HOW TO USE THE WHITE ROTARY *Automatic*

SINCE 1876

WHITE

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IMPORTANT NOTICE

In some details, such as needle system and type of sewing light for example, your WHITE ROTARY ZZ machine may differ from certain illustrations and descriptions you may observe in this book. That is because the manufacturer has made some minor changes in standard production to meet our own specifications. Any such changes, however, do not affect any fundamental parts or functions.

WHITE SEWING MACHINE CORPORATION
CLEVELAND 11, OHIO

In Canada
WHITE SEWING MACHINE PRODUCTS LIMITED
602 King Street, W.,
Toronto, Ontario, Canada

Dear Homemaker,

At last you are the proud owner of the White Rotary Automatic Zig-zag Sewing Machine. The machine was explained to you in detail, and you are now eagerly looking forward to the great variety of sewing techniques that can be performed on it.

Although everything is still quite clear to you, it is possible that in time some of the directions given to you for making the various adjustments may escape your memory – because, it is unlikely that you will immediately try your hand at all the different sewing techniques which your machine is capable of performing.

We have therefore prepared this informative book of instructions, and hope you will find it a useful guide. Before using the machine we advise you to give a cursory glance at the pages of this booklet, so that you gain a rough idea of its contents. This will help you when reverting later on to any one of the chapters.

It is a good plan to open out to the left page 1; the information given on that page should be read in conjunction with the contents of the book. The various parts referred to in the text are clearly marked and numbered on page 2.

Your attention is drawn particularly to chapters 1, 2 and 6. After reading these you will have become thoroughly acquainted with the working principle of your machine; you will look upon it as a living thing that has been placed under your care and protection.

The more you understand the working of your sewing machine, and what you can do with it, the greater will be your appreciation of its wide scope.

Contents

Standard Accessories supplied

with the White Rotary Automatic Zig-Zag:

1 sheet metal case for housing accessories

1 standard presser foot Z–343 f for the zig-zag and straight stitch

1 guide 535 with thumb screw 410

1 edge-stitcher with guide Z–292

1 quilter guide 1194 with holder Z–1016

1 narrow hemmer Z–385, approx. 5/64" (2 mm) wide

1 wide hemmer Z–383, approx. 5/32" (4 mm) wide

1 shirring foot 299

1 buttonhole foot Z–293

1 presser foot for buttons, 348

1 beading foot Z–343 d

1 applique foot Z–349

5 pattern discs, each disc for 2 distinct stitch techniques

3 bobbins 970

1 buttonhole opener

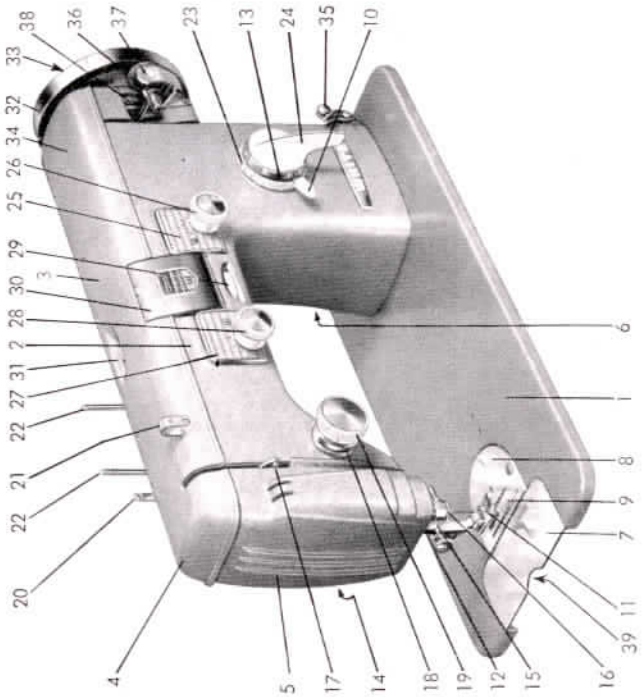
1 screwdriver – medium size

1 screwdriver – small size, for bobbin case

1 book of instructions

4 needles

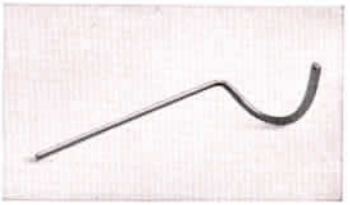
The Sewing Machine Head (Front View)



1 Bed Plate
2 Arm
3 Detachable Arm Cover Plate
4 Head
5 Hinged Face Cover Plate and Built-in Sewing Light
6 Switch for Sewing Light and Control
7 Bed Plate Slide
8 Needle Plate
9 Feed dog
10 Lever for Lowering the Feed
11 Presser Foot
12 Presser Bar
13 Dial for feed position
14 Presser Bar Lifter
15 Needle Bar
16 Needle Clamp
17 Thread Take-Up Lever
18 Regulator Spring
19 Upper Thread Tensioner
20 Thread Guide No. 1
21 Thread Guide No. 2
22 Spool Pins
23 Scale for setting to required Stitch Length
24 Stitch Regulating Lever
25 Scale for Zig-Zag Stitch
26 Zig-Zag Stitch Knob
27 Scale for Stitch Positioning
28 Stitch Positioning Knob
29 Adjustable Limit Stop for Zig-Zag Stitch and Buttonholing
30 Automatic Fashion Stitch Mechanism with Interchangeable Pattern Discs
31 Setting Plate for Pattern Discs
32 Balance Wheel
33 Stop Motion Screw
34 Belt Track
35 Bobbin Winder Thread Tension
36 Winder
37 Latch for Engaging Winder Action
38 Latch for Disengaging Winder Action
39 Hook

Presser feet and their designations

Edge-Stitcher
and Zipper foot
with Guide Z–292



Quilter Guide 1194,
used with Pt. Z–1016

Standard Foot Z–343 f
for the Zig-Zag
and Straight Stitch

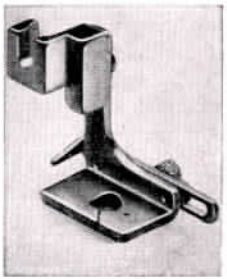
Guide 535
with Thumb Screw
410

Holder for Quilter
Guide Z–1016, used
with Pt. 1194

Narrow Hemmer Z–385
abt. 3/64" wide

Wide Hemmer Z–383
abt. 5/32" wide

Shirring Foot
299



Buttonhole Foot
Z–293

Presser Foot
for Buttons, 348

Beading Foot
Z–343 d

Applique Foot
Z–349

Important Hints

Sewing Machine Oil and Needles are best purchased from sewing machine specialists, or from the suppliers of your machine. Never use just any kind of lubricating oil – if you do, the working parts of your machine will get gummed.

