

Instruction book

PASSAP[®]
Combi



INTRODUCTION

The knitting machine PASSAP-COMBI is composed of two parts :

- the single bed machine ("Version A")
- the double bed machine ("Version B")

The white pages of this instruction booklet concern solely the single bed machine. Owners of "Version A" have therefore only to follow the instructions given on the white pages.

The pink pages concern solely the double bed machine. The owners of "Version B" have to follow the instructions given on all the pages of this booklet, i. e. :

- white pages for single bed knitting
- pink pages for double bed knitting

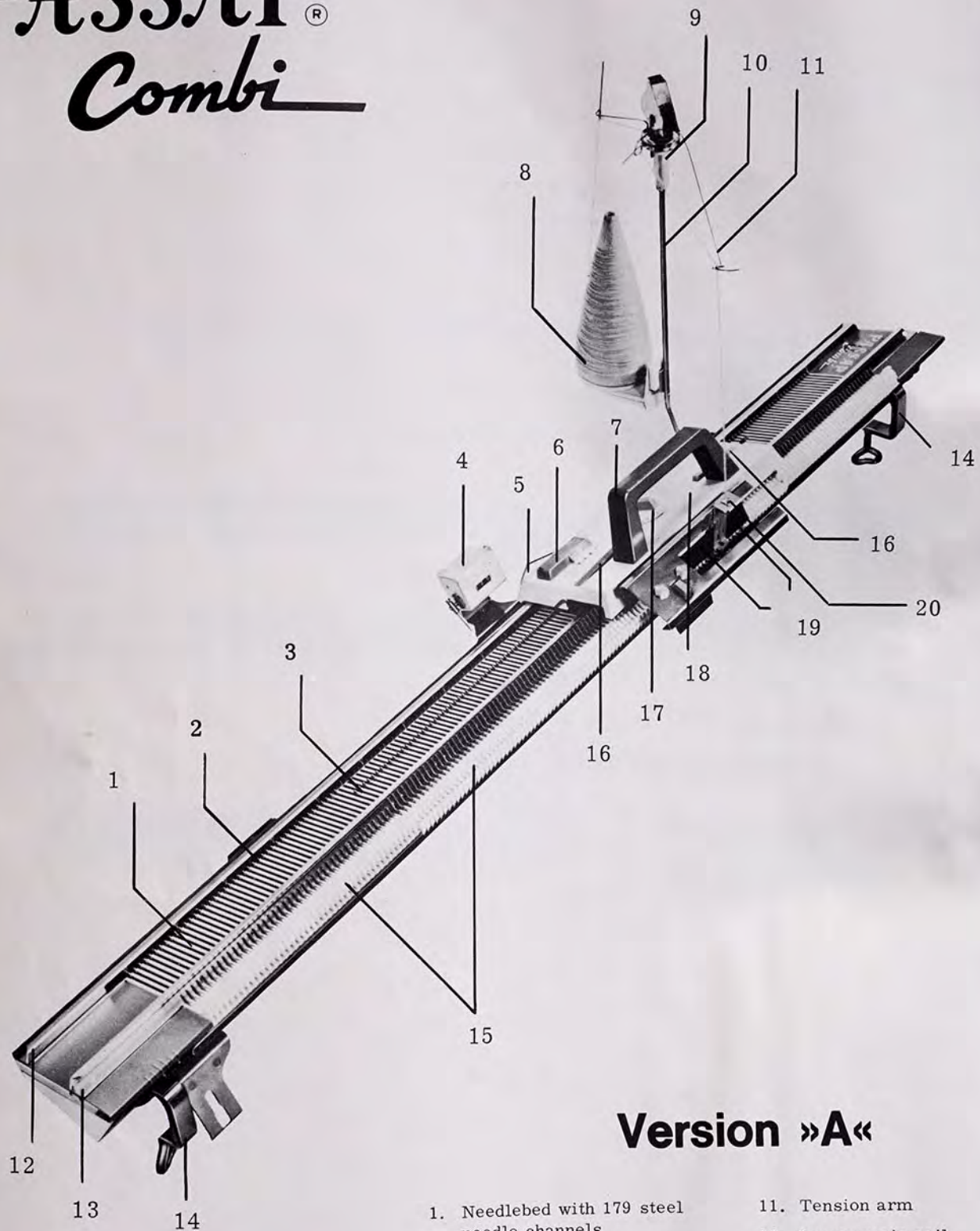
We advise our PASSAP FRIENDS, who own a double bed machine, to first learn how to use the single bed before starting to knit with the double bed machine.

Abbreviations

dial = stitch size dial
RC = row-counter

st(s) = stitch(s)
nd(s) = needle(s)
s = sinker(s)

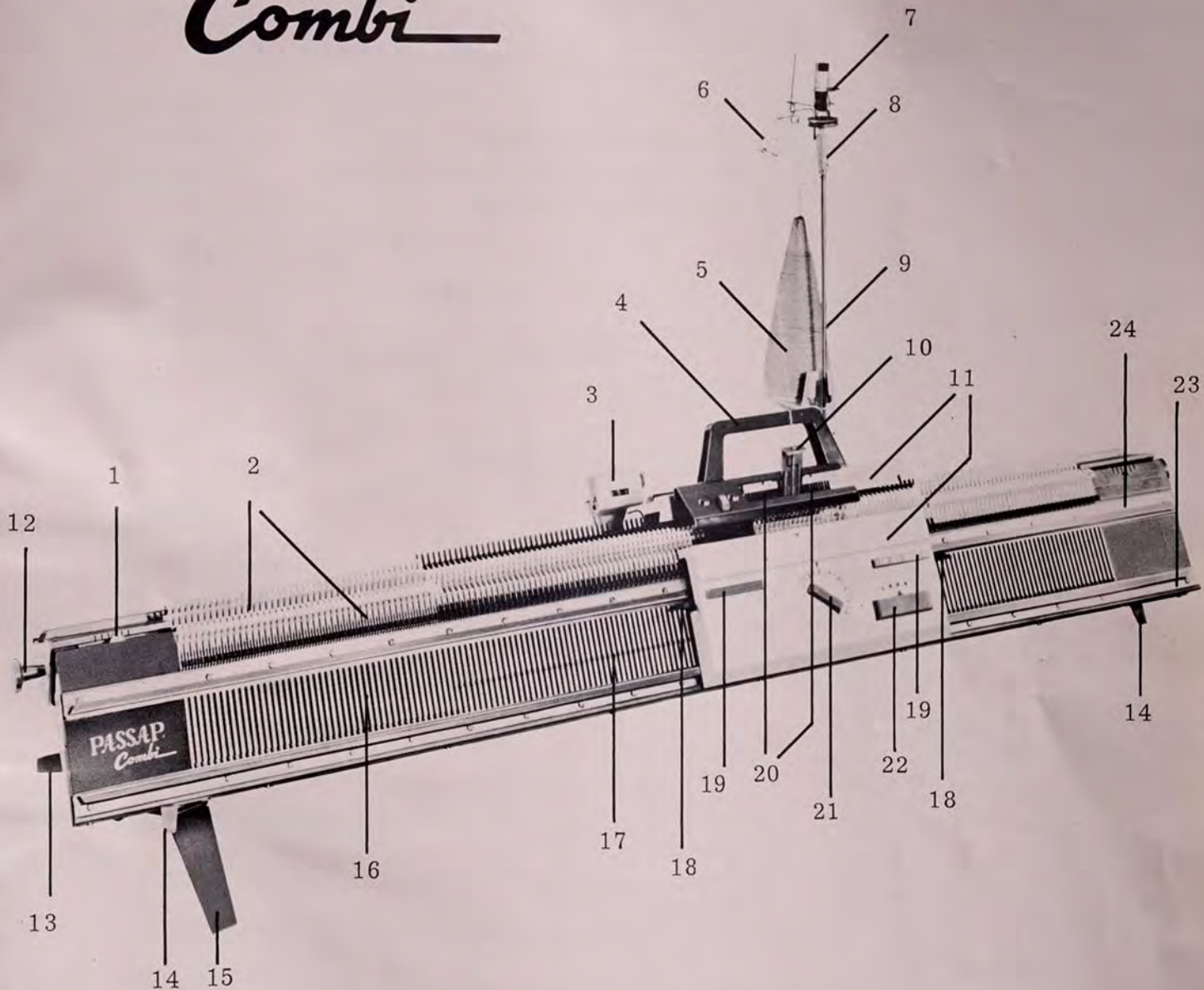
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Version »A«

- | | |
|---|-----------------------------------|
| 1. Needlebed with 179 steel needle channels | 11. Tension arm |
| 2. Needle scale | 12. Lower main rail |
| 3. Latch needles | 13. Upper main rail |
| 4. Row-counter | 14. Clamps for fixing the machine |
| 5. Trip wire for the row-counter | 15. Sinkers |
| 6. Basic pattern selector | 16. Returning key |
| 7. Handle | 17. Stitch size dial |
| 8. Cone | 18. Lock |
| 9. Tension regulator | 19. Brushes |
| 10. Yarn guide | 20. Feeding eyelet |

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Version »B«

- | | |
|--|---|
| 1. Racking indicator | 14. Lowering levers |
| 2. Sinkers | 15. Racking lever |
| 3. Row-counter | 16. Front bed with 179 steel
needle channels |
| 4. Handle | 17. Latch needles |
| 5. Cone | 18. Sinker levers |
| 6. Tension arm | 19. Returning keys |
| 7. Lever of tension arm | 20. Brushes |
| 8. Tension regulator | 21. Stitch size dial |
| 9. Yarn-guide | 22. Basic pattern selector |
| 10. Feeding eyelet | 23. Lower main rail |
| 11. Lock | 24. Upper main rail |
| 12. Fixing bolts | |
| 13. Position lever to adjust
the beds | |

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HOW TO SET UP THE MACHINE

Unpack all parts and put them on a table.

Please keep the packing as well as the box and store in a dry place. You may need them again.

SINGLE BED MACHINE (Version "A")

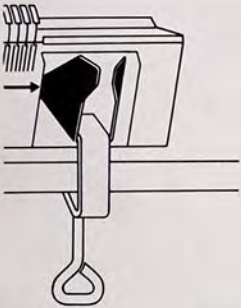


Fig. 1



Fig. 2

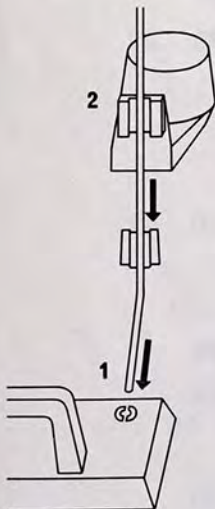


Fig. 3

1. Place bed close to table edge and fix with clamps, fig. 1. If you have a special PASSAP stand use the winged nuts packed in a small bag. The instructions for fixing the nuts is printed on top of this bag.
2. Slide lock into main rails, fig. 2.
3. Insert mast of yarn-guide into the hole at lock and fix cone-holder Fig. 3.
4. Fit row-counter into centre slot at back of bed, fig. 4. There are three slots for placing the row-counter according to which part of the machine is being used.
5. Place feeding eyelet into its socket on lock, fig. 5.

OIL YOUR MACHINE ACCORDING TO SPECIAL INSTRUCTIONS.
NOW IT IS READY FOR USE.

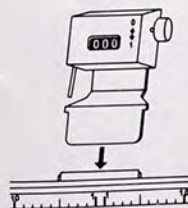


Fig. 4

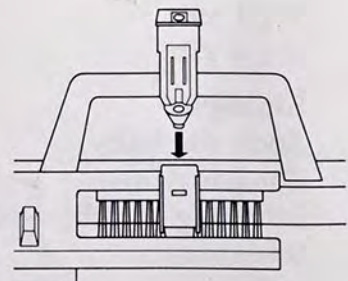


Fig. 5

DOUBLE BED MACHINE (Version "B")



Fig. 6

With version "B" we define both beds as "back bed" and "front bed".

You recognise the back bed by the stitch scale and the pads underneath the chassis.

You recognise the front bed by the two holders and the racking lever at left underneath the chassis.

You recognise the back lock by its handle. The front lock has no handle.

When setting up the machine you first fix the back bed as explained on page 6. The back bed is version "A". Then slide on the back lock.

Now proceed as follows :

6. Fit brackets of front bed into supports of back bed above clamps, let front bed slide back, then push upwards until it engages in upper position (working position), fig. 6.
7. Insert fixing bolts right and left into openings provided at back bed, fig. 7.
8. Bring racking lever into position, fig. 8 : press slightly backwards, then move to left until catch engages as shown in fig. 9. Now move lever twice to left until indicator points to third racking position (fig. 8).
9. Slide front lock onto main rails and place it in front of back lock until lock connection catches, fig. 10.

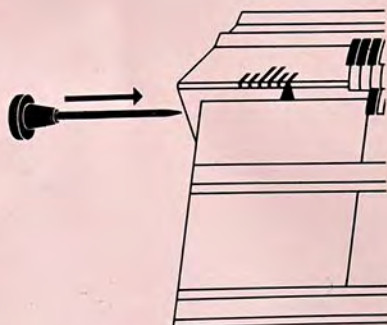


Fig. 7

OIL YOUR MACHINE ACCORDING TO SPECIAL INSTRUCTIONS.
NOW IT IS READY FOR USE.

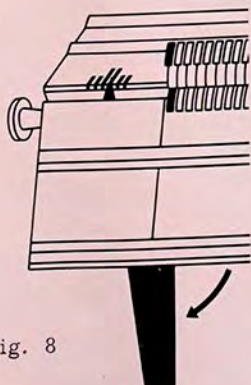


Fig. 8



Fig. 9

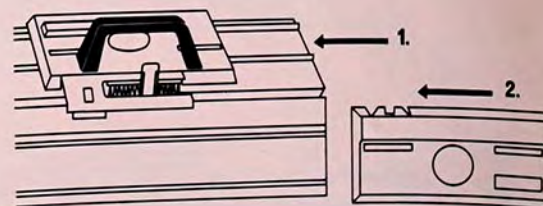
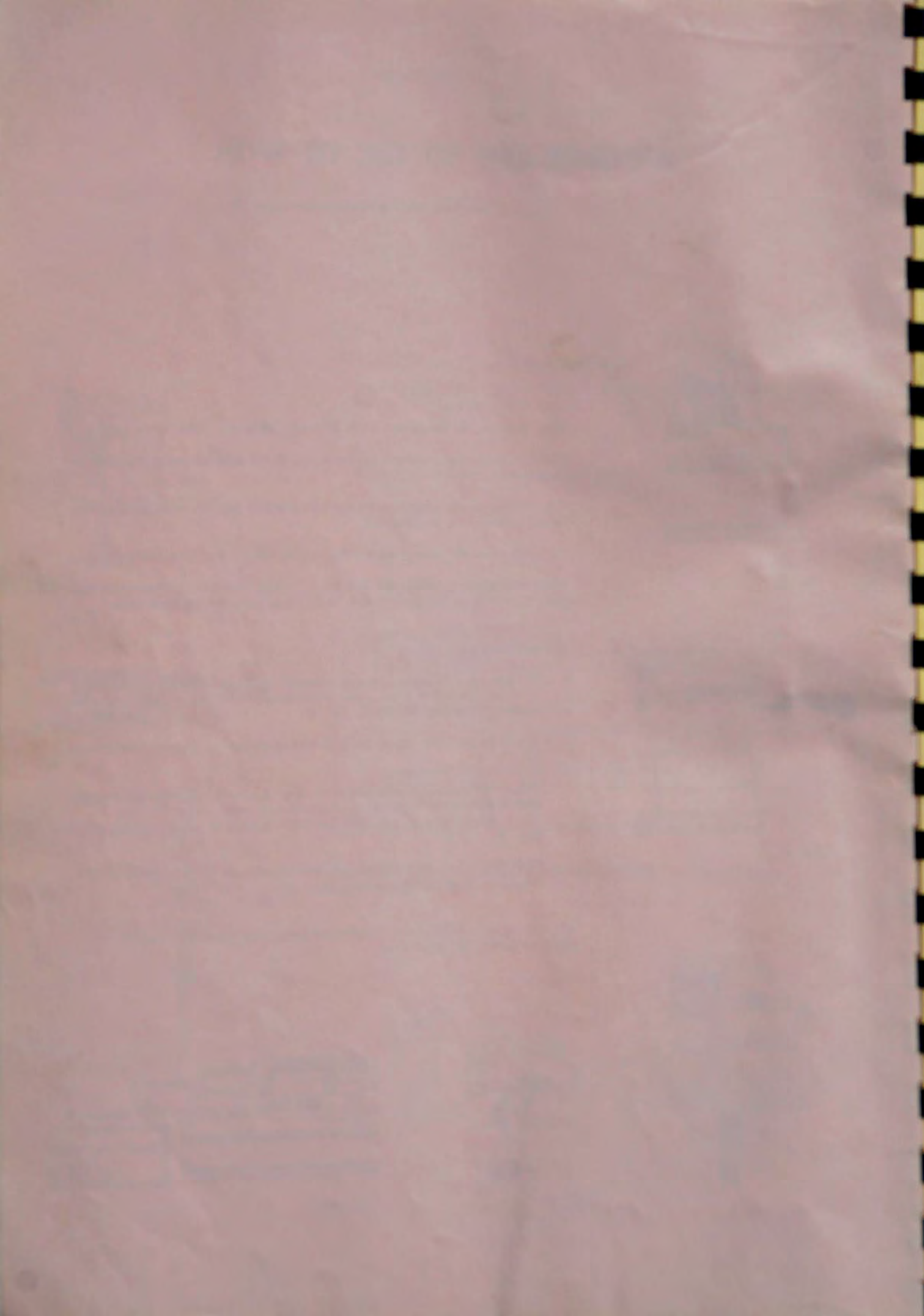


Fig. 10



Important hints to be read before
starting to use the knitting machine

Supplement to the instruction book

1. First of all : oil the machine

Move locks to the extreme right and put all the needles and sinkers in Working-Position.

