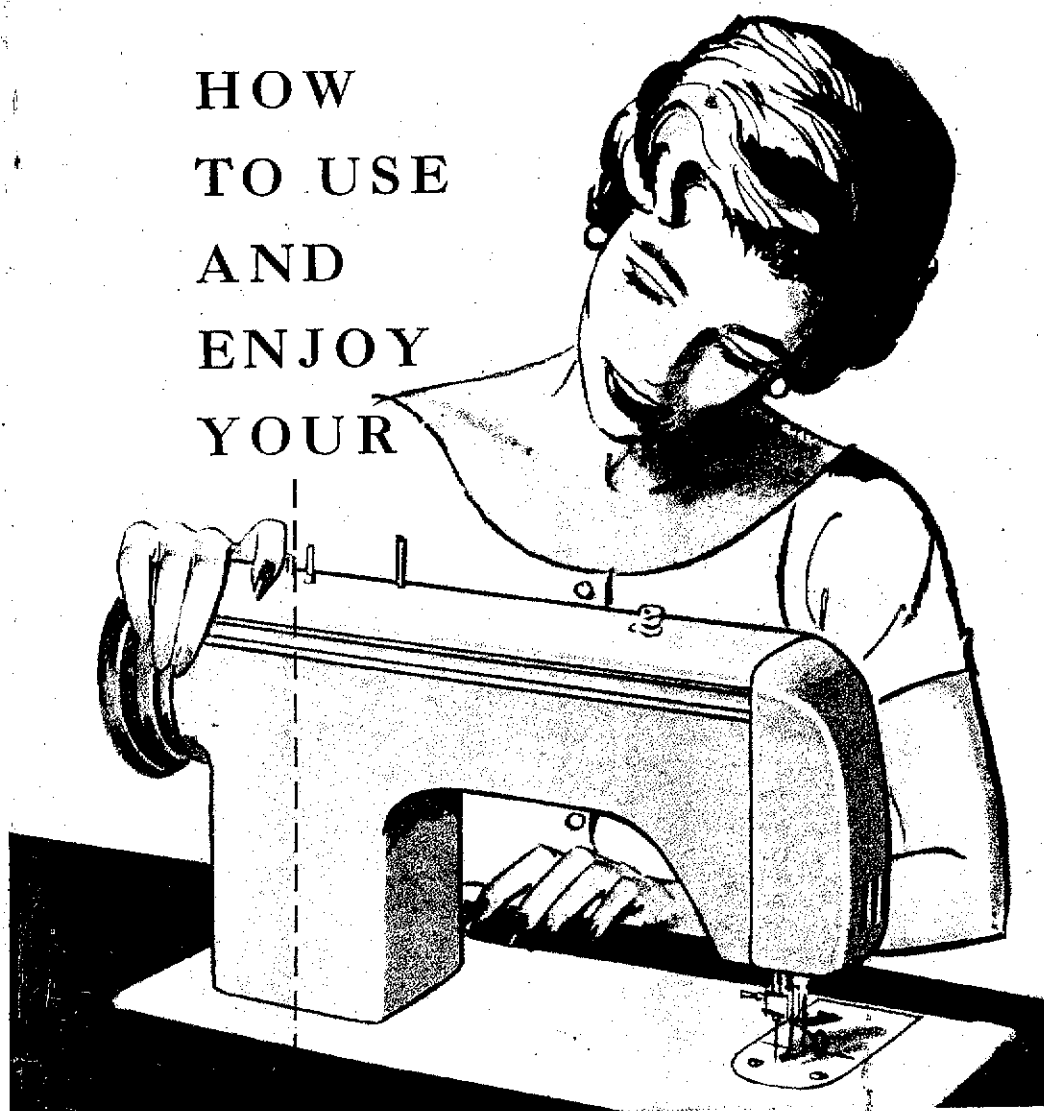


HOW
TO USE
AND
ENJOY
YOUR



BROTHER®

Valiant 930"

SELECT-O-MATIC



BROTHER INTERNATIONAL CORPORATION

36-50 38th Street Long Island City 1, N. Y.

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TYPES OF FABRICS	THREAD SIZES	NEEDLE SIZES	Set LENGTH Control At	Stitches Per Inch	HAND NEEDLES
Filmy materials comparable to Net, Silk, Chiffon Velvets, Voiles, Ninon Marquissette, Chiffon	50 Embroidery 100 Cotton Synthetic Thread	9	2 to 1 1/2	15 to 20	10
Sheer materials comparable to Lawn, Sheers, Paper Taffetas, Pure Silks, Synthetic Tricots, Synthetic Velvets, Satins, Dimity, Synthetic Gossamer Silks, Silk	50 Embroidery 80 to 100 Cotton A Silk Synthetic Thread	11	2 to 1 1/2	15 to 20	9
Lightweight materials comparable to Gingham, Chambray, Pique, Poplin, Percale, Cretonne, Chintz, Faille, Bengaline, Wool Flannel, Wool Jersey, Cotton Velvets and Velveteens, Wool Crepe, Lightweight Suitings	50 Mercerized 60 to 80 Cotton A Silk	14 or 16	2 to 1 3/4	15 to 18	8
Medium heavy materials comparable to Gabardine, Rep, Corduroy, Crash, Heavy Suitings and Coatings	Heavy Duty Mer. 40 to 60 Cotton Synthetic Thread	16	2 1/2	12	6
Heavy materials comparable to Sailcloth, Denim, Ticking, Overcoatings	30 to 40 Cotton Thread	18	2 3/4	10	4
Plastic Materials	50 Embroidery Synthetic Thread 50 Mercerized	11 or 14	2 1/2	12	11

INTRODUCTION

This is your BROTHER instruction course. It has been created for you so that you may, in the shortest time possible, learn everything about your BROTHER sewing machine.

Sewing is one of the pleasures in life which can only be enjoyed to its fullest if one possesses a truly fine sewing machine.

With your BROTHER sewing machine, you will be able to design, create, mend and repair with the utmost speed and with the least amount of effort. You are the master of this machine, for without your guidance it cannot function. You must be completely relaxed and take as much time as you feel necessary. The more practice you have the more expert you will become.

Your BROTHER sewing machine has been completely serviced and is ready to use. Your machine was oiled, mechanically checked at the factory, and pre-sewn to make sure it is in perfect working order.

If the packing tape and the accessory box are still attached to your machine, please remove them.

KEY CHART

- A. NUMBERS 1, 2, 16, AND 17 CAN BE USED WITH TWIN NEEDLES.
- B. NUMBERS 1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17 AND 18 CAN BE USED WITH VARIATIONS ON THE NEEDLE POSITION CONTROL AND OR THE STITCH WIDTH CONTROL.
- C. NUMBERS 6, 11, 19 AND 20 CAN BE USED WITH VARIATIONS ON THE STITCH LENGTH CONTROL AND THE STITCH WIDTH CONTROL.
- D. NUMBER 20 IS A BLIND STITCH KEY.