If it is necessary to have your machine repaired, please let only sewing machine specialists attend to the work.

Table of needle sizes

The following table will show the size of needles generally used with various sizes of thread.

Cotton	Silk	Mercerized	Nylon	Needle Size
100	A	50	A	00
80 to 100	A	50	A	0
60 to 80	A	50	A	1
40 to 60		Heavy Duty		2
30 to 40		Heavy Duty		3
20 to 30		Heavy Duty		4

If you want to sew exceptionally heavy-weight or fine texture materials, first try out the needle and thread selected on a suitable remnant.

For darning and embroidery we recommend colour-fast machine embroidery mercerized thread for upper and under thread, and needles size 0.

1. Preparing for sewing

Setting the Needle

Raise the needle bar to its highest, and take the needle between thumb and forefinger of your left hand, making sure that the long groove in needle faces you and the flat side is away from you. Now insert the needle into the needle clamp, pushing it as far up as it will go. Finally with your right hand tighten the thumb screw on the needle clamp.

Fitting the Presser Foot

For all ordinary sewing use standard presser foot No. Z–343 f; this foot is suitable not only for straight stitching, but also for zig-zag sewing. Take the presser foot with your right hand and from below push it on to the presser bar, and up against the screw. Tighten the screw with your left hand, and then use a screwdriver for final tightening. All other types of presser feet are fitted in the same manner.

Fig. 1

Under Threading

see Figs. 1–5

Removing the Bobbin Case.

Move the needle to its highest point, and tilt the head back. With your thumb and forefinger of your left hand grip the bobbin case latch (Fig. 1), lift it, and draw the case with bobbin clear of the machine. Turn the bobbin case upsidedown, and let the bobbin drop into your right hand. Before loading the bobbin put the sewing mechanism out of action. Hold the balance

Fig. 2

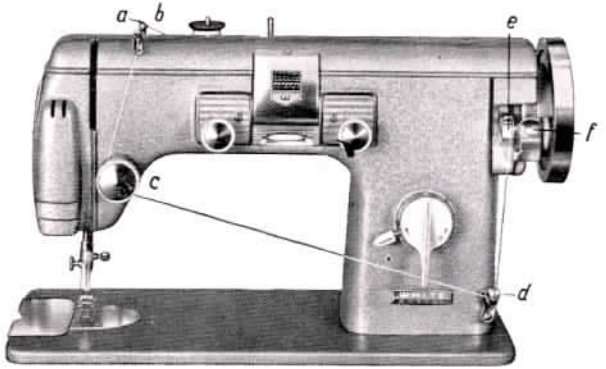


Fig. 3

wheel with your left hand and loosen the stop motion screw – which is fitted to the centre of the wheel – with your right hand. The screw must be turned outwards as far as it will go (Fig. 2). After you have placed the thread on the spool pin draw the thread through guides *a* and *b* – see Fig. 3 – then from left to right round the tensioner *c*, through guide *d*, up to winder *e*. With your left hand wind the end of the thread a few times from front to back around the bobbin. Mount the bobbin on the pin, press latch *f*, and set the machine in motion. The winder action stops automatically when the bobbin is fully loaded. Finally the stop motion screw is firmly re-tightened by screwing it inwards against the balance wheel.

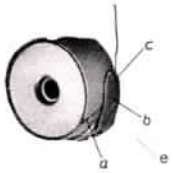


Fig. 4

Replacing the Bobbin in Bobbin Case

With your left hand hold the bobbin case, open side up, and with your right hand insert the bobbin with the thread leading from left to right (Fig. 4). Next draw the thread into the slot *a* and

under the tension spring *b*, and through the small hook *c* on the face of the bobbin case.

Replacing the Bobbin Case

The bobbin case with bobbin inside is now held with thumb and forefinger of the left hand by the open latch, and pushed on to the small pin which is in the centre of the hook (Fig. 5). Now press the bobbin case down gently, and let it click into position.

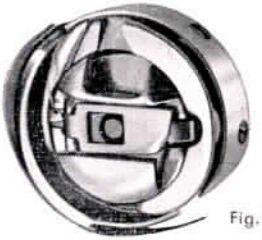


Fig. 5

Upper Threading

see Fig. 6

From the spool mounted on spool pin the thread is drawn through the hole in guide *a*, then across the arm of the machine to the front and to the right of thread guide *b*, then underneath the guide and from left to right into the upper slot. From there the thread is passed from right to left through the lower slot in guide, then down and from right to left into the slot of the upper thread

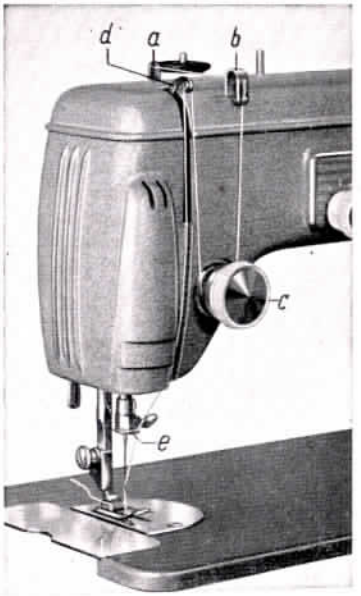


Fig. 6

tensioner *c*, and up again and from right to left through the hole in the thread take-up lever *d*. Now pass the thread down and behind guide on needle clamp *e*, and finally from front to back through the eye of the needle.

Drawing the Under Thread through the Needle Plate

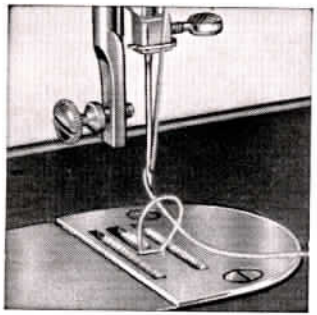


Fig. 7

Hold the end of the upper thread with your left hand, leaving the thread slack. Turn the balance wheel over towards you to let the needle travel down and up again to its highest point. The under thread will be drawn upwards and through the needle plate. The looped under thread (Fig. 7) can now be drawn out fully and, together with the upper thread, placed under and behind the presser foot. Do not move the threaded needle without first placing some material beneath it.

Speed Control

To set the machine in operation turn on the sewing light and then exert pressure on the knee lever of the full power speed control. When the light is turned off, the current is automatically shut off (in the case of a table model, turn on light before exerting pressure on the foot control).

