

every 4th needle, tension 8, becting know -1. needles #10 guage 4 it to in uply stockingette weight on ends of work and your (ball) bose and Important : Key

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SETTING UP THE KNITTER





(1) Place the knitter with the handle of carrying case away from you and unlock the catches on both sides of the handle.



(2) Lift the upper case slightly and pull towards you, so that the upper case can be release.

- 1 -



(3) Remove the accessory box on the needle bed.



(5) Press the head of screw upwards and fasten the knob.



(4) Take the table clamps out of the accessory box.Raise the front of the knitter, insert the head of screw into the aperture.

(6) Fasten the knitter to the table by tightening table clamp screws.





(7) Remove the carriage lock.



(9) Release the spring in the case and remove the sinker plate assembly.



(8) Release the spring in the case and remove the L carriage.



(10) Loosen the plastic thumb screws of carriage, insert the sinker plate assembly as far as it will go and fasten thumb screws securely.



(11) Fasten the handle on the carriage.



plate, then slide the row counter away from you.)



(12) Set the row counter on the row counter setting studs.(Fit the studs in the apertures of row counter lower



(13) Fit the set lever onto the shaft of the setter at the rear right of the needle bed.





- (14) Take out the automatic yarn tension unit from the case and turn the front yarn guide arm in the direction of the red arrow.
- (15) Turn the take up springs as far as they will go.



(16) Turn out the rear yarn guide as far as it will go.



(17) Fit the end of the rod into the stand hole at the center of knitter with the rear yarn guide away from you.



(18) Set the accessory tray (the cover of accessory box) on the accessory tray setting studs.

(Insert the studs in the openings of the accessory tray and slide it to the left as it will go.)

INFORMATION BEFORE KNITTING



· Positions of needles in the needle bed



On the both sides of needle bed, there are marks A, B, C, DI, DII and E.

These marks show the positions of needles.

• Tension Dial



Tension in knitting denotes the size of the stitch. The tension dial is graduated from 0 to 10, each space between numbers being subdivided into three parts. The figure 0 denotes the tightest tension, i. e. the smallest stitch and the 10, the loosest or largest stitch. The tension at which a garment is knitted depends not only on personal taste, but also on the type of garment required and the thickness of the yarn. • Pattern Selector Buttons



The center button marked "Plain", when pushed in, releases other buttons. When all five are even, you get plain knitting(stockinette stitch).

• Holding cam levers



Holding cam levers have three positions: [,] and].

- I Holding pattern knitting
- I Partial knitting
- I All other knitting than holding and partial knitting

• Row Counter



You can turn the figures on the row counter to zero, by turning as indicated by arrows, the 3 knobs in order from right.





 Preparing the yarn Method ①: Prepare the yarn by piling it loosely into a box or tray in order to prevent the knitting from being uneven. Method ②: Wind the yarn to in ball with "Ball Winder" and "Skein Holber."





(2) Push down the release button and set the reverse knob to "A" and push back all needles to position "A".



(3) Using the straight edge of a needle pusher, bring forward the desired number of needles to position "B", or about 2" from the resting position "A".



(5) Move the carriage across the working needles and put the carriage on the right end of the needle bed.





Change Knob:N

Holding cam levers position : I Button for Laying-in Pattern Brush : N

Pattern Selector Buttons : Plain Knitting



 (6) Hold comb centered to the edge of the needle bed with the wire hooks of the comb facing you. Turn securing levers at both ends to face you.



- 10 -



(7) Place hooks between pegs of needle bed as far as possible.

Turn the two securing levers outwards to the right and left respetively, and cast-on comb will hang correctly on the machine.



(8) Thread the automatic yarn tension unit









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(9) Adjust the locating knob. The locating knob has marks "+" and "-". "+" denotes strong tension and "-" weak tension. Strong tension is suitable to thin yarn and weak tension is suitable to thick yarn.



(11) Pull yarn back into slit until you hear the click of the yarn feeder spring.



(10) Thread yarn under the yarn feeder spring.



(12) Hold the end of yarn and move the threaded carriage from right to left.

This will cause loops to be picked up in the needle hooks.

- 13 -



(13) If the last few needles come up from the line of other threaded needles, push them back with fingers. Continue the carriage movement until the carriage in clear of the cast-on comb.



(14) Carefully unhook the comb from the pegs by turning the securing levers of the cast-on comb and let the cast-on comb hang in the loops of yarn.



(15) Turn the loose end of the yarn round the cast-on comb clip to keep it out of the way and to secure the first stitch.



(16) After casting-on, set the stitch dial to 5 for a medium thick yarn.

Move the carriage from left to right and continue knitting.

Move the carriage at an even speed and listen for a click at the end of each row.

