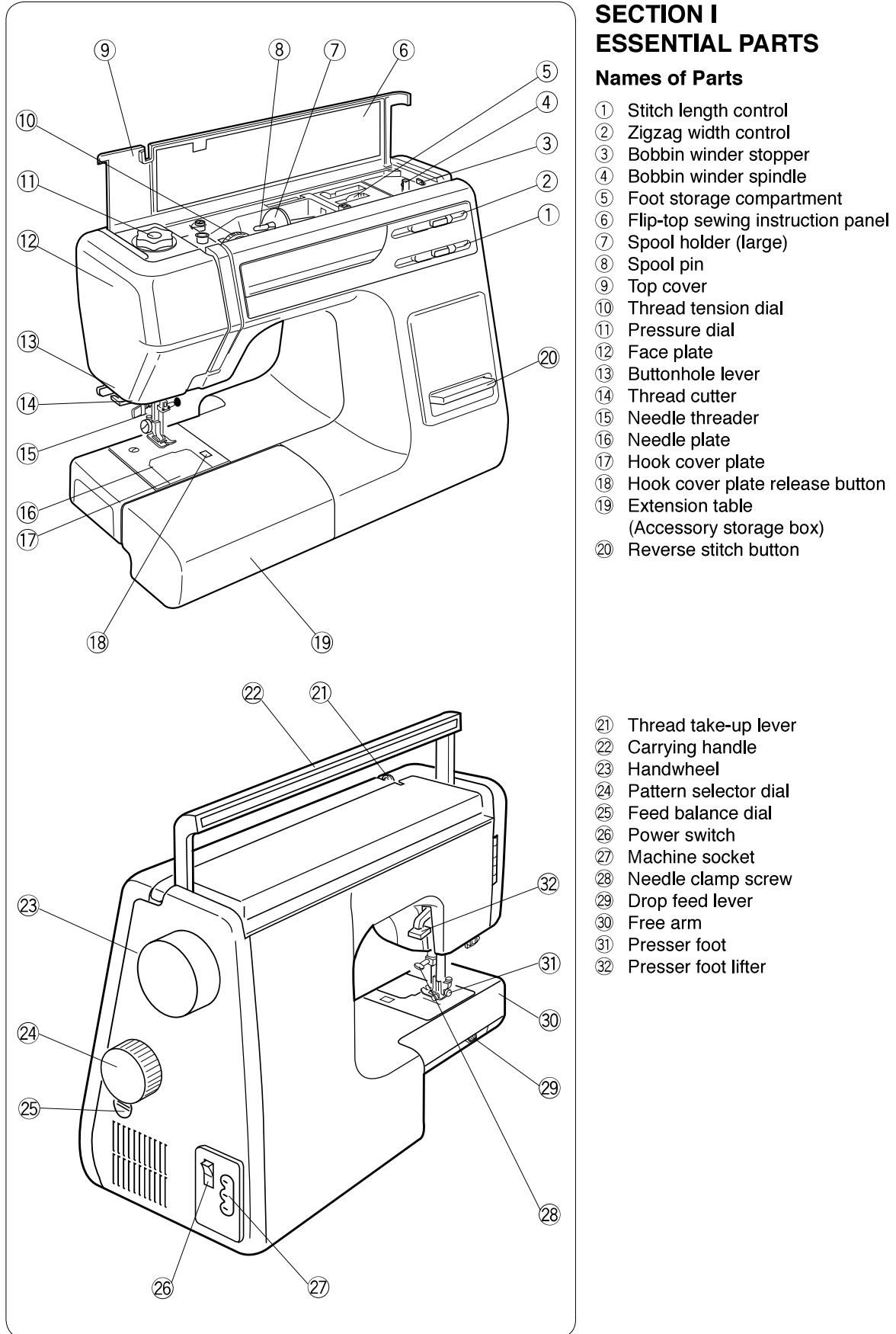
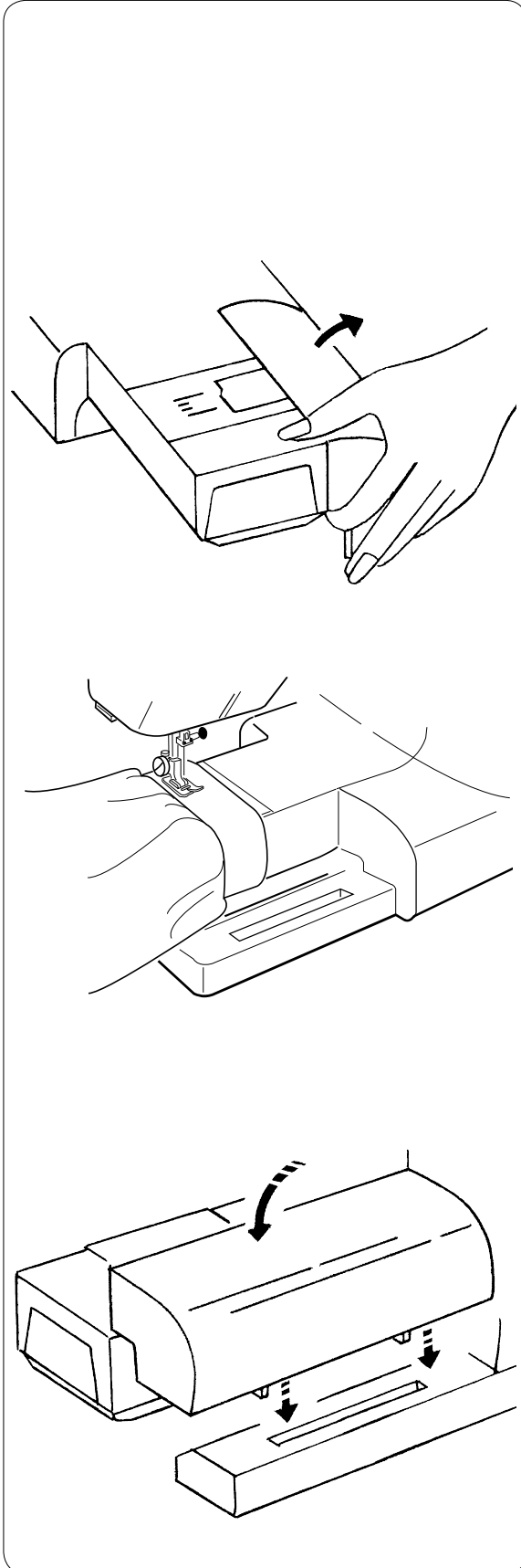


## SECTION I ESSENTIAL PARTS

### Names of Parts





## Removable Extension Table

### Extension Table

The extension table provides added sewing surface and can be easily removed for free arm sewing.

### For free arm sewing

Lift out the extension table, as illustrated.

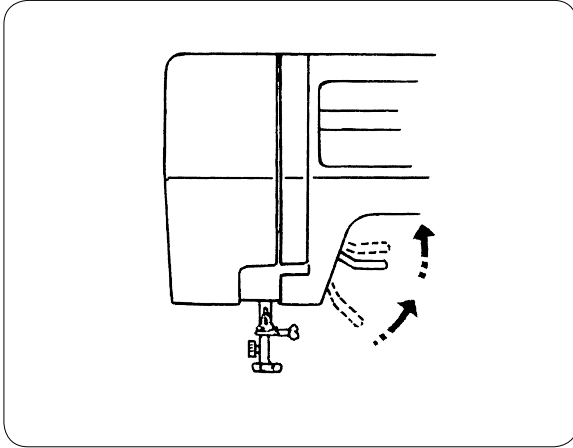
### Free arm sewing:

The free arm is used for stitching sleeves, waistbands, pant legs or any other tubular garments.

It is also useful for darning socks or elbows.

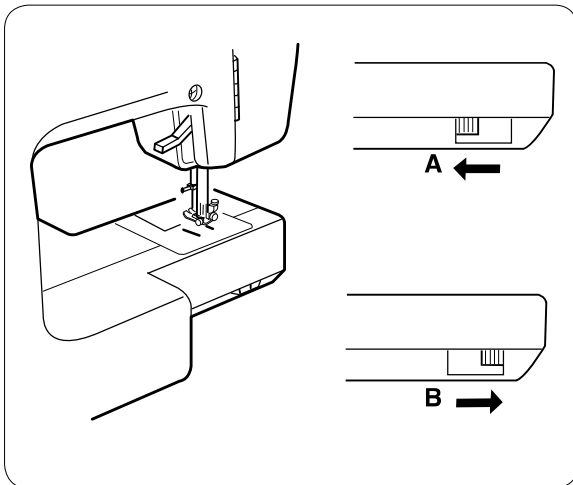
### For attaching the table

Position the two pins of the storage box on the base slit and push down gently.



### Additional Clearance

The presser foot can be raised higher for additional clearance.



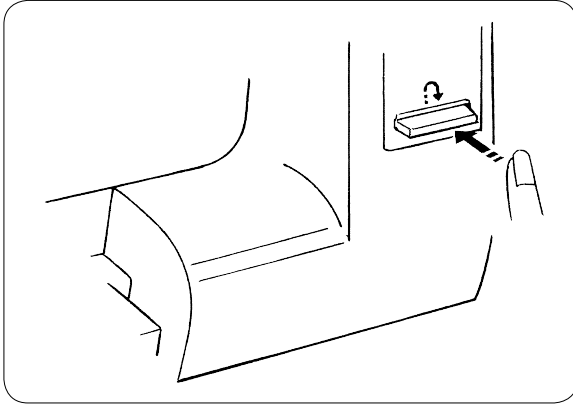
### Dropping the Feed Dogs

Drop feed lever is located underneath of free arm bed.

A: To raise the feed dogs, push the lever to the direction of arrow as illustrated.

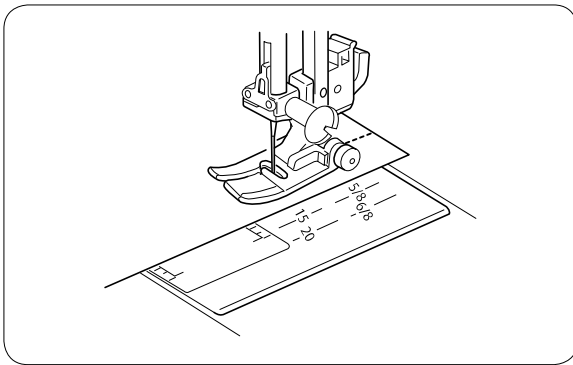
B: For dropping the feed dogs, push the lever to the direction of arrow as illustrated.

\* Feed dogs must always be up for normal sewing.



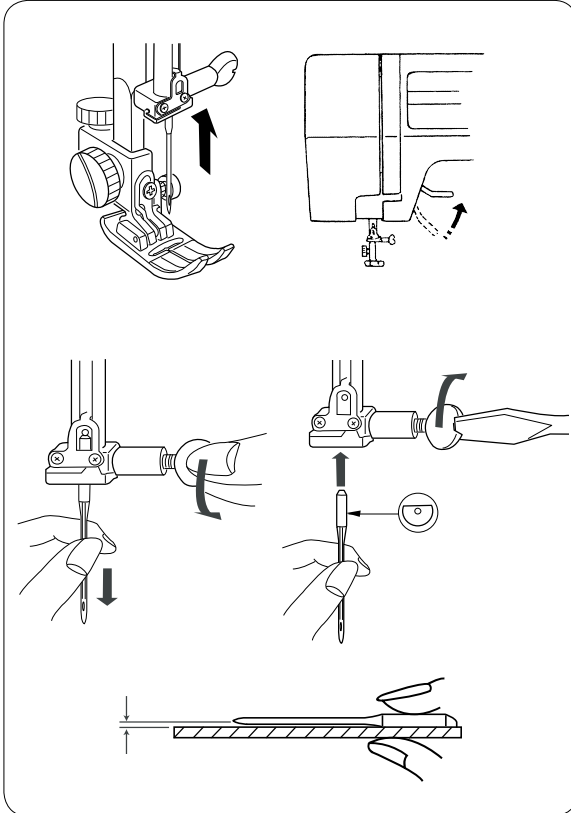
### Reverse Stitch Button

As long as you keep the reverse stitch button depressed, the machine sews backwards.



### Seam Guide Line

The numbers on the needle plate indicate the distance between the left needle position and the line. The numbers in the front indicate in millimeters. The numbers in the back indicate in inches.



## Changing Needle

### **!** CAUTION:

Turn the power switch off before replacing the needle.

Raise the needle by turning the handwheel toward you and lower the presser foot.  
Turn off the power switch.

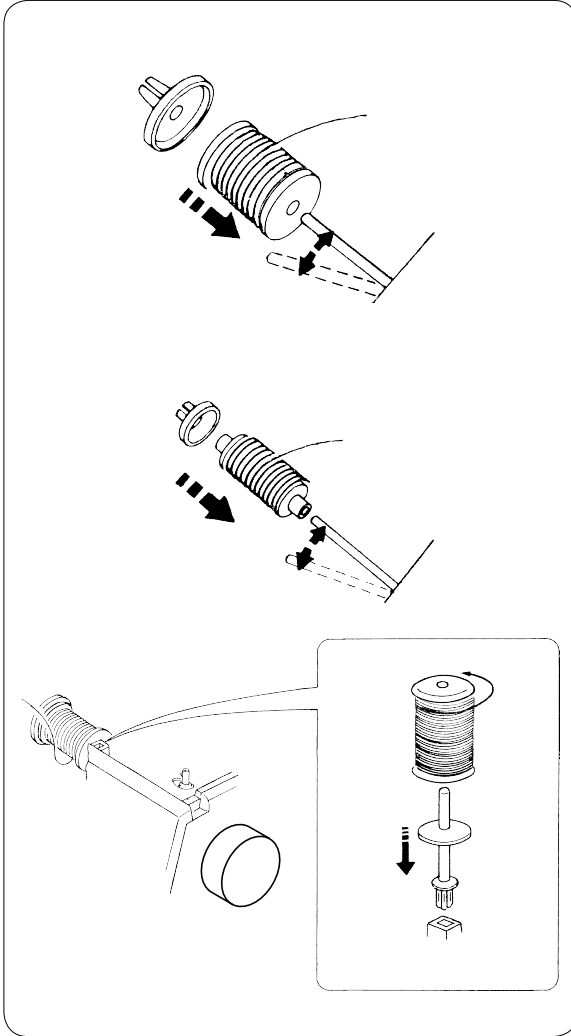
Loosen the needle clamp screw by turning it counter-clockwise.

Remove the needle from the clamp.

Insert the new needle into the needle clamp with the flat side away from you.

When inserting the needle into the clamp, push it up as far as it will go and tighten the clamp screw firmly with the screwdriver.

\* Check your needles frequently for barbed or blunted points. A damaged needle can cause permanent snags or runs in knits, fine silks and silk-like fabrics.



## Winding the Bobbin

### Horizontal Spool Pin

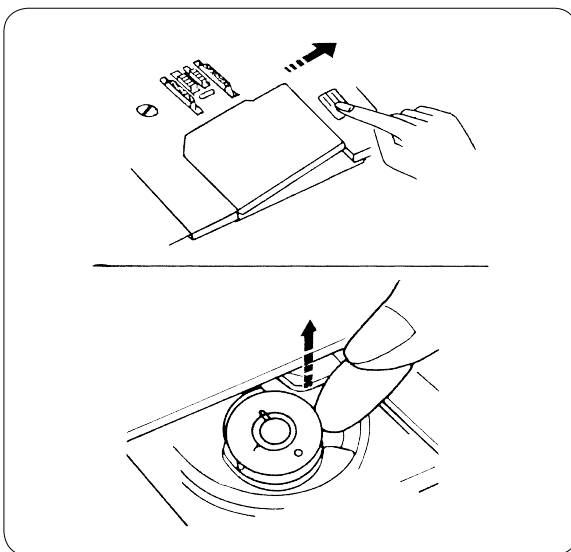
Lift up the spool pin. Place the spool of thread on the spool with the thread coming off the spool as shown. Attach the large spool holder pressing it firmly against the thread spool.

\* The small spool holder is used with narrow or small thread spools.

### Additional Spool Pin

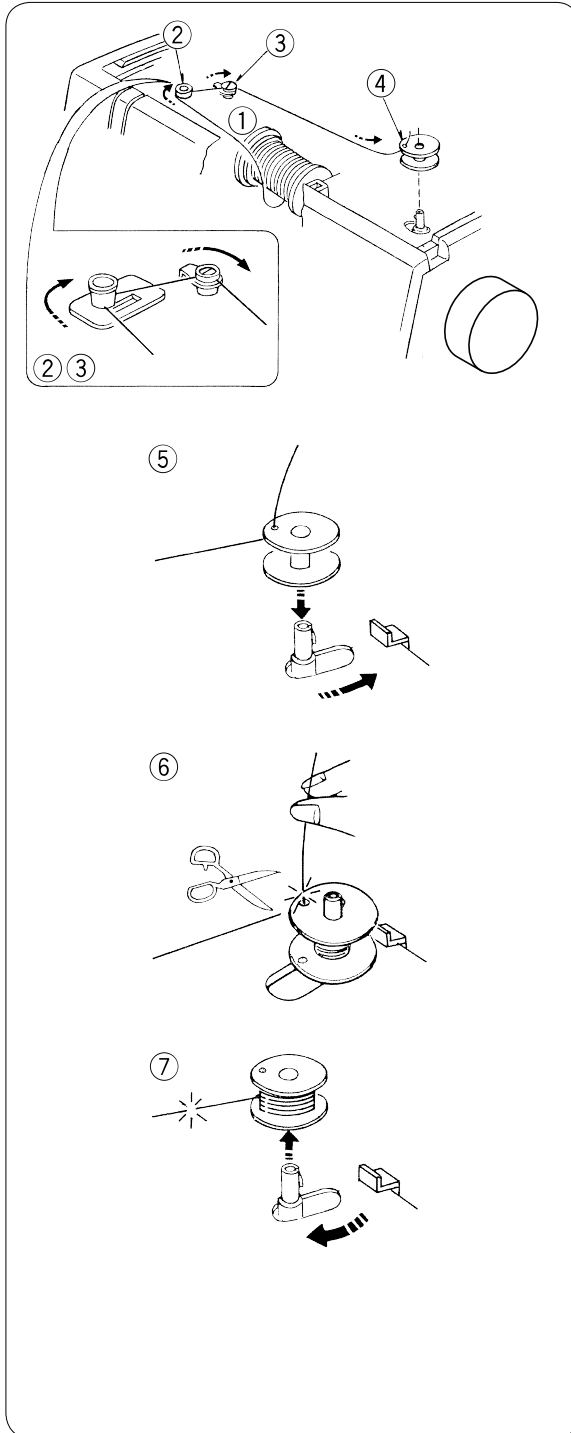
The additional spool pin is used to wind extra bobbins without unthreading the machine.

To use, insert the additional spool pin in the hole. Place the felt and the spool on the pin.



## Removing the Bobbin

Gently slide the hook pin cover plate release button to the right, and remove the cover plate. Lift out the bobbin.



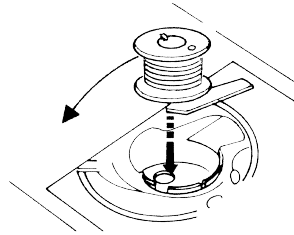
### Threading the Bobbin Winder

- ① Draw the thread from the spool.
- ② Guide the thread around the thread guide.
- ③ Guide the thread around the bobbin winder thread guide.
- ④ Insert the thread through the hole the bobbin, threading from the inside to the outside.
- ⑤ Put the bobbin on the bobbin winder spindle, and push it to the right.
- ⑥ With the free end of the thread held in your hand, depress the foot control. Stop the machine when it has made a few turns, and cut the thread close to the hole in the bobbin. Depress the foot control again. When the bobbin is fully wound, it will stop automatically.
- ⑦ Return the bobbin winder to its original position by moving the spindle to the left, and cut the thread as shown.

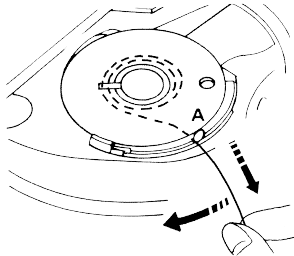
\* The machine will not sew until the spindle has been returned to the left.

## Inserting the Bobbin

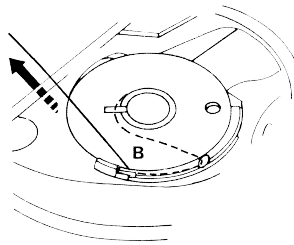
Place the bobbin in the bobbin holder with the thread running counter-clockwise.



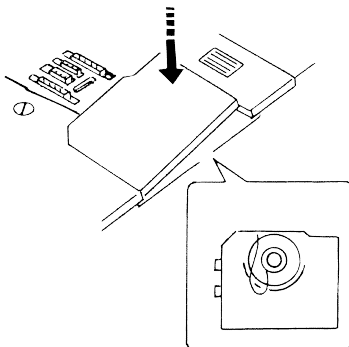
Guide the thread into the notch A on the front side of the bobbin holder. Draw the thread to the left sliding it between the tension spring blades.



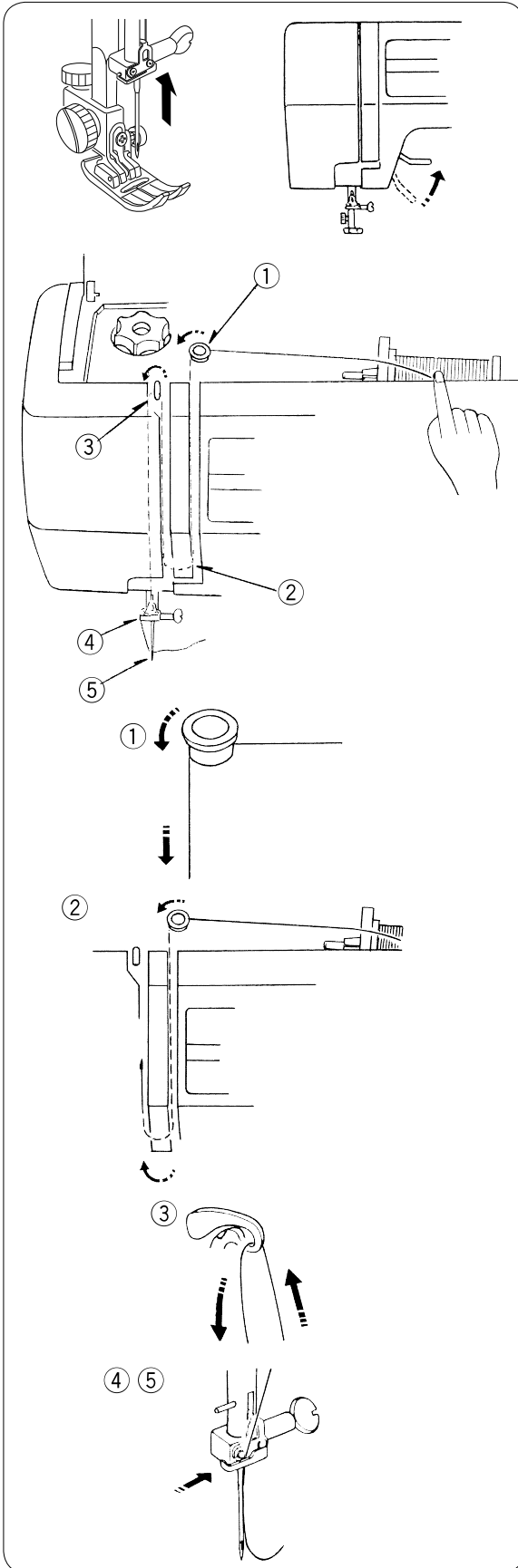
Continue to draw the thread lightly until the thread slips into notch B.



Pull out about 15 cm (6") of thread and attach the hook cover plate.







## Threading the Machine

Raise the take-up lever to its highest position by turning the handwheel toward you.

Raise the presser foot with the presser foot lifter and thread in the order from ① to ⑤.

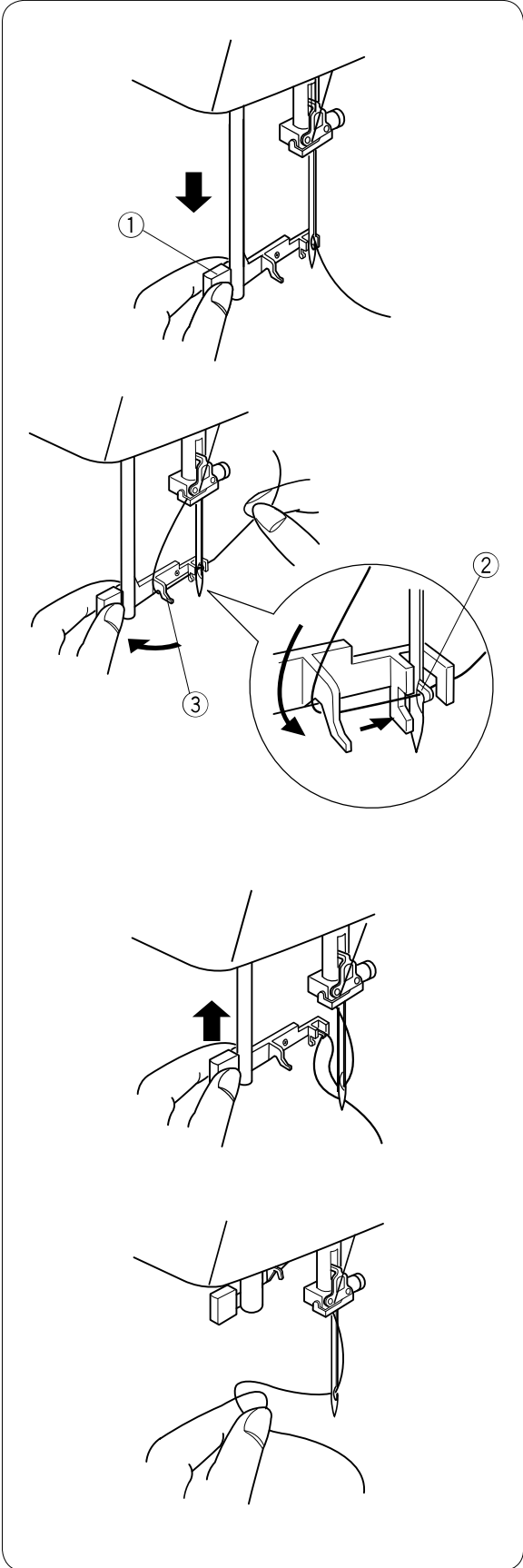
① Lead the thread from the spool and pass it through the thread guide. Then draw it down along the right slot.

② Guide the thread around the bottom of the thread guide plate from right to left, then draw it upward.

③ Firmly draw the thread from right to left over the take-up lever and down into the take-up lever eye.

④ Then guide it down along the left slot.

⑤ Slide the thread from the left behind the needle bar thread guide. Thread the needle.



**Needle Threader**

Lower the presser foot. Raise the needle to its highest position.

Pull down the needle threader knob as far as it will go.

- ① Threader knob

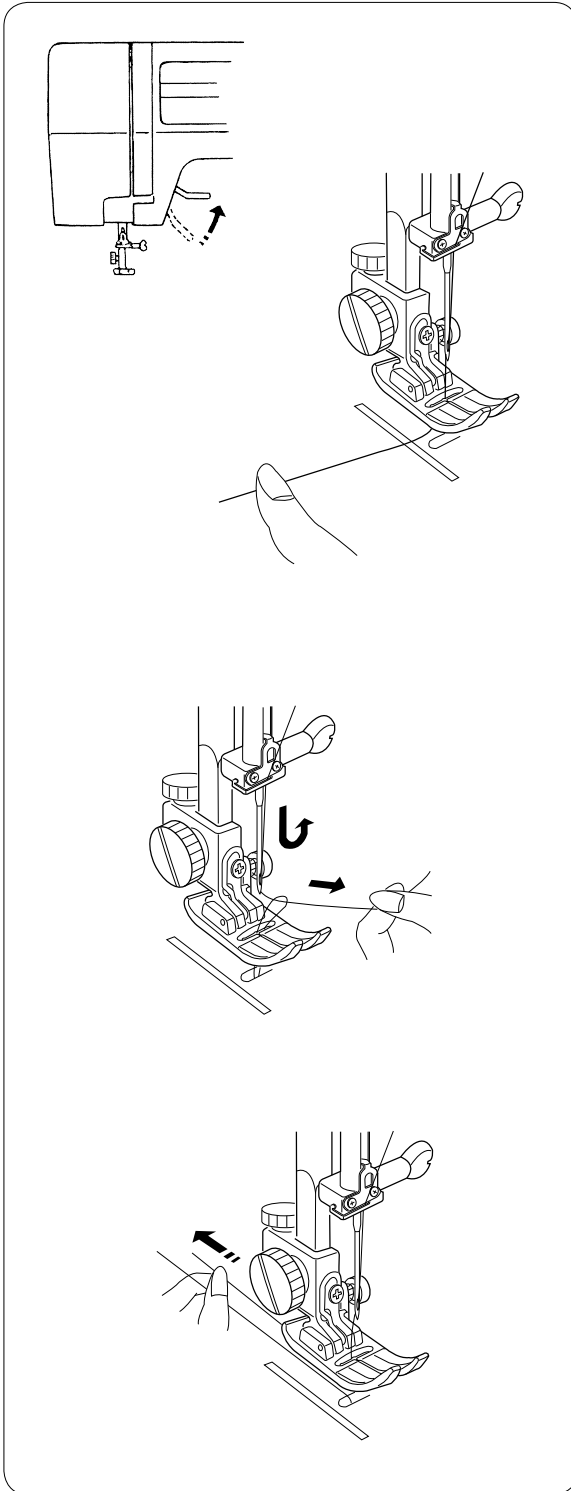
Turn the knob in the direction of the arrow in the illustration, then insert hook into the needle eye. The hook comes out through the needle eye from behind. Paying close attention to the needle point, draw the thread around the guide and under the hook.

- ② Hook
- ③ Guide

Turn the knob in the direction of the arrow in the illustration, drawing the thread loop through the needle. Gently let the threader goes up to pull the thread loop up.

Pull the thread through the needle eye.

**NOTE:**  
 The needle threader can be used with a #11 to #16 needle or a blue tipped needle.  
 Thread size 50 to 90 should also work well.



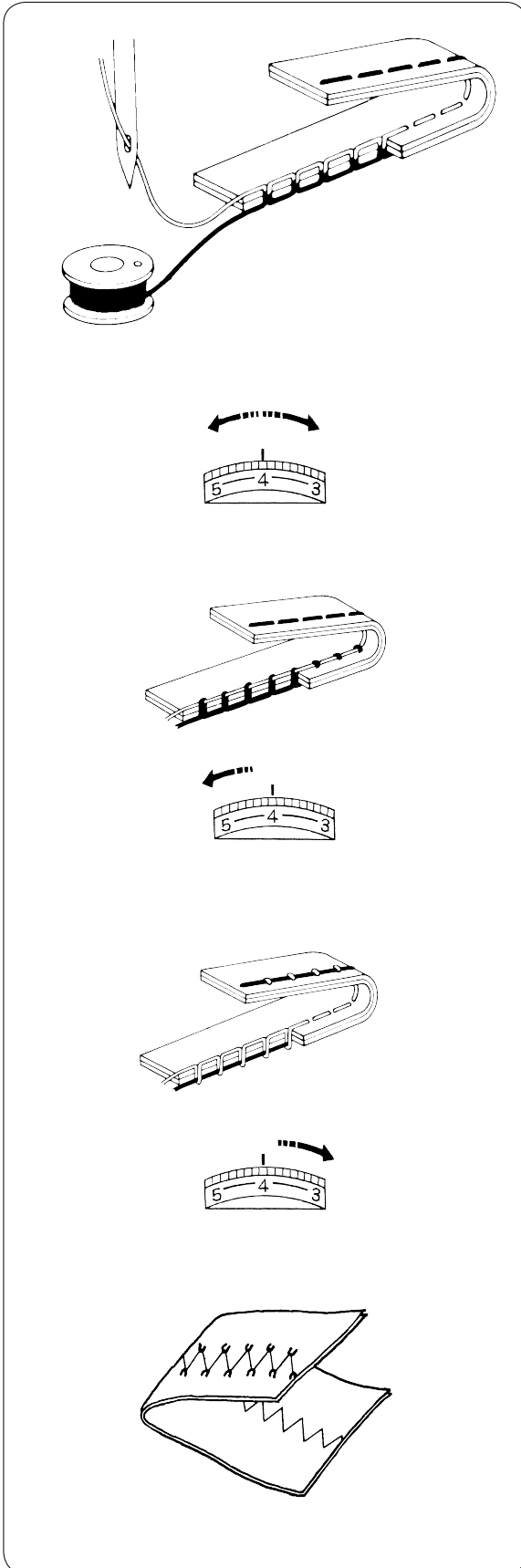
### **Drawing Up Bobbin Thread**

Raise the presser foot and hold the needle thread lightly with your left hand.

Turn the handwheel slowly towards you with your right hand until the needle goes down and continue turning handwheel until the take-up lever is at its highest position.

Lightly draw up the needle thread forming a loop of bobbin thread.

Pull 15 cm (6") of both threads back and under the presser foot.



## Balancing Needle Thread Tension

The needle thread and the bobbin thread should interlock in the center of two layers of fabric in straight seams.

Set the desired number of the thread tension dial at setting mark.

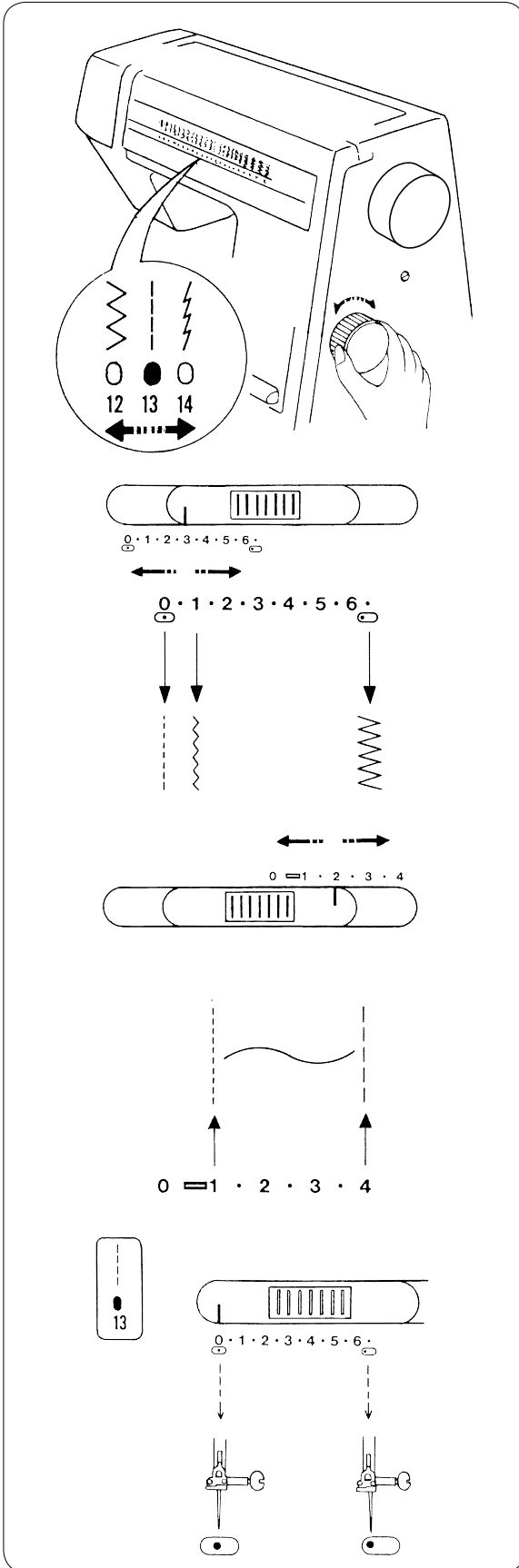
Loosen the needle thread tension by moving the dial to a lower number.

Tighten the needle thread tension by moving the dial to a higher number.

## Thread Tension for Zigzag Sewing

To obtain better zigzag stitches, the needle thread tension should be slightly weaker than in the case of straight sewing.

The needle thread should appear slightly on the reverse side of the fabric.



### Pattern Selector Dial

Select the pattern by turning the pattern selector dial and the red signal shows the selected pattern.

\*Raise the needle above the fabrics and presser foot when you turn the pattern selector dial.

### Zigzag Width Control

Higher the number, wider the stitch width.

This machine will sew the maximum 6.5mm (0.25") wide zigzag.

\*Raise the needle above the fabrics when you set the stitch width.

### Stitch Length Control

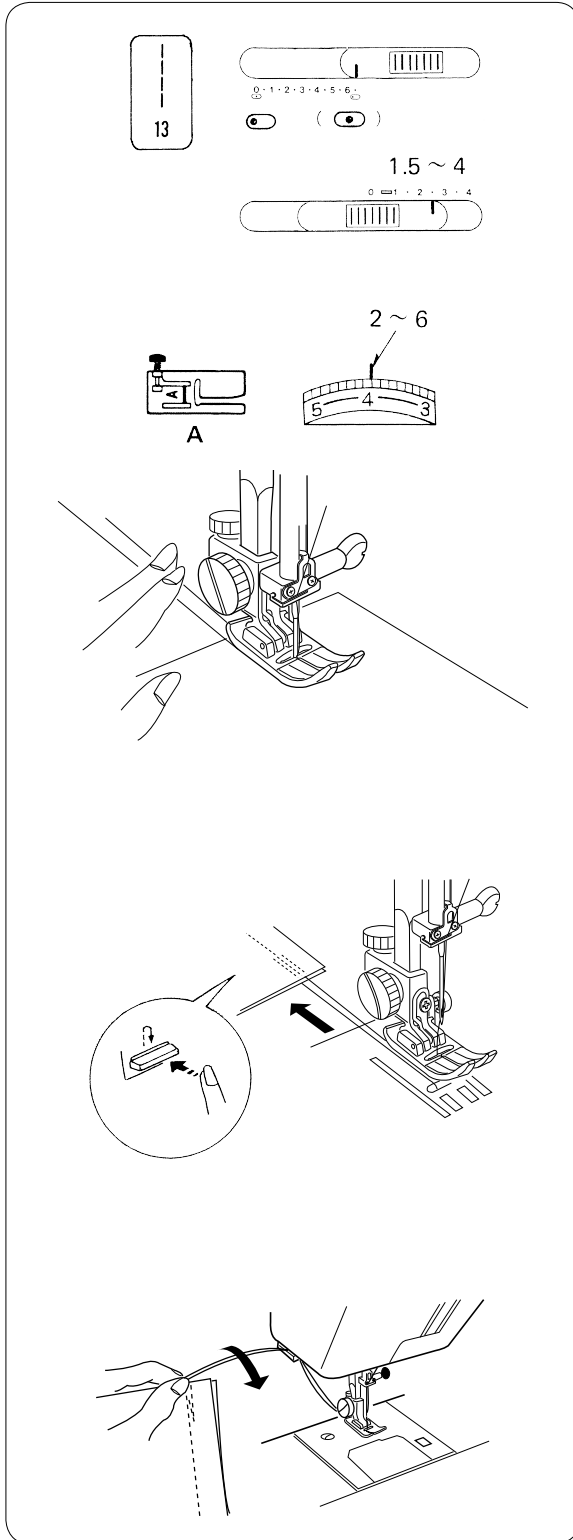
The higher the number, the longer the stitch length. You can select the suitable stitch length for fabrics that you plan to sew.

#### NOTE:

Stitch length is automatically set for stretch stitch pattern on pattern number 14 to 18.

### Variable Needle Position

When pattern number 13 is selected, you can move the needle between center and left needle positions.



## SECTION III BASIC SEWING

### Straight Stitch Sewing

Raise the presser foot and position the fabric next to a stitching guide line on the needle plate.

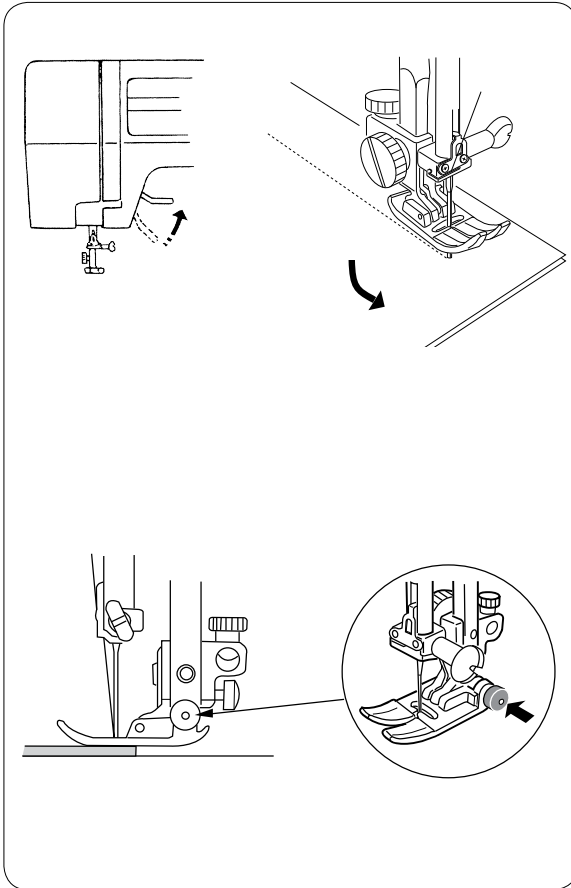
Lower the presser foot and smooth the threads toward the back. Depress the foot control.

Gently guide the fabric along the guide line letting the fabric feed naturally.

For fastening the ends of seams, press the reverse stitch button and sew several reverse stitches.

Raise the presser foot and remove the fabric, drawing the threads to the back.

The threads are cut the proper length for starting the next seam.



### **Changing the Sewing Directions**

Stop the machine and bring the needle down into the fabric by turning the handwheel.  
Raise the presser foot.

Pivot the fabric around the needle to change sewing direction as desired.  
Lower the presser foot.

### **Straight Stitching on Heavy Fabrics**

Lower the needle into the fabric at the point where you wish to start sewing.  
Press the small black button on the zigzag foot with your left hand to “lock” the presser foot to the fabric.

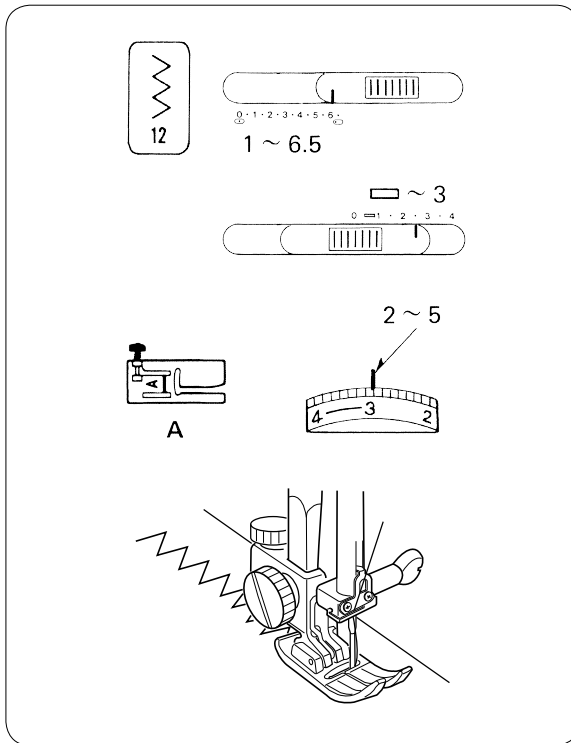
Lower the presser foot with your right hand, keeping pressure on the black button with your left hand.

Release the black button and start sewing.