1.	11.
2.	12.
3.	13.
4.	14.
5.	15.
6.	16.
7.	17.
8.	18.
9.	19.
10.	20.

How to Ready Your Machine for Sewing

Take the pedal, which is connected to your machine by a long electric cord, and place it on the floor within easy reach of your foot. Then take the electric plug, which is also connected to the sewing machine and insert it into a convenient outlet. If your machine starts to run when you plug it in, then you must *reverse* the two plugs that are *under* the sewing machine.

If the machine is a console model, it may come with a knee control. Whenever the accelerator pedal is referred to in this course, remember to use the knee control.

PLEASE DO NOT STEP ON THE PEDAL TO START YOUR MACHINE UNTIL YOU ARE INSTRUCTED TO DO SO.

Your sewing machine comes with a built-in light (#1C). Reach behind your machine on the left hand side and turn on the switch.

How to Remove the Bobbin

Open the key cover (#10) at the top of the machine and if there is a pattern key in place, remove it (#10B). To do this take hold of it and lift it straight up. Put it away in the key box and then close the key cover (#10).

Raise the presser foot control (#1B) with your left hand. Place your right hand on top of the balance wheel (#8A), which is located on the upper right hand side of your machine, and move it towards you until the needle has moved to its highest position.

With your left hand, pull the slide plate (#3D) toward you until it is fully open.

Look into the opening behind the slide plate and you will see the bobbin case (#3B) directly under the needle area. Please notice a square hole that looks like it has a round ball in the center of it. This is the hinge, which locks the bobbin case in place.

With the tip of the index finger of your left hand, reach into the opening and pull the hinge toward you and you will see it swing out and toward your left. While still holding the hinge with your finger, place your thumb against the hinge and with finger and thumb together, pull the hinge to your left and the bobbin case will come out (#3F). Place the bobbin case on the table in front of you. Place it so that the hinge is up.

Now remove any thread that might be on the top side and around the needle of your machine. Also remove any test material which might still be under the needle area.

Before you go any further, you should practice running your machine just as it is—as follows:

With your right hand on the top of the balance wheel (#8A), move it towards you and at the same time step on the accelerator pedal. Your machine should start to run. Next, push down very hard on the pedal and you will see the machine speed up. Now lift your foot off the pedal slightly and your machine will slow down again. The trick to sewing properly is to be able to run your machine at a constant and moderate speed. If you run your machine too rapidly, you stand a good chance of breaking the thread. Practice starting and stopping your machine for a few moments. To stop it, just lift your foot off the pedal and at the same time use your right hand to stop the balance wheel (#8A).

Pick up the bobbin case in your left hand and the bobbin will fall out. If there is any thread on the bobbin, Please set it aside and get an empty bobbin from your accessory case.

How to Wind the Bobbin

Now, take a spool of thread and place it on one of the upper spool pins.

With your left hand, take hold of the loose end of the thread from the spool and guide it through the first and second thread guides (#2A) on the top of your machine, then, down to and under the bobbin tension pulley (#6D). Now pick up the empty bobbin with your right hand and wind the thread around the bobbin six or seven times with your left hand, making sure that the thread goes over the *top* of the bobbin and away from you. Place the bobbin with the thread on it on to the winding pin of the bobbin winder (#6C) and make sure that the bobbin is all the way on the stud by turning the pulley (#6A) with one hand and the bobbin with the other in opposite directions. Now, push on the bobbin control marked "PUSH" (#6B) and the bobbin will be locked into the winding position.

With your left hand on top of the balance wheel (#8A) to hold it still, place your right hand on the needle stop control (#8B) and turn it towards you one half a turn. This disengages the sewing end of your machine.

Now you are ready to wind the bobbin. Place your right hand on top of the balance wheel (#8A) and move it towards you. At the same time, press the foot on the pedal. Remember, not too vigorously or it will race the machine. Keep the machine running at a constant speed and watch the bobbin being wound.

When you see or hear the bobbin winder disengage, remove your foot from the pedal and stop the machine at the same time with your right hand on the balance wheel.

You will learn, that your right hand is always used to start and stop the machine.

Now, reengage the needle stop control (#8B) by holding the balance wheel (#8A) with your left hand and turning the needle stop control with your right, one half turn away from you. Make sure you turn it until it is secure.

Now with your right hand, again turn the balance wheel (#8A) toward you until the take-up lever (#2E) is at its highest position.

THE TAKE-UP LEVER MUST ALWAYS BE AT ITS HIGHEST POSITION WHEN YOU ARE GOING TO THREAD THE MACHINE.

Threading the Bobbin Case

Break the thread leading from the spool to the bobbin at the winder pulley (#6D) and remove the fully wound bobbin from the winding pin with your right hand. Pick up the bobbin case (#4A) with your left hand and insert the loaded bobbin (#4B) into it.

Now, while still holding the unit in your left hand, with your right take hold of the loose thread and pull it into the small slot (#4C) at the edge of the bobbin case. Continue to pull this thread downward until it slips under the needle guard and into the large hole (#4D), which is the delivery eye.

Inserting the Loaded Bobbin into the Machine

Transfer the loaded bobbin case to the right hand and with the index finger of your left hand, pull open the hinge and hold it between your index finger and thumb. Return the case to the bobbin raceway (#3F) where it came from originally while still holding it by the hinge.

Make sure the little metal finger is pointing upwards (#3A). Now, let go of the hinge and push on the bobbin case to make sure it is locked into position. Take any excess thread that is hanging out and drop it into the bobbin pit and close the slide plate (#3D).

Threading the Upper Part of the Machine

Take hold of the thread from the spool at the top of the machine with your left hand. Make sure that the thread is still threaded through the top two thread guides from back to front (#2A). With your right hand, hold the spool so it will only unwind if you pull the thread, and with your left hand, move the thread down and to the right of the thread tension control. Make sure the thread is toward the back of the control and aga-

inst the tension guide (#2B). Then swing the thread to the left under the control. Continue moving the thread under the control and up the left hand side of it, making sure that as you go up, you catch the check spring (#2C). Continue your circle over the top of the control, holding the thread fairly tight until you see the thread drop behind the hook guide (#2D).

Now, guide the thread up and behind the thread guide bar (#2F) from right to left, and continue with the thread upwards.

With both your hands, pass the thread through the hole at the end of the take-up lever (#2E) from right to left. Now, pull the thread down and pass it back through the thread guide bar (#2F) from right to left. Continue to bring the thread down and pass it from front to back into the thread guide (#2G), and then continue downwards with the thread and pass it through the last guide (#2H) by pulling it into the guide from the left to the right. Then, down to the needle and pass the thread through the needle from front to back (#2I) and pull out about 6 inches of thread.