Oil rails and needle feet by help of a brush or a soft cloth (see prescriptions for taking care of the machine).

Important: Locks must never be oiled

Set both pattern selectors at N and both stitch size dials at 8. Then move lock 20 to 30 times across the needles, from one end to the other and in an even rhythm, until oil is spread out evenly.

Attention: Be sure that you have passed over all working needles before returning the lock. Do not push too hastily, otherwise the empty needles may start floating and jamming the lock.

Result: Easy functioning of all movable parts.

2. Wind the bobbins evenly (see instruction book, page 22)

We wish to point out again that regular waxing and regular winding are absolutely necessary (see drawings hereafter).



wrong



right

Result: Smoothly running yarn and nice texture.

3. How to adjust the tension arm and the tension discs

To adjust the yarn-tension properly you need both, tension discs and tension arm. The tension discs brake the running in yarn, the tension arm pulls back the superfluous yarn.

Low numbers: weak braking, resp. weak pulling back of yarn.

High numbers: strong braking, resp. strong pulling back of yarn.

a) How to adjust for single bed knitting- for all wools.

At first set tension arm backwards, i. e. at 8 or 10. Then put tension discs at approx. 4 1/2 or 5 1/2.

Now alter the setting of the tension discs, until the tension arm remains almost horizontally after yarn has been pulled back behind the mast.

Result: Nice and even texture.

b) How to adjust for double bed knitting - for all wools.

Set tension arm at 1 or 3. Then adjust the tension discs accordingly, until the tension arm remains almost horizontally after yarn has been pulled back behind the mast.

Result: Easy movement of lock.

Instructed him to be ready before
starting to use the sewing machine.

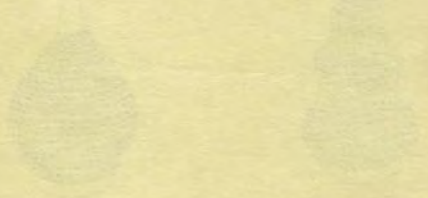
Department to the instruction book.

When I sit on the machine
I have to be in the correct position and not all the needles and stakers
in the machine.

On the 1st day of the month of March or a soft cloth (see
the instruction book for the correct care of the machine).
Important: The machine must be kept clean.
The machine must be kept clean and the needles must be changed
often. The machine must be kept clean and the needles must be changed
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When the machine is not working properly, it is necessary to check
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Important hints to be read before
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Supplement to the instruction book

1. First of all : oil the machine
Move locks to the extreme right and put all the needles and sinkers in Working-Position.
Oil rails and needle feet by help of a brush or a soft cloth (see prescriptions for taking care of the machine).
Important: Locks must never be oiled
Set both pattern selectors at N and both stitch size dials at 8. Then move lock 20 to 30 times across the needles, from one end to the other and in an even rhythm, until oil is spread out evenly.
Attention: Be sure that you have passed over all working needles before returning the lock. Do not push too hastily, otherwise the empty needles may start floating and jamming the lock.
Result: Easy functioning of all movable parts.
2. Wind the bobbins evenly (see instruction book, page 22)
We wish to point out again that regular waxing and regular winding are absolutely necessary (see drawings hereafter).



wrong



right

- Result: Smoothly running yarn and nice texture.
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To adjust the yarn-tension properly you need both, tension discs and tension arm. The tension discs brake the running in yarn, the tension arm pulls back the superfluous yarn.
Low numbers: weak braking, resp. weak pulling back of yarn.
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 - a) How to adjust for single bed knitting- for all wools.
At first set tension arm backwards, i. e. at 8 or 10. Then put tension discs at approx. 4 1/2 or 5 1/2.
Now alter the setting of the tension discs, until the tension arm remains almost horizontally after yarn has been pulled back behind the mast.
Result: Nice and even texture.
 - b) How to adjust for double bed knitting - for all wools.
Set tension arm at 1 or 3. Then adjust the tension discs accordingly, until the tension arm remains almost horizontally after yarn has been pulled back behind the mast.
Result: Easy movement of lock.

OPERATING DETAILS

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SINGLE BED MACHINE (Version "A")

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SINGLE BED MACHINE (Version "A")

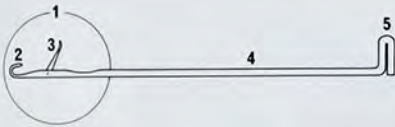


Fig. 11

THE BED

It consists of five main parts : the needle bed, latch needles, sinkers, row-counter and stitch scale

The needle bed

It is made of 179 steel needle channels, and forms one solid unit with the chassis.

The latch needles, fig. 11 to 13

Each needle channel carries a latch needle. The latch needle consists of three parts, fig. 11 : the needle head (in the circle 1) with hook 2 and latch 3, the needle shaft 4, the needle foot 5.

The needle is operated by the alternate movement of the lock and forms the stitch as shown in fig. 12 / 1 - 7.

Important ! Do not return lock before completing the previous row in full.



Fig. 12

The latch needle has four basic positions, fig. 13

- 0 = Neutral-position. Needle foot at lower bed rail, needle is completely out of action.
- 1 = Working-position. Needle foot in lower third of needle bed, needle head flush with upper edge of bed. After having cast on, the stitch hangs in the hook of the needle head.
- 2 = Rest-position. Needle foot at upper bed rail, needle head rising far above upper edge of bed, stitch on needle shaft. The needle is temporarily out of action.
- 3 = Yarn-receiving -position. Needle foot in upper third of needle bed, needle head open and rising just above upper edge of bed, needle underneath open latch. The yarn-receiving-position serves as crossing from rest-position into working-position.

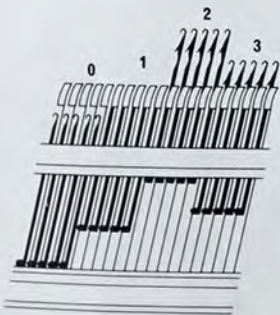


Fig. 13



Fig. 14



Fig. 14



Fig. 14

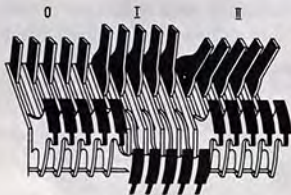


Fig. 15

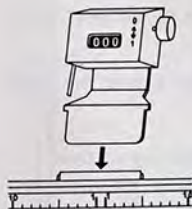


Fig. 16

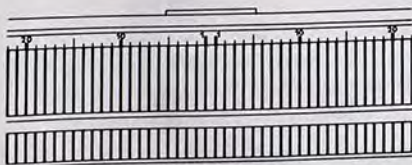


Fig. 17

The sinkers, fig. 14 and 15

The sinkers movable by their levers are placed in the upper part of the needle bed. They have two functions :

1. To release the old stitch at the moment when the new stitch is formed - due to their alternate up and down movement.
2. To keep the new stitch in position whilst the needle slides backwards - when they are in their lower position.

Each sinker works separately during knitting, because the lock moves the levers one after the other.

The sinker has three basic positions, fig. 14 and 15

0 = Neutral-position. The lever is pushed in. The sinker is in upper position above the needle bed.

You have to press in the lever to put the sinker into neutral-position.

I = Working-position. The lever stands erect. The sinker is lowered around needle head.

If you wish to put the sinker from neutral-position into working-position just press forwards the lever and then push back immediately. In this position the lever now stands higher than the levers in neutral-position.

II = Rest-position. The lever slants forwards. The sinker is in upper position (same as when in neutral). It is temporarily out of work.

The rest-position is used for all operations where needle and stitch must be free, for instance decreasing, casting off, racking patterns etc.

A slight forward pressure on the lever is enough to move it from working-position into rest-position. When the lock sinker levers are in upper position (pos. II) the sinkers are automatically put into rest-position during the lock movement.

The row-counter, fig. 16

The row-counter works with a three-way action.

To add numbers : Push metal trigger. This is done automatically when the lock is moved from one side to the other side of the machine, because then the trigger is operated by the trip wire at lock.

To deduct numbers : Turn red wheel downwards, number by number, in direction " -1 ".

Use it always after free move of lock or after having unravelled rows.

To set to 000 : Turn red wheel upwards in direction " 0 ".

Abbreviation for row-counter : "RC", used in model and stitch pattern descriptions.

The stitch scale, fig. 17

It is fixed to the lower main rail of bed (version "A"). Each mark corresponds to a needle. It is numbered from the central point of the needle bed, to left and right from 1 to 90.

It allows for counting stitches and for centring the knitting.

The lock, fig. 18

Although they form one unit we look separately at the lock and at the yarn-guide.

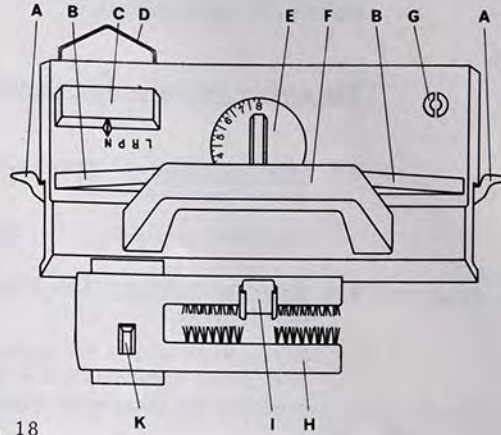


Fig. 18

The lock, fig. 18 slides in the main rails and moves needles and sinkers when knitting. It is made up of various operating parts the use of which is explained in fig. 18 in the sequence of their lettering.

- A - Sinker levers - they are situated at the sides of the lock and serve to put sinkers in rest-position for racking patterns. They are only used for double bed knitting and their function is explained on the pink pages.
- B - Returning keys - by pressing these keys the needles will automatically be brought back from rest-position into working-position.
It is always the returning key next to the knitting which returns the needles.
I.e. : press and hold down left returning key if you move the lock from right to left,
press and hold down right returning key if you move the lock from left to right.

The returning keys bring all needles back into working-position. In case you wish to return into working-position certain needles or certain groups of needles only (heel knitting, short rows) you cannot use the returning keys. In these cases you have to push the needles back into yarn-receiving-position.

- C - Pattern selector - to choose the basic patterns. You move it sideways. For single bed knitting only positions N and L are used. The use of positions P and R is explained on the pink pages.

N = normal knitting

L = free move of lock. This position allows you to move the lock across the needles whilst no knitting is done, no matter whether there are stitches hanging in the needle heads or not.

N	P	R	L
stocking stitch K/K	fisherman's rib	tubular	free move

Fig. 19

The four positions of the pattern selector are explained on the diagram under the handle, fig. 19.

- D - Trip wire - for operating the row-counter. Each time the lock passes the row-counter the trip wire pushes the trigger backwards thus adding a number on the row-counter.
- E - Stitch size dial - turn sideways for quarter, half and full numbers. It is numbered from 1 to 8 and allows for a total of 29 different adjustments. The numbers, however, do not correspond to the numbering of hand knitting needles.

For example :

fine baby wool 1 to 3
 3 ply pullover wool 2 to 4
 4 ply pullover wool 3 to 5
 triple-and double -
 knitting wool 5 to 8

Abbreviation for stitch size dial : "dial", used in model and stitch pattern descriptions.

F - Lock handle

G - Socket (hole) - to fix the yarn-guide

H - Brush support - holding two pairs of brushes to open and keep open latches when knitting.

I - Socket for feeding eyelet - fixed stationary to brush support. The feeding eyelet, which places the yarn in the working needles, is to be set into this socket.

K - Lock connection - to connect back and front lock. To be used only for double bed knitting.

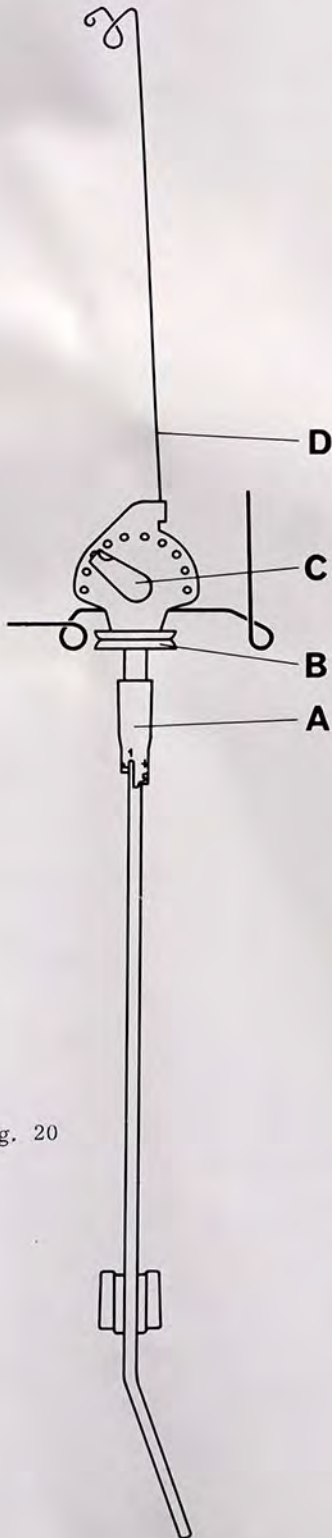


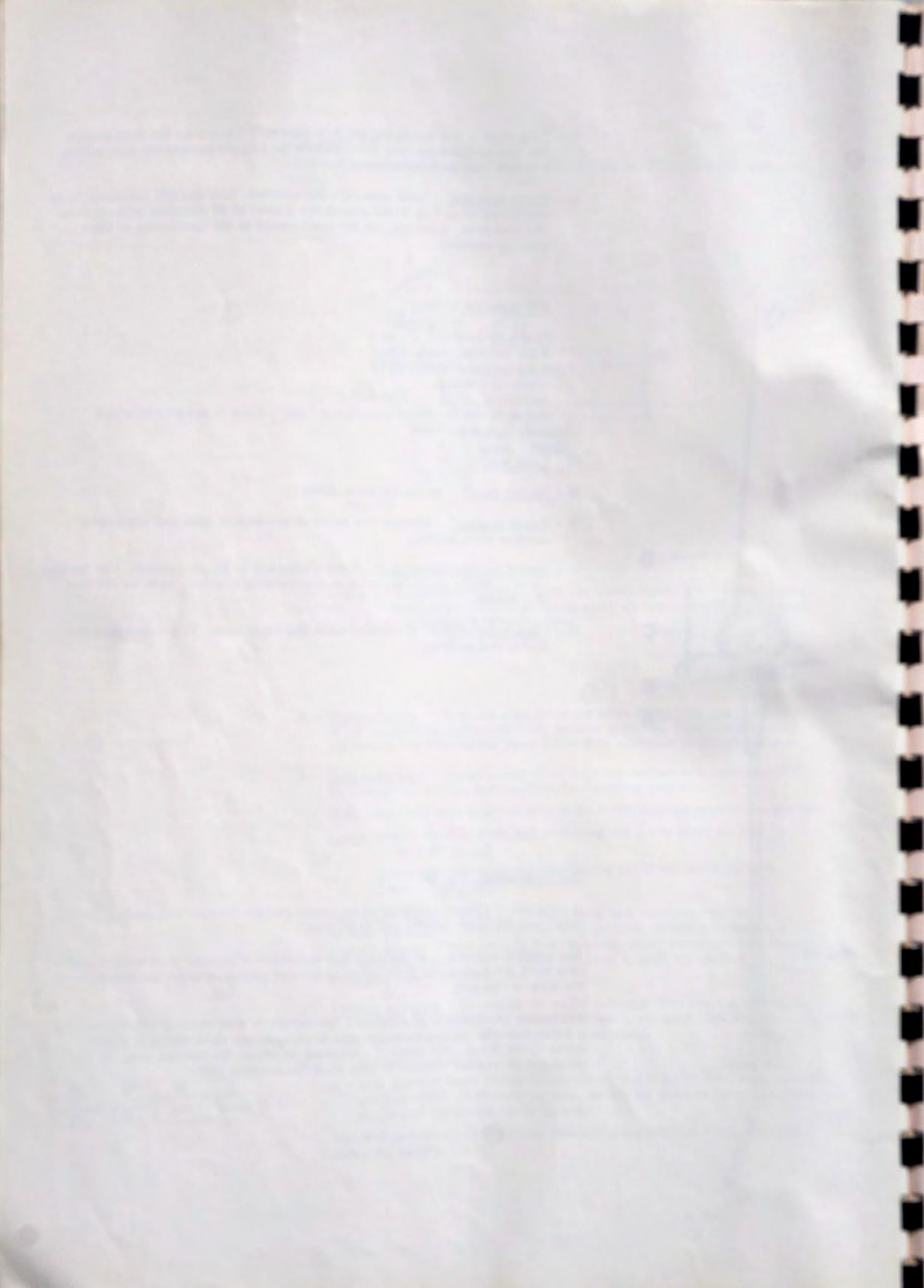
Fig. 20

The yarn-guide, fig. 20

It consists of a mast carrying at its upper end the tension regulators. At its lower end the cone holder has to be fixed.

The tension regulators of the yarn has to ensure a regular yarn supply and to take back the surplus of yarn which is always produced when the direction of the lock is changed.

There are two sorts of regulators : the handle A with various notches and the tension discs B, giving more or less braking to the yarn whilst it passes between the discs. The lever C, allowing to adjust the tension arm, D to stronger or weaker tension to take back the surplus yarn.