2. Sewing

General

Before you commence to sew, move the thread take-up lever to its highest point. Now place the material under the presser foot, l o w e r the presser bar lifter and start to sew. When making the first few stitches hold on to the ends of the two threads, so that they do not get sewn down or drawn into the race where they would cause jamming. Do not try to assist the feed by pulling the material, but merely guide the material along. Before doing any sewing proper, try out a few stitches on a piece of material of the same texture.

When sewing hard or thick parts of the fabric, or when stitching across seams, assist the needle by carefully turning the balance wheel with your hand. This will prevent the needle from bending or breaking.

Before sewing the corner of a seam draw with a hand sewing needle a thread through the material, and then sew along one edge. Turn the corner, and continue to sew while holding both ends of the tacking thread. This way you will prevent stoppages at corners which, otherwise, easily occur.

Adjusting the Stitch Length – Fig. 8
Located on the right front of the sewing unit there is a combination adjustment disc, for regulating the stitch length, for sewing in reverse, and for controlling the feed.

To adjust the stitch length first set the stitch adjusting lever *a* in a vertical position. Set dial *b*, numbered from 0 to 5, at the stitch length desired (near 0 being the shortest stitch, 5 the longest). Then, to sew forward, be sure to push adjusting lever *a* to left as far as it will go. To sew backward, push lever to right as far as possible.

Fig. 8

Lever *c* serves to regulate the height of the feed and to lower it. For normal sewing, set the lever *c* at I. To sew very fine fabrics, when a lower feed height is advantageous, set lever *c* at II.
To drop the feed below the needle plate for darning, monogramming, and sewing on buttons, set lever *c* at topmost position III.

Setting for Straight or Zig-Zag Stitching – Fig. 9

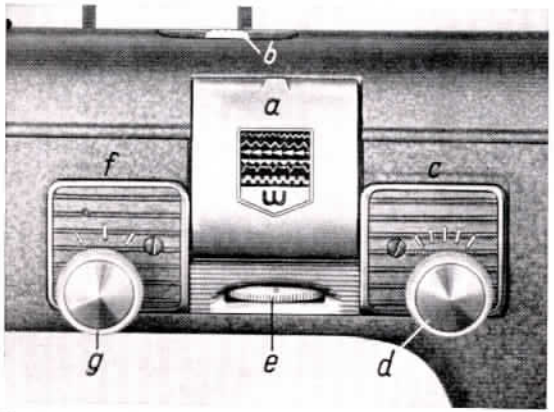


Fig. 9

On the machine arm, facing the operator, you will see:

Centre: cover plate *a* behind which the automatic fashion stitch mechanism is positioned. This is where the interchangeable pattern discs are mounted; (see page 26 "Automatic Fashion Stitching").

Above: the pattern disc selector *b* which, for zig-zag sewing must be set on "zig-zag stitch".

Right: zig-zag scale *c* with indicator lines, and zig-zag stitch adjustment knob *d*, which for straight stitching, must be set on indicator line farthest to left, and, for zig-zag stitching, on one of the other markings.

Below: the adjustable stop with figures 0–4, for limiting the zig-zag stitch width *e*, and with a marking indicating buttonhole sewing; (see page 24 "Buttonholes"). For zig-zag sewing the lever is preferably placed on 4.

Left: a scale *f* for determining the stitch position, and the stitch positioning knob *g* which, for the usual straight stitch and zig-zag stitch, must be in centre position.
The setting of this lever, to left or right, is necessary for certain special sewing techniques, which will be explained to you in detail later on in this book.
The zig-zag knob *d* can be locked in position for straight stitching by placing it, and the selector *e*, on 0.
You can limit the width of the zig-zag stitch by setting the selector *e* and the knob *d* on equal settings. The knob can then only be moved between 0 and the indicator selected.

Regulating the Thread Tensions – Figs. 10–12

The upper thread tension is regulated by turning the setting flange of upper thread tensioner *c* – Fig. 6 –. Clockwise adjustment increases the tension; anti-clockwise adjustment reduces the tension.
The under thread tension is regulated by turning the small screw *e* – Fig. 4 – with the aid of a screwdriver. Here too the tension is increased by clockwise turning, and decreased by anti-clockwise adjustment.
Usually, any incorrect tension will be experienced on the upper thread. Therefore, any alteration found necessary should be made there first. The under thread tension should not be altered unless it is absolutely necessary to do so.
Satisfactory stitching is possible only if upper and under thread tensions are correct.
After you have sewn an inch or two, inspect the stitching on top and underneath; the tensions are satisfactory if both threads are drawn into the material equally, and lock in the centre of the work (Fig. 10). If, however, stitches loop on the underside of the work (Fig. 11), the upper thread is too slack, and must be given more tension by turning the setting flange of tensioner *c* – Fig. 6 – to the

right. If after adjusting the upper thread tension the loops continue to be formed on the underside of the material, it is possible that the underthread has been tensioned too severely, and you must then slacken it off a little by turning the small screw *e* – Fig. 4 – to the left.


Fig. 10


Fig. 11


Fig. 12

Loops forming on top of the material (Fig. 12) may be owing to excessive upper thread tension, and you must correct the tension by turning the setting flange of tensioner *c* – Fig. 6 – to the left. Only if none of the above-mentioned adjustments corrects the stitch-forming, should the under thread be given more tension by turning the screw *e* – Fig. 4 – to the right.

Adjusting the Pressure of the Presser Bar

After removing the arm covering plate regulate the pressure at *a* (Fig. 44). Using a screw driver, turn to right to increase the pressure, turn to left to decrease the pressure.

Removing the Work from the Machine

Move the thread take-up lever to its highest, raise the presser bar lifter, and draw the material to the back, clear of the needle. Now you can sever the threads, but make sure that you leave the ends of the threads about 3" long under and at the back of the foot, so that the machine is ready for the next sewing.

3. Sewing with the Straight Stitch

Setting the machine

Set the zig-zag knob to "0", the stitch positioner to center position, and the stitch regulating knob as required for the work in hand (for further particulars, see page 12 "Setting for straight or zig-zag stitching").

For all work, including straight stitching, you can use the needle plate – Fig. 13 – which has an oval-shaped needle hole and is fitted to the machine.


Fig. 13

Ordinary Straight Stitching

Standard Presser Foot Z–343 f

This foot can be used for both straight and zig-zag stitching.