Now, hold the end of the thread towards you with your left hand and with your right, turn the balance wheel (#8A) toward you. Continue to turn it until the needle goes all the way down into the hole in the needle plate and then returns to its highest point. Pull on the thread with your left hand and see if the needle has picked up the bobbin thread (#5B). If it has, then with your right hand, pull the bobbin thread out until you retrieve the end of it. If it did not pick up the thread, then repeat the process by turning the balance wheel (#8A) once again.

Once this is done, then pass the needle thread down between the toes of the presser foot (#5C) and out away from you. Take the bobbin thread and move it away from you (#5D).

Ready to Sew

PLEASE REMEMBER THIS. NEVER RUN YOUR MACHINE WHEN IT IS THREADED, WITHOUT MATERIAL BENEATH THE PRESSER FOOT.

Take a piece of practice material and fold it over once so that you have a double thickness. Place it under the needle and lower the presser foot control (#1B) with your left hand. Set the fabric control (#1A) to the type of material you are using and also set the feed control (#7A) to "NORMAL".

Set the stitch length control (#7E) to No.3. Now, set the needle position control (#7D) to M. Set the left stopper control (#7B) all the way to the left by pushing it in and moving it. Then, set the width control (#7C) to "ZERO".

With your right hand, start your machine in motion by pulling the balance wheel (#8A) towards you and at the same time, step lightly on the pedal. **DO NOT PULL THE MATERIAL. LET THE MACHINE DO THE WORK. MERELY GUIDE THE MATERIAL WITH YOUR FINGERS. IF YOU PULL THE MATERIAL, YOUR NEEDLE MIGHT EITHER BEND OR BREAK.**

When you get to the end of the material, push the direction control button (#7F) in the center of the length control (#7E) and your machine will sew in the opposite direction.

Hold the button in until you have sewn backwards as far as you want to. Then, release the button and the machine will sew forward again. To sew in a different line just turn the material slightly while sewing.

Continue sewing until you get the feel of it and gain some confidence.

If you want to stop the machine, merely lift your foot off the pedal and use your right hand as a brake to stop the balance wheel (#8A) from turning.

How to Turn a Corner while Sewing

If you want to turn a corner after sewing a straight line, merely sew to the point where you want to make the turn and then stop your machine. Be sure that the needle is all the way down through the material by turning the balance wheel (#8A) slightly with your right hand. Then lift the presser foot control (#1B) with your left hand and turn the material so that the machine will then sew at right angles to the direction you were sewing. Once you have turned the material, drop the presser foot control again and commence sewing. You can practice by sewing squares and triangles.

CORRECTIONS AND ADJUSTMENTS

If everything up to this point was in proper adjustment, your machine should have performed perfectly.

Sometimes, things can happen to your machine that might make you feel that it is not functioning properly. Almost in every instance, any adjustment that might be necessary can be done by you in a matter of seconds.

Your sewing machine has been completely checked and test-sewn. The most common difficulties you should encounter would be that your balance wheel might not turn, the needle might bend or break, or your thread might break at various points. All of these things can be remedied by you.

As far as thread breakage is concerned, it sometimes takes repeated adjustments in order to correct this situation. There is no reason in the world why this correction cannot be made by you at all times.

IF YOUR UPPER THREAD KEEPS BREAKING, you should check to see if you have threaded the upper part of your machine correctly and if you have, then check your bobbin to see that it is threaded correctly, and that the bobbin case is seated properly in the race. If you cannot find incorrect threading in either the upper or lower part of your machine, then check the tension control to make sure that it is not set too tightly. Just turn it to a lesser number to decrease the tension. You might also check the tension control on the bobbin case. If it is too tight, just loosen the screw slightly with your small screw driver.

Another reason that your thread might break is that the needle you are using might be bent or set into the machine incorrectly. Check page 14 for proper insertion of your needle. Many times thread breakage can be attributed to the fact that you might be using the wrong thread for the type of material being sewn. You might check the chart on page one for this correction. Of course, running your machine at too great a speed might also cause the thread to break.

When you purchase thread at your local store make sure that it is fresh and strong. If, you unfortunately pick thread that is old and dried out, it will either break while sewing or it will break after the first one or two washings once the garment is completed. This would certainly be an unfortunate thing. With practice you will be able to tell whether the thread is good or not by just pulling on it with your fingers. If it breaks too easily, then you will know that it must be old.

The last thing you might check is that your feed control (#7A) might be set too low. Raise it by turning it toward "NORMAL".

It is possible that if your material does not feed properly as it goes under the needle, the thread might break.

IF YOU ARE BREAKING THE LOWER THREAD, then you must go immediately to the bobbin case to see that the bobbin is threaded correctly and inserted into the raceway properly. You might also check to see that the race which the bobbin case fits into is free of any accumulated thread and lint. If too much thread or lint accumulates, it is possible this might be the cause.

Lastly, make sure that the tension screw on the bobbin case is not set too tightly. Actually, you should be able to pull on the thread with your finger with little effort to make the thread unwind. This is a matter of practice. As you become a better sewer, you will know before you start whether it is set correctly or not. Once this tension screw is set properly, it is very seldom that you will have to readjust it, except in some cases where you use some exceptionally heavy material or exceptionally heavy thread.

As mentioned under "BREAKING THE UPPER THREAD", if the thread you are using is too old and is dried out, it will break just as easily on the bobbin as it will on the top of your machine.

IF YOUR BALANCE WHEEL WILL NOT TURN, it is usually caused by continuous sewing over the same hole in the material without moving the material under the needle. What happens is that the thread starts to accumulate in the material and begins to build up in the needle hole. As soon as the thread packs in tight enough, your needle becomes jammed between the thread and the metal plate, causing the entire machine to freeze. This is what makes the balance wheel lock.

To free the needle, and in turn free the balance wheel, you must remove the bobbin case and disassemble your race. See page 14 for details on how to disassemble the raceway.

IF YOUR STITCHES ARE NOT EVEN, that is when most of your stitches are of equal size, but every once in a while you have a shorter or longer stitch, then you must be either pulling on the fabric instead of just guiding it. Also your needle might be the wrong size for the thread or fabric. Check your chart on page one for the correct needle and thread size.

One other point you might check is that the feed control, which is pictured in (#7A), is not set properly and your material is not feeding under the needle at the proper tension.

IF YOU ARE SKIPPING STITCHES, that is, when you have several stitches in a row and it seems to skip a stitch completely, then you must be using a bent or blunt needle. The only other thing that could cause this is that either the needle or thread you are using is not the proper size. Check your chart on page 1.

IF YOUR NEEDLE BREAKS, it is usually because you are either pulling the material or the needle is striking the presser foot or the needle plate. If your needle is striking any surface at all as it passes in and out of the hole in the needle plate, then you must readjust your needle to make sure it is properly positioned. You might also reset your presser foot by loosening the screw next to it and check to see if it is properly positioned.