OPERATING DETAILS (continued)

THE DOUBLE BED MACHINE (Version "B")

OPERATING DETAILS (continued)

THE DOUBLE BED MACHINE (Version "B")

The double bed machine has a second bed defined "front bed". This bed can be fixed to the back bed, it can, however, be removed any time.

This means that the double bed machine can be used as single bed as well as double bed.

The beds and locks of the double bed machine have the following additional functions :

Position lever for adjustment of beds, fig. 21 and 22

With regard to the back bed the front bed can be put into two different positions :

Front sinkers opposite of back needles, fig. 21

Front sinkers opposite of back sinkers, fig. 22



Fig. 21

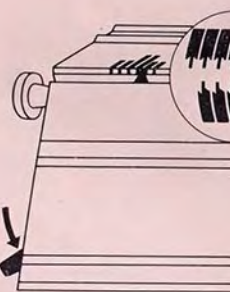


Fig. 22

Due to these two positions of the beds, the needles of one bed can always be put in an alternate position with regard to the needles of the other bed, no matter whether you knit with every needle in working-position, fig. 21. or whether you use every second needle only (1 : 1 rib), fig. 22.

Lever upwards - racking indicator points on a mark, fig. 21. Knitting with all needles.

Lever downwards - racking indicator points between two marks, fig. 22. Knitting with every other needle.

Before adjusting the position levers press slightly backwards.

The racking lever, fig. 23

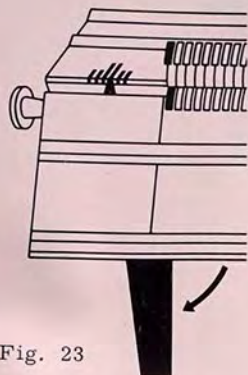


Fig. 23

With regard to the back bed - the front bed can be racked (= displaced) over 5 positions to knit "racking patterns".

First of all you bring the racking lever (at left underneath the front bed) in the downward position, then you can move it either to the left or to the right to effect racking of front bed in either direction. The indicator at left marks the respective position of the front bed, fig. 23.

Before moving the racking lever press it slightly backwards to disengage it.

If ever you repack your machine, you must return the racking lever completely underneath the front bed.

The lowering lever, fig. 24

They are situated at right and left of lower edge of front bed. To lower the front bed : push both levers inwards holding bed at the same time. It slides automatically into the lower position. When pushing the bed upwards the lowering levers return automatically into their original position.

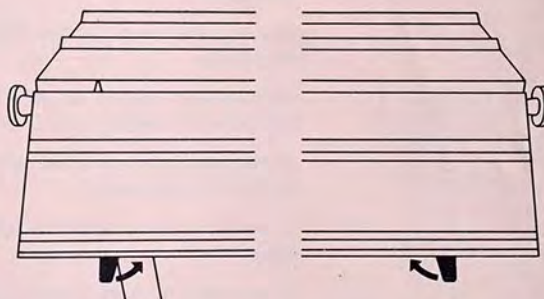


Fig. 24

The front lock, fig. 25

The front lock corresponds with the back lock. It has, however, no handle, no yarn-guide and no brush support. Additionally it is furnished with a slot for the lock connection, fig. 25/L.

Certain working parts of both locks have to fulfill further operations than those explained on the white pages for the single bed machine.

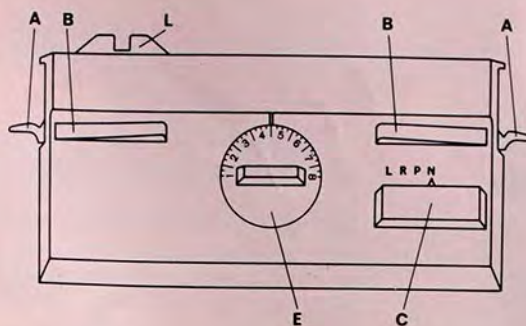


Fig. 25

- A - The lock sinker levers - It has been mentioned before, that the lock sinker levers are only to be used for double bed knitting. Their function is to lift the sinkers in rest-position to disengage the needle heads in order to have the stitches free for racking. When racking the front bed the stitches have to give way.

With machines, newly delivered, the lock sinker levers are back in position I. To put them into action : lift and push upwards in direction of upper bed edge until they are in position II. To put them back : lift and place downwards until they are in position I again.

The lock sinker lever away from the knitting brings the sinkers into rest-position.

If you have to move the lock from right to left - you put the right lever upwards.

If you have to move the lock from left to right - you put the left lever upwards.

The sinker levers of both locks have always to be put in upwards position in order to bring the sinkers on both beds in rest-position.

If racking is done after every row, both sinker levers on both locks have to be in position II.

If racking is done every second row only, one sinker lever on each lock has to be in position II.

If racking is done after a certain row only, one sinker lever on each lock has to be put in position II before this row and in position I again after this row.

The normal position is the lower position (I). The upper position (II) is used for racking patterns only and that is always specially mentioned in the respective description.

- C - The pattern selectors - It has been mentioned before that positions P and R can not be used for single bed knitting. For the double bed, however all four positions are used :

N = normal knitting
 P = fisherman's rib
 R = tubular
 L = free move

In our model and pattern descriptions the positions of the back and front pattern selector are designed by two letters one placed above the other.

Example : $\frac{N}{P}$

N = back selector
 P = front selector

ACCESSORIES AND THEIR USE

ACCESSORIES

ACCESSORIES AND THEIR USE

The following accessories are delivered with PASSAP-COMBI

- the cone winder
- the pattern ruler
- the double ended transfer tool
- the green tool
- the red tool
- the black tool
- the grey tool
- the decker comb
- the dust brush
- the bottle of oil
- the paraffin wax
- two clamps

The use of the cone winder will be explained in chapter IV, the use of the clamps has been explained in chapter I.

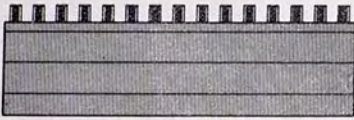


Fig. 26

Pattern ruler, fig. 26

It serves to arrange the needles in groups, the toothed edge is for 1 : 1 division (every second needle in work). The smooth edge serves to bring all needles in work.



Fig. 27

Double ended transfer tool, fig. 27

At each end 1 decker needle. It serves to transfer stitches from one bed to the other.

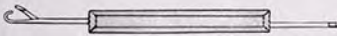


Fig. 28

Green tool, fig. 28

At one end a latch needle, at the other a decker needle. The end with the decker needle serves to transfer stitches onto another needle. The end with the latch needle serves to decrease stitches by hand.

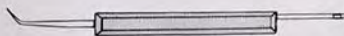


Fig. 29

Red tool, fig. 29

At one end an angled point, at the other a decker needle. The angled point serves for various operations, amongst them for opening the latches. The decker needle is used to transfer stitches (just as the green tool).

Black tool, fig. 30



Fig. 30

At one end a needle pusher, at the other 3 decker needles.

The 3 decker end is used for fashion decreasing, when the three edge stitches should be transferred to the inside. The needle pusher is used to put a single needle in another position.

Grey tool, fig. 31

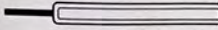


Fig. 31

At one end a rod, at the other a sinker pusher.

The rod end is used to remove the protecting rail when exchanging a needle. The sinker pusher is used to put a single sinker from working into neutral-position.

Decker comb, fig. 32



Fig. 32

It serves mainly to transfer stitches when passing from stocking-stitch to tubular for instance for a sock.

It can also be used as a stitch holder, when a certain group of needles has to be put in rest-position, for instance for a pocket opening.

Dust-brush, fig. 33



Fig. 33

It serves to remove dust and wool fluff from the needle beds and from the sinkers.



Fig. 34

Bottle of oil, fig. 34

It contains special PASSAP-BELLODOR-OIL for lubricating the various lock parts, the needle feet and the main rails. You will have a special instruction for this procedure.

Bag with paraffin wax

For soft knitting you should wax the wool as per instructions in chapter IV.

PREPARATION FOR KNITTING

HOW TO WIND THE YARN, fig. 35

Most hand knitting yarns on the market being for sale either in balls or in hanks the wool must be wound on cones for knitting on the machine. For this reason a cone winder is delivered with the PASSAP-COMBI.

For better and easier knitting you should wax the yarn when winding the wool by simply letting it glide across a piece of paraffin you hold in the hand. The cone winder has to be fixed at the table edge. The wool will be wound on cones, fig. 35, as follows :

Put ball on the floor (or hank on a hasp). From inside the ball take beginning of yarn, pull it across the big guiding eyelet, place it in the opening of the cone holder and put the cone on. This way the beginning of the yarn is well held. Hold thread coming from the ball in your left hand, and letting it glide across the paraffin wax with your right hand turn handle of cone winder regularly in direction of arrow. In doing so move your left hand smoothly up and down to place yarn evenly on the cone. This up and down movement is limited by the guiding eyelet. Don't pull yarn too tight but still tight enough. A cone can take appr. two ounces of medium and even three ounces of fine wool.

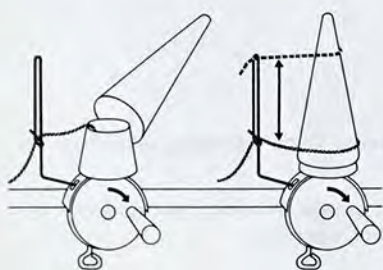


Fig. 35

HOW TO THREAD THE YARN, fig. 36 and 37

Put mast of yarn guide, which carries the yarn tensioner at its upper end, into the socket at lock, fix cone and put on a cone full of yarn.

Behind the mast pick up loose end of yarn with the right hand and take rest of yarn in the left. Then thread as shown in fig. 36/1 to 5, guiding the yarn with the right hand !

- 1 - place the yarn into back eyelet (from below upwards and to the right downwards).
- 2 - then pass it between the tension discs (from back and right towards you). The yarn must run between the mast and the little peg, so that it cannot escape.

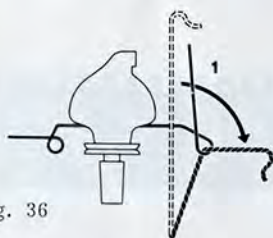


Fig. 36

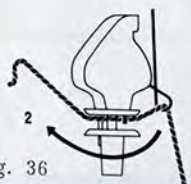


Fig. 36

How to start a new cone ?

Please ensure from time to time, that there is still enough yarn on the old cone. Before the old cone is finished, knit one more complete row, cut yarn appr. 4 inches away from knitting and remove the old cone. (The oddment of wool which might still be left on the cone can be used later on to make the seams). Put on new cone, thread the yarn as shown in fig. 36/1 to 5 and pull end down between the beds. When continuing knitting hold this yarn end until the needles have properly knitted.

Once the knitting is finished darn loose ends at outside edges.

It may be that you notice to late that the cone holds no more yarn. In such a case you can make a knot with the ends of the old and the new cone - but if possible above the feeding eyelet. The machine takes knots, although it does not look nice in the knitting. We therefore would advise, unravel the row with the knot and pull the part of yarn containing the knot down between the beds. Then you can continue knitting.

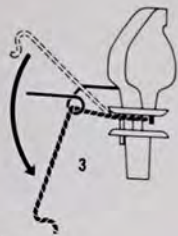


Fig. 36

- 3 - from above and left place yarn downwards into the front eyelet.
- 4 - now bend tension arm with left hand and place yarn from the left into the eyelet at tension arm.
- 5 - remove feeding eyelet from its socket, pass yarn through and replace feeding eyelet. Underneath the feeding eyelet pull out appr. 20 inches of yarn.

Look at fig. 37 : that's how the yarn should be threaded !
Now release yarn.

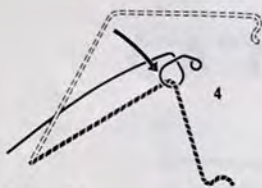


Fig. 36

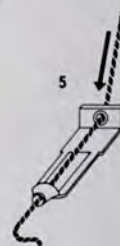


Fig. 36

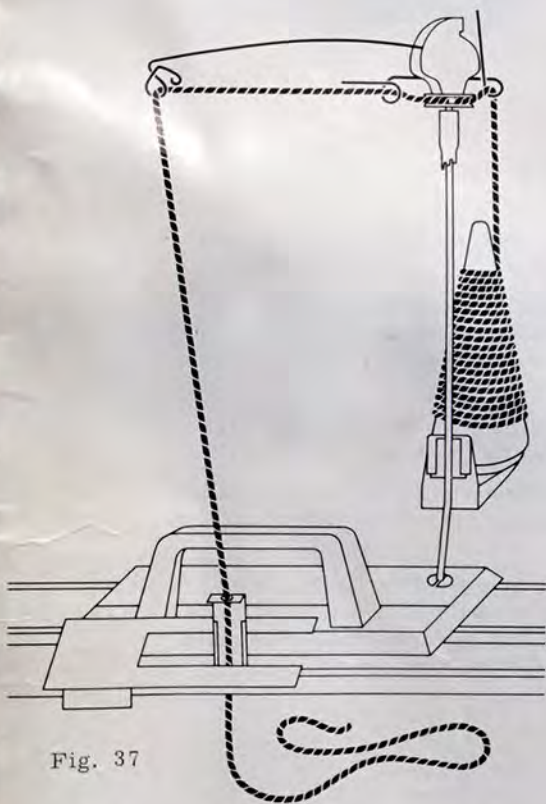


Fig. 37

HOW TO ADJUST THE YARN TENSION, fig. 38

The tension arm has always to be adjusted first : holding yarn with the left hand underneath the back eyelet (behind the mast), pick up yarn end with the right hand underneath the machine, then pull it down until the tension arm is in a horizontal position.

The tension arm has to move up freely, it must, however, not fly up. If the upwards pull is too strong, set lever of tension arm at a lower number (direction " - "). If the upwards pull is too weak, (the tension arm rises too slowly) set lever at a higher number (direction " + "). You find the correct adjustment by testing.

You adjust the tension discs only after having adjusted the tension arm : clamp yarn between feeding eyelet and socket, then pull yarn down behind the mast until tension arm is in a horizontal position.

Let yarn go behind the mast, then test as follows :

If the upwards pull of the tension arm is too strong, increase the braking of the discs, i. e. set tension regulator at a higher number (lift regulator, turn it in direction " + " and let go).

If the tension arm moves too slowly or not at all, decrease the braking of the discs, i. e. set tension regulator at a lower number (lift regulator, turn it in direction " - " and let go).

After each new setting pull down yarn behind the mast and test the adjustment.

The adjustment is correct as soon as the tension arm moves freely and steadily from the horizontal position upwards.

The adjustment of the yarn tension differs according to thickness and elasticity of the yarn. For a heavy, unelastic wool the lever of the tension arm must be set at a high number and the regulator of the discs at a lower number. For a fine, elastic wool the lever of the tension arm must be set at a lower number and the regulator of the discs at a higher number.

For example :

lever of tension arm at 4	or	regulator of discs at 4 1/2
lever of tension arm at 1	or	regulator of discs at 5 1/2
lever of tension arm at 3 1/2	or	regulator of discs at 2

The tension arm rises upwards into vertical position, if knitting is interrupted (for increasing, decreasing etc). You have to pull down the yarn behind the mast to bring it in the horizontal position again, before continuing knitting.

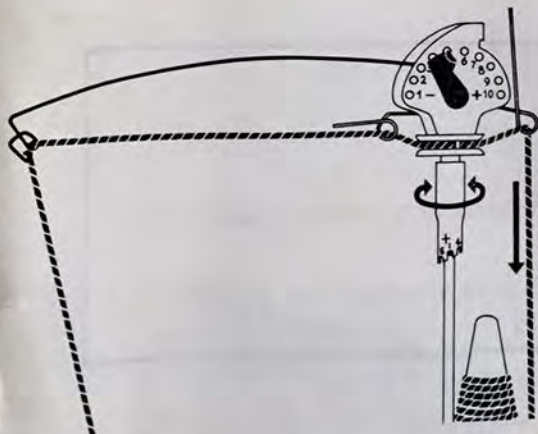


Fig. 38

SINGLE BED KNITTING

(Version "A,,")

You are surely anxious to start knitting now, that you have prepared your machine correctly and made its acquaintance.

We suggest, that you knit at first a simple sweater with long sleeves and a V-neck before attacking the more intricate patterns and shapes of the higher art of knitting. This way is the easiest for you to get to know your machine properly.

We ask the owners of the double bed machine also to start with this first sweater, i. e. to knit on single bed, which means "back bed" for them.

The sweater is knitted in stocking stitch throughout with double hem at lower edge and sleeves. You will practise beforehand all manipulations necessary for this sweater by knitting small samples.

You will learn casting on for stocking stitch, hem knitting, increasing, decreasing, putting stitches (resp. needles) in rest-position for a V-neck and casting off. The following manipulations will be furthermore explained in this chapter : buttonhole, short rows and a baby sock.

Please observe these rules !

Tension arm : Don't forget to pull down the yarn behind the mast before you continue knitting after an interruption.

Sinkers : You should have one sinker less in work than needles. Every sinker should work between two needles.

Row-counter : Don't forget to put it at 000 before starting a new part when lock is at right hand side.

I CASTING ON AND STOCKING STITCH, on single bed, fig. 39

Wind the wool, thread the yarn and adjust the yarn tension as explained in chapter IV. Put row-counter at 000.

Test square :

Lock setting

Pattern selector at N, dial at 3 to 4 1/2 according to wool.

Needles

Put 30 needles in rest-position, open latches. All other needles in neutral-position, fig. 40.