If the carriage is jammed in the course of normal knitting, see page 74

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• Knit Stitch and Purl Stitch



In knitting, that side of the material which faces you is called the purl stitch, and the other side is called the knit stitch.



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HOW TO USE THE PATTERN CENTER

The pushbutton patterning system is one of the revolutionary features of this knitter. Multicolor and textured designs now can be made automatically and the pushbuttons in conjunction: cams can produce most intricate designs effortlessly.



• Needle Selection



- Raise the desired number of needles from position "A" to position "B".
- (2) Push down the "1" button.



(3) Turn the set-lever to the left as far as it will go, then the corresponding needles will be raised to position "DI".

(4) Move the carriage with setting for plain knitting. Then all needles will be back to position "B". (5) Turn the set lever again so the same needle's group will be raised.



(6) Push down the release button, then the button "1" will be released.

- TA STA
- (7) Shift the needle selector lever towards yourself so that when pushing down the set lever, the needles will actuate in a large motion to come to the position of D II. This operation is used for multi-color knitting.

- · Needle Selector Buttons and Reverse Lever
- * There are eight needle selector buttons.

Each button controls each needle group. A combination of pushed down buttons will control the corresponding combination of selected needles.



Therefore, by using the reverse lever, needle selection in multicolor knitting is very simple.

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· Slide dial and Slide Indicator

 Push down the "1" button, turn the slide dial and set the arrow at 1 on the slide indicator.

Swivel the set lever, then the needles on the mark \bowtie will be selected.



(2) Turn the slide dial and set the arrow at 2 on the slide indicator.

Turn the set lever, then the needles on right side of the mark \bowtie will be selected.

The slide direction indicator indicates the direction in which the slide dial is turned.



* The slide dial is used for sliding needle selection position and very useful for zigzag patterns and diagonal patterns.



(3) Relation between the needle selector buttons and the needles are shown in above figure.

HOW TO KNIT PATTERN KNITTING



- · How to read the pattern knitting tables
- * Various knitting patterns are shown in the following pattern knitting tables.

The lower section of the table shows the operating parts of the knitter.



· Steps:

Operate the knitter in numerical order.

The required operation in each step is shown in the lateral rows of the table.

• Direction of carriage movement:

Move the carriage according to the direction of arrow.

Before step 1, place the carriage on the right side of the needle bed.

• Color of yarn:

Shows the color of yarn in the yarn feeder.

Main Color: a

Sub Color : b. c.....

Figure " \bigcirc " means the movement of the carriage without knitting.

• Tension Dial:

Shows the tension No. of the Dial. The numerals show tension for medium size yarn.

• Holding Cam Lever:

Shift the holding cam levers of right and left sides to the marked positions: I, I and I

• Pattern selector button:

Press the cam button corresponding to the designated mark.

• Change knob:

Turn this knob to corresponding position of the marks: N, T and MC

• Button for Laying-in Pattern Brush: Place this button to corresponding position of the marks. Needle Selector Buttons

1~8:

Shows the button to be pushed down and operation of the set lever.

- a) **5** means pushing down button "5" and operation of the set lever.
- b) means operation of the set lever without repushing down of button.

• Reverse lever:

Shift the reverse lever to the corresponding mark.

· Slide dial:

Turn the slide dial to set the scale at this figure.

• Change lever:

Shift this lever to the mark position.

• Laying-in thread:

Shows the color of the laying-in Thread.

• Direction of L-Carriage:

Slide the L-carriage to the marked direction.

· Direction of K-Carriage:

Slide the K-carriage to the marked direction. The mark of " \rightarrow " means one-way travel and the mark of " \subset " means the round travel of the carriage. Before knitting, position the K-carriage at the right end of the knitting material.

1. Holding Pattern (1)

		-	1	C			Р	atte	rn (Cen	ter	 	-		-	Dire	Dire					
Steps	Color of Yarn	Tension Dial														Laying-in thread	of L	Direction of K Carriage				
1	а	5	Ш			1	11	N	N								A	1	Δ			٠
2	+	٠	7		11	1	•	,	*			13					7	11	11			-
3	٠	"	•		4		•	,	7								7	*	-			٠
4	٠		+					-	٠								"	7	"			-
5	*	?	Ι		*		7	-	*								7	٠				+
6	٠		*				4	•	7								1	11	"			-
7	•		III		•		7	"	**								"	3	•			+
8			*		*			•	"								,	17	"			-
9	*	٠	,				"	•	4								,	,	7			•
10	*	,	•		*		11	7	"								+	"	"			-
11	٠	,	I		,		7	•	*		1						7	4	"			•
12	٠		*	- Ľ	7		*	7	"					1			"	"	"			-

This pattern can be knitted by operating the holding cam levers, slide dial and set lever.



