C position as shown in Fig. 2, and knit one row.

Repeat the above operation (1) - (5).

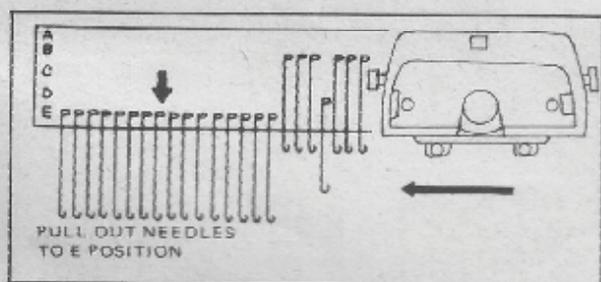


Fig. 3

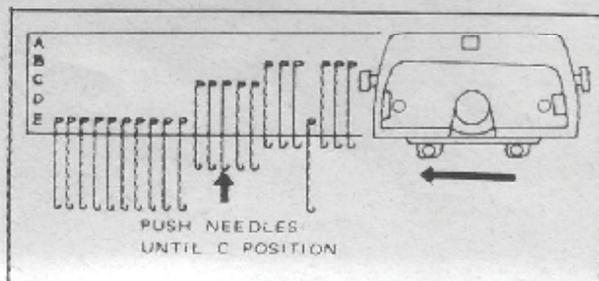


Fig. 4

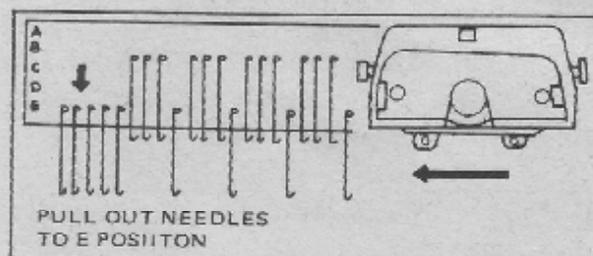


Fig. 1

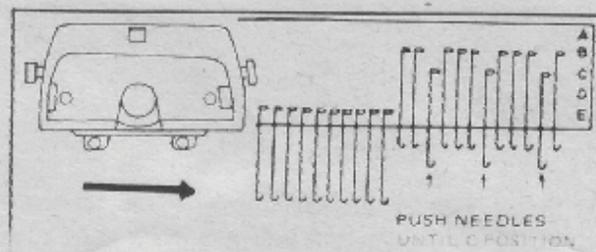


Fig. 2

Method 2. (Increasing of knitting part)

Set the both right and left Partial Knitting Levers to "I" position.

1. Pull out the required needles not to be knitted and opposite the carriage to E position.
 2. Select the needles according to the relative knitting diagram, and knit one row. (Fig. 3)
 3. Pass the knitting yarn underneath the needle next to the last needle knitted, and knit one row.
 4. Push the needles continuing to knit to C position as shown in Fig. 4 and knit one row.
 5. After passing the knitting yarn underneath the needle next to the last needle knitted, push the needles which have tucked stitches at E position to C position as shown in Fig. 2, and knit one row.
 6. After pushing the needles continuing to knit to C position select the needles according to the relative knitting diagram and knit one row. (Fig. 4)
- Repeat the above steps (3) - (6).

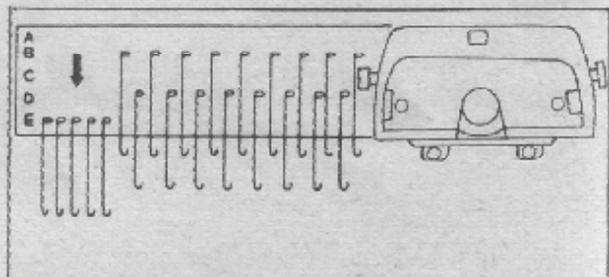
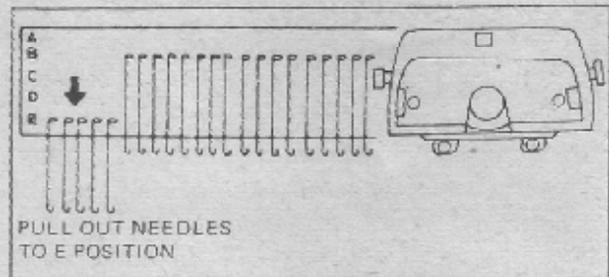
PARTIAL KNITTING OF TUCK PATTERN STITCH, SLIP LOOP TUCK STITCH, SLIP LOOP TUCK COLOR COMBINATION STITCH AND THREAD KNITTING

Method 1. (Decreasing of knitting part)

Set the both right and left Partial knitting Levers to "I" position.