THE PROPER FUNCTION OF THE CONTROLS

Thread Tension Control (#2)

The thread tension control is at its correct setting if the thread on both sides of the material seems to disappear into the material. This means that the two threads are locking together half way through the material, as in (#9A).

If the tension is too tight on the control, then the thread on the top of the material will lie straight and you will actually see the bottom thread showing on the top of the material, as in (#9B). Also, if it is too tight the thread might break.

If the tension is set too loose on the control, then you will notice the bottom thread lying straight on the bottom of the material and the top thread will be showing on the bottom of the material, as in (#9C.)

ALWAYS ADJUST THE THREAD TENSION CONTROL GRADUALLY AND MAKE SURE THAT THE PRESSER FOOT CONTROL IS DOWN WHEN ADJUSTING.

Thickness of the material and the thickness of the weave do affect the tension on the thread. The tension setting for one material is not necessarily the right setting for another type of material. Many times minor imperfections in the stitch indicate incorrect adjustment on the thread tension control.

The numbers on the thread tension control indicate the amount of tension. The higher the number, the more tension. Every time you change the material or thread to a different type, then you

must adjust the tension. If adjusting the thread tension control does not seem to take care of the trouble, then **YOU MUST CHECK THE BOBBIN TENSION CONTROL.**

Bobbin Tension Control (#4F)

The bobbin tension screw located at the side of the bobbin case regulates the tension on the bobbin thread. If the screw is too loose, then the thread on the top of the material will lie straight with the bottom thread visible on the top of the material, as in (#9B).

If the screw is too tight then the thread on the bottom side of the material will lie straight and the top thread will be visible on the bottom of the material (#9C). Having it too tight will sometimes cause the thread to break.

Tension on the bobbin is usually correct if you can pull the thread from the bobbin without much force. This adjustment comes with practice. When it is set correctly, the thread will tie together in the center of the material, out of sight, as in (#9A).

Stitch Length Control (#7E)

The stitch length control is the control that you use to adjust the length of the stitch. The number of stitches per inch ranges from a setting of fine, which equals approximately 34 stitches per inch, to a setting of No. 4, which equals approximately 6 stitches per inch. (See chart on page 1 for breakdown.)

NEVER USE YOUR MACHINE WHEN IT IS SET ON ZERO UNLESS YOU ARE INSTRUCTED TO DO SO. THIS MIGHT CAUSE YOUR MACHINE TO JAM.

Direction Control (#7F)

The push button direction control is used when you want to sew backwards. You can manipulate it either rapidly or slowly depending upon what type of work you are doing. The most common use for the push button control is to lock a stitch at the end of a seam. This is called "back tacking".

Feed Control (#7A)

Different materials require different settings on the feed control. The heavier the material, the more towards "NORMAL" the dial should be set and the lighter the material, the more towards "DARN" the dial should be set. This is a matter of practice.

Fabric Control (#1A)

The fabric control is merely an adjustment of the pressure that is brought to bear on the presser foot. Fabrics of different weights will vary the required pressure. This adjustment, when properly set, will enable the fabric to move under the needle smoothly.

Needle Position Control (#7D)

The needle position control merely controls whether your machine sews on the left or right. For example, if you move the control to the left to L, you will also see the needle move to the left. If you set the control to the right to R, you will see the needle move over to the right. If you set the control on M, then the machine will function as a straight stitch machine and sew on center. This machine is a full zigzag machine. The fact that you have this needle position control on your sewing machine enables you to sew three times as many stitches as any other regular zigzag machine.

Width Control (#7C)

The width control regulates the width of the stitch. Setting this control on ZERO creates a straight stitch. The further you move the control to the right towards No. 5, the wider the stitch becomes. Therefore, if while you are sewing you move this control back and forth between ZERO and 5, you would be creating a zigzag stitch. The manner and rhythm in which you move the control determines the style of the zigzag stitch.

Stopper Controls (#7B)

The stopper controls merely limit the swing of the width control. These stoppers are used when you want to limit the maximum

width of your stitch. For example, if you want to swing the width control between No. 1 and No. 3 only, then you would set your left hand stopper on No. 1 and the right stopper on No. 3.

MAKE SURE THAT YOU INSERT THE PROPER NEEDLE PLATE FOR ZIGZAG SEWING. It is the one with the slot that receives the needle, instead of the one with the small round hole.

How to Use Pattern Keys

This sewing machine comes with 20 pattern keys, No. 1 through No. 18 are maroon, No. 19 and No. 20 are white keys. No. 20 is a blind stitch key.

To insert a pattern key merely open the key cover (#10) on the top of the sewing machine and insert the pattern key so that the marker on the top edge of the pattern key (#10B) lines up exactly with the finger on the machine (#10A). You *must* always line up (#10B) with (#10A) when you are going to start to sew a pattern. The reason for this is that you always want to start at the beginning of a pattern, rather than in the middle of one, so that if you are sewing several rows of the same pattern they will come out together. To line up the two points, merely turn the balance wheel towards you. For various automatic patterns, please refer to the Pattern Chart on page No. 2.

When using a pattern key you may vary patterns sewn by the manipulation of the stitch length control (#7E), the needle position control (#7D) and the width control (#7C). Always set the fabric control (#1A) and the feed control (#7A) to the proper setting for the fabric being sewn.

1. *Always set the stitch length control (#7E) on "FINE" when using an automatic pattern key. You may vary the length of stitch by moving the control anywhere in the "FINE" area.*
2. *The needle position control (#7D) varies the pattern key stitch to various degrees, depending on where the width control (#7C) is set. Study your Chart on page No. 2.*
3. *The width control (#7C) will regulate the width of the stitch which is forming the pattern. The manipulation of this control will greatly vary the resulting pattern.*
4. *Twin needles may be used when using automatic pattern*

keys. Only use pattern keys No. 1, No. 2, No. 16 and No. 17. If you use any pattern key other than these four your needle will swing too much to the left or right and strike the needle plate.

SERVICING YOUR MACHINE

Replacing the Needle

The sewing needle should be replaced if it is bent, broken or dull. To do this, raise the needle to its highest point by turning the balance wheel towards you. Then take the screw driver (from the accessory box) and loosen the needle clamp screw (#2J) and remove the needle. The new needle should be inserted into the needle housing. **MAKE SURE THAT FLAT SIDE OF THE NEEDLE (#2K) IS FACING AWAY FROM YOU TOWARDS THE BACK OF THE MACHINE.**

Now tighten the screw (#2J) with the screw driver, after making sure the needle is all the way up into the housing. **MAKE SURE THE NEEDLE YOU USE IS THE CORRECT SIZE FOR THE THREAD YOU ARE USING** (See page No.1).