Edge Stitching – Fig. 14

Edge Stitcher and Zipper Foot Z–292, with Guide

This foot is used with guide for making wider hems and

maintaining an even line of stitching. After setting the guide, firmly tighten the clamp screw. The right edge of the material must be kept closely to the guide.

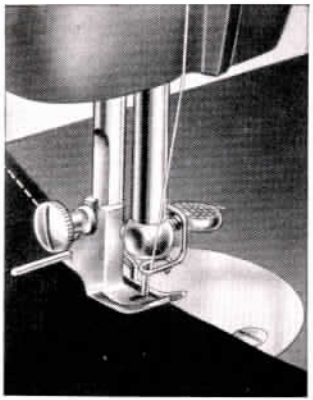


Fig. 14

The guide should not be used with this foot when any of the following work is carried out:

1. sewing very closely to the edge of the material;
2. laying several parallel stitch lines closely together and
3. sewing on zip-fasteners closely to the edge of the material. This foot, without guide, enables more accurate sewing along the edge of the fabric than is possible with presser foot No. Z–343 f.

Quilting – Fig. 15

Standard Presser Foot Z–343 f with Quilter Guide 1194 and Holder Z–1016

Fig. 15

First attach the presser foot to presser bar. Next slide from the back the rounded guide holder on to the presser bar, so that the former encircles the foot. Now insert into the holder the straight portion of the guide, pushing the guide through the holes in holder, from left to right. Make your first row of stitches, then move the material to the right to give the desired spacing between first and second stitch row, and tighten the thumb screw on holder. When making your second row of stitches, let the guide slide over the first stitch row. The third and succeeding stitch rows are made in the same way, i. e. the second row acts as guide to the third, and the third as guide to the fourth, a. s. o.

Narrow hems – Fig. 16

Narrow Hemmer Z–385, approx. 5/64" (2 mm) wide
Wide Hemmer Z–383, approx. 5/32" (4 mm) wide

Fold over to the wrong side the edge of the fabric, making a fold about 1/8" wide. At the commencement of the material insert a pin, or with a hand-sewing needle attach a thread, and with it draw the material into the curl of the hemmer, where it is automatically turned under twice. Commence to sew carefully. Allow the material to feed into the hemmer freely without, however, overfilling the curl. Presser foot Z–383 is suitable also for making wider hems in the same fashion. (For further details of the application of this foot, see page 23 "Zig-zag Hem").

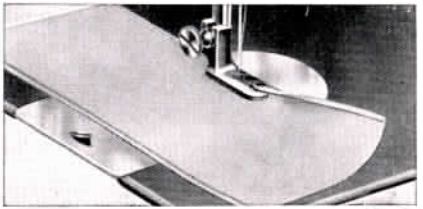


Fig. 16

Ruffling and sewing on Flounces in One Operation
Fig. 17

Shirring Foot 299

With this foot you can sew on frills or flounces – for instance, when working on curtains. First you must hem the curtain and the flounce, using the hemmer; (for further particulars, see page 17 "Narrow Hems"). Then you lay

the edge of the curtain (right side up) into the slot of the foot; the edge of the flounce (right side up) you place under the foot, and, while simultaneously sewing and gathering, let it run along with the edge of the curtain, at about 3/8" (1 cm) from the edge. If you want to make a small heading for the flounce you will achieve the same results by placing the curtain and the flounce wrong-side-up. Instead of using the straight stitch you can sew with the zig-zag stitch, size 2–4, for ruffling and sewing on, in one operation.

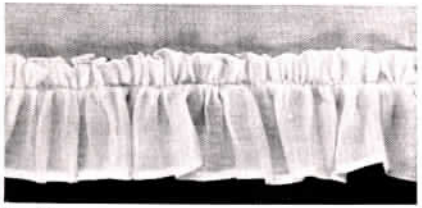


Fig. 17

Ornamental Stitching with the Straight Stitch – Fig. 18
Standard Presser Foot Z–343 f


Fig. 18

A step-pattern of stitches – which can be varied, as desired – is obtained by moving the stitch positioner (for further particulars, see page 12 "Setting the Machine for straight or zig-zag stitching") from midway position to the left, back to the centre, to the right, back to centre, to the left, a. s. o. Before moving the stitch positioner you must raise the thread take-up lever to its highest. When sewing thin fabrics, use copy or tissue paper for backing the material.

Pearl Yarn Embroidery
Standard Presser Foot Z–343 f
Upper thread: cotton. Under thread: fine pearl yarn, wound on to bobbin. Upper thread tension: strong. Under thread tension: weak. (For further particulars, see page 13 "Regulating the Thread Tensions"). As the pearl yarn embroidery is produced on the underside of the material, the work must be placed wrong side up.

Darning

Without Presser Foot; with Embroidery Hoop. The feed must be lowered for this class of work, by turning lever (10) – see page 1 – to top position III.

Stretch the part to be darned over the hoop, and place the work flat on the bedplate under the needle. Draw the under thread up, and lower the Presser Bar Lifter. Work the machine fast and with an even rhythm, and, at the same time, move the hoop steadily to and fro under the needle, laying the stitch lines closely and parallel across the hole. Continue in the same manner across the first lines of stitching. Make sure that the lines are laid uneven in length, so that the edge around the hole does not fray. If necessary, repeat the operation until the hole is completely darned, or just add a few additional stitch lines where gaps are still visible.

Sewing with the Zig-zag Stitch | 4.

Setting the machine

Set the pattern disc selector (31, page 11) as for zig-zag stitching, move the zig-zag stitch adjustment knob (26, page 1) to give the required stitch width, and place the stitch regulating knob (24, page 1) as needed for the work in hand. The stitch positioning lever (28, page 1) normally should remain in centre position; (for further details, see page 12, "Setting for straight or zig-zag stitching"). Your attention will be drawn to any deviations from the directions given above.
The thread tension for zig-zag sewing must not be too severe; when adjusting for zig-zag width 4, and stitch length 1, the upper stitching should appear on the underside of the material as small points.

Ordinary Zig-Zag Sewing – Fig. 19

Standard Presser Foot Z–343 f

According to the positions of the zig-zag stitch adjustment knob and the stitch regulating lever, zig-zag stitches can be laid up to $^{5}/_{32}$" (4 mm) wide, and up to $^{13}/_{64}$" (5 mm) apart from point to point.