1. Pull out the required needles not to be knitted and opposite the carriage to E position.
2. Select the needles according to the relative knitting diagram, and knit one row.
3. Pass the knitting yarn underneath the needle next to the last needle knitted.
4. Repeat step (2).

Repeat the above steps (1) – (4).



Method 2. (Increasing of knitting part)

Set the both right and left partial knitting Levers to "I" position.

1. Pull out the required needles not to be knitted and opposite the carriage to E position.
2. Select the needles according to the relative knitting diagram, and knit one row.
3. Pass the knitting yarn underneath the needle next to the last needle knitted.
4. Repeat step (2).
5. Push the needles continuing to knit to B position. (Fig. 1)
6. Select the needles according to the relative knitting diagram and knit one row. (Fig. 2)

Repeat the above steps (3) – (6).

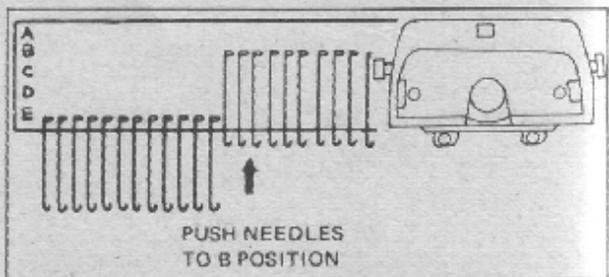


Fig. 1

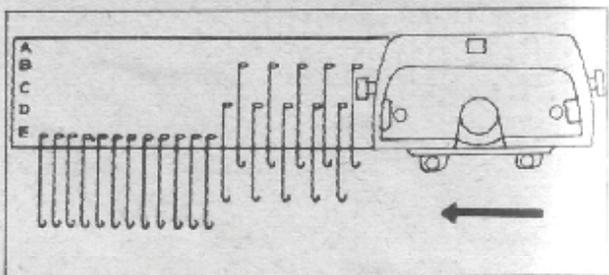
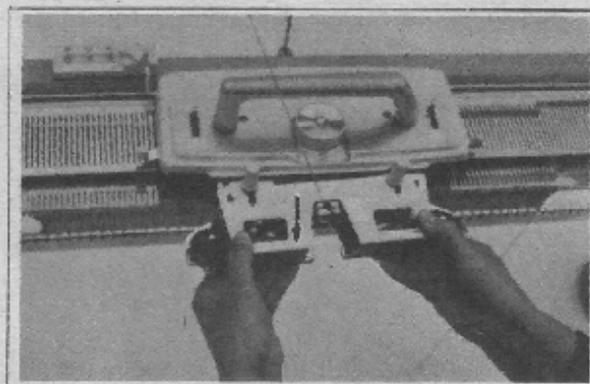
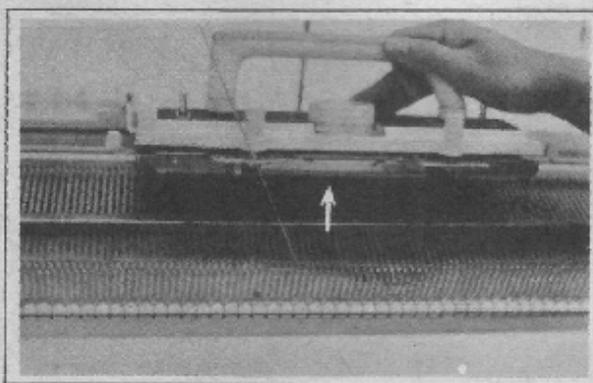