Sinkers

Put one sinker less than needles in rest-position, leave the rest of sinkers in neutral-position.

Lock at right. Pull out sufficient length of yarn below the feeding eyelet, make a loop with a slip knot round the first needle at left and push the loop behind the open latch. Now wind the yarn fairly loosely around each successive needle in turn, in an anticlockwise direction, fig. 41.

Pull down yarn behind the mast, press and hold returning key and move lock carefully to the other side. As soon as the lock has passed the edge needle at left, let go returning key and continue knitting i. e. move the lock, in even rhythm, to the right, to the left, to the right and so on. Knit 30 rows this way. Remove feeding eyelet from its socket at lock and move lock twice without knitting to release knitting.

If during the first few rows, the movement of the lock is too heavy set dial at a lower number. If you think, that the knitting looks somewhat tight, set dial at a higher number. You can adjust the stitch size looser or tighter as you wish.

Another method to cast on. Knit the first row without using the returning key : after having cast on push needles back into yarn receiving-position by hand taking care that all stitches rest behind the open latches. Then you can pass the lock as explained before.

When knitting this test square you can also practise the use of the row-counter.

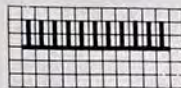


Fig. 39



Fig. 40

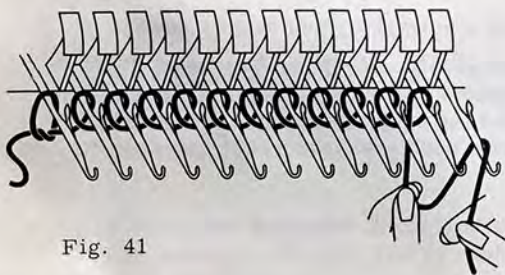


Fig. 41

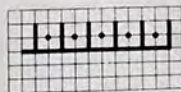


Fig. 42

II HEM KNITTING, fig. 42 to 45

The usual rib 1 - purl 1 welts can only be knitted on the double bed machine. On single bed we make a double hem instead.

You knit stocking stitch in 1 : 1 division. Put dial 1 to 2 numbers lower than for the rest of the sweater. This way you will have a nice, close and elastic welt.

Test square :

Lock at right, pattern selector at N.

Advance every second needle (1 : 1 division) in rest-position, fig. 42. Put the corresponding sinkers also in rest-position (all of them, not in 1 : 1 division). Cast on as for stocking stitch, but winding the yarn around every other needle only. As your hem should be 15 rows high, knit twice this amount i. e. 30 rows. Lock at right.

Put the intermediate empty needles in working-position. To turn up hem, pick up the loops of the cast on edge with the single decker of the red tool, and, with a twist, place them into the open hooks of the empty needles, fig. 43.

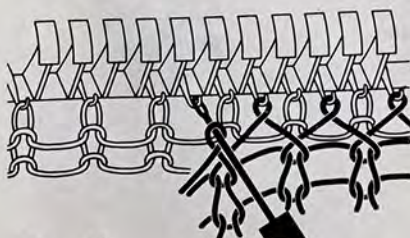


Fig. 43

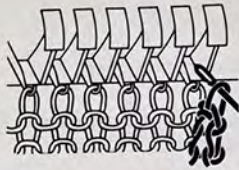


Fig. 44

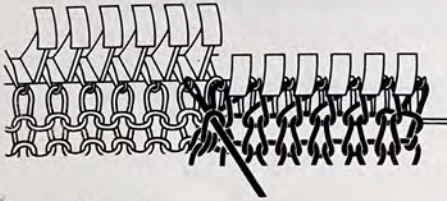


Fig. 45

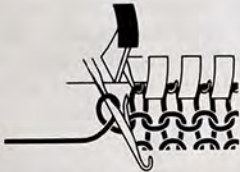


Fig. 46

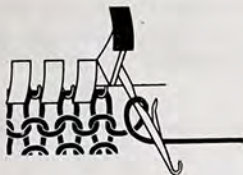


Fig. 47



Fig. 48



Fig. 49

For certain garments it is nice to knit the welt over every needle. Cast on as for stocking stitch (fig. 41). Knit twice the height of welt, then pick up loops of cast edge according to fig. 44. You then will have two stitches at every needle, fig. 45.

III INCREASING

Make a new test square with 40 needles in working and knit 41 rows.

- a) Increasing one stitch at left. Lock at left. At left put one needle in rest-position and wind yarn around according to fig. 46, taking care that the loop is placed behind the open latch. Put corresponding sinker in rest-position. Return new needle to yarn receiving-pos. fig. 46 and move lock to right.
- b) Increasing one stitch at right. Lock at right. Increase one stitch at right the same way as you have done at left, fig. 47. Knit one row.
- c) Increasing several stitches. You can do it either at right or at left of knitting, always on the side where the lock is. Same procedure as for increasing one stitch, however put as many needles in working as stitches are required and wind the yarn around every single needle.

IV DECREASING

You may practise decreasing on the same test square, but you should beforehand, knit a few rows.

- a) Decreasing one stitch at right or at left. It does not matter where the lock is. Put edge sinker in neutral-position. With decker needle of red tool put edge stitch onto second needle. This needle holds now two stitches, put empty needle in neutral-position. Continue knitting.

Decreasing one stitch at left, fig. 48

Decreasing one stitch at right, fig. 49

- b) Fashion decreasing. At right and left, either at the same time, or in turns. Put edge sinker in neutral-position and the three following sinkers in rest-position.

With black tool transfer the three edge stitches inwards as shown in fig. 50/1 and 2. Put empty edge needle in neutral-position.

There is now one stitch each on the two first needles and two stitches on the third needle, fig. 50/3.

Continue knitting.

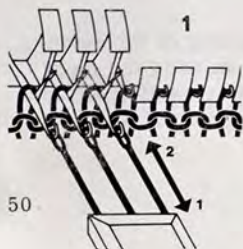


Fig. 50

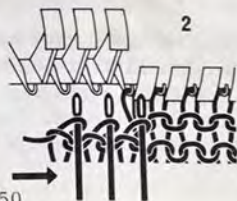


Fig. 50

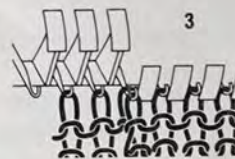


Fig. 50

- c) Decreasing several stitches. This can be done only at the side of knitting where the lock is. Fig. 51 shows decreasing several stitches at right. For left side decreasing the procedure is the same.

At first put as many sinkers in neutral-position as you want to decrease stitches.

1 and 2 With decker needle of red tool place first stitch onto second needle and empty needle in neutral-position.

3 and 4 Put both stitches behind open latch, place yarn by hand in the needle head and pull needle backwards. In doing so, both stitches move over closing needle head and get caught by the new stitch.

5 and 6 Place new stitch onto next needle and repeat procedure shown in fig. 51/3 and 4.

Continue working like this until the desired number of stitches has been decreased. Hang last stitch obtained on first needle still in working-position. This needle will now be the new edge stitch.

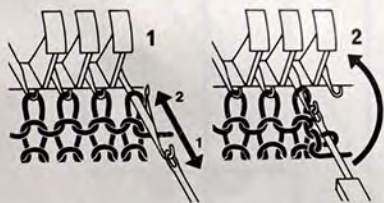


Fig. 51

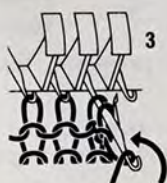


Fig. 51

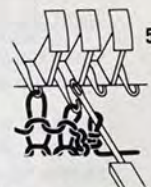
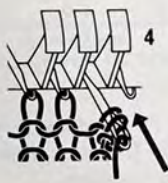
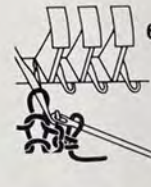


Fig. 51



V CASTING OFF

Once the knitting is finished, the stitches have to be cast off to remove work from machine.

The procedure is the same as for decreasing several stitches, according to the above explanation.

If many stitches should be cast off, we recommend not to put all sinkers at once in rest-position, but groupwise only. This way you avoid that the stitches may slip off the needles heads.

If a knitting ends with a point (for instance between neck opening and fashion decreasing), where there are at the end three stitches left only, place the two outside stitches onto the centre needle and cast off as per fig. 52.

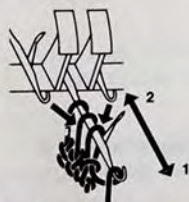


Fig. 52

VI STITCHES IN HOLDING POSITION - NEEDLES IN REST-POSITION

fig. 53/1 to 3.

Sometimes you want to leave alone certain groups of stitches, whilst other groups should be knitted (neck cuts, pocket openings, gussets etc.)

Our example : back opening for zipper

Having reached the necessary length for the beginning of the opening, put left half of needles in rest-position and continue knitting the right shoulder part with the right half. Finish this part by casting off and remove it from the machine. Then, with the left group of stitches knit left shoulder reversing shapings.

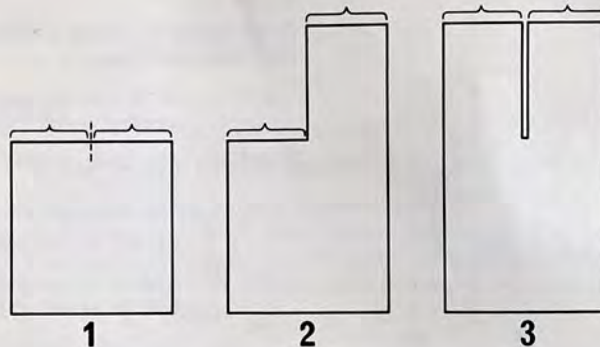


Fig. 53

Test square

Cast on 40 stitches and knit 30 rows. Let's presume, that the back opening should begin here.

Lock at right. At left put 20 needles in rest-position and the corresponding sinkers in neutral-position (for left shoulder). The stitches remain on the shafts of the rest-position needles.

Continuing knitting you will see, that 20 needles only at right are working. Knit 30 rows for right shoulder. Then cast off the 20 stitches and put needles and sinkers in neutral-position. Remove work from the machine.

Now knit with the needles still remaining on the machine. Lock at right. Put the corresponding sinkers in rest-position. Pull yarn down below the feeding eyelet, until the tension arm has regained its horizontal position. Press and hold down left returning key and move lock to left. Let key go and knit altogether 30 rows. Cast off all stitches and remove work from machine.

The knitting shows, in its upper part, two equal parts, both knitted straight. For a V-neck or a round neck for instance you would have decreased stitches at certain intervals.

Sometimes you have to bring back in working-position single needles or certain groups of needles only. For this you cannot use the returning key, which brings back to work all needles. You have to put these needles into yarn receiving-position by hand.

SECOND PART - YOU KNIT YOUR FIRST SWEATER fig. 54

It concerns a sweater in stocking stitch with V-neck, long sleeves with fashion decreasing and double hem.

We recommend to use a nice 3 ply botany wool (appr. 7 ounces).

If you follow the diagram with descriptions correctly the sweater should fit a 7 to 8 years old child.

Don't forget to thread the yarn and adjust the yarn tension.

The figures on the diagram are marked with I, II, III and V. Figur IV has been deleted because - according to our description method - it concerns a collar, which does not exist for this sweater.

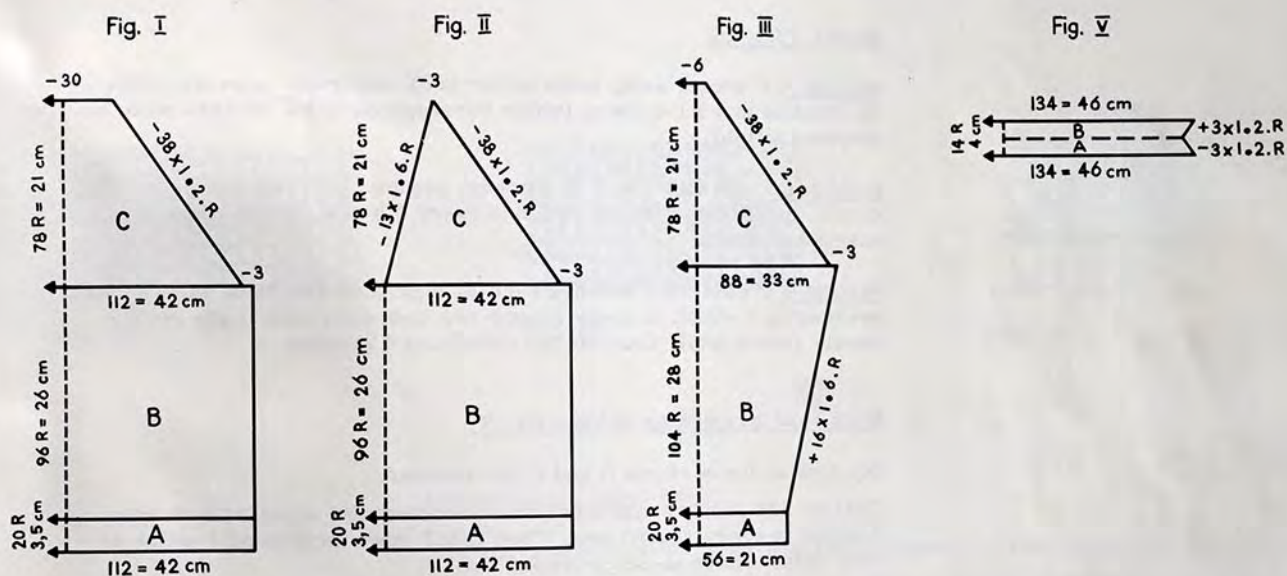


Fig. 54

Back - fig. I

Section A : double welt, see para II, page 25.

Dial at 3 to 3 1/2.

Cast on 56 stitches in 1 : 1 (which corresponds to 112 stitches when knitting stocking stitch).

Knit 40 rows, make hem.

Section B : set dial 1 to 1 1/2 numbers higher. Knit 96 rows stocking stitcl

Section C : shoulder. Cast off, for armhole, at right and left 3 stitches each, then decrease 1 stitch in every second row both ends with triple decker needle (black tool) Cast off the remaining 30 stitches.

Front - fig. II

Sections A and B : same as back up to beginning of neck cut.

Section C : right shoulder part with armhole and V-neck. At left put 56 needles in rest-position. Continue knitting at right, decreasing for neck and armhole as follows :

At edge of neck line decrease 1 stitch 13 times in every 6th row (use decker needle of red tool). At edge of armhole fashion decrease as for back. All stitches but two or three will be decreased in the 78th row. Cast off the remaining stitches.

At left put into yarn-receiving-pos. the 56 rest-position needles and knit left shoulder part with reversed shapings.

Sleeve - fig. III

Section A : double welt, same as for back and front, however, with 28 stitches in 1 : 1 division (which corresponds to 56 stitches when knitting stocking stitch).

Section B : set dial 1 to 1 1/2 numbers higher. Knit 104 rows stocking stitch, increasing 1 stitch 15 times every 6th row at both ends. You will have 88 stitches.

Section C : cast off 3 stitches each at right and left, then knit 78 rows decreasing 1 stitch in every second row both ends with triple decker needle (black tool) Cast off the remaining 6 stitches.

Neck band in stocking stitch - fig. V

Set lock as for sections B and C for sweater.

Cast on 134 stitches and knit 7 rows decreasing 1 stitch at both ends 3 times in every second row. Then knit 7 rows increasing 1 stitch at both ends 3 times in every second row.

Turn up cast on edge as for double hem, knit 1 row and cast off.

To make up

Pin out parts to size and press lightly, using hot iron over damp cloth. Press welts somewhat stronger.

Sew up side and sleeve seams and attach neck band, mitring edge in front.

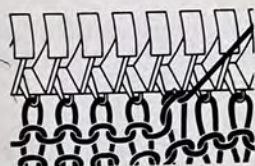


Fig. 55

How to unravel rows

It might be that, erroneously too many rows have been knitted. You can unravel them according to fig. 55.

Sinkers in rest-position (various groups in turns). Pull yarn gently but firmly until it becomes taut and the stitches of the previous row return in the needle heads (be careful - not behind the latches !). Keep in mind how many rows you have unravelled and set back row-counter accordingly.

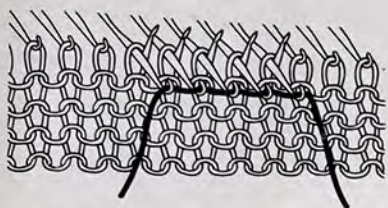


Fig. 56

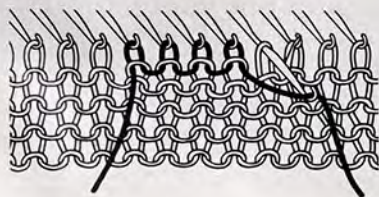


Fig. 57

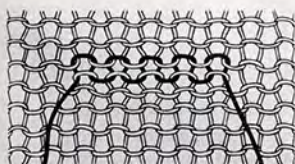


Fig. 58

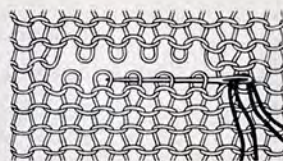


Fig. 59



Fig. 60

THIRD PART - SUNDRY

Buttonhole

Advance in yarn-receiving-pos. the number of needles necessary for the buttonhole. The stitches are behind the open latches. Place an oddment of wool, approx. 4 inches long over the open needles, fig. 56.

Now knit every stitch by hand : one after the other return each needle into working-position, fig. 57. Continue knitting.

The oddment of wool remains in the knitting, fig. 58.

After having finished knitting, remove odd wool leaving a number of open stitches. Pick up these stitches with a darning needle, fig. 59, then finish off with buttonhole stitch, fig. 60.