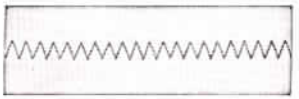


Fig. 19

Overcasting, Edge-Stitching, Hemming – Fig. 20

Standard Presser Foot Z–343 f

The above designations refer, in this case, to very similar sewing work, viz: sewing the edge of material, to prevent fraying. Place the material from left to right under the presser foot and let the needle, when deflecting to the right, closely pass the edge of the material. When stitching to the left, the needle will go through the material, giving the required sewing width.

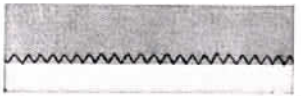


Fig. 20

When oversewing seams make a sufficient number of zig-zag stitches of suitable width, without turning under the trimmed edge.

When overcasting visible seams, however, the trimmed edge of the material must be narrowly folded over and sewn down with the 3/64" (1 mm) straight stitch. This done, the edge is trimmed neatly. Finally you overcast with closely laid zig-zag stitches of the required width.

Edge-Joining and Overseaming – Fig. 21

Standard Presser Foot Z–343 f

Stitch width 4; stitch length to suit the work in hand.
Narrowly fold over to the wrong side the edges of the two pieces of material, and edge-join them neatly with the zig-zag stitch. The edges of the material must lie accurately midway between left-to-right deflection of the sewing needle. After sewing trim the edges closely to the line of stitching.

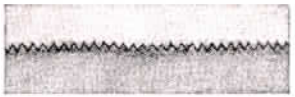


Fig. 21

Sewing on Lace – Fig. 22

Standard Presser Foot Z–343 f

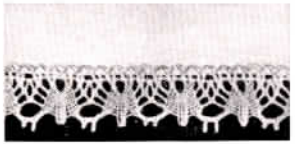


Fig. 22

Place the lace over the right edge of the cloth, and then overcast the edge of the lace with zig-zag stitches of suitable width and spacing. Now cut off the surplus material. Lace of curved or sharp-cornered design must first be tacked with small stitches to the cloth before sewing down.
A stronger join between cloth and lace is obtained if you first sew down the lace with 1–1.5 mm wide zig-zag stitches, then trim away the surplus material on the wrong side, and finally overcast the first line of stitching, on the right side, with zig-zag stitches which should be closer together and 1/2 mm wider than the first stitches.
You may also use hemmers Z–385 and Z–383 for sewing on lace. Both these feet have on the right a slot, cut diagonally. The edge of the cloth is inserted into the curl, where the material is automatically turned under twice. At the same time the edge of the lace is introduced into the slot; the zig-zag stitch then sews down the lace direct on to the seam.

Zig-Zag Sewing with Pearl Yarn – Fig. 23

Standard Presser Foot Z–343 f

Upper thread: sewing cotton. Under thread: fine pearl yarn, wound on to bobbin.
Stitch width: 2–4. Stitch length: medium. Upper thread tension: strong. Lower thread tension: weak.

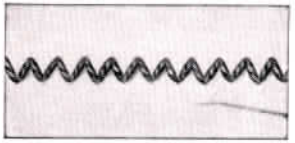


Fig. 23

(For further particulars, see page 13, "Regulating the Thread Tensions"). As the pearl yarn embroidery is produced on the underside, the material must be placed wrong side up.

Zig-Zag Hemming – Fig. 24

Wide Hemmer Z–383

Stitch width: 4. Stitch length: medium.
This foot may be used for making seams with the straight stitch or with the zig-zag stitch; (for further particulars, see page 17, "Narrow Hems").

Fig. 24

Buttonholes – as hand-finished – Fig. 25

Buttonhole Foot Z–293 with Adjustable Gauge

Stitch width: 2. Stitch length: almost 0. Stitch position: left. Adjustable limit stop *e* – see page 12 – on "buttonhole" mark, (for further particulars, see page 13, "Setting for Straight or Zig-Zag Stitching").

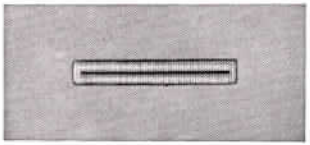


Fig. 25

Under thread tensions: weak. Upper thread tension: sufficiently strong to draw the under thread up, so that straight and regular chain stitches are formed; (for further particulars, see page 13, "Regulating the Thread Tensions").

Hold the upper thread slack in your hand, and purl along the first edge of the buttonhole. At the end leave the needle on the right in the material, and raise the presser bar lifter. Move the material around to the right until it faces in the opposite direction, and make one stitch on the left. Now move the zig-zag stitch adjustment lever on to 4. Firmly hold the material and make the first bar by stitching four times to and fro. Leave the needle on the left in the material, slide the zig-zag lever back to 2, and purl the other edge of the buttonhole; when sewing the second purl make sure that the first purl lies accurately in the right-hand groove which is provided in the underside of the presser foot. The second purl will then follow parallel into the groove on the left. Finally, leave the needle when on the left in the material, turn the zig-zag knob again on to 4, and make the second bar in the manner already described above. Now you make a few fastening-off stitches – after first moving the knob to 0.

Before removing the work from the machine, set the gauge, which is fitted to the right-hand side of the foot, to correspond with the size of the buttonhole, and tighten the screw. This setting is for gauging the next buttonhole. Now you slash the centre of the buttonhole, using the buttonhole opener.

Buttonhole with Gimp – Fig. 26

Buttonhole Foot Z–293 with Adjustable Gauge

For setting the machine, follow the directions given on page 24, under "Buttonholes". Upper thread tension: normal. Under thread tension: slightly stronger (see also page 13, "Regulating the Thread Tensions").

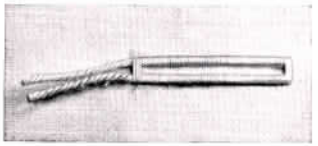


Fig. 26

The reinforcing thread must be threaded from above through the small hole in presser foot, and placed at the back of the machine. When sewing the buttonhole, let the gimp slide through your hand. The two ends must be trimmed off closely to the stitching.

Sewing on Buttons – Fig. 27

Buttonhole Foot 348

Stitch width: 4. Stitch length: 0. Stitch position: left. The feed must be lowered for this class of work, by turning lever *c* – see page 1 – upwards.

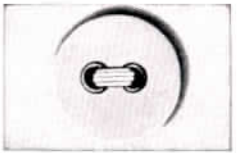


Fig. 27

Place the button on the cloth, lower the presser bar lifter, and let the needle pass through the left hole in button. Stitch 8 to 10 times from hole to hole. Now move the zig-zag stitch adjustment lever to 0, and fasten-off with a few stitches. Remove the work from the machine, after severing the threads.

Automatic Fashion Stitching – Figs. 28–31

Beading Foot Z–343 d

Stitch width: 4. Stitch length: almost 0. Stitch position: centre.