How to knit the holding pattern (1).

It is not necessary to change the yarn, pattern selector button and reverse knob. Knit several rows of plain knitting and rest the carriage on the right side of the needle bed apart from knitting. Step 1.

> color of yarn : main color tension dial : 5 holding cam levers : left W. right W pattern selector button : plain change knob : Set the knob at the position of "N". button for laying-in pattern brush: Set the button at the position of "N". needle selector button : 1.5 reverse knob : A slide dial : 1 change lever : Set the lever at the mark of " \triangle ".

After setting as above, swivel set lever and move the carriage from right to left.

Step 2.

Move the carriage to right. Step 3.

Move the carriage to left. Step 4.

Move the carriage to right.

Step 5.

Change the left holding cam lever from "I" to "I", and move the carriage to left.

Step 6.

Move the carriage to right.

Step 7.

Turn the slide dial and set the arrow to 3 on the slide indicator.

Swivel the set lever.

Change the left holding cam lever from "I" to "I". Move the carriage to left.

Step 8.

Move the carriage to right.

Step 9.

Move the carriage to left.

Step 10.

Move the carriage to right.

Step 11.

Change the left holding cam lever from "II" to "I", and move the carriage to left.

Step 12.

Move the carriage to right. Repeat steps $(1) \sim (12)$.

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2. Holding Pattern (2)



*Leave the needles on the marks \bowtie and \ll in position "A". Raise other needles to position "B".



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3. Tucking Pattern



*This pattern can be knitted, by operating the reverse lever and set lever only.



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4. Whole tucking pattern



***This** pattern can be knitted by operating the reverse lever and set lever



5. Holding and tucking pattern





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6. Lace-like pattern



Multi-color Patterns Knitting

Multi-color pattern knitting is efficiently and concurrently done by this knitter as follows :

(1) After several rows of plain knitting, stop the carriage on the left side once.

(2) Turn to set the cam change knob at the MC position and, at the same time, slide the carriage to the right, so that the knitting needles will come on to the position of DI.

(3) Push the both PART Buttons of the pattern selector button of the carriage, then knit in accordance with the pattern knitting table. lay yarn over hooks next to guard * Be sure to lay across the thread on the open latches of by he

the needles from the carriage side first.

* Open all the latches when laying the thread across the needles. The closed latches cause dropping the stitches.

* The laying thread should be held as tight as it will not be loose.

* Shift the change lever to the mark of " \triangle ".



In case the knitting and the laying threads are same (in case of only two colors), you can knit by using the laying thread feeder in accordance with the instructions for the laying-in pattern knitting. But in case of selecting 6 knitting needles or more, you can not use the laying thread feeder.

7. Multi-color pattern (1)



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8. Multi-color pattern (2)





	Carriage											1	Pattern Center										Dir	ā	
St	Color	Tens	Holding C	ratu	ern S	elect	or D	utton	Cha	Button				Ch		ide e L						Laying-i	Direction of L	Direction of	
Steps	Color of Yarn								Pru	12345678 Needle Selector ↔ Buttons Reverse Lever Slide Dial											Laying-in thread	f L Carriage	K Carriage		
1	a	7	1						1	MC	N						K)	182		В	1	V	b		•
2	+	*	,	<			4		+	7	*					Ø				7	"	"	1		-
3		4						*	٠	,	•									7	,		*		٠
4	•		4				•	+	-	~	•				O	Ø	0	Ø		*	"		1		-
5		,		\vdash	1		"	+	7	~					Ň	Ň	Í	Ì	-	7	*		,		+
6			~	\vdash	\vdash	+			"		"			83	ñ	n	-	ñ	~~	,	"				-
7			,	-	-	+		,	"				8.3	ŝ	m	-	8.28 	67	m	"	"	,		-	
8			,	-	-	-		,			"	-	Ö	27	-	818	ň	83			,		"	-	-
10 9	*	?	•		\vdash	+	*		"	*	"	8.8	m	-	-	84	84	M	873	*		,	,	-	
11	•	,	7		-	+	"	"	7	•	*		-		-		H	8		7	7	"	"	_	•
12	*	1	•			-	"	*	*	"	4	83	_		-			24		"	"	"	?	_	-
13	•	4	*				"	٠	"	"	"		23	_			-	24		*	,	"	7	_	+
14	\$	*	7	1			4	4	•	"	"		00000	Ø			_			"	"	"	7		-
15	,		*		_		*	,	"	*	"						Ø	M	8	4	*	*	*	1	+
16	4		٠				"	"	7	"	"		Ø		Ζ						"	4	"		-•
17	+	,	,				*	"		*	"			Ø		0	Ø	X	O	"	"		,		٠
18	4	,	"				"	"	,	"	"		_								7				-
19		+					+		*	,	4			iiii	_					,	.,	,	,		+
20		•	,	-			1				4		03						Ŵ		*			-	-•
22		*	*	-		-		,	*	*	*		-	-	-		n	-		,		"	"	-	+
23 22	*	*	,			-	"	,	*	*	*							**		*	"	7	"		_
24	*	٠	*				•	*	,	*	*		_		_	Ð	_			•	*	7	•	_	-
25	*	7	*				,	1	7	,	*		_				_		<u> </u>	,	·	·	*	_	+
26	1	*	٠				٠		*	4	4		_				_		_	*	,	*	1	_	-•
27	5	4	*	_			7	"	#	-	*				_		_			7	,	-	-	-	-