Cleaning the Race

The race will collect lint and thread from constant sewing. To remove the race, do the following:

- 1. Turn balance wheel (#8A) until the needle is at its highest point and tilt the machine after unhooking the latch.*
- 2. Remove the bobbin and bobbin case (page No.3).*
- 3. Turn the retaining nut (#11A) counter clockwise till it is loose and let it drop down off the retaining ring (#11B).*
- 4. Lift the retaining ring (#11B and #12B) off the race.*
- 5. Remove the race hook by pulling on its center pin (#12C).*
- 6. Remove all thread and lint from the hook and retaining ring, and wipe clean with a cloth.*
- 7. Check to see if there is any thread or lint inside the race housing (#12D) before you return the hook and retaining ring. If there is, remove it.*

8. *Replace the hook (#12C) by holding it by the center pin and insert it with the circular part towards your right. DO NOT FORCE IT.*
9. *Swing the retaining ring back into position (#12B and #11B),*
10. *Lift the retaining nut (#11A) back into position over the retaining ring (#11B) and tighten clockwise.*
11. *Replace the bobbin and bobbin case (Page No.5).*

Replacing the Bulb

To relace the bulb, open the front plate on your sewing machine and lift up on the reflector, pulling it towards you at the same time. Remove the bulb (as you would any light bulb) and replace it with the extra one from the accessory box. Now push down on the reflector so that it goes back into its proper place and close the door. It is advisable to keep an extra bulb on hand at all times.

Replacing the Belt

To replace the belt, loosen the screw that holds the motor bracket against the *side* of the sewing machine and lift the bracket and motor, as one unit, towards the balance wheel (upwards). Remove the belt from the small pulley and then work it off of the balance wheel pulley. Put the new one onto the balance wheel pulley and then onto the small pulley. Tighten the screw on the bracket. Do not make the belt too tight on the pulleys. There should be a slight give to it.

Adjusting the Bobbin Winder

If while winding the bobbin on your bobbin winder (#6C) you find the thread is winding unevenly, then you must readjust the winder pulley (#6D). To adjust it, just loosen the screw holding it in place and move it either to the left or right, just the slightest amount. Then tighten it and see if the bobbin will now wind correctly. If the winder pulley is too much to the right, you will see the thread pile up on the right side of the bobbin, if it is too much to the left, then you will see the thread pile up on the left side of the bobbin. That is why you must adjust it until it winds evenly back and forth.

OILING THE MACHINE

How Often ?

If you use your machine an average of one hour a day, then you should oil it at least once a week.

If you use it just a couple of times a week, then oil it every four or five weeks.

If your machine has been standing unused for several months or more, then it must be *cleaned* and *oiled*.

How to clean

The only parts of the machine that need a good cleaning at least once a week, when you use the machine weekly, is the race and the bobbin case. Take the race apart as described on page #14 and brush or wipe the unit clean using kerosene or benzine. This will cut the old oil. Examine the race and the race housing to make sure every bit of thread and line has been removed.

Remove the needle plate which will expose the cloth gripper so you can clean this area also (#13A). Do not loosen the screws, the plate will come out when you lift it.

Oiling

USE ONE OR TWO DROPS ONLY FOR MOST OILING POINTS.

1. Put 3 drops of oil in the bobbin race. Make sure you remove all parts first (page #14).
2. Oil all the points indicated on the Oiling Chart. Besides putting oil where the parts rub together, make sure you put oil in each oil hole.
3. Make sure you insert the tip of your oil can (it comes with your accessory box) all the way into each oil hole.
4. Make sure that you put oil in the three holes at the top side of your sewing machine, one is located on the left at the top and the other two are located on the right. Put three drops of oil in each one of these holes and make sure that the point of your oil can is all the way down in the hole when you do this.
5. Open the face plate where the light is and oil all the moving parts. Put two drops at the top of the spring and one drop

at the bottom of the shaft the spring rides on where it passes through the housing of the sewing machine. See the Oiling Chart.

- 6. Also oil the needle shaft at the bottom where it passes through the housing.*
- 7. Turn the balance wheel and you will see the cam behind the needle shaft turning. Oil both points where the cam is connected to the needle shaft and also at the lower connecting point where there is a small hole. Also put two drops behind the cam in the groove that the take-up lever rides in.*

Open the key cover and put 3 drops of oil on the gear (#10D) located one inch below where you insert the key. After you have oiled the entire machine, then put all the parts you removed back into place and let the machine run for about two minutes. (Make sure the foot is up unless you have a cloth under it.) This will work the oil into the working parts thoroughly. Wipe the excess oil from all the parts that you have just lubricated. Run stitching onto a piece of cloth to make certain all the oil is completely absorbed. You might also take a cloth and wipe all around the needle, needle shaft (that is exposed under the machine) and also the foot and foot shaft. After you have completed oiling your machine, you must dry off the exposed parts, or the oil will sweep down towards the needle and will spot the material on which you are working. Make sure that you don't have too much oil where the bobbin case goes or it will seep into the case and get your bobbin thread wet.

OIL THE MOTOR ONLY TWICE A YEAR. There is an oil hole at each end of the motor. Just 2 drops is enough.

SUGGESTIONS FOR VARIOUS STITCHES

This sewing machine is an automatic zigzag machine and is capable of making a multitude of zigzag and fancy stitches, plus monogramming, basting, overlocking, etc. The stitches created depend entirely upon the manipulation of the control knobs and also your creative ability. Don't forget one of the very interesting features of this model sewing machine is that it will sew with twin needles. This means that you can increase the number of types of stitches that you can make over the ordinary automatic zigzag machine.

(a) To Make a Straight Stitch

1. Set width control (#7C) to ZERO.
2. Set needle position control (#7D) to M.
3. Set stitch length control (#7E) to the length of stitch desired.
4. Set the fabric control (#1A) to the type of fabric being sewn.
5. Commence to sew.

IN MAKING A SATIN STITCH, OR ANY FANCY OR ZIG-ZAG STITCH, USE THE NEEDLE PLATE WITH THE SLOT INSTEAD OF THE ONE WITH THE ROUND HOLE.

(b) To Make a Satin Stitch

1. Set the width control (#7C) to No. 5, and move the stopper control (#7B) that is on the left up against the width control so that it will be held in position.
2. Set the stitch length control (#7E) to Fine.
3. Set the feed control (#7A) to Normal.
4. Set the fabric control (#1A) to the type of fabric being sewn.
5. Commence to sew.

(c) To Make a Simple Zigzag Stitch

1. Set the width control (#7C) to 5.
2. Set the needle position control (#7D) to M.
3. Set the stitch length control (#7E) anywhere from Fine to 5. (This setting can vary, depending on the length of stitch desired).
4. Commence to sew.

(d) To Make a Fancy Zigzag Stitch

1. Set your feed control (#7A) to Normal.
2. Set your fabric control (#1A) to the type of fabric being sewn.
3. Set the length control (#7E) on FINE.
4. Set the needle position control (#7D) to M.
5. Move the left stopper control (#7B) all the way to the left.
6. When you start to sew move your width control (#7C) from Zero to 5 and back to Zero again and continue to do this back and

forth. Do it either rapidly or slowly but make sure you do it at the same speed each time.