Graduations - short rows

You knit graduations to shape a garment (gusset, flared skirt, bonnet etc).

It is done by putting needles group by group into rest-position always knitting 2 rows with the remaining working needles in-between.

As soon as the desired number of needles has been put into rest-position, the needles have to be returned into yarn-receiving-pos. either all at once or also group by group to be knitted again.

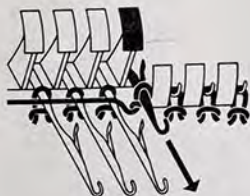


Fig. 61

Example :

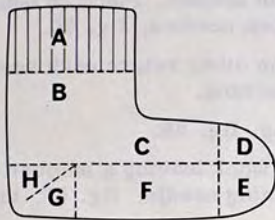
You have to knit a gusset of 24 stitches in 4 graduations.

Starting position lock at right. At left advance 5 needles (not 6!) in rest-position and put the corresponding sinkers into neutral-position. Knit 1 row. Now advance the 6th needle also in rest-position, fig. 61.

You bring the needles into rest-position in two steps, to avoid a hole in the knitting at the crossing from one step to another. Knit 1 row and repeat the procedure three times, until a total of 24 stitches is in rest-position. Lock at right.

To return all 24 needles into working position : put sinkers in rest-position press and hold down left returning key, knit 1 row, let go returning key and continue knitting.

BABY SOCK, fig. 62 and 63



knitted on single bed in one piece

Fig. 62

Follow diagram and descriptions as you did with the child's sweater.

- Size : Length of foot 4 to 6 inches
- Materials : Appr. 1 ounce medium wool for one pair.
- Adjustment : Dial 4, tension discs 5, tension arm 3.
These settings are only a recommendation.
You should make a test square for every yarn to see whether the adjustment is all right for your special kind of wool.
- Test square : 100 sts = 13", 100 rows = 10"

For a little sock a test square of 10 sts = 1 1/4" and 10 rows = 1" is sufficient, especially if you can compare it with an old sock. The table of measurements at the end of this booklet gives you the indications for normal knitting, based on a test square of 100 stitches and 100 rows. To unable you to use this chart although you have made a test square of 10 stitches and 10 rows only, you have to multiply by 10 the inch-measurements of your test square.

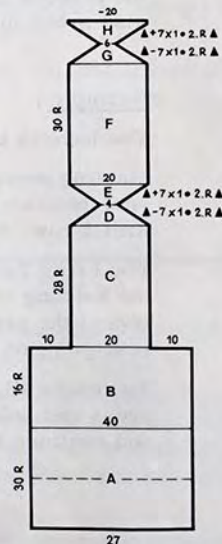


Fig. 63

Explanation of diagram

Section A, Hem : Work as explained on page 25, however, cast on 27 sts in 2 : 1 division and knit 30 rows with dial set at 3 1/2. Then turn up hem.

Section B, leg : With 40 sts and dial set at 4 1/2 knit 16 rows stocking stitch.

Section C, instep : At right and left take 10 stitches each on an oddment of wool (see buttonhole), then release these stitches from the machine by pushing needles forwards and backwards in neutral-position. With 20 stitches knit 28 rows.

Sections D and E, point : Same procedure as described on pages 44 and 45 for heel-knitting, but - as you are knitting on the single bed machine - knit on back bed with pattern selector at N. The back triangles on diagram indicate, that you have gradually to decrease and increase at both ends.

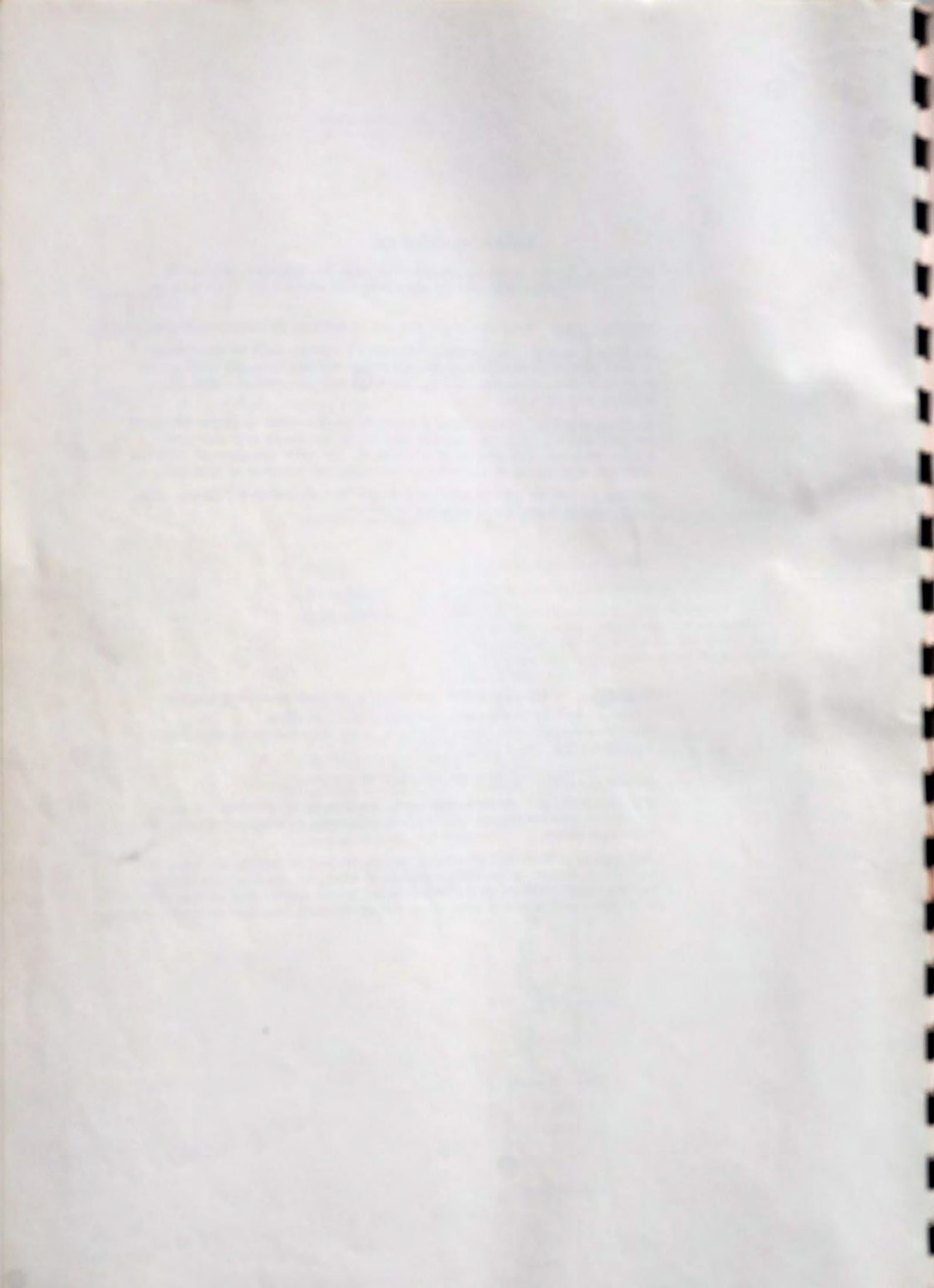
Section D : At the side of lock put 1 needle in rest-position 7 times, until there remain 4 needles in working in centre.

Section E : At the side of lock put 1 needle in yarn-receiving-position 7 times, until all needles are in working-position again.
(As you are knitting on single bed there is no transferring of edge loops - just ignore fig. 102.)

Section F sole : With 20 stitches knit 30 rows.

Sections G and H : Work as for point. As soon as all needles are back in working-position again, knit 2 more rows with an oddment of wool, then release stitches.

To make up : With knit-stitch join the 20 stitches of heel to the twice 10 stitches of instep, unravelling oddment of wool, as you sew. Close hem and leg edges, leaving an opening at hem, where elastic will be inserted. At both edges sew instep to sole. Pass elastic through hem and sew ends together.



DOUBLE BED KNITTING

(Version "B,,)

The double bed machine is mainly made for all sorts of ribbing.

Please observe these rules :



Fig. 64

- 1) Edge needles : First needle at left - on front bed. Last needle at right - on back bed, see fig. 64.
- 2) Sinkers : Put always one sinker less in working-position than needles in use. Special reference is made to exceptions of this rule.
- 3) Sinker levers : The lower position I is their normal position. The upper position II is used for racking patterns only. Special reference is made when position II has to be used.
- 4) Position lever for bed adjustment : Lever upwards - knitting over every needle. Lever downwards - knitting in 1 : 1 division.

FIRST PART - VARIOUS MANIPULATIONS

Casting on for ribbing - normal method with tubular rows, fig. 64

Over the desired width of knitting put every needle on both beds in working position, fig. 64. Thread yarn and place feeding eyelet into its socket at lock.

Position lever up, lock at right, pattern selector at $\frac{N}{N}$, dial at 2 (according to wool).

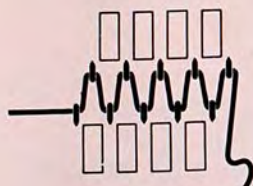


Fig. 65

Row 1: Move lock to the left to extend the yarn in a zig-zag, fig. 65.

Row 2: Set pattern selector at $\frac{R}{R}$ and dial at one higher number. Move lock to the other side.

Rows 3, 4 and 5: as second.

Row 6: Set pattern selector at $\frac{N}{N}$ and dial at 2 1/2 or 3 (according to wool).

From now on move lock forwards and backwards in an even rhythm, never returning before having passed the whole width of knitting.

Casting on for ribbing - quick method with racking.

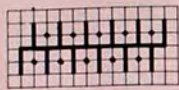


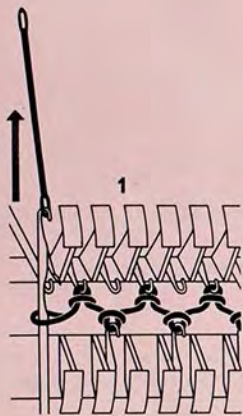
Fig. 66

Casting on for 1 : 1 rib - every second needle in working, fig. 66

Same procedure as for casting on with tubular rows.

1 : 1 rib is mostly used for welts of sweaters knitted in stocking stitch. It may, however, very well be used to knit whole sweater with a heavy yarn. For 1 : 1 division put position lever (at left of front bed) down.

Changing to stocking stitch : If you want to continue with stocking stitch after having knitted a 1 : 1 rib welt, you have to transfer the stitches of the front bed to the empty needles of the back bed. For this purpose you use the double ended transfer tool according to fig. 67 / 1 to 5.



- 1 and 2 Take stitch on transfer tool
- 3 and let it slide to opposite end of tool.
- 4 and 5 Then put stitch on corresponding needle of back bed. Remove tool.

Fig. 67

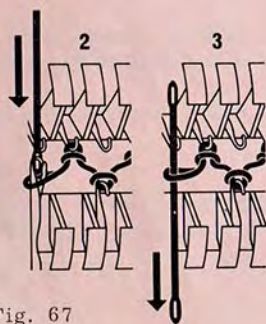


Fig. 67

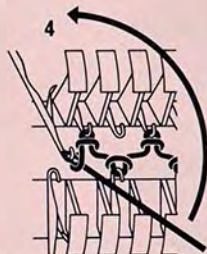


Fig. 67

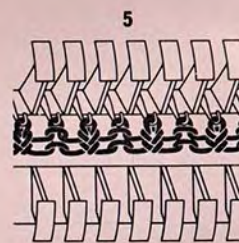


Fig. 67

To facilitate the transfer put corresponding sinkers for a moment in rest-position. After having transferred all stitches (at back all sinkers in working-position), at front put all needles and sinkers in neutral-position and continue knitting stocking stitch.



Fig. 68

Increasing

Please note : "increasing 2 stitches " means you have to increase 1 stitch on each bed, when double bed knitting.

- a) Increase 2 stitches at right. Lock at right, advance one needle each at back and front and put one sinker each in rest-position, fig. 68. Move lock to left.
- b) Increase 2 stitches at left. Same procedure as for right, but at left, fig. 69.



Fig. 69



Fig. 70



Fig. 71

- c) Increasing several stitches. If more than two stitches have to be increased, you always work at the side opposite to the lock, either at right or at left. This increasing is done in two steps : at first you increase the desired number of stitches minus 2 and knit one row. On returning row increase the remaining 2 stitches.

Example : You want to increase 8 stitches at left. Lock at right. At left advance into working-position 3 stitches on each bed (not 4 !) fig. 70 and knit 1 row. Lock at left. Now, on each bed, advance the 4th needle in working position, fig. 71, continue knitting.

Do not forget to put the corresponding sinkers in working-position.



Fig. 72

Decreasing. Please note : "decreasing 2 stitches" means you have to decrease 1 stitch on each bed, when double bed knitting.

- Decreasing 2 stitches at right or left. No matter at which side the lock is, with decker needle of red or green tool lift edge stitch off needle and transfer it to the next needle of the same bed, fig. 72. Put empty needles and sinkers in neutral-position.
- Fashion decreasing 2 stitches at right or left. Use triple decker of black tool and transfer the three edge stitches one needle towards the centre of same bed. Put empty needles and sinkers in neutral-position.
- Decreasing several stitches at right or left. This can be done only at the side where the lock is.

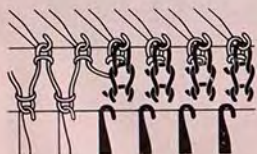


Fig. 73

Example : With the double ended transfer tool transfer the number of stitches you have to decrease from the front bed to the back bed, leaving empty needles at front in working-position, fig. 73.

Knit 1 row. Loops have been formed on the empty front needles, fig. 74.

Release these loops by pushing needles forwards and backwards. Pull down knitting to stretch the stitches at back needles.

Crochet these long stitches with the latch needle of green tool, fig. 75 and 76 and put last stitch obtained through crocheting on the new edge needle, fig. 77.

Release the crocheted stitches still hanging on back needles by pushing forwards and backwards the needles. Continue knitting.

Fig. 78 shows the position of green tool when crocheting from the left.



Fig. 74

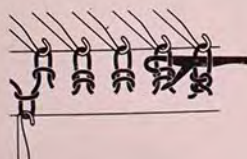


Fig. 75

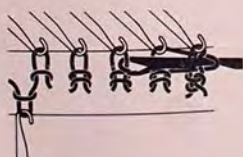


Fig. 76

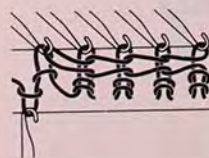


Fig. 77



Fig. 78

How to put stitches in holding position

Normally you put needles in rest-position just as explained for single bed knitting (neck opening, graduations). When knitting on double bed you have to do so on both beds at the same time.

For racking patterns, however you cannot use this procedure due to the fact, that the rest-position needles would hinder the lateral displacing of the front bed. To put stitches in holding position you have to knit them with an oddment of yarn as follows :

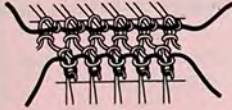


Fig. 79

On each bed advance the respective needles in yarn-receiving-pos. and on each bed place an oddment of wool of sufficient length across the open needle heads. Now push needles in working-position. The latches close and catch the odd yarn. Then, one after the other on each bed return every single needle in neutral-position. The odd yarn will form long loops. Fig. 79.

Later on, when these stitches should be knitted again, just pull at one end of odd yarn, whereby the stitches will slide back in the needle heads again. Do so on both beds. Then everything will be ready to continue knitting.

Casting off stitches to finish work

Same procedure as shown on page 37, fig. 73 to 78.

For casting off a great number of stitches we recommend to put sinkers in rest-position by groups of 6 or 7 only, not all at once. This way you are sure that the stitches will not slip off the needles.

After having crocheted the last stitch break yarn and pull end through last stitch, fig. 80.

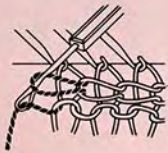


Fig. 80



Fig. 81

PART TWO - SUNDRY

Buttonhole

On each bed put number of needles needed for buttonhole in yarn-receiving-position, so that stitches slip behind the open latches.

Choose an uneven number of stitches, when knitting on double bed (for instance at back 4, at front 3). The additional needle should always be on the back bed, fig. 81.

Taking an oddment of wool of another colour, one after the other knit the stitches for the buttonhole, starting at right, first needle at back, second needle at front etc., fig. 82. All button hole needles being back in working-position again, pull down, between the beds, the ends of the odd yarn using green tool, fig. 83.

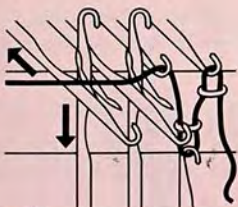


Fig. 82

Once the knitting is finished, remove oddment of wool and finish off with buttonhole stitch.

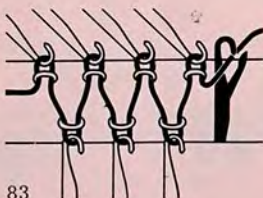


Fig. 83

How to knit graduations - short rows

Work the same as for single bed knitting, however, put needles in rest-position not only on back bed but on front bed as well.

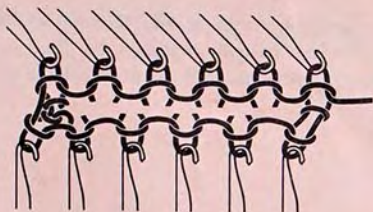


Fig. 84

Tubular, fig. 84

Make a test square with normal number of sinkers (one less than needles per bed). If however, with certain wools the edge stitches of back and front come too close together, try an extra sinker per bed :

at back one sinker more at right
at front one sinker more at left

You will then have a perfect texture at the edge stitches.