How to change the yarn for color knitting pattern

Thead two yarn in automatic yarn tension unit. Thread the knitting yarn through the yarn feeder and hold other yarn with the yarn clip.



How to change the yarn.

Take off the yarn from yarn feeder and hang it on the end of needle bed.

Thread other yarn through the yarn feeder.



10 Zigzag pattern

				Ca	rriage					F			Di	Di			
Steps	Color of Yarn	Tension Dial	Holding Cam Lever	Pattern S			Holding Cam Lever	Change Knob	Button For Laying-in Pattern Brush	Bu	4 5 6 7 E Selector ↔ attons Reverse Lever- Slide Dial- Change Lever-			Laying-in thread	Direction of L Carriage	Direction of K Carriage	
1	а	7	1				1	N	N			A	1	4		_	•
2	+	•	7			9 7	*	7	"			"	2	"			-
3		-	"			5 . 4		1	7			7	3				+
4			1			y #	*	"	*			4	4	"			-
5	*	1		-			7	"	7			7	5	"			٠
6	+	4	"			" "	4		7				6	11			-
7	*		*		1	7 9	"		"			"	7	1			+
8	4		*	_			"		"			,	8				-•
9	11		,				"		"			*	7	7			٠
0	1	>				. "	"	"	"			7	6	"			
1		,	7			. ,	7		**			"	5	. "			٠
2	4		,			7 11	#	4	"			"	4	"			-
3		*	-				"	"	"			"	3	"			+
4	5	*	7		1	7 7	*	"	"			"	2	"	10		-



Laying-in patterns

Laying-in pattern apparatus is one of the wonderful features making the knitter a versatile instrument for various types of knit wear.



- * The laying-in thread feeder should be fitted by fastening the knob (a), after fitting projection (b) to the opening of the arm.
- * Push down the button for the laying-in pattern brush to set at T.

* In case of other knitting except the laying-in pattern, set the change knob to N and the button for the layingin pattern brush to "N".

11. Laying in pattern (1)

The following is the basic laying-in pattern.



Main Yarn a 4 ply yarn Laying-inYarn b 4 //

In case of laying-in pattern knitting, always set the change lever at the marking of " \triangle ".

Thread the yarn for yarn feeder and the laying-in thread through the automatic yarn tension unit, then press down the buttons of 1, 3, 5, and 7, and then set the change lever at the mark of " \triangle ".

Step 1)

(1) Set the reverse lever at A and select the needles.

(2) Insert the laying-in thread of the in automatic yarn tension unit into the laying-in thread feeder opening provided on the left side of the carriage.

(3) Slide the carriage to the left.

Step 2)

Shift the reverse lever to B and select the needles.
Take off the laying-in thread from the laying-in thread feeder openning and turn it to the opposite side of the carriage, so that the laying-in thread is free from the carriage.

(3) Slide the carriage to the right.

(The laying-in thread will be guided to the laying-in thread feeder opening automatically. Make sure of this state before sliding the carriage.)

* After this, repeat the above steps 1) and 2).



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12. Laying-in pattern (2)



Main Yarn a 4 ply yarn Laying-in Yarn b 4 //



13. Laying-in pattern (3)

For this pattern, thick wool is suitable as laying-in yarn.

				Ca	rriage					Pattern Cent	er					Direction
Steps	Color of Yarn	D E Pattern Selector Buttons						M Need	Needle Selector ◇ Buttons Reverse Lever							
1	а	8	1				1 7	r 1				A	1	4	b	-
2	,	4	*		*	1	, ,	. 1				"	2	"	1	-
3	4	4	*		7		• ,					7	3		7	•
4	•		*		*		- ^	•				7	4	"	1	-
5		,	*		-		7 "	•				1	5	*	•	-
6			"		"		7 .	1				,	6	*	*	-
7	*		7	-	*		" A					"	7	1	С	-
8			,		*							,	6	"	"	-
9		*	,		•							,	5	1	,	•
0	*	,			7		" "					*	4	"	*	-
11		,	7		,		y *					1	3	*	*	-
2	4		•		7		, ,	1				1	2	"	1	-

Main Yarn a 4 ply yarn Laying-in Yarn b Bulky yarn Laying-in Yarn c Bulky yarn



14. Laying-in pattern (4)



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15. Cable stitch pattern

Knit several rows in plain knitting before transferring the stitch to make cables.