FOR MORE FANCY ZIGZAG STITCHES SEE THE CHARTS 2 AND 3 ON THE TOP OF YOUR ILLUSTRATION CARD.

Using Twin Needles

1. Remove the standard needle from your sewing machine (see page #14). Insert your twin needles into the machine with the flat side away from you. Push the twin needles all the way up into the housing and then tighten the retaining nut (#2J) with a screw driver. *(Use the needle plate with the wide needle slot in it.)*

2. Place two spools of thread on the two spool pins on the top of your machine. (They can either be the same color or different colors).

3. Thread your machine exactly as you do when you thread it for a single needle (see page #5) except when you get down to the needles you thread one thread into the left hand needle and the other into the right needle from front to back.

4. As far as the bobbin thread is concerned it makes no difference whether you use the same color as the threads on the top of your machine or a different color. It will only be seen on the bottom side of the fabric being sewn. Only wind one thread onto the bobbin when using twin needles. Don't get the idea that it is necessary to wind two threads on it. The two threads on the top of your machine lock into the single thread on the bottom.

5. Pick up your bobbin thread in the same manner that you do when you use a single needle, except you hold both threads from the twin needles towards you (see page #6).

The number of stitches you can create with your twin needles are many but make sure you do not move or set your width control to too wide a stitch or either your left or right hand needle will strike the needle plate or foot of your machine. You can test the limitations of your twin needles by doing the following:

6. Raise the presser foot control (#1B).

7. Lower the twin needle by turning the balance wheel (#8A) 'til the tips of the needles are just below the presser foot with the points of the needles just barely into the needle hole in the needle plate.

8. Move the width control (#7C) to the right until you see the right hand needle come as close as possible to the right edge of

the needle hole in the needle plate. Look to see what number your width control (#7C) has moved to and then set the right hand stopper (#7B) over against the width control so that it cannot swing to a higher number. Adjust the left stopper control (#7B) to limit the swing of the needle to the left.

You may now use your twin needles for any fancy stitch or any straight stitch you desire, including the satin stitch.

How to Make Buttonholes (Method A)

This method is convenient when you wish to sew buttonholes on bulky garments and *does not* necessitate turning the material under the sewing foot.

Always make sure when getting ready to sew buttonholes that you set your feed control (#7A) to the proper setting. Also, make sure that you practice on scrap material before attempting to sew personal garments.

1. Use the "all purpose" sewing foot.
2. Set the stitch length control (#7E) to FINE.
3. Use tailor's chalk and mark the exact location of buttonhole desired on the fabric (#14A).
4. Set your fabric control (#1A) to the proper setting for the material you are using.
5. Set the needle position control (#7D) to R.
6. Set the width control (#7C) on #2 and lock it into position with your left stopper control (#7B).
7. Place the material under the foot with the needle at point (#14B-R) on the marked buttonhole. Push in on the direction control (#7F) and sew backwards to point (#14B-S).
8. When you reach point (#14B-S) stop the machine, making sure that the needle stops on the right hand side. If necessary, turn the balance wheel to move it to this position.
9. Turn the feed control (#7A) to the DARN position.
10. Move the width control (#7C) over to No. 5.
11. Sew approximately 10 stitches from point (#14C-S) to point (#14C-T), finishing with the needle at point (#14C-T). If the needle ends on the right, then turn your balance wheel to move it to the left.
12. Move the needle position control (#7D) to L and turn the feed control (#7A) back to NORMAL position.

13. Set the width control (#7C) back to No. 2 and proceed to sew forward on the other side of the buttonhole from point (#14D-T) to point (#14D-U) and finish with the needle at point (#14D-U) on the left. If the needle ends on the right, then turn your balance wheel to move it to the left.
14. Set the width control (#7C) back to No. 5 and move the feed control (#7A) back to DARN and sew approximately 10 stitches from point (#14E-U) to point (#14E-R).
15. Set the width control (#7C) to ZERO and sew 6 stitches to lock the thread on the buttonhole (at point #14E-R).
16. With your seam ripper, open the buttonhole by cutting between the two rows of stitches.

How to Make Buttonholes (Method B)

This type is most widely used for lighter materials and for corded buttonholes. It is suggested that you practice on scrap material before attempting to sew on a personal garment.

1. Set your feed control (#7A) to NORMAL and set your fabric control (#1A) to the proper setting for the material you are using.
2. Use the "all purpose" sewing foot.
3. Set the width control (#7C) to #2 and lock it there.
4. Set the stitch length control (#7E) to FINE.
5. Set the needle position control (#7D) at L.
6. Make the desired location of the buttonhole with tailor's chalk and place the fabric under the sewing foot.
7. Start sewing at the point (#15R) and continue to point (#15S) making sure you end at point (#15S) with your needle on the right side and in the material.
8. Raise the presser foot control (#1B) and turn the material clockwise 180 degrees until the row which you have just sewn now comes toward you from the needle. Then drop the presser foot control (#1B).
9. Raise the needle to its highest position by turning the balance wheel (#8A) towards you and move the width control (#7C) to No. 5 and lock it there.
10. Sew 6 full width stitches from (#15S to #15T).
11. Set the width control (#7C) back to #2 and sew the second side of the buttonhole to point (#18U).
12. Set the width control (#7C) back to No. 5 and sew 6 full width stitches from (#15U to #15R).
13. Move the width control (#7C) back to ZERO and tie the thread

- by taking 2 or 3 stitches.
14. With your seam ripper, open the buttonhole by cutting between the two rows of stitches.

NOTE: To give buttonholes added strength when needed, use a cord. Place the cord under the sewing foot and hold it in position as you sew. The stitches will automatically cover it.

How to Sew on buttons

1. Use the "all purpose" sewing foot.
2. Set the fabric control (#1A) to COATING and also set the feed control (#7A) to DARN.
3. Place the fabric under the presser foot.
4. Place the button on the fabric under the presser foot with the button's holes directly beneath and centered on the hole in the presser foot.
5. Lower the presser foot by dropping the presser foot control (1B).
6. With your right hand, turn the balance wheel (#8A) toward you and at the same time adjust the width control (#7C) until the needle moves through the center of each button hole without striking any surface.
7. Set the needle position control (#7D) on L and set the stitch length control (#7E) on ZERO.
8. Slowly start the machine and make 8 to 12 stitches between the button holes and then stop with the needle remaining in one of the button holes.
9. Raise the presser foot by lifting the presser foot control (#1B) and then move the width control (#7C) back to ZERO. Lower the presser foot and sew 5 to 6 stitches to tie the thread.

Before you try sewing buttons on to a personal garment, you should use practice material until you do it well.