Casting on

1 : 1 division for needles on both beds, lock at right, pattern selector at R, move lock once to the left and once to the right.

R

Now put missing empty needles also in working position and continue knitting, fig. 84.

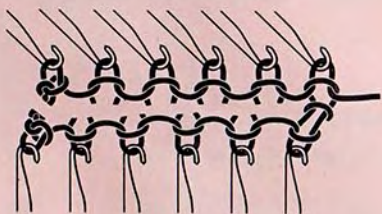


Fig. 85

Half-tubular also called "semi-tubular"

Half-tubular allows for knitting large pieces. You can, in fact knit stocking stitch over 360 needles.

a) Open at left, fig. 85, lock at right

Lock $\frac{N}{L}$, knit 2 rows

Lock $\frac{L}{N}$, knit 2 rows

Each time when the lock is at right, change positions of pattern-selectors.

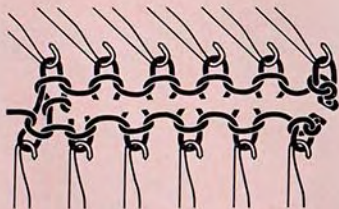


Fig. 86

b) Open at right, fig. 86, lock at left

Lock $\frac{L}{N}$, knit 2 rows

Lock $\frac{N}{L}$, knit 2 rows

Each time when the lock is at left, change positions of pattern-selectors.

Racking - quick casting on with racking

Racking allows for very nice zig-zag-patterns, due to the fact that front bed stitches are knitted in an oblique way with regard to the back bed stitches.

Before starting a racking pattern, i. e. before casting on, the front bed must be racked (displaced) as many positions to the right or to the left as racking-positions are wanted for the respective design. For further information see chapter VII.

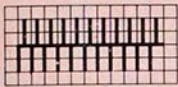


Fig. 87



Fig. 88

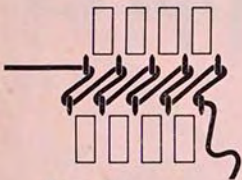


Fig. 89

Quick casting on with racking

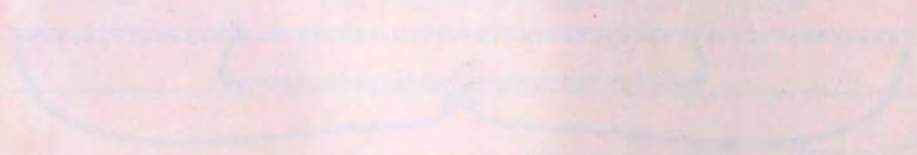
On account of its "hand made look" we recommend this method especially for elegant, high class fashion knits.

On both beds over the desired width put every needle in working, fig. 87. Position lever of bed upwards, lock at right, pattern selector at $\frac{N}{N}$, dial at approx. 2, according to wool.

- Row 1: Rack front bed 1 position to right, fig. 88.
Move lock to left to extend yarn in a zig-zag.
- Row 2: Rack front bed 1 position to left, fig. 89.
Move lock to right.

Now set dial at a higher number (according to wool) and row-counter to 000 and continue knitting.

MAN'S SOCK WITH FASHIONED HEEL



Preface to man's sock with fashioned heel knitted
tubular on double bed

Follow diagram and descriptions as for child's sweater.

Before you start, however, we would like you to practise the following operations :

- 1) transferring stitches for tubular knitting
- 2) heel knitting
- 3) toe-knitting

Ad. 1) Transferring stitches with the decker comb for tubular knitting after a 1 : 1 welt, fig. 90

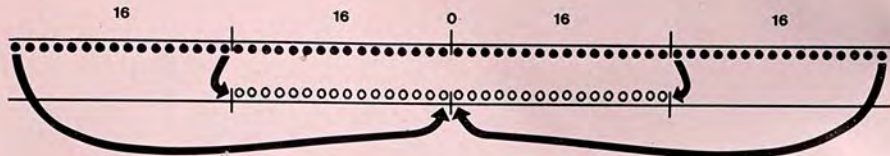


Fig. 90

Dial at $2 \frac{1}{2}$. Position lever down (see page 16, fig. 22).

Cast on 64 sts in 1 : 1 division and knit 40 rows.

Lock at right.

Transfer all sts from front bed to empty needles of back bed (see page 36, fig. 67) to have a total of 64 sts on back bed. At front put all nds and sinkers in neutral-position and set pattern selector at L. At back set dial at $4 \frac{1}{2}$ and selector at N, knit 2 rows.

Lock at right.

At right unravel $\frac{1}{4}$ of sts, i. e. 16 sts (see page 30).

At front centre just opposite the back needles, put 32 nds and 31 sinkers in working-position - if necessary open latches.

Remove side of decker comb.

At right take $\frac{1}{4}$ of back sts (16) on decker comb : Place yarn behind sinkers, put 16 sinkers in neutral-position, hook in comb, pull forwards and push backwards, holding knitting lightly by hand underneath the machine, fig. 91.

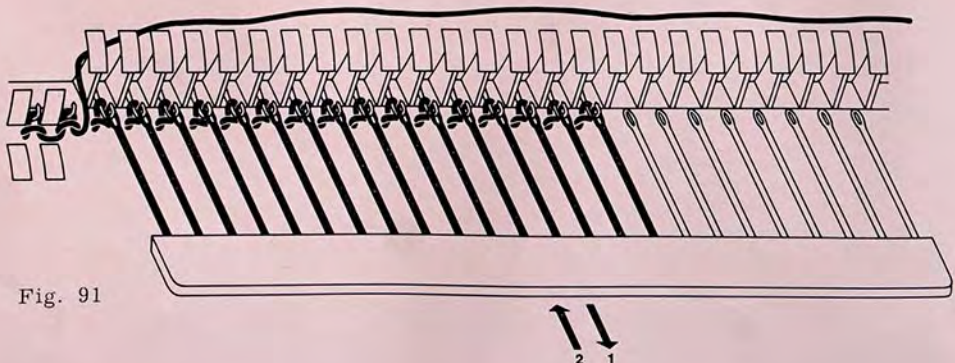


Fig. 91

Cover decker comb with side fig. 92 and return the 16 back needles (empty) into neutral-position.

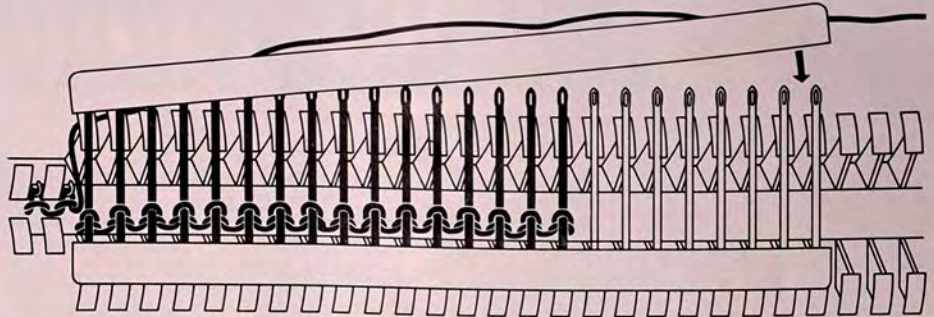


Fig. 92

Lower front bed and drop decker comb between both beds, fig. 93, turn towards the centre and lift up again.

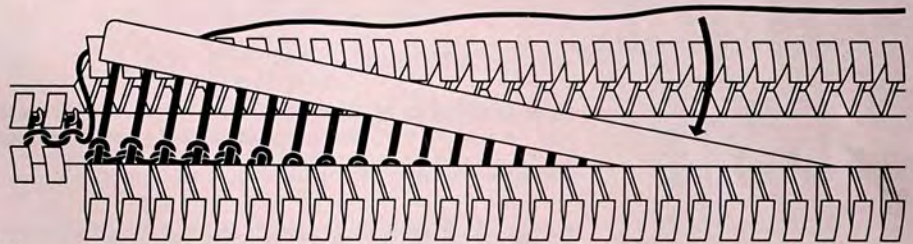


Fig. 93

Raise front bed again.

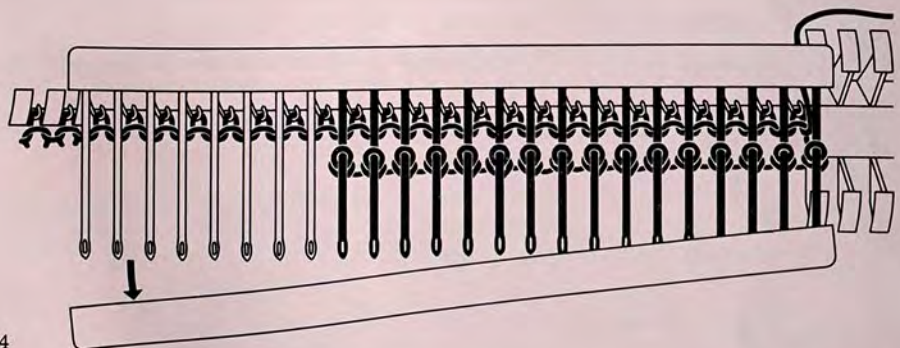


Fig. 94

Remove side of decker comb, which is now facing you, fig. 94. Transfer sts on right half of front needles : at front sinkers in rest-position, hook in comb, fig. 95, pull forwards and push backwards to make sts glide into the needle heads (be careful, not behind the latches !)

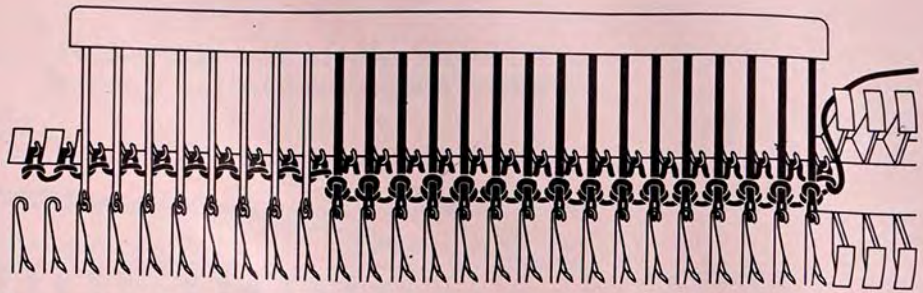


Fig. 95

Remove comb and put needles in a straight line in working-position.
 Same procedure at left, i. e. transfer 16 sts from back to front placing at back empty nds and sinkers in neutral-position.
 At front cross the two centre stitches, fig. 96, in order to have a neat closed row of stitches. All sinkers in working-position.



Fig. 96

Check : You must have, each at front and back, 32 nds and 31 sinkers in working-position.

On both locks set dial at $4\frac{1}{2}$ and selectors at $\frac{R}{R}$.

Knit 21 rows tubular. Lock is at left.

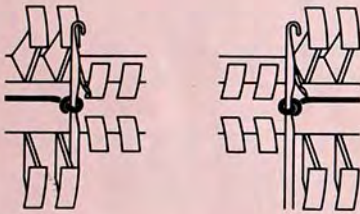


Fig. 97

Ad. 2) Fashioned heel

Heel knitting is done on front bed for a tubular knitted sock. At back the sts remain in the needle heads without being knitted.

Pattern selector back at L, front at $N = \frac{L}{N}$.

Graduated decreasing - short rows - by putting needles in rest-position (stitches in holding position)

Lock at left.

At left put 1 nd in rest-position, fig. 97 at left - knit 1 row.

At right put 1 nd in rest-position, fig. 97 at right - knit 1 row.

** Left side : put 1 nd in rest-position and 1 sinker in neutral-position, fig. 98, - knit 1 row.

Right side : put 1 nd in rest-position and 1 sinker in neutral-position, fig. 99, - knit 1 row. **

Repeat continuously what is explained between two **, until there remain, at centre, 14 nds and 15 sinkers in working.

Lock at left.

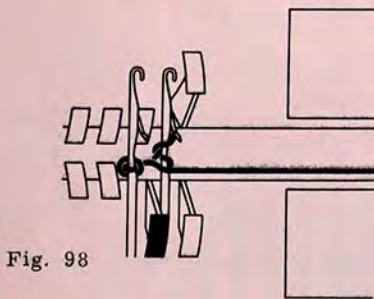


Fig. 98

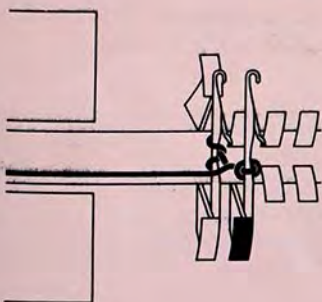


Fig. 99



Fig. 100

Graduated increasing- short rows - by putting needles in rest-position (stitches in holding position)

Lock at left.

At left put 1 nd in yarn-receiving-pos. and 1 sinker in working-position, fig. 100. Knit 1 row.

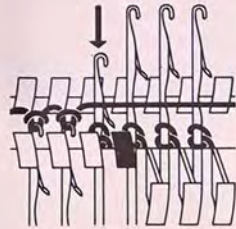


Fig. 101

At right put 1 nd in yarn-receiving-pos. and 1 sinker in working-position, fig. 101. Knit 1 row.

Needles and sinkers return automatically into working-position, when moving the lock.

Continue knitting this way until there remain, at left and right, just 1 edge needle each in rest-position. Lock at left.



Fig. 102

Both at left and right each, place slip stitch of front needle on edge needle of back bed in order to avoid a hole between instep and heel, fig. 102.

At left put edge needle in yarn-receiving-position - knit 1 row.

At right put edge needle in yarn-receiving-position - knit 1 row.

Now the heel is finished.

Set selectors at $\frac{R}{R}$ and knit 21 rows tubular for foot (test square). Lock is at right.



Fig. 103

Ad. 3 Toe

You make the final decreasing for the toe with the triple decker (black tool) either by transferring 2 sts, fig. 103, or 3 sts (s. page 27, fig. 50). If you transfer 2 sts only one of the three deckers will not be used.

When knitting tubular you must always decrease back and front.

Lock at right, RC at 000.

Back right, decrease 1 st and put 1 sinker in neutral-position.

Front right, decrease 1 st and put 1 sinker in neutral-position.

Back left, decrease 1 st and put 1 sinker in neutral-position.

Front left, decrease 1 st and put 1 sinker in neutral-position.

Knit 2 rows (RC 4). Repeat 7 times. 8 times in all. 2 sts have been decreased at both ends in every 4th row and a total of 32 rows have been knitted. Set RC at 000.

To terminate the toe decrease 6 times in the same way but every 2 rows, until a total of 8 sts remain on the machine (4 on each bed) and 12 rows have been knitted.

Break yarn at approx. 6 inches away from sock, thread end of yarn in a darning needle, pick up the 4 front stitches, then the 4 back stitches and pull yarn through.

Release stitches off the needles, lower front bed and remove sock underneath the machine. Gather point of toe and darn end inside.

MAN'S SOCK

Description for a man's sock, fig. 104 and 105

Size : 8 1/2 to 9 (length of foot approx. 11 ")

Materials : approx. 3 1/2 ounces sock wool (with or without nylon, dralon, orlon etc.) for 1 pair of socks.

Adjustment : dial 4 1/2, tension discs 5, tension arm 3.
 These settings are a recommendation only.
 You should always make a test square for every yarn to see whether the adjustment is all right for your special kind of wool.

Test square : 100 sts = 13 "
 100 rows tubular, on RC 200 = 10 "

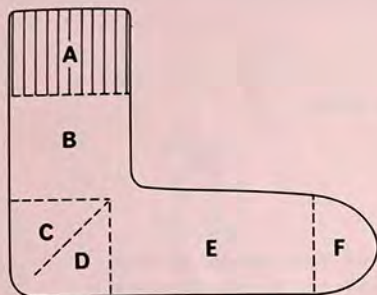


Fig. 104

We recommend to make a test square for every new material. In chapter VIII you will find a table of measurements with explanatory text concerning calculating of knitted garments. The charts are based on a test square of 100 stitches and 100 rows. For such a small article as a man's sock a test square of 50 sts and 50 rows will be sufficient. You just have to double the amount of inches measured on your test square and then can find the corresponding column on the chart.

Explanation of diagram

Section A, welt, knitted open : in 1 : 1 division cast on 64 sts and knit 40 rows.

Section B, leg : tubular knitting. The diagram shows the width of one bed only, i.e. 32 sts. In front of this figure you see a small circle : O 32, indicating that for tubular knitting you have to have 32 sts on each bed.

Before knitting the leg you have to transfer 16 sts at each end from back to front as shown in figs 91 to 96. The length of leg depends on size required. Our suggestion is for size 8 1/2 to 9 with a length of 50 rows tubular, which means 100 rows indicated by RC.

Sections C and D, heel : the heel being knitted on one bed only, i.e. the front bed, there is no circle for these sections on the diagram. The black triangles indicate graduated decreases and increasings at both ends as shown by the shape of diagram.

Section C : decrease 1 st at both ends 9 times, until there remain 14 needles in working at centre of knitting. In doing so you knit 18 rows.

Section D : increase 1 st at both ends 9 times, until all needles are back in working position again. In doing so you knit again 18 rows.

Section E, foot : from now on you knit tubular again, i.e. O 32. You can adjust the foot length to any desired size by knitting 5 tubular rows (10 RC rows) more or less per size.

For instance : 8 to 8 1/2 = RC 120, 8 1/2 to 9 = RC 130, 9 to 9 1/2 = RC 140.
 For our diagram we have chosen size 8 1/2 to 9 with 65 tubular rows = RC 130.