① Using a pair of three-eye transfer tools pick up three stitches with one transfer tool, and the adjacent three stitches with the other tool.



② Place the three stitches on the tool in your left hand onto the hooks of the machine needles on the right.



③ Place the three stitches on the other transfer tool in your right hand onto the hooks of the needles on the left.

Raise those six needles to position "E"

Knit 10 rows.

Rib two or three stitches on both sides of the pattern starting at the beginning of the knitting.

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16. Ribbing stitch

The latch tool is used.

The ribbing is produced by having knit stitch over knit stitch and purl stitch over purl stitch, in vertical lines. The ribbing narrows and lengthens the knitted fabric and increases its elasticity.

							_	_	-	_
1	-	Ι	-	1	-	-	<u></u>		_	
1	-	1	_		_		-	1	-	
1	-	1	—	1	-	1		1	-	
1	-	1	_	1	-	1	_	1	-	1
1	-	1		1	-	1	—	1	-	
1	-	Ι	-	Ι	-	1	-	1	-	1
1	-	1	-	1	-	1	-	1	-	1
Ī	-	1	-	1	-	1	-	1	-	Ι
İ	-	1	-	1	-	1	-	1	-	1
T	-	1	-	1	-	Ι	-	1	-	Ι



(1) Knit as many rows as required for the length of the ribbing on a slightly tighter tension. Drop the third stitch from the end by pushing the needle forward then back until the stitch drops off the

needle. Then, allow the stitch to drop as far down the fabric as you wish.

Insert the hook of the latch handle into the loop of the last dropped stitch from the front of the fabric.



(2) Hold the tool parallel, and see that the stitch is behind the latch. Catch the next parrallel thread into the hook, and pull forward until new stitch is formed



Watch the latch of tool, always pick up parallel threads one by one.

Note that the last stitch falls behind the latch so that the next parallel thread is in front of the latch.



When all parallel threads are picked up, the last stitch is placed back onto the empty needle. Repeat steps ② and ③ for each row required to be "ribbed".

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17. Garter stitch pattern

The latch tool is used.





1 Knit two rows in plain stitch.

Insert the latch tool second underneath stitch. Remove the stitch from the needle and shake the latch tool with the stitch on the stem of the latch tool and ladder one stitch.



② Knit one ladder and make one stitch and transfer it on the empty needle.

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3 Repeat 1 and 2 operation about all stitches on one row.





- (1) Cast-on 3 or 4 needles.
- (2) To get fine finish, use a slightly tight tension.
- (3) Depress right PART button.
- ③ Pull down the fabric by left hand, and move the car riage by right hand.

KNITTING LACE PATTERN USING L CARRIAGE

The L carriage is used to knit lace pattern with the pattern center.



1. Preparing to knit



(1) Remove the auxilliary rails from the carrying case.



(2) Insert the auxilliary rail into the hole and under the auxilliary rail fastener on the end of knitting machine.

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(3) Fasten the handle on the L carriage.



When you use 2-ply yarn or lace yarn fit paraffin to stud on front yarn guide. 2. How to use the L carriage



(1) Knit several rows in plain knitting, hang the color weight on the cast-on comb.

Yarn used	Tension Dial
2 ply	3
4 ply	5
lace yarn	4

(2) Set the tension dial as shown in the above table.



- (3) Swivel the set lever and select the needles.
 - When the needles are selected together with the adjacent needle, you can not knit. Therefore, make sure not to move the L carriage.
 - In case of lace knitting, the change lever must be set at " Δ ".



* In case of the end needle is selected, push it back with your finger.



(4) Set the L carriage and make sure the rear side of L carriage fits in the back rail of needle bed.



(5) Move the L carriage slowly.

If the L carriage is jammed, see page 76.



≪To unlock the L carriage≫

Push in the release button of the L carriage
Lift the rear of it and pull it toward you.



 \ll To reset the released L carriage on the auxilliary rail \gg

When you reset the released L carriage on the auxilliary rail, place it right on the rail, as shown in figure.

3. How to knit Lace Pattern

How to read the pattern knitting table

<Example>



Steps :

Operate the knitter in numerical order.

The required operation is shown in the lateral row of each step.

Needle Selector Buttons:

- a) I means pushing down button "1" and operation of the set lever.
- b) means operation of the set lever without pushing down button.