Fig. 2

REMEDY FOR TROUBLES

DETACHING THE CARRIAGE WHILE KNITTING

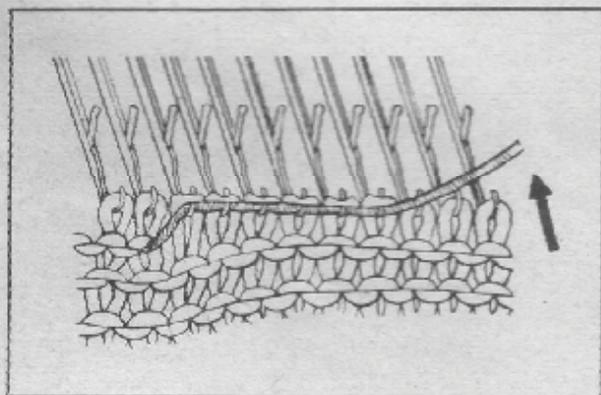
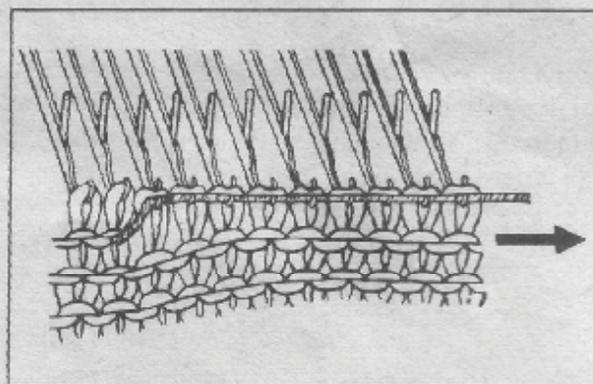
When the carriage gets stuck or there is a knitting mistake, do not move the carriage by force, but detach the fabric presser by loosening the screw knobs and pulling up the fabric presser.



- ◀ Tilt back the carriage and slide back to beginning of row. Unravel stitches back to commencement of row.

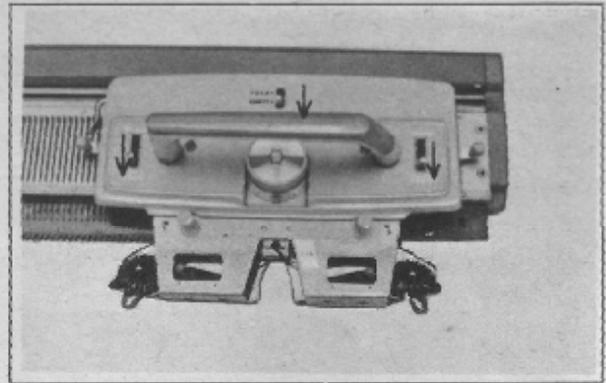
UNRAVELING KNITTING ON THE MACHINE

In case of over knitting or errors in knitting, the incorrect rows should be unraveled. Pull the end of the knitted yarn sideways as shown by the arrow.

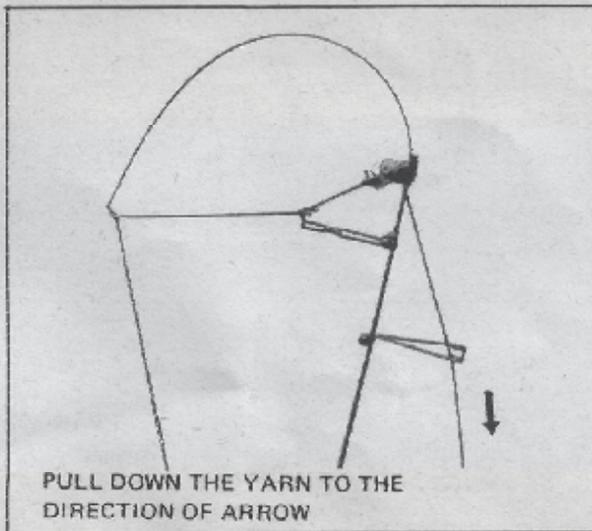


- ◀ Pull the yarn up to the opposite side as shown by the arrow while pulling the knitted fabric lightly, and the stitches will be unraveled and the row beneath will be hooked on the needles. By repeating this process, unravel the incorrect rows.