Section F, toe : continue knitting tubular decreasing at both ends 2 sts 8 times in every 2 nd tubular row (RC 4), then 2 sts 7 times in every tubular row (RC 2), as shown in fig. 103. The black dot in the instructions of diagram replaces the words "in every".

To make up : Having finished the sock you just have to close the seam at back of welt.

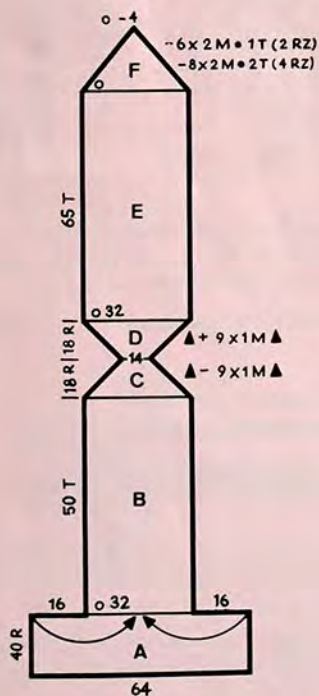


Fig. 105

THIRD PART - BASIC PATTERNS

Ribbing

There are two sorts of ribbing :

Over every needle (fig. 87)

Over every other needle (1 : 1 rib, fig. 66)

Pattern selector always $\frac{N}{N}$.

When working over every needle you obtain a knitting of close texture which you might take for "stocking stitch on both sides". Only when stretching the knitting sideways you will see the it concerns also a 1 knit / 1 purl-rib. This texture is used to knit whole sweaters and dresses as well as welts for garments in fisherman's rib.

Knitting over every other needle serves mainly as a welt for garments in stocking stitch.

Fisherman's rib

It is mostly worked over every needle (fig. 87). For heavy wool, however, you should knit in 1 : 1 division, i.e. over every other needle.

Pattern selector at $\frac{P}{P}$. At every lock movement the needles work as follows :

Row 1 - loops : The needles catch the yarn only, they do not form stitches.

Row 2 - normal : The needles knit normally, they form stitches.

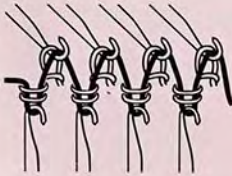


Fig. 106

When moving the lock from right to left, loops are formed on the back needles, fig. 106.

When moving the lock from left to right, loops are formed on the front needles, fig. 107.

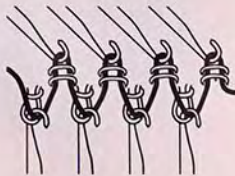


Fig. 107

Half fisherman's rib - pearl rib on right side of knitting

To be knitted either over every needle or in 1 : 1 division.

Pattern selector at $\frac{P}{N}$.

Half fisherman's rib - pearl rib on wrong side of knitting

To be knitted either over every needle or in 1 : 1 division.

Pattern selector at $\frac{N}{P}$.

Decreasing when knitting fisherman's rib

As seen in fig. 106 and fig. 107 there are on one bed single stitches and on the other loops on top of the old stitches. We recommend to always transfer the single stitches to the needles of the other bed before decreasing. This means that, according to pattern, you might have to crochet the stitches on front bed instead of those on the back bed.

Long-stitch pattern

Only over every needle. Pattern selector at $\frac{N}{R}$

2 : 2 ribbing

This basic pattern also is well suited for a welt as it gives a nice neat finish to a garment.

It needs a special method of casting on.



Fig. 108

Arrange needles as shown in fig. 108.

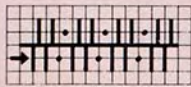


Fig. 109

Set racking lever one position towards the right, fig. 109.
This is the casting on position.



Fig. 110

Knit the first 5 rows as for normal casting on with tubular rows :

Pattern selector at $\frac{N}{N}$, move lock to left to place the zig-zag, fig. 110.

Pattern selector at $\frac{R}{R}$, knit 2 rows tubular (RC 4).

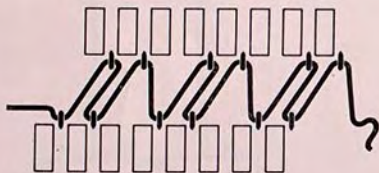


Fig. 111

Pattern selector at $\frac{N}{N}$, set racking lever one position towards the left, fig. 111, and dial at $2\frac{1}{2}$ or 3, continue knitting.

With fisherman's rib and needle division according to fig. 108 you can make a very attractive pattern by racking the front bed once to the left and once to the right alternating every two rows.

CHAPTER VII

STITCH PATTERNS ON SINGLE BED

Starting position : lock at right, for all patterns

A) Loop patterns

A loop is really a slip stitch. To obtain loops you have to put certain needles in rest-position. When moving the lock over the knitting the yarn is simply placed across the shaft of these needles, whilst the adjacent needles in working-position knit normally. Rest-position needles form loops and not stitches.

Depending on the thickness or coarseness of the yarn the lock can be moved once or several times to place one or several loops.

To knit off the loops you press and hold down the respective returning key, which brings the rest-position needles back in working again.

There are patterns where certain needles have to be in rest-position whilst others have to return into working. For these patterns the returning key cannot be used. The needles have to be put in yarn-receiving-position by hand.

Stitch patterns with loops give relief to a texture.



Pattern 1 - With returning key, fig. 112 and 113

Basic selector at N. Arrange needles from the left.



Fig. 112

First series

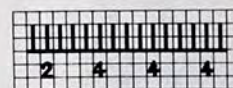


Fig. 113

Second series

Cast on 61 sts in stocking st. and knit 10 rows. Turn up hem and knit 2 rows. Now begin pattern.

1st series : lock at right, RC at 000. Starting from left put the 4th and every 4th nd in rest-position and knit 4 rows. Press and hold down left returning key and knit 1 row.

2nd series : lock at left, RC at 5. Starting from left put the 2nd and every 4th nd in rest-position and knit 4 rows. Press and hold down right returning key and knit 1 row.

Lock at right, RC at 10.

Repeat these two series.



Pattern 2 - With yarn-receiving-position of needles, fig. 114

Basic selector at N. Arrange needles from the left.

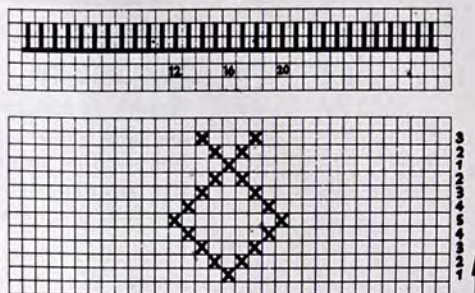


Fig. 114

1st series : Lock at right. Put in rest-position the 16th nd and knit 2 rows. Return this nd in yarn-receiving-position.

2nd series : Put in rest-position nds 15 and 17 and knit 2 rows. Return these nds in yarn-receiving-position

3rd series : Put in rest-position nds 14 and 18 and knit 2 rows. Return these nds in yarn-receiving-position

4th series : Put in rest-position nds 13 and 19 and knit 2 rows. Return these nds in yarn-receiving-position

5th series : Put in rest-position nds 12 and 20 and knit 2 rows. Return these nds in yarn-receiving-position

Now repeat one after the other series 4, 3, 2 and 1.

One complete-pattern is finished. As a trimming you may now knit a second pattern beginning with 2 nd series.

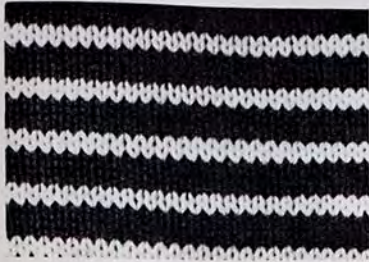
B) Multicoloured patterns

Just by changing colours stripe patterns are obtained or else - combined with loops - very attractive multicoloured designs. You prepare one feeding eyelet per colour which, according to choice, is placed in the socket. The feeding eyelets not in use for the moment are to be placed behind the right hand side plate.

As the lock is furnished with one wool carrier only, you place the other cones on the floor underneath the table and regulate the yarn tension for these cones by hand holding the yarn slightly above the feeding eyelet.

Always two rows for each colour must be knitted. Colour change takes place always at right, as described below.

1st feeding eyelet = basic colour, 2nd feeding eyelet = trimming colour.



Pattern 3 - Two-coloured horizontal stripes, fig. 115

Basic selector at N. Cone for basic colour in wool carrier, yarn fed in yarn-guide, eyelet placed in the socket. Cone for trimming colour on the floor, yarn fed into a second eyelet on your lap.

Knit 4 rows with basic colour.

Remove eyelet from socket and place it behind the right hand side plate.

Place eyelet with trimming colour into socket and knit 2 rows, holding the yarn above the eyelet.

Remove eyelet with trimming colour from socket, and, holding it, place eyelet with basic colour into the socket. Now place eyelet with trimming colour behind the right hand side plate.

Pull tight yarn behind the wool carrier, i.e. adjust cone and begin again.

If you always follow this rhythm you will always have a neat crossing of colours at edge of knitting.

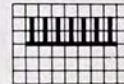


Fig. 115



Pattern 4 - Two coloured loop design, fig. 116 and 117

Change colours as explained in pattern 3.

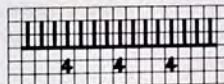


Fig. 116

First series

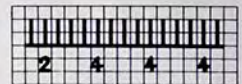


Fig. 117

Second series

Knit 4 rows basic colour.

** Put in rest-position the 4th and every 4th nd. Knit 4 rows trimming colour.

Press left returning key and knit 4 rows with basic colour.

Put in rest-position the 2nd and every 4th nd, knit 4 rows trimming colour.

Press left returning key and knit 4 rows with basic colour. **

Repeat continuously from ** to **

C) Open work design with transfer of stitches.

For this pattern you transfer stitches on other needles.

There are lots of varieties. Moving the pattern from one row to the other you can transfer stitches to right or left. You can, repeatedly at every row, transfer two stitches either to the right or to the left. You can cross stitches over two needles or with the triple decker tool to obtain cable designs etc.



Pattern 5 - A classic open work design, fig. 118 and 119

Basic selector at N.

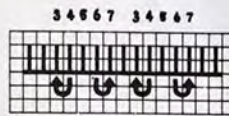


Fig. 118

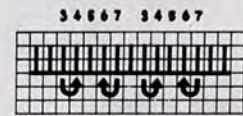


Fig. 119

First series

Second series

1st series : Throughout the row put the 4th st. onto the 3rd nd and the 6th st. onto the 7th nd, counting the 7th st as a first st. again. - Knit 2 rows.

2nd series : Throughout the row put the 3rd st. onto the 4th nd and the 7th st. onto the 6th nd. - Knit 2 rows.

3rd series : As first.

These three series make a very attractive trimming. For a whole surface of a baby sweater for instance you repeat series 1 and 2 alternating continuously.



Pattern 6 - Cabling, fig. 120

Basic selector at N. Put stitch size 1 1/2 points higher.



Fig. 120

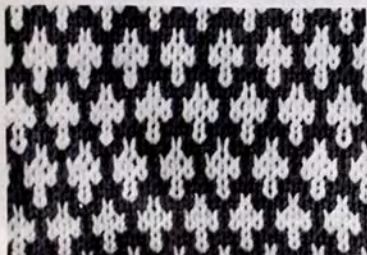
Pattern-series : Take stitches 7, 8 and 9 onto the triple decker tool and attach the latter into the knitting (under the nds). Now, one after the other and with the red tool, transfer st. 6 onto nd 9, st. 5 onto nd 8 and st. 4 onto nd 7.

Remove triple decker tool from knitting and transfer the sts onto nds 4, 5 and 6. Cabling gives always a certain tension to the yarn, so that we recommend to give a helping push with the angled point of the red tool. Repeat this cabling throughout the row at desired intervals.

Knit 6 rows and repeat.

D) Fairisle with cross threads on the reverse

The best way is to prepare a diagram on square paper such as used for embroidery designs. Each square equals 1 stitch in width and two rows in height. Various signs mark the different colours, such as dots, crosses, circles ...



Pattern 7 - Two-coloured fairisle with cross threads, fig. 121 and 122

X = basic colour ● = trimming colour

Basic selector at N, basic colour in yarn-guide, knit a few rows.

Then set basic selector at L.

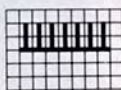


Fig. 121

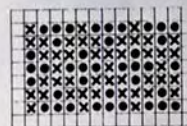


Fig. 122

Put in yarn-receiving-position the nds marked with ● (see diagram). Remove feeding eyelet with basic colour from socket and place it behind the right hand side plate.

Put feeding eyelet with trimming colour into socket and knit 1 row.

Put the same nds into yarn-receiving-position and knit 1 row. RC 2.

Put into yarn-receiving-position the nds marked with X.

Remove feeding eyelet with trimming colour and put eyelet with basic colour into socket, knit 1 row. Put the same nds into yarn-receiving-position and knit 1 row. RC 4.

The first row of squares, i.e. the first pattern series is finished.

Work the other series accordingly.

For a fairisle pattern with three colours, 6 lock movements have to be made, i.e. RC 6. Each colour needs 2 rows.

E) Fairisle with woven-in threads on the reverse

Here again you prepare a diagram. No colour is fed in the yarn-guide. The basic selector is always set to L. You need as many cones as you have colours per row.

For each row put all nds into yarn-receiving-position, then place the colours over the nds according to diagram :

Lock at right. Starting from the right place the colour of the first group of nds over the open needle heads (short end of yarn at right), then the colour for the second group, the colour for the third group and so on. Knit 1 row.

Now proceed the same way from the left : if you knit two-row-fairisle, you place the colours over the same needle groups, i. e. according to the same pattern series. If you knit one-row-fairisle you place the colours over the needle groups marked for the next pattern series. When changing from one colour to the other, the following thread has to be crossed with the precedent thread in order to avoid a hole. Then knit 1 row. Repeat from right etc.



Pattern 8 - Three-coloured fairisle with woven-in threads, fig. 123

Basic selector at L. To place colours put all nds into yarn-receiving-position.

1 series = 1 row of squares

● = red X = blue, empty square = white.

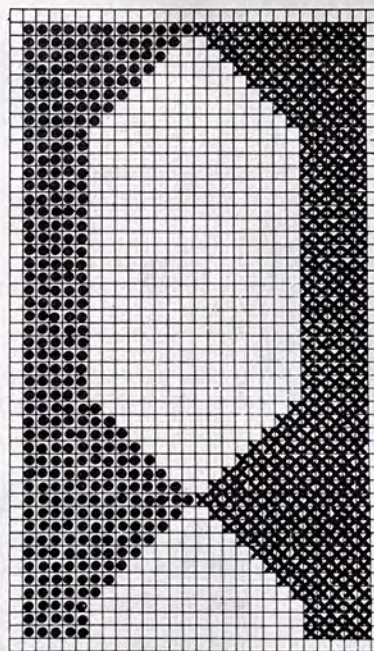


Fig. 123

- 1st to 3rd series : 5 nds blue, 16 nds white, 5 nds red - knit 1 row.
- 4th series : 6 nds blue, 14 nds white, 6 nds red - knit 1 row.
- 5th series : 7 nds blue, 12 nds white, 7 nds red - knit 1 row.
- 6th series : 8 nds blue, 10 nds white, 8 nds red - knit 1 row.

Continue in the same manner for series 7 to 11, until no white nd is in work. Then repeat pattern in reverse, i. e. knit series 10 to 3. Knit series 3 in all 21 times, then start again with series 4 etc.

STITCH PATTERNS ON DOUBLE BED

Apart from the basic patterns explained in chapter VI, there are lots of other possibilities for double bed knitting, which you can also combine with the aforesaid single bed patterns. Hereafter we are giving the general directions.

A) Stitch patterns with out-of-work needles

For ribbing and racking patterns put certain needles in neutral-position. This will produce vertical grooves in the knitting or else, with racking, oblique or zig-zag grooves.

Knitting done with neutral-position needles adjust itself always in direction of the suppressed needles. This way you can automatically produce pleats and folds.



Pattern 9 - Pleat-knitting, fig. 124 and 125

Basic selector at N. In normal ribbing (over every needle) cast on with racking 62 sts, i.e. 31 on each bed, and knit 1 row.

For pleating transfer sts as follows :

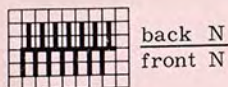


Fig. 124



Fig. 125

Front bed : from the left, put the 6th st on the 5th needle and the 7th st. on the 8th needle, then, throughout the row and counting the 8th needle as a first needle, put the 12th st. on the 11th needle and the 13th st. on the 14th needle. Return empty needles into neutral-position.

Back bed : from the left and throughout the row put the 12th on the 11th needle and the 13th st. on the 14th needle, always counting the 14th needle as a first one. Return the empty needles into neutral-position.

This arrangement has to be made once only, before beginning.

Then knit the desired length of, for instance, a skirt.

B) Multicoloured designs

As with single bed knitting you can knit on the double bed with various colours (or different types of yarn) . You also use different feeding eyelets. You can combine stripes with fisherman's rib, you can knit multicoloured loop-patterns, where front and reverse of knitting each show another pattern which either may be used as the right side.



Pattern 10 - Two-coloured stripes with pearl rib, fig. 126

Front and back basic selectors at N. In normal ribbing (over every needle) and with racking cast on 62 sts. and knit 1 row.

At front basic selector at P.

Knit 2 rows with basic colour (fed in the yarn-guide) and 2 rows trimming colour (guiding the yarn by hand). Repeat.