Slide dial:

Turn the slide dial before operating the lever and set the slide indicator.

Direction of the L carriage:

Move the L carriage according to the direction of arrow.

Direction of the K carriage

Move the K carriage according to the direction of arrow.

 \rightarrow one row

- ⊂ two rows
- * Always operate the L carriage before operating the K carriage.
- * Place the K carriage at first on the right side of the needle bed.
- * Set the reverse lever to position "A".

<Lace pattern (1)≫

This is the most basic lace pattern.

Step 1:

Push down needle selector buttons 1 and 5 and swivel set lever.

It is not necessary to reset the slide dial. (If the end needles are out to position "D", push them back with fingers.)

Move the L cariage slowly from left to right (If the L carriage is jammed on the way, see page 76.)

Knit two rows by the K carriage.

Step 2:

Repeat step 1 from step 2 to step 6.

Step 7:

Swivel the set lever.

Move the L carriage from right to left.

Knit two rows by the K carriage.

Step 8:

Repeat step 7 in steps 8 through 12.



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≪Lace pattern (2)≫



≪Lace pattern(3)≫



≪Lace pattern(4)≫

ł				Ca	rriage		Ŧ		-		Pa	tter	n Ce	nte	r			-	1	Direction	Direction
	Color of Yarn	Tension Dial	Lever		PLAIN_	Buttons	Holding Cam Lever	agua	Button For Laying-in Pattern Brush		R	Sel tons ever	ector	eve Di	er]			Laying-in thread	ion of L Carriage	ion of K Carriage
1	a	5	1				1	N	N							A	1	Δ		-+	C
2	,	*	,		*		+	*			\square			+	-	1	8	11		+	
3	*	"			*			,	,		Ħ			+	+	,	2		t	-	C
4	•		4		>		-	~	,				+	+	+	7	7		t	+	F
5	*	,			2		7	"	*				+	+	+	7	3		t	-	C
6			~		•		4	"	"			-	+	+	+		2		┢	-	-
7	*		"		*		"	"	"	6			+	+	+	7	8	,	t		C
8	,		1		*				"				+	+	-		1	,	t	-	d
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10	"	>			*		"	"	"				-	1	-	7	4	"	t	+	1
11	٠	,	7		2	-	"						+	+	+	7	+ -		t	-	r
12	*	4	•			-		"	"	.			+	+	-	"	+ -	"	t	-	F
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15	,	,	+		-	+	4	,	"		+		+	+	+	*		*	t	-	

HOW TO KNIT GARMENTS

......



1. Partial knitting in Plain stitch

Decreasing stitches



Set the holding cam levers in position "II".

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 Bring up the needles in the opposite side of carriage, to position "E".

The numder of needles to be raised to position "E", depends on the shape of the curve.



2) Knit one row.

When stitches are made with the needles in the position "B", the yarn lies across on the stems of the needles in position "E".



3) Pass the yarn under the stem of the first needle in position "E".



4) Knit one row.

Repeat steps (1), (2), (3) and (4).

• Increasing stitches

Set the holding cam levers in position I.





1) Bring up the needle in the opposite side of carriage, to position "E".

The number of needles to be raised to position "E" depends on the curve you want to get.





2) Knit one row.

When stitche are made with the needles in the position "B", the yarn lies across the stems of the needles in position "E".

End needle in position "B".



 Pass the yarn under the stem of the first needle in position E. 4) Kait back one row.



 Manually move back the needles from position "E" to "D" by the number of stitches you want to increase. Repeat steps (2), (3), (4) and (5).

- 2. Partial knitting of multi-color pattern zigzag patternigzag pattern, zigzag patternand laying-in thread pattern
- Shift the holding cam levers of the carriage to the position of I, and position the resting needles at E.
- (2) Select the needles according to the table, (lay across the laying thread) and knit one row.
- (3) Pass the yarn (and the laying thread) under the stem of the first needle in position E.

- 3. Partial knitting of holding stitch pattern
 - Decreasing stitches



We take one holding pattern stitch for the purpose of explaining the above subject. Every fourth needle have 2 holding stitches and 2 plain stitches alternatively. Set the holding cam levers in position "II".



1) Raise the needles which you want to rest to position "E".



 By using the needle selector buttons select the needles to hold up to position "D".



3) Knit 2 rows. But, at the end of the first row, pass the yarn under the stem of the first needle in position "E".



 Raise several needles which you want to rest to position "E".



5) Move back the needles which have holding stitches from position "E" to "D".



6) Shift the holding cam lever on knit side of the carriage from "II" to "II". Knit two rows.