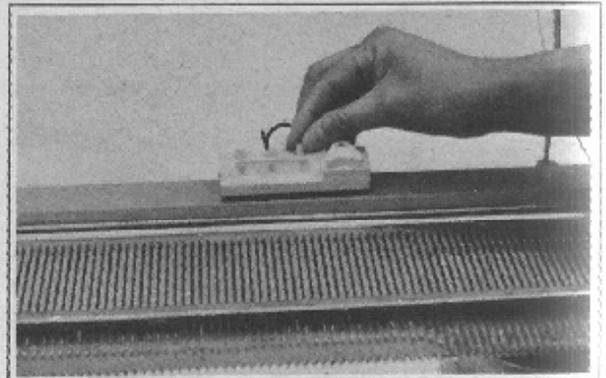
If the carriage is on the opposite side of the yarn end when the erroneous rows are unraveled, set the Tuck Lever and both knitting Levers at "EMPTY" position and slide the carriage to the side where yarn end is found. And return the lever to the previous position and re-knit the row.



Pull down the yarn from beneath the rear yarn guide of the take-up rod to avoid end loops.



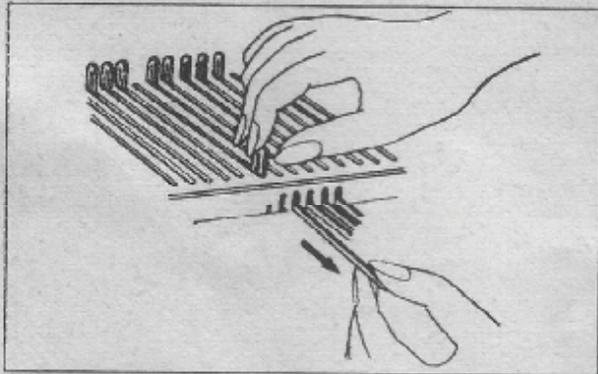
Turn the row counter dials toward the direction of arrow to correspond to the number of rows unraveled (Make sure that the dials are turned in the direction of the arrow.)



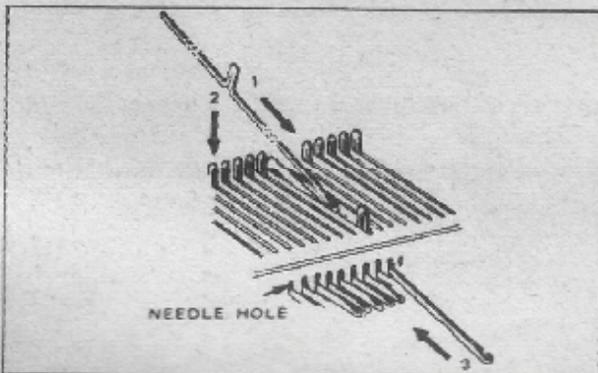
HOW TO REPLACE LATCH NEEDLE

Push the needle presser bar under the needle bed ▶ with a handle of the latch needle tool from one side.

Pull out the needle presser bar until the other end of the bar is disconnected from the latch needle to be replaced.

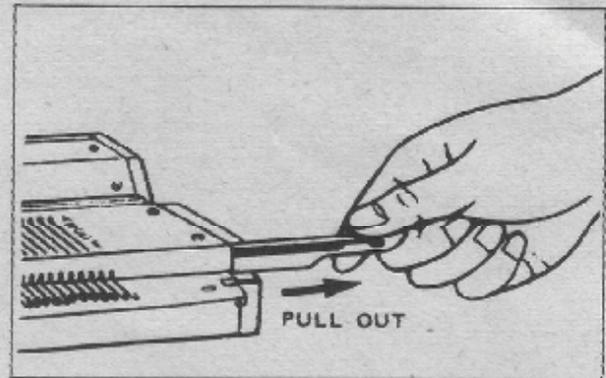


Push down the needle hook with the left hand, ▶ hold the butt and push it away from you. Move the needle to be replaced in the order 1, 2 and 3 as shown in right.

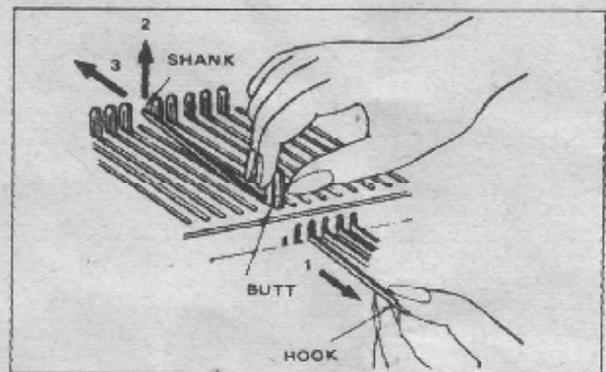


Pressing down the raised hooks of the needles, ▶ return the needle presser bar.