Mending

1. Remove the sewing foot completely from the machine by unscrewing the screw (#5A) that holds it in place and removing it.
2. Set the feed control (#7A) to the DARN position.
3. Set the needle position control (#7D) on M.
4. Set the stitch length control (#7E) on FINE.
5. Set the width control (#7C) on ZERO.

6. Place the material to be sewn in an embroidery hoop or frame and make sure the material is taut.

7. With a pair of scissors trim all loose threads away from the torn area.

8. Place the hoop with the material under the needle, making sure that the material lies flat on the needle plate. If you have it upside down, the material will be suspended between needle and the needle plate.

9. Lower the presser foot control (#1B), even though you have removed the presser foot. This releases the tension on the thread tension control.

10. Hold the thread coming from the material towards you with your left hand and with your right turn the balance wheel(#8A) towards you until the needle passes down through the material and returns with the bobbin thread. Then pull out the bobbin thread and hold it between the fingers of your left hand while you again turn the balance wheel to form 2 stitches.

11. Now turn the tear in the material so that you can sew across it while you push the hoop away from you and toward you. This will enable your stitches to bind the two sides of the tear together.

12. Now hold the hoop with your left hand so that you can move it as needed and with your right hand turn the balance wheel (#8A) to start your machine in motion. Run your machine at a medium to fast speed.

13. Make sure that you sew at least one half inch on each side of the tear in order to make a strong mend. Make sure as you go that you make these rows of stitches as close as possible.

14. There are three basic types of tears: a straight tear(#16A), an L shaped tear (#16B) and a hole (#16C). In all three instances the procedure of mending these holes is the same.

HOW TO SEW ON HOOKS, EYES AND SNAPS

Hooks

1. Set your controls the same as if you were going to sew on buttons (See the index).

2. Sew over the stem of the hook, very near the holes, with a few stitches (See figure #17A).

3. Then pull the hook until it is in the position as shown in (#17B).

4. With the 2 holes in the hook under the needle area, adjust your width control (#7C) so that the needle strikes the center of each hole. Sew approximately 10 stitches. (See #17C).

Eyes

1. Set the controls as you would for sewing on buttons, (see Index).
2. Move the holes of the eyes under the needle area.
3. Adjust your width control (#7C) so the needle will strike the center of the holes as in (#17D) and sew approximately 10 stitches.
4. To secure the eye in place take 3 or 4 stitches on each side as indicated in (#17E).

Snaps

For sewing on snaps, use the same adjustments as you would to sew on hooks and eyes and sew at points indicated in (#17F) and (#17G).

EMBROIDERY AND MONOGRAMMING

Set the machine as you would for mending, including the removing of the sewing foot, and make sure that you bring up the bobbin thread through the material before you start. Embroidering and monogramming should be practiced on scrap material. You may vary the design of the stitches by adjusting your stitch width control (#7C), your needle position control (#7D) and the stitch length control (#7E). (See diagram #18).

Applique

1. Use the "all purpose" foot.
2. Place the material to be appliqued on top of the foundation material and baste it into position.
3. Proceed to over-sew the edge with a zigzag stitch. (See page #18).

Cording

1. Use the "all purpose" sewing foot.

2. Set the needle position control (#7D) to M.
3. Set the width control (#7C) to whatever width zigzag stitch required. This setting will vary with the thickness of the cord being used.
4. Refer to Diagram No. 19. This shows you how to guide the cord under the needle so that your stitches will form over the cord.

Very attractive decorative effects can be achieved by using contrasting colored cords and cottons.

Shirring

1. Wind elastic thread of your choice on the bobbin by hand. DO NOT STRETCH THE THREAD WHILE WINDING—MERELY WIND IT WITH THE LEAST AMOUNT OF TENSION.
2. Loosen the bobbin tension screw completely, so that there is no tension on the elastic thread.
3. Replace the bobbin and the bobbin case into the machine and pick up the bobbin thread with the needle in the usual manner. (page #5 and #6).
4. Make sure your top thread is as strong as No. 30, if not stronger, and make sure that the tension on the upper thread is increased by tightening up on the thread tension control (#2).
5. Place your material in position under the needle.
6. Lower your sewing foot.
7. Set your fabric control (#1A) and the feed control (#7A) to the proper setting.
8. Commence to sew after selecting the length of stitch needed. (The longer the stitch, the fuller the shirring effect will be.)

How to Make a Hem

1. Remove the "all purpose" sewing foot from the machine and replace it with the hemmer foot (see No. 20). Make sure it is locked into proper position with the retaining screw.
2. Set the needle position control (#7D) to M.
3. Set the width control (#7C) to ZERO if you wish a straight stitch or move it to the number indicating the width stitch you desire.
4. Set the stitch length control (#7E) to 2 or 3.

5. *Place the edge you wish to hem into the scroll opening of the hemmer and lower the presser foot.*
6. *Guide the material evenly, making sure one half of the scroll opening stays filled with the edge of the material as in (#20).*

How to Make a Shell Stitch

The shell stitch is very popular on very thin materials, such as silk, chiffon or rayon. To make a shell stitch, proceed exactly as you do for hemming (see page #25). The only difference is that you sew a wide zigzag stitch, which is adjusted by moving the width control (#7C) to a higher number, and a longer stitch, by moving the stitch length control (#7E) to a higher number. Also, tighten up on the upper thread tension (#2). This will cause the edge to picot and produce a shell stitch. (See #21).

How to Hem Lace

Proceed as for hemming (see page #25) and insert the lace in the hemmer foot and guide the lace and the material on which it is to be sewn, evenly (see #22).

How to Attach Lace

1. *Use the "all purpose" sewing foot.*
2. *Place the lace on top of the material, letting it overlap the material by at least 1/4 of an inch. Place both pieces under the presser foot and then lower the presser foot.*
3. *Adjust the width control (#7C) to the zigzag stitch you wish and adjust the stitch length control (#7E) to the length of stitch desired.*
4. *Usually on a wide piece of lace, a wide zigzag stitch should be used. Conversely, on a thick piece of lace, a close stitch should be used.*

How to Make a Hemstitch

1. *Use the "all purpose" sewing foot and set the needle position control (#7D) to M.*
2. *Set the width control (#7C) to 2 or 3.*
3. *Set stitch length control (#7E) to No. 3.*
4. *Draw out desired number of threads from material (fagotting).*

5. Place the material under the sewing foot and start to sew slowly.
6. Sew a row of stitches as close as possible to the edge of fagoting on both sides (see #23).

NOTE : You can obtain a picot edge by cutting between the parallel lines of stitching.