 Shift the holding cam lever from "II" to "II". Repeat steps (1), (2), (3), (4), (5), (6) and (7). • Increasing stitches





 Raise the needles which you want to rest to position "E".



 By using the needle selector buttons, select the needles to hold up to position "D".



3) Knit 2 rows

But at the end of the first row, pass the yarn under the stem of the first needle in position "E".



 Move back the needles which have made holding stitches and those which you want to operate from "E" to "D".



5) Shift the holding cam lever on knit side of the carriage from """ to "". Knit 2 rows.



 Move back the needles which you want to operate from "E" to "C".



 7) Shift the holding cam lever from "I" to "I". Repeat stops (2), (3), (4), (5), (6) and (7).

4. Partial knitting of Tucking pattern

As one example, we select one tucking pattern. Every other needle has one tucking stitch and one plain stitch alternatively. Set the carriage.

When carriage is on the right-hand side of the knitting, push in left tuck button.

When carriage is on the left-hand side of the knitting, push in right tuck button.

Set both holding cam levers in position I.

Decreasing stitches





(1) Place the needles in position "B" and raise other needles to position "E".



(2) Using the needle selector buttons select the needles to position "D".



(3) Knit 2 rows.

But, at the end of the first row, pass the yarn under the stem of the first needle in position E.



(4) Raise the needles which you want to rest.

Using the needle selector buttons select the different needles from step (2).

Knit 2 rows,

Repeat steps (1), (2), (3), (4), (5) and (6).

• Increasing stitches





(1) Place the needles to operate in position "B" and raise other needles to position "E".



(2) Using the needles selector buttons select the needles to position "D".



(3) Knit 2 rows.

But, at the end of the first row, pass the yarn under the stem of the first needle in position "E".



(4) Move back the needles which you want to operate to position C.



- (5) Using the needle selector buttons select the different needles from step (2).
- (6) Using the transfer tool, transfer the stitches on the back of the latches in position "C" onto the hooks of the needles and place these needles in position "B".
- (7) Repeat steps (2), (3), (4), (5) and (6).

*«*How to transfer the stitch*»*



 Hold the transfer tool parallel with the needle and place the eye of the transfer tool into the hook of the needle. Bring the needle forward. The stitch in the hook of the needle will slide behind the latch and onto the needle.



(2) Without releas ing the transfer tool from the hook of the needle, push the needle all the way back until the stitch is transfered onto the transfer tool.



- (3) Raise the transfer tool with the stitch on it and transfer it to the adjacent needle.
- 5. Increasing stitch Increasing one stitch at either edge



(1) Use the transfer tool, move the stitch out to the adjacent empty needle.



- (2) To fill in empty needle pick up stitch from second needle in lower row.
- Increasing several stitches at either edge.



Bring into action on the same side as the carriage.

Raise the increasing needle to position "E". Wind yarn around stem of each needle. Raise the holding cam levers to position I. Knit across.

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6. Dereasing stitch

· Decreasing one stitch at either edge



- * Use the 2×1 transfer tool to transfer two stitches at the end to the inside needles, and place empty needle out of action to position "A".
- Other method of Decreasing one stitch



(1) Use the single transfer tool to transfer the 3rd stitch to the 2nd stitch.



(2) Transfer the 2nd stitch to the empty 3rd needle and the end stitch to the 2nd needle. Place empty needle out of action.

• Decreasing several stitches



 Do it from the side where the carriage is placed. Transfer the 2nd stitch to the end needle.

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(2) Transfer the two stitches to the 2nd needle. Place empty needle out of action.



(4) Repeat this process. Transfer the last stitch to adjacent needle.



(3) Raise the needle with the two stitches so that the stitches fall behind the latch of the needle.Lay yarn in front of latch and manually pull needle back to form a single stitch.
7. How to bind off



8. How to cast off



9. How to bind off one knit one purl rib



10. Waste knitting or

loose course knitting.



* To obtain a garment with a beautiful edge, waste knitting is used.

After waste knitting with waste yarn is finished, knit one row with the carriage with cast-on thread.

Then proceed to garment knitting.

After finishing the garment knitting, the garment and the waste knitting can be separated by pulling out the cast-on thread.

11. How to determine the gauge



* The gauge or tension determines the tightness or looseness of the stitches.

Determine the proper gauge by making a swatch.

Knit a small test piece on about 30 needles, working sets of 30 rows, each set in a different tension.

Put the swatch on a plane.

Count the number of stitches per inch across, and the number of rows down per inch.

Based on this mathematical approach, it soon becomes a simple matter to create your own garments or your knitter with the assurance that the size will be correct. It is recommended that a small test swatch be made before starting each garment to prove correctness of gauge.