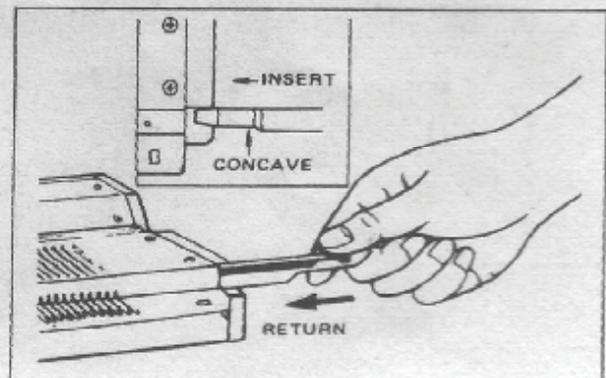
If the needle presser is detached from the needle bed, insert the needle presser with turning concave to this side where it was, as shown in right.



▶ Pull the latch needle to be replaced out toward you to E position.

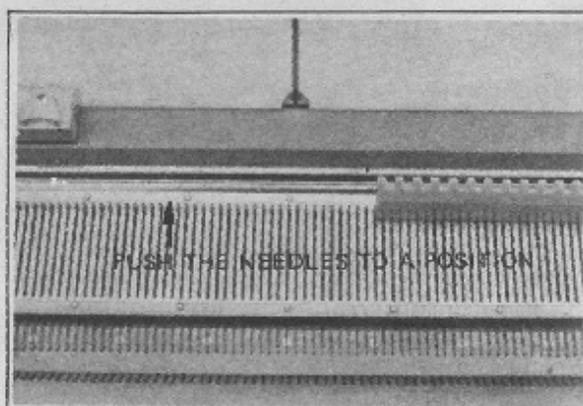


▶ Pass the new needle through needle hole and pull it out toward you. Insert the shank in the needle bed. (Move the needle in the order 1, 2 and 3 as shown in left.)



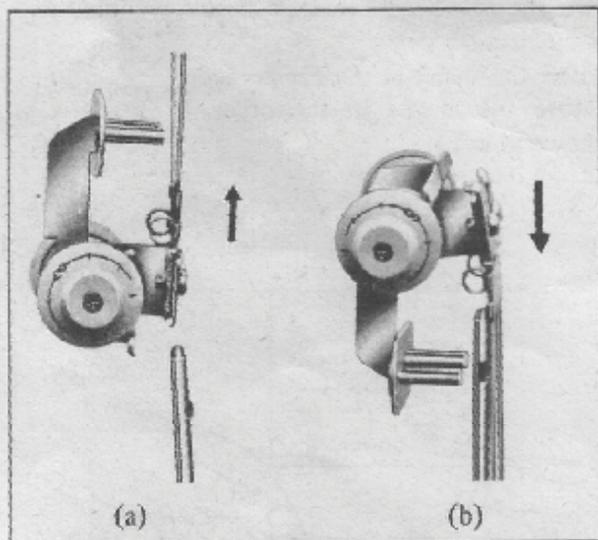
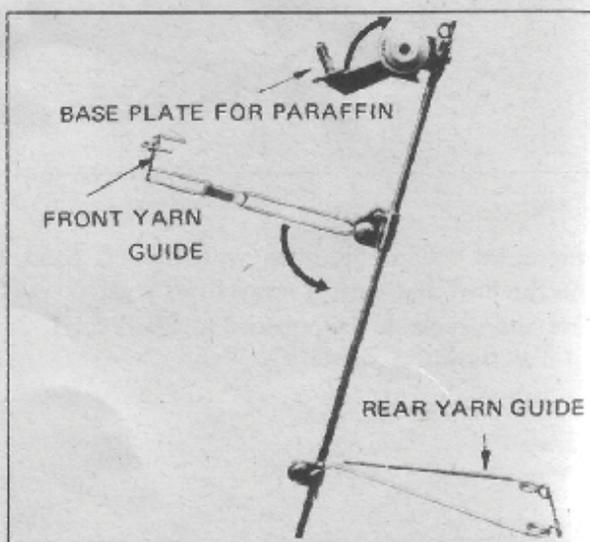
HOW TO STORE THE MACHINE

Push the needles at B position toward A position. ▶



Put the front yarn guide downwards as shown in ▶ right.