How to Make a Flat Felled Seam

1. Use the felling foot (see #20).
2. Set the needle position control (#7D) to M.
3. Set the width control (#7C) to ZERO.
4. Set stitch length control (#7E) to 2.
5. Lay the two pieces of fabric to be sewn together edge to edge, making sure that the right side of the materials lay against one another.
6. Adjust the edges of the material to be sewn so that the bottom fabric extends about $1\frac{1}{8}$ of an inch beyond the edge of the top fabric.
7. Place the fabric under the foot, using the long toe of the foot as a guide and commence to sew.
8. Once you have completed the seam, raise the foot and remove the material, turn it over, open it up and lay it on the table, so that the right side of the material is down.
9. Now take the material, making sure that the $1\frac{1}{8}$ inch edge folds over to the left and insert the material into the scroll opening of the foot.
10. Sew slowly, guiding the material carefully, so that you get a straight seam.

To Make an Overlock Stitch

1. Use the "all purpose" sewing foot. (see #21).
2. Set the needle position control (#7D) to M.
3. Set the stitch length control (#7E) to 2 or higher, depending upon the closeness of the overlock you desire.
4. Set the width control (#7C) to 5 or less, depending upon the width of the overlock stitch you desire.
5. Place the edge of the material under the presser foot and lower same, turning the balance wheel (#8A) by hand towards you until you are sure that the needle will just miss the material on one side.

6. Commence to sew slowly, guiding the material carefully, so that you get a straight seam.

How to Make a Blind Stitch Hem

1. Use the "all purpose" sewing foot.
2. Set the needle position control (#7D) on M.
3. Set the width control (#7C) on 2 or 3, depending upon width of stitch desired.
4. Set the stitch length control (#7E) on 5.
5. Fold the material into the size of hem desired and fold back as in (#24A) with approximately 1 1/4 inch overlap on the bottom edge.
6. Commence to sew down the fold as in (#24B).
7. After completing your hem, unfold the material and press, as in (#24C).

How to Use the Cloth Guide

The cloth guide is very useful when you want to sew in a straight, uniform line.

To attach the cloth guide, place it over the hole to the right of the needle in the bed of the machine and screw in the thumb screw after adjusting the cloth guide to its proper position.

Merely guide the material to be sewn under the needle and against the cloth guide to create a straight sewing line, (see #25).

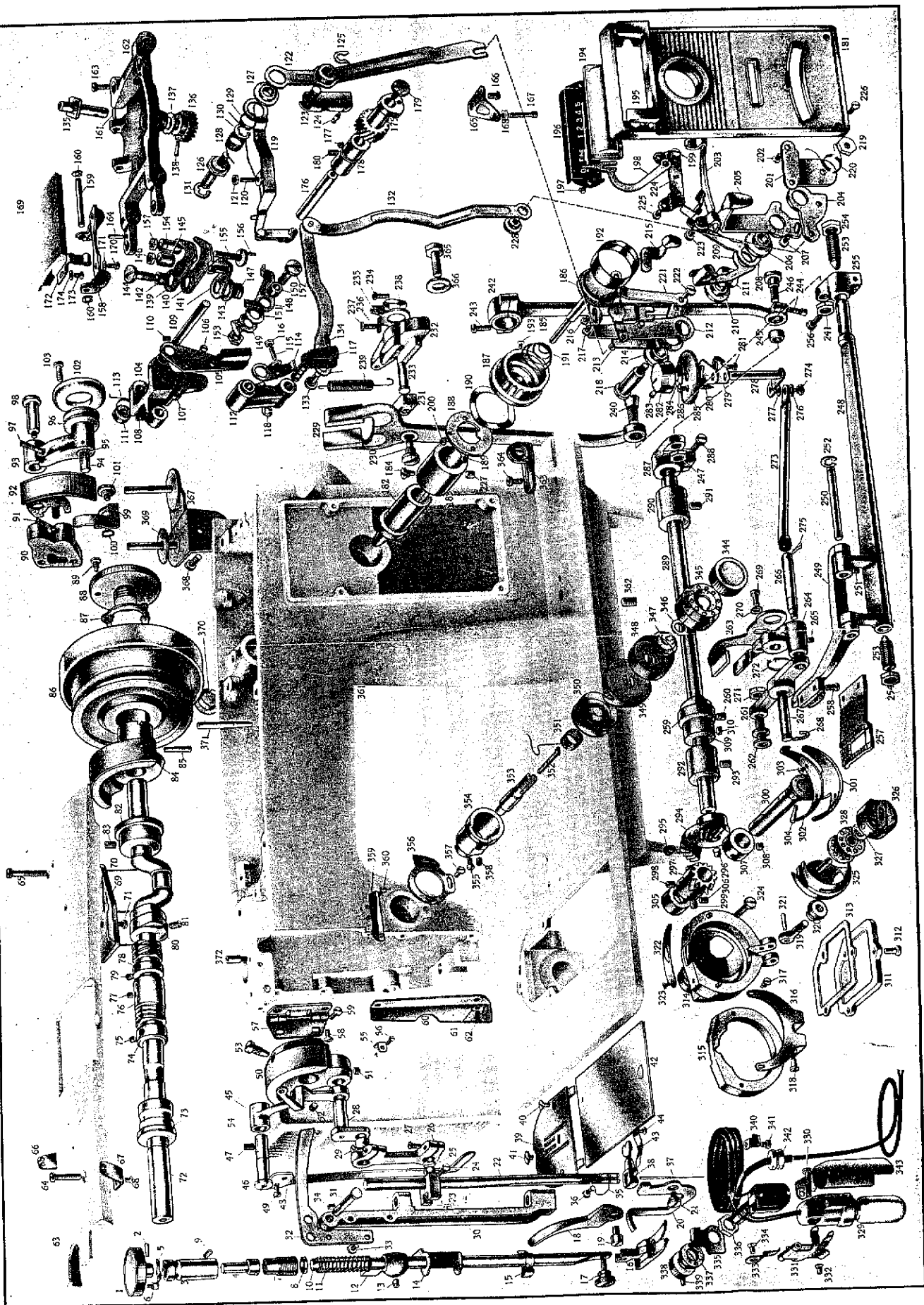
How to Use the Adjustable Zipper Foot

1. Set the machine as you would for straight stitch sewing (see page #18).
2. Set the needle position control (#7D) to M.
3. Remove the "all purpose" sewing foot and attach the adjustable zipper foot (see #26).
4. Place the material and zipper under the zipper foot and adjust the zipper foot by moving it to the left or right, so that the needle will pass on the left hand side of the zipper foot through the notch in its side.
5. Sew on one side of the zipper, then raise your presser foot and slide the material over with the other half of the zipper beneath it.

6. Lower the zipper foot and adjust the zipper to left or right, so that the needle passes to the right of the zipper foot through the groove cut on its side.

NOTE: MAKE SURE THAT YOUR NEEDLE AT ALL TIMES CLEARS THE METAL ZIPPER FASTNER. THIS WILL AVOID BREAKING THE NEEDLE.

PARTS CATALOGUE FOR MODEL 930



PARTS CATALOGUE FOR MODEL 930

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