Fig. 28

Fig. 29

Fig. 30

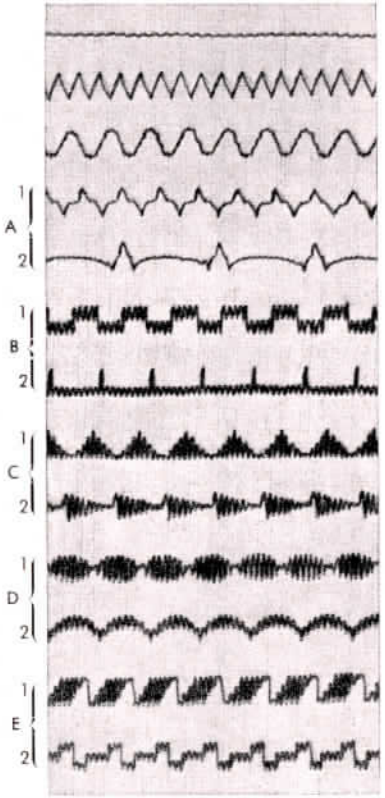


Fig. 31

The machine is designed to perform three basic stitch techniques, viz: straight stitch, zig-zag stitch and highly elastic curve stitch (Fig. 31, first three examples at the top of the illustration).

By interchanging the 5 pattern discs (Fig. 29) – each disc gives 2 distinct fashion stitches – no less than 10 different ornamental stitch techniques can be performed on the machine. After opening the cover of the automatic fashion stitch mechanism (30) – see p. 1 – you will clearly see the pattern disc *b* – Fig. 28 – which is mounted on stud *a*. If you rotate the pattern disc selector *c* – Figs. 28 and 30 – until the selector indicates "1", the machine will sew fashion stitch No. 1, which corresponds to the pattern marked on the side of the disc away from you. If you set the selector *c* on "2", the machine will sew fashion stitch No. 2, the pattern of which is shown on the side of the disc facing you. By decreasing the stitch width, and shortening the stitch length, a wide range of varying stitch techniques can be obtained.

When the selector *c* is set on "curve stitch" (Fig. 31, 3rd example from the top), the machine will sew the highly elastic curve stitch which is used not only for ornamental purposes, but also for all stitching and repairing on tricot. The pattern disc can be exchanged when the selector *c* is set on "zig-zag" or "curve stitch". With the selector in either of these two positions, the disc can be mounted on the stud (Fig. 28) as easily as slipping a ring on your finger.

Beading Stitch – Fig. 32

Beading Foot Z–343 d

With this presser foot you can do beading or zig-zag sewing. Stitch width: 2–4 (most effective with 4). Stitch length: almost 0. Upper thread tension: slightly weaker than normal. Under thread tension: slightly stronger than normal; for further particulars, see page 13, "Regulating Thread Tensions"). The stitches must be laid closely together, so that there are no gaps visible.

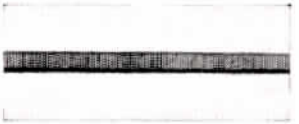


Fig. 32

Individual Ornamental Stitches – Figs. 33–35

Beading Foot Z–343 d

A great variety of stitches of varying width and length – by adjusting the lever (Fig. 33) the range can be increased evenly – can be made. A few of the sewing effects are illustrated here, but you can add many more to these by applying your own imagination.


Fig. 33

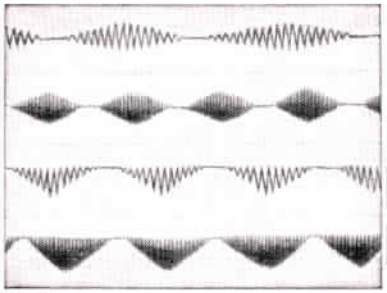


Fig. 34

1. Stitch length: approx. 0,5. Stitch positioner: midway. While sewing with an even speed move the zig-zag knob evenly between positions 0 and 4.

2. Stitch length: almost 0. Stitch positioner: midway. While sewing with an even speed move the zig-zag knob evenly between positions 0 and 4.

3. Top – stitch length: 0,5. Bottom – stitch length: almost 0. Top and bottom – stitch positioner: left or right. While sewing with an even speed move the zig-zag knob evenly between positions 0 and 4.

4. Stitch width: 1,5–2. Stitch length: (top) 1; (centre): 0,5; (bottom): almost 0. Stitch positioner: move the stitch positioning knob alternately to the left and right, keeping count of the number of stitches made on each side.

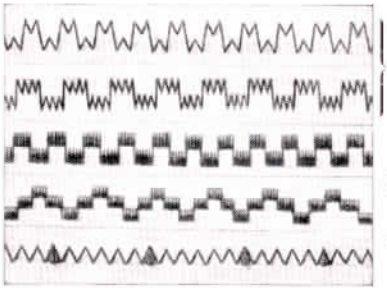


Fig. 35

5. Stitch width: 1,5. Stitch length: almost 0. Stitch positioner: move the stitch positioning knob from centre to left, back to centre, over to right, back to centre, a. s. o.

6. Stitch width: 2–3. Stitch length: 1. Stitch positioner: midway. After you have made about 10 zig-zag stitches, lower the feed, and continue to sew the same number of stitches on the spot.

Applique Work – a) Ordinary; b) with Gimp – Fig. 36

Applique Foot Z–349
for Straight and Curved Stitching

Preparatory work: place the material on the fabric, as indicated in the pattern, using the zig-zag stitch for sewing down. The sewing should be done with the standard presser foot Z–343 f, and with a stitch width of 1–1.5, and a medium stitch length. The surplus material must be trimmed away closely to the line of stitching.

For this class of applique work the upper thread tension must be slightly weaker, and the under thread tension slightly stronger, than normal. There must be no gaps between the stitches.

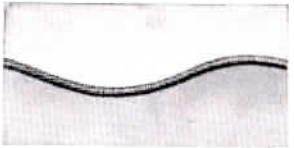


Fig. 36

a) Ordinary Applique Work: Stitch width: 2–4. Stitch length: almost 0. With this stitch oversew the previously made zig-zag seam along the edge of the material.

b) Applique Work with Gimp: Stitch width: not to exceed 2. Stitch length: almost 0. Before you attach the foot, thread the gimp into it, as follows: insert a needle threader from back to front through the hole in the foot, introduce the gimp into the eye of the threader, and then draw the gimp with the threader through the hole and to the back of the foot. Now you can attach the foot to the presser bar. Commence to sew, and let the gimp slide through your hand.