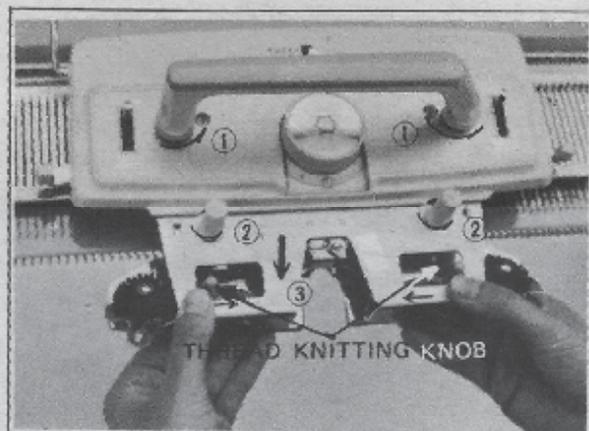
Turn the rear yarn guide and base plate for paraffin, pushing it as indicated by arrow.



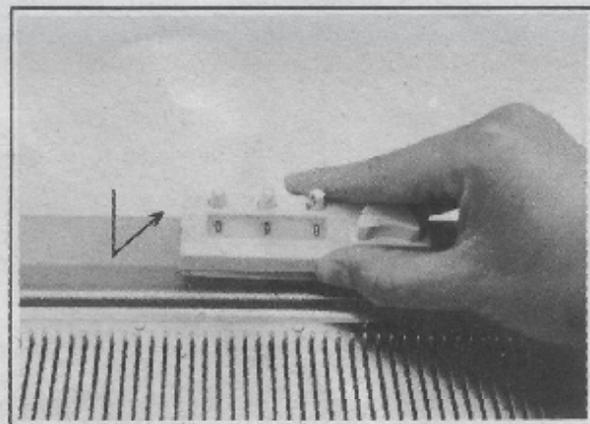
- ◀ (a) Pull out the take-up spring from the take-up rod.
- (b) Insert the take-up spring upside down in the take-up rod.

Remove the fabric presser from the carriage. ▶

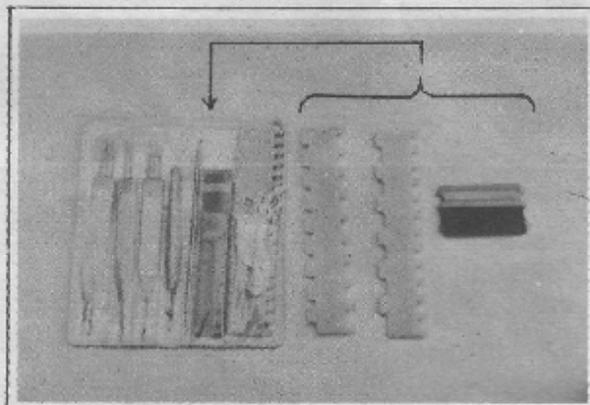
TURN BOTH THREAD KNITTING KNOBS
INWARDS.



Take off the row counter from the knitting ▶
machine complete.



Store the accessories in the accessory bag. ▶



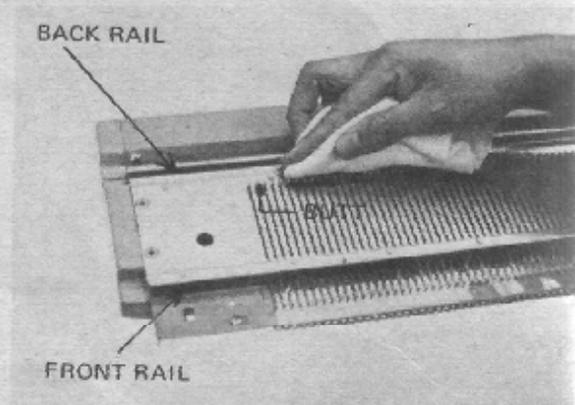
HOW TO KEEP AND MAINTAIN THE MACHINE

Daily maintenance is required in order to use the machine in good condition for a long time.
After using the machine, wipe dirt off the carriage and needle bed completely.
Apply oil carefully to the metallic parts.
Clean the case and the carriage cover with a cloth soaked with neutral detergent.