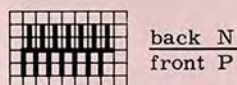


Fig. 126



Pattern 11 - Two-coloured loops, pattern, fig. 127

Front and back basic selectors at N. Basic colour in the yarn-guide. In normal ribbing (over every needle) and with racking cast on 62 sts and knit 1 row.

Now transfer sts. as follows :

At back, starting from the left : always put the 2nd st. onto the 1st needle and the 3rd st. onto the 4th needle, counting the 4th needle as first again. Put empty needles in neutral-position. Knit 2 rows.



Fig. 127

Series 1 : At front put each third needle (on diagram marked with X) in rest-position and knit 4 rows with trimming colour, guiding the yarn by hand. At front each rest-position needle has 4 loops.

Series 2 : At back put all needles in rest-position. At front press and hold the left returning-key and knit 1 row with basic colour. (The rest-position needles at front have now returned into working-position). Let go the returning key and knit a further 3 rows. At back each needle has 4 loops.

Series 3 : At front put every 3rd needle in rest-position. At back press and hold the left returning key and knit 1 row with trimming colour. (At back the needles have returned from rest-position into working-position). Let go the returning key and knit a further 3 rows. At front each rest-position needle has 4 loops. Repeat alternating series 2 and 3.

C) Racking patterns

You can make lovely designs with all basic sts (except tubular) just by racking the front bed either after each row or at intervals of several rows. Due to racking the sts are drawn sideways. They will be knitted in the next row by another pair of sts of the opposite bed. Whilst racking, the lock has of course to stay outside the knitting. Furthermore you have to watch the correct knitting of the edge sts. Therefore, before beginning a racking pattern, you always have to displace the front bed as many positions to the right or left as the number of rackings required for the respective pattern. The corresponding sinker levers at the lock have to be put upwards in position II.



Pattern 12 - Full fishermen's rib in zig-zag, fig. 128

Racking lever at 3rd racking mark.

At front and back basic selectors at N. In normal ribbing (over every needle) cast on 62 sts and knit 1 row. Back and front put all (4) sinker levers upwards, rack one position to the left, knit 1 row.

At front and back put stitch sizes 1¹/₂ numbers higher and the basic selectors at P. RC at 000.

Racking lever at right, knit 1 row. RC 1.

Racking lever at left, knit 1 row. RC 2.

Continue until RC 14.

Now knit 1 row without racking. RC 15.

Racking lever at right, knit 1 row. RC 16.

Racking lever at left, knit 1 row. RC 17.

Continue until RC 29.

Now knit again 1 row without racking. RC 30.

Repeat continuously these 30 rows.

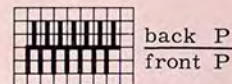


Fig. 128



Pattern 13 - Racking pattern on reverse of stocking stitch, fig. 129

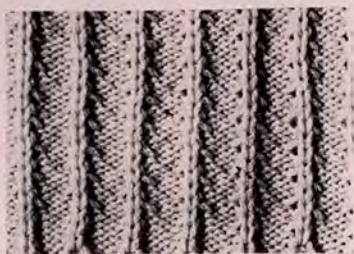
At front and back basic selectors at N. Racking lever at 3rd racking mark. Cast on in normal rib (over every needle) and knit a few rows.

Throughout the row transfer 6 sts to back bed, leaving 2 sts on front. Put empty needles in neutral-position. At front and back left sinker levers upwards. RC at 000. This arrangement has only to be done once.



Fig. 129

Knit 3 times : 2 rows, racking lever to left. RC 6.
 Knit 3 times : 2 rows, racking lever to right. RC 12.
 Repeat continuously these 12 rows.



Pattern 14 - Racking sts on reverse of stocking stitch, fig. 130

On back bed only cast on 62 sts in stocking st and knit a few rows. Fix front bed, racking lever on 3rd racking mark. Basic selectors back at N, front at P. At front and back left sinker levers upwards. At front bed put every 3rd needle in working-position.

Knit 2 rows, rack 1 to left.

Knit 2 rows, rack 1 to right.

Repeat.



Fig. 130



Pattern 15 - Attractive racking on reverse of stocking stitch, fig. 131

On back bed only cast on 62 sts in stocking st. Knit a few rows. Fix front bed, position lever on 3rd racking mark. Basic selectors back at N, front at P. At front and back left sinker levers upwards. On front bed put every 3rd needle in working-position.

Knit 2 rows, rack 2 to left.

Knit 2 rows, rack 2 to right.

Repeat.

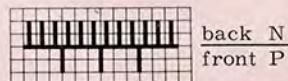


Fig. 131

D) Released stitches

This type of pattern is very suitable for soft lacy garments such as bed jackets, baby clothes etc. On the back bed all needles work always. On the front bed only certain needles work for a limited number of rows. According to the design, the front bed needles are released after one or several rows, thus producing a very attractive open work effect.

Pattern 16 - Pattern with released stitches, fig. 132

On back bed only cast on 62 sts for stocking stitch and knit a few rows.

Fix front bed, position-lever upwards, racking lever at first mark from right. At front and back basic selectors at N.

At front arrange needles always 6 needles in neutral-position, 2 needles in working-position.



Fig. 132



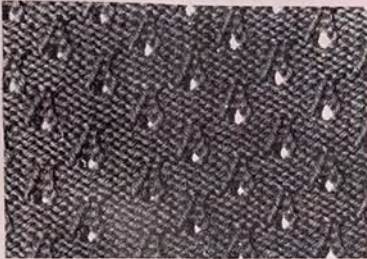
Series 1: Racking lever at first mark. Knit 6 rows. Open lock connection and move twice front lock only. The front stitches slip off their needles and the empty needles remain in working-position. Connect locks again.

Series 2: Place racking lever at fifth mark. Knit 6 rows, then 2 rows with front lock only. Then connect locks.

Repeat these two series throughout. When work is finished stretch knitting both ways to loosen completely the released stitches.

E) Patterns with transferred stitches

This type of pattern can be done on the reverse of stocking stitch as well as on ribbing. It is obtained by transferring stitches either from one bed to the other or by displacing stitches on the same bed.



Pattern 17 - Transferred stitches on the reverse of stocking stitch, fig. 133

On back bed cast on 62 sts and knit a few rows stocking stitch. Fix front bed, position-lever upwards, racking-lever at 4th mark from right. Front and back basic selectors at N.

At front always put 1 needle in working-position, 5 needles in neutral-position, observing the arrangement for the edge sts as shown in diagram.

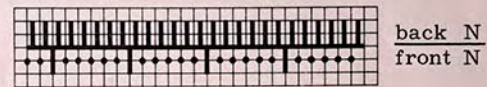


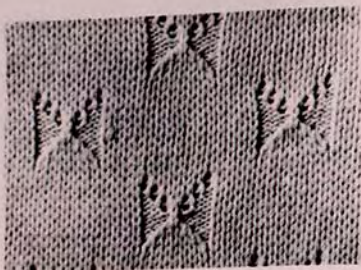
Fig. 133

Series 1: Knit 4 rows. Transfer sts from front to back leaving the empty front bed needles in working-position.

Series 2: Racking lever at 1 st mark from right. Knit 4 rows. Transfer front sts to back needles leaving front needles in working-position.

Series 3: Racking lever to 4th mark. Knit 4 rows. Transfer front sts to back leaving empty needles in working-position.

Repeat alternating series 2 and 3.



Pattern 18 - Transferred stitches on special ribbing

On double bed cast on for normal ribbing (over every needle) 62 sts and knit a few rows.

Basic selectors at front at R at back at N. Work according to diagram.

- = either : at front transfer st to adjacent needle, knit 2 rows
- or : at front put empty needle into working-position, knit 2 rows.

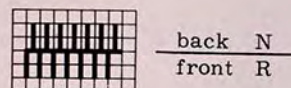


Fig. 134

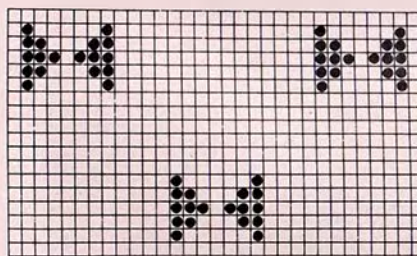


Fig. 135

Knit 6 rows.

Series 1 : Transfer st 1 on needle 2 and st. 7 on needle 6, leave 15 sts and repeat. Put empty needles in neutral-position. Knit 2 rows.

Series 2 : Transfer st 2 on needle 3 and st 6 on needle 5, leave 15 sts and repeat. Put empty needles in neutral-position. Knit 2 rows.

Series 3 : Transfer st 3 on needle 4 and st 5 on needle 4, leave 15 sts and repeat. Put empty needles in neutral-position. Knit 2 rows.

From now on increase again these sts one after the other.

Series 4 : At front put into working-position nds 3 and 5, leave 15 sts and repeat. Knit 2 rows.

Series 5 : At front put in working-position nds 2 and 6, leave 15 sts and repeat. Knit 2 rows.

Series 6 : At front put into working-position nds 1 and 7, leave 15 sts and repeat. Knit 2 rows.

Knit 6 rows, then repeat series 1 to 6 alternating, i. e. beginning with the 12th st.

How to knit your test square and calculate the required numbers of rows and stitches

Before starting any garment it is essential that you make a generous test square. This is no waste of wool as you can unravel it later on once your garment is finished and use the yarn again for collar, seams etc.

Why you should knit a test square ?

1. To test your wool and stitch pattern
2. To test the texture of the knitting
3. To calculate the required number of rows and stitches

The number of rows and stitches required for a garment varies according to wool, wool tension and adjustment of the stitch size.

If you want your garment to fit really well, you should always calculate the required number of stitches and rows according to your wool and the setting of your machine.

That's what makes PASSAP knitting such a wonderful pleasure : you may knit as you like according to your own individual taste.

How to knit a test square ?

The larger your test square the more precise your calculation of the number of rows and stitches required for the correct fit of your garment. In order to avoid the time-wasting counting of stitches, where errors may easily occur, just knit a square of 100 stitches and 100 rows.

However, if you do not work over all needles, i. e. if certain needles remain in rest-position (thick wool, 1 : 1 division, 3 : 1 division etc.) a square of 50 needles width and 100 rows depth will be sufficient. In this case you just multiply by 2 the number of inches corresponding to 50 stitches and proceed as explained below.

Only the needles in working-position will be counted.

First, by testing, find the right stitch size and wool tension, then do not alter the adjustment of your machine.

With contrast wool cast on 100 stitches (50 on each bed), knit a few rows, set row counter to 000. Now thread the wool you are going to use for your garment and knit until row counter reads 100. *

As soon as the row counter indicates 100, thread in contrast wool, knit a few rows and remove. Stretch square according to pattern lengthwise and crosswise until it shows the required texture. Then, without pressing, let it rest on a table.

* With normal knitting 100 rows indicated by the row counter are 100 rows actually knitted. When patterning it can be less, e. g. with tubular knitting or fisherman's rib 100 rows indicated by the row counter are only 50 rows actually knitted, since on each bed stitches are only knitted on every alternate row. In order to avoid any doubt, we just count the number of rows indicated by the row counter.

How to calculate your garment ?

Thanks to the PASSAP chart no calculation has to be done. You just use the chart as explained below. Our example explains how to find the number of stitches. Proceed the same way to find the number of rows.

And this is how you use the PASSAP chart :

Horizontally : measurements in inches of your test square.

Across the top you will find the measurements of your square of 100 stitches and 100 rows ; range from 4" to 20" split up in two charts.

Vertically : required measurements in inches for your garment. From top to bottom, on the left and right, you will find the number of inches measured for your garment. These numbers range from 1/2" to 40" on each chart.

Example :

The 100 stitches of your square measure, say, 10". For your garment, however, you need a width of, say, 8". Look in the horizontal column under 10" and in the vertical column under 8". Where both columns meet you find the number 80, i. e. you have to cast on 80 stitches (40 on each bed).

In the same way you find the desired number of rows on the chart.

Numbers for measurements which you do not find on the chart you may obtain by a simple addition :

Example :

Required width, say, 7 1/2

You read on the chart :

Square : 100 stitches = 10"

7" = 70 stitches
 1/2" = 5 stitches

Total 7 1/2" = 75 stitches

Set down on your paper pattern next to the appropriate measurements in inches each number of stitches and rows you have found on your chart.

Table of measurements of a 100 stitches or 100 rows test square from 4" to 12"

Required length of knitting (inches)	Inches equivalent to 100 stitches or 100 rows										Required length of knitting (inches)									
	4	4½	5	5½	6	6½	7	7½	8	8½		9	9½	10	10½	11	11½	12		
½	12-13	11	10	9	8-9	7-8	7	6-7	6-7	7	6-7	5-6	5-6	5	4-5	4-5	4	½		
1	25	22	20	18	17	15	14	13	12	11	11	10	10	10	9	9	8	1		
2	50	44	40	36	33	31	28	27	25	24	22	21	20	19	18	17	16	2		
3	75	67	60	55	50	46	43	40	38	35	33	31	30	29	27	26	25	3		
4	100	89	80	73	67	62	57	53	50	47	44	42	40	38	36	35	33	4		
5	125	111	100	91	83	77	71	66	63	59	55	53	50	48	45	43	41	5		
6	150	133	120	109	100	92	86	80	75	71	66	63	60	57	55	52	50	6		
7	175	156	140	127	117	108	100	93	86	82	78	74	70	67	64	61	58	7		
8	200	178	160	145	132	123	114	107	100	94	89	84	80	76	73	70	67	8		
9	225	200	180	164	150	138	128	120	113	106	100	95	90	86	82	78	75	9		
10	250	222	200	181	167	153	142	133	125	118	111	105	100	95	91	87	83	10		
20					333	307	285	266	250	235	222	210	200	190	182	173	166	20		
30										353	333	315	300	285	273	261	250	30		
40																		40		
																		348	333	40

Table of measurements of a 100 stitches or 100 rows test square from 12 1/2" to 20"

Required length of knitting (inches)	Inches equivalent to 100 stitches or 100 rows										Required length of knitting (inches)				
12 1/2	13	13 1/2	14	14 1/2	15	15 1/2	16	16 1/2	17	17 1/2	18	18 1/2	19	19 1/2	20
1/2	4	3-4	3-4	3-4	3	3	3	3	2-3	2-3	2-3	2-3	2-3	2-3	2-3 1/2
1	8	7	7	7	6-7	6-7	6	6	6	6	6	5	5	5	5
2	16	15	14	13	13	12	12	12	12	11	11	10	10	10	10
3	24	23	22	21	20	19	18	18	18	17	17	16	16	15	15
4	32	31	30	28	27	26	25	24	24	23	22	22	21	20	20
5	40	38	37	35	34	33	32	31	30	29	28	28	27	26	25
6	48	46	44	43	41	40	39	37	36	35	34	33	32	31	30
7	56	54	52	50	48	47	45	44	42	41	40	39	37	37	35
8	64	62	59	57	55	53	52	50	48	47	46	44	43	42	41
9	72	70	66	64	62	60	58	56	54	53	51	50	49	47	46
10	80	77	74	71	69	67	64	62	60	59	57	56	54	53	51
20	160	154	148	142	138	133	129	125	121	118	114	111	108	105	102
30	240	231	222	214	206	200	193	186	181	176	171	167	162	158	154
40	320	308	296	286	276	266	258	250	242	235	229	222	216	210	205

TECHNICAL HINTS

1. How to change a latch needle, fig. 136 and 137

Remove the two protecting rails underneath upper and lower main rail : with thorn of grey tool push rail inwards at one side, then pull it out at the other, fig. 136.

Holding foot pull needle out backwards lightly lifting at the same time, fig. 137.

Insert new needle underneath upper main rail then place into channel, fig. 137.

Put all needles straight in line in working-position. Now replace protecting rails, first underneath lower, then underneath upper main rail.

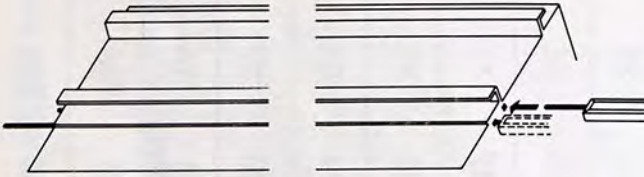


Fig. 136

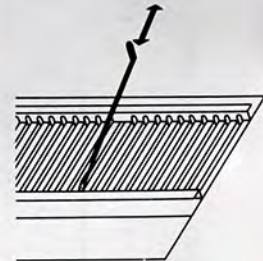


Fig. 137

2. How to replace a sinker, fig. 138

Note : the sinkers of front and back bed are of different shape. The back sinkers have a symmetrical nose and the front sinkers have an asymmetrical nose.

Place operator of damaged sinker in neutral-position and all the other operators in working-position.

By help of two screw drivers or special tongs spread out the two panels right and left of sinker.

Remove old sinker and insert new one, taking care that the teeth clinch correctly. The new sinker must be in line with the other sinkers, when put in working-position.

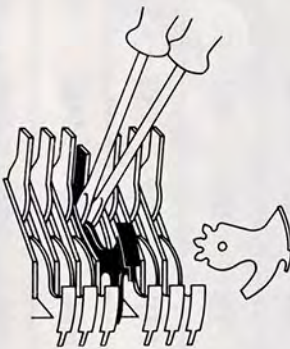


Fig. 138

3. How to release a jammed lock

If the locks jams (due to wrong manipulation, a too heavy knot etc.) do not force it, but : remove feeding eyelet, set pattern selector(s) at L = free move and try to move lock in the same direction as before. If the resistance is too strong, cut yarn close to needles. Now the lock can be moved again.

When knitting on double bed, open lock connection and release each lock separately.