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12. Partial knitting with the L carriage

- * Set the holding cam levers in position "I".
- * Push down both PART buttons.
- * Set the tension dial as shown in next table.

Numbers before setting	Setting Numbers
4	5
5	6
6	7



(2) Of the selected needles, those which are not used must be pushed back to position "B".



- (3) Move the L carrige in the direction shown in pattern knitting table.
 - * If operation of the L carriage required more than once in the pattern knitting table, repeat steps (1), (2) and (3).



(1) As shown in the pattern knitting table, push down needle selector buttons and swivel set lever.

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(4) Raise the knitted needle to position "E".



- (5) Move the L carriage in the direction shown in pattern knitting table.
 - * Hang the yarn in the hook of the first needle in position "B".



• When the needle is bent



(1) Push either side of the felt bar end piece with the end of latch tool until it comes out.



(2) Withdraw it by hand from the knitter until the needle you wish to change is free.

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(3) Pull the needle forward as far as it will go. Push down the hook of the needle until shank end of the needle rises clear of the needle bed.



(4) Grasp the shank end and draw it out backwards.

(5) Replace it with a new needle by holding it with latch opened.

Push the felt bar back into place.

• When the carriage is jammed



- (1) Loosen the thumb screws of the sinker plate, remove the sinker plate from the carriage.
- (2) Grip the handle of the carriage and lift the front of the carriage.

Slide the carriage to the side where the row commenced and when clear of needles lower the front onto the needle bed.

- (3) Attach the sinker plate to the carriage and fasten the thumb screws of the sinker plate securely
- (4) Unravel last row of knitting and if necessary rethread carriage feeder.



(1) Pull yarn slightly out of stitches.

The stitches of the previous row will slip into the hooks of needles automatcally as the yarn is raised towards the needle bed.

- (2) Move the carriage in either direction without knitting.
- (3) Pull the ripped yarn down through the back of the rear yarn guide until the yarn take up spring is brought back into operation.
- (4) Adjust the numbers on the row counter.

«Carringe movement without knitting»



- * In case of plain knitting You can move the carriage without knitting by pushing down both PART bottons.
 *If the needles are in position DI, push back the ne edles in position DI to position B.
- *If the needles are in position DI or E, set the holding cam lever to II.

≪How to remove the laying-in pattern brushes≫

* Set the laying-in pattern buttons to position "N" and remove the laying-in pattern brushes from the sinker plate assembly.





• When the L carriage is jammed

- * Remove the L carriage from its jammed position.
- * If the L carriage is caught with needles, take sufficient care in removing it.
- * After removing the L carriage, you can knit according to following steps.



 If you see needles caught with each other, separate them by lifting their tips.



If stitches are caught on two needles as shown by (a) in above figure, pull selected needles (b) toward you and push them back together with needles (c) to positi on "B"in order to transfer the stitches.



CARE OF YOUR KNITTING MACHINE

For best results your knitter must be kept clean and visible working parts regularly oiled.



Oiling and cleaning



* Remove the cap and oil your machine before and after use.



(1) The needle bed

Clean the needle bed and the carriage slide rails with clean cloth.

Oil the needle bed and the carriage slide rails using oiler.



(2) The needle butts

Oil the needle butts with oiler.



(3) The carriage

With clean cloth, wipe away all fluff. Oil all moving parts of the carriage with oiler.

• Note

Clean and oil your knitter each time you have finished knittng and clean off all excess oil before use, especially from parts which will come into contact with the knitting. Always leave a light film of oil on all parts between the rails under the carriage.





(1) Remove the auxilliary rail (lift up and pull it.)



(2) Replace the auxilliary rails in the upper case as shown in figure.

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(3) Open the springs in the case.



(4) Replace the cast-on comb in the case.



(5) Fold up the automatic yarn tension unit. Remove the automatic yarn tension unit.



(6) Replace the automatic yarn tension unit as shown in figure. (Fit the head A of automatic yarn tension unit under the clasp B of the case.)



(8) Remove the sinker plate and replace it as shown in figure.



(7) Place the yarn tension rod and the take-up spring beside comb and put them inside of hook ©.



(9) Remove handle from the L carriage and replace the L carriage as shown in figure.



(10) Close the springs.



(i2) Take out the carriage lock from the accessories box and lock carriage on the left end of the needle bed.



(11) Remove the set lever, push down the release button, set the reverse lever to "A" and push back all needles to position "A".



(13) Pull out the row counter.



(14) Remove the accessory tray by sliding as indicated by arrows.



(16) Replace them and other accessories in the accessories box.





(15) Remove the handle of the carriage, table clamps and set lever.



(17) Place the box on the right side of the needle bed.
 The left end of the accessories box must be in line with the number 50 needle.







(18) Close the upper case and lock the catches.

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