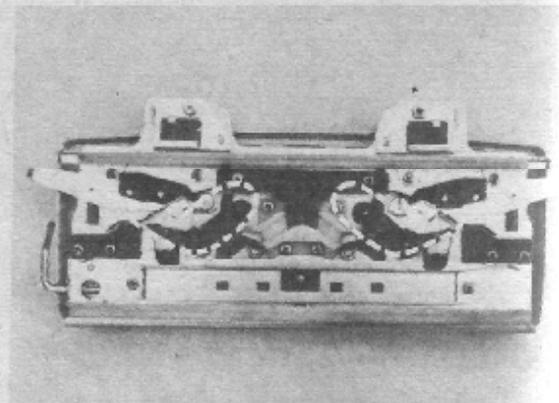
Note: Never use thinner, benzine, alcohol, gasoline, etc.

OILING

Never apply oil to the latch and hook of the needle, but to the butt with an oiled rag to avoid excess oiling as shown in right.
Wipe the back rail surface and the front rail surface with an oiled rag.



Apply oil to the knitting cams on the rear of the carriage (the oblique line), and wipe off excess oil with a rag.



MAINTENANCE

Store the machine in a dry, cool place.

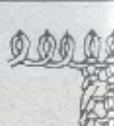
When the machine is used again after a long period of storing, wipe off the coated oil and apply fresh oil to the butt of the latch needles, various cam surfaces of the carriage and the front and back rail surfaces of the needle bed.

When beginning to knit, first knit all stitches for 20 – 30 rows with old wool yarn.

STANDARD STITCH SIGNS

The signs shown here are as the material would be seen from the knit side. This is because both purl and knit stitches are shown as knit stitch signs on the machine. Remember, though in an actual practice a purl stitch is in the opposite direction of a knit stitch.

	Knit 3 stitches together stitch of the left being in front:		Make the middle needle vacant by transferring the stitch onto the left temporarily, remove a stitch from the right onto the vacant needle, also the two stitches from the left needle.	
	Knit 3 stitches together, stitch of the right being in front:		Do the same thing as above reversely.	
	Knit 3 stitches together, middle stitch being in front:		Put each stitch from both sides on the middle needle.	
	Knit 2 stitches together, right stitch on left:		Put a right stitch on a left stitch or first, remove a right stitch to its next right stitch and on a vacant needle, put a left stitch on which put back the stitch firstly removed to the right side.	
	Knit 2 stitches together, left stitch on right:		Do reversely against the above way of symbol.	
	Purl stitch:		With a tappet or a crochet needle you can undo knit stitches and change them into purl stitches.	
	Knit stitch or plain stitch:		Put yarn over machine needles in an ordinary way and knit.	
	Cross stitch, left side loop over the right:		Transferring one stitch onto the left temporarily slip a stitch from the right onto the vacant needle; remove the former onto the vacant needle on the right.	
	Cross stitch, right side loop over the left:		The same thing as the other done reversely.	
	Transfer stitches toward the left:		After knitting two stitches together for a pattern some stitches are to be transferred one after another and this symbol says to do it leftward.	

/	Transfer stitches toward the right:		Do the same thing as above reversely.	
Y	Increase one stitch at left side:		Make one needle vacant, pick up a right stitch of the preceding row as a new stitch for the vacant needle.	
Y	Increase on stitch at right side:		Make one needle vacant, pick up a left side stitch of the preceding row as a new stitch for the vacant needle.	
O	Hole:		Make a needle vacant and knit one row.	
3 V	Missing extended loop:		The loop in the bottom row is brought to the top row, without making any stitch rows in between.	
ω	Wrapping stitch:		This is the way how to cast on or to increase stitches.	
8	Floating loop:		The loop in the bottom row is tucked and the yarn is knit across the front of the top row.	
Q	Twist stitch:		Taking a stitch off the needle, twist it once and put it back on the previous needle.	
A	Undone stitch seen sideway:		When undone stitch is pulled up a sideway stitch should be seen on stockinette side.	
U	Pull up stitch:		Undo a stitch on any rows made with this symbol; pull up all the undone stitches and place them on one needle.	
V	Increase in cast on comb:		Stitches marked with this sign should be undone and the lowest loop only should be pulled up. This figure shows as one row is undone.	