In both cases the sewing must completely cover the trimmed edge of the material.

Cording – Fig. 37

Applique Foot Z–349

Gimp: cotton.

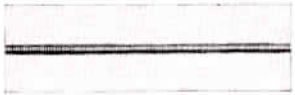


Fig. 37

For thread tensions, stitch setting and method of working see under b) "Applique Work with Gimp".

Wool and Pearl Yarn Work – Fig. 38

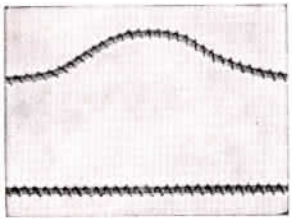


Fig. 38

Applique Foot Z–349

Gimp: Wool or pearl yarn, colored. Stitch width: 2. Stitch length: 0,3–0,5. For thread tensions and method of working, see under b) "Applique Work with Gimp." The colored gimp must show through the zig-zag stitching.

Overcasting in Conjunction with Pearl Gimp – Fig. 39

Applique Foot Z–349

Gimp: pearl yarn, colored.

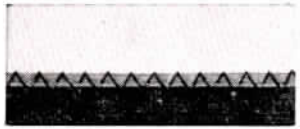


Fig. 39

Preparatory work: as for "Overcasting, Edge-Stitching, Hemming", see page 21, paragraph 2.

Stitch width: 2. Stitch length: 0,3–0,5. Thread tensions and method of working as under b) "Applique Work with Gimp", page 29. The colored gimp must show through the zig-zag stitching.

5. How to use the twin Needle Clamp

If you have purchased the adjustable twin needle clamp, you will find the following instructions helpful.

Front
Fig. 40

Back
Fig. 41

To adjust distance between twin needles

The distance between the twin needles may be adjusted by loosening the two screws on the back of the clamp (Fig. 41). To obtain the widest possible distance between the needles, move lower section of clamp outward until the marking on the upper part is in line with the innermost of the three markings on the lower part. This adjustment can be made on either one or both needles.

To obtain a medium spacing between the twin needles, line up the marking on the upper part of the clamp with the centre line on the lower part. For a narrow spacing between the two needles, line up the marking on the upper part with the outer line on the lower section of the clamp.

After the adjustment of distance between the twin needles has been made, tighten the screws on the back of the needle clamp. You will find the adjustment is easier to do before the clamp has been attached to the needle bar.

Fig. 42

How to obtain best results with twin needles

As a general rule the stitch positioning lever should be on centre when sewing with twin needles. It is also advisable to test the descent of the needles to be sure neither one hits the side of the needle hole.

When the needles are the widest distance apart only straight stitching can be done. It is impossible to do zig-zag stitching, curve stitching or automatic embroidery. However, when the needles are adjusted to the narrowest distance apart, all single needle stitching previously described can be duplicated. In most cases, the stitch width can be as high as 4.
When the needles are adjusted to a medium distance apart, set the stitch width accordingly, always testing the descent of the needles before starting to sew.

To attach the twin needle clamp: Raise the thread take-up lever to its highest, loosen the needle clamp retaining screw, and carefully draw the single needle clamp from the bar. Slide the twin needle clamp on to the needle bar, pushing it up as far as it will go, and tighten the screw on the right of the clamp.

Threading of twin needles

Place a spool of thread on each of the two spool pins. Pass both threads together through the two thread guides (page 9, Fig. 6) then separate the threads. Take one thread through the front thread guide on the tensioner, and the other thread through the rear guide. Pass both threads together through the take-up lever, from where each thread is then taken separately through the appropriate guide on the needle clamp. Thread eyes of needles from front to back.

Tensions

Follow directions given previously for thread tensions and stitch lengths when doing either straight stitching, ornamental stitching or automatic embroidery.

Changing needles

Both left and right needles in various sizes may be purchased from the supplier of your machine. To change needles, loosen the screws on the front to the twin needle clamp (Fig. 40). Insert a left and right needle into the proper positions (the long groove in needles toward the front of the clamp). Retighten the small screws.

6. Cleaning and Oiling

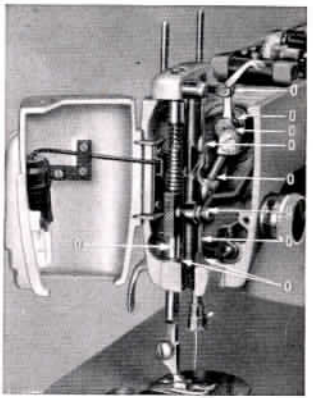


Fig. 43:
End View of Machine Head, with opened face cover plate

To keep the machine at a high pitch of efficiency, good care must be taken of it. Mere dusting of the machine surface will not suffice. Fluff, thread ends and dust settle in the working mechanism, and combine with the lubricating oil. Gradually small lumps are formed which interfere with the stitch forming mechanism and impede the smooth running of the machine.

It is necessary, therefore, to give all parts specified hereafter a regular, thorough cleaning. Never use for cleaning metal instruments, such as scissors, screwdrivers or needles – if you do, you may accidentally damage the delicate stitch forming mechanism. Use instead either a suitable brush or a small wooden stick. Point the stick and wrap round the point a piece of soft cloth.
After cleaning, oil all working parts carefully. Use only best quality sewing machine oil, which contains neither resin nor acid and is crystal clear. A few drops at

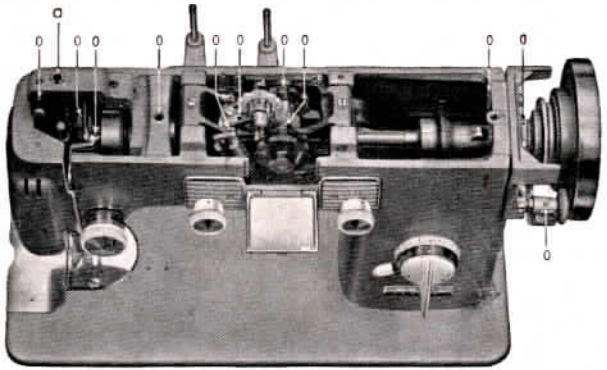


Fig. 44: Top View of Machine Head, with arm cover plate removed

the right places will prove ample. After oiling, run the machine rapidly for a minute – make sure first that the needle is not threaded, and that the presser bar lifter is raised – to let the oil penetrate to every part of the working mechanism. Then let the machine stand idle for a short while. Before using it again wipe away all surplus oil.

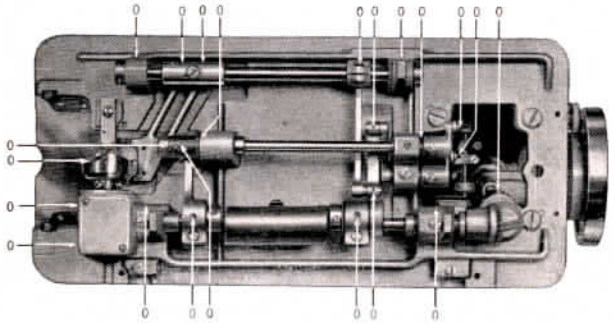


Fig. 45: View of Under-Side of Bed Plate

If the machine has not been used for any length of time or if you have used it continuously, thus rendering thorough cleaning necessary, first of all apply a few drops of kerosene to all lubrication points. Then work the machine rapidly, wipe all parts, and apply a film of fresh oil.

The following points, which are marked 0 on the adjacent illustrations, must be cleaned and oiled in proper sequence:

1. The Head (Fig. 43) – access to the parts is gained after opening the hinged face cover plate.
2. The arm (Fig. 44) – the arm cover plate must be lifted.
3. The Needle Plate – the plate can be removed after the retaining screws have been taken out.
4. The Hook (Fig. 46). Move the needle bar to its highest, and tilt the machine over to the back. A small size paint brush will be found most suitable for removing any dust from the hook. Apply a few drops of kerosene to the race between the hook II and the bobbin carrier IV; then work the machine rapidly for a short while, and

Fig. 46

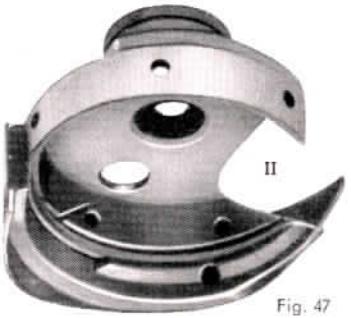


Fig. 47

Fig. 48

Fig. 49

finally apply a few drops of oil. Should this prove insufficient to dislodge the dirt from the hook, or should thread ends impede the free movement, then the hook must be carefully dismantled. This is done by removing the race guide III after the small screws 1, 2 and 3 have been unscrewed. This done, the bobbin carrier IV can be taken out. All parts should then be carefully wiped with a clean piece of cloth. When reassembling, move the thread take-up lever to its highest, so that the point I of the hook is on the left, and on top, as shown in Fig. 46. Then replace the bobbin carrier IV into the hook II, and let the retaining key engage into the groove *n*. Finally, replace the guide III and fix it down with screws 1, 2 and 3.

In addition to the above, you must also lubricate all other places indicated on the illustrations, making sure that after oiling all parts are properly replaced.

7. Cause and Remedy of Faults

Please always remember: many machine troubles may be caused by your not carefully following these working instructions. In many cases faulty working of your machine can be remedied merely by cleaning and oiling.

Machine works heavily:

1. Thread ends have become entangled in the hook race – remove all obstructions.
2. Certain working parts of the machine are dry – apply a few drops of oil.
3. The machine is dirty – thoroughly clean it.
4. The wrong kind of oil has been used – clean the machine with kerosene.

The machine is noisy:

1. Thread ends have become entangled in the hook race – remove all obstructions.
2. Certain working parts of the machine are dry – apply a few drops of oil.
3. A component part has worked itself loose – retighten it with a screwdriver.

Upper Thread breaks:

1. Inferior quality, knotty sewing thread breaks easily – use a better quality.
2. The needle is too fine for the thread or material – use a thicker needle (see page 6, "Relative Needle Sizes and Thread Numbers").
3. The upper thread tension is too severe – loosen the setting flange on tensioner (see page 13, "Regulating the Thread Tensions").
4. The needle is wrongly inserted, or it is bent – straighten the needle, or change it (see page 7, "Setting the Needle").

5. The eye of the needle has a knife-edge – change the needle.
6. Thread ends or dirt are interfering with the free movement of the feed dog, resulting in bad feeding of the material – remove the needle plate and thoroughly clean the feed dog.
7. The bobbin case has developed a rough edge, causing the thread to break – remove the case and consult a sewing machine specialist.

The Under Thread breaks:

1. Inferior quality, knotty sewing thread breaks easily – use a better quality.
2. The bobbin thread tension is too severe – loosen the tension screw (see page 13, "Regulating the Thread Tensions").
3. The bobbin thread tension is too weak – tighten the screw with a screwdriver (see page 13, "Regulating the Thread Tensions").

Stitches are missed:

1. The needle has not been set high enough – change the needle; (see page 7, "Setting the Needle").
2. The needle is bent or blunt – change the needle.
3. The needle is too thin or too thick for the thread used – change the needle or the thread, to give the correct relation between the two (see page 6, "Relative Needle Sizes and Thread Numbers").
4. The thread curls owing to its being unsuitably spun or too highly glossed for your purpose – use a different thread.
5. The needle used is incorrect – obtain the correct needle from the suppliers of your machine.

The Needle breaks:

1. The needle is wrongly inserted – reset the needle. The needle is bent or blunt – change the needle, (see page 7, "Setting the Needle").

2. The needle is too fine for the thread or material – use a thicker needle; (see page 6, "Relative Needle Sizes and Thread Numbers").
3. The upper thread tension is too severe – loosen the setting flange on tensioner; (see page 13, "Regulating the Thread Tensions").

Faulty Feeding:

Thread ends or dirt are interfering with the free movement of the feed dog, resulting in bad feeding of the material – remove the needle plate and thoroughly clean the feed dog.

The Material puckers:

1. Both tensions are too severe – loosen the setting flange on upper thread tensioner and the screw on bobbin case; see page 13, "Regulating the Thread Tensions").
2. The pressure exerted by the presser foot is too great – reduce the pressure by adjusting the pressure regulating screw *a* (Fig. 44).

Uneven stitching:

1. The thread is uneven or too thick – change the thread.
2. The tension is wrong – regulate the tension; (see page 13, "Regulating the Thread Tensions").
3. Upper and under thread are being drawn unequally from reel or bobbin respectively, owing to a dirty setting flange or bobbin – remove all obstructions.
4. The needle is blunt or bent – use a new needle.
5. The bobbin is wrongly positioned – remove the bobbin case and make sure the bobbin is properly inserted in the case.

In all cases where faulty working of the sewing machine cannot be rectified by your following the above directions, please consult the suppliers of your machine. They will always be glad to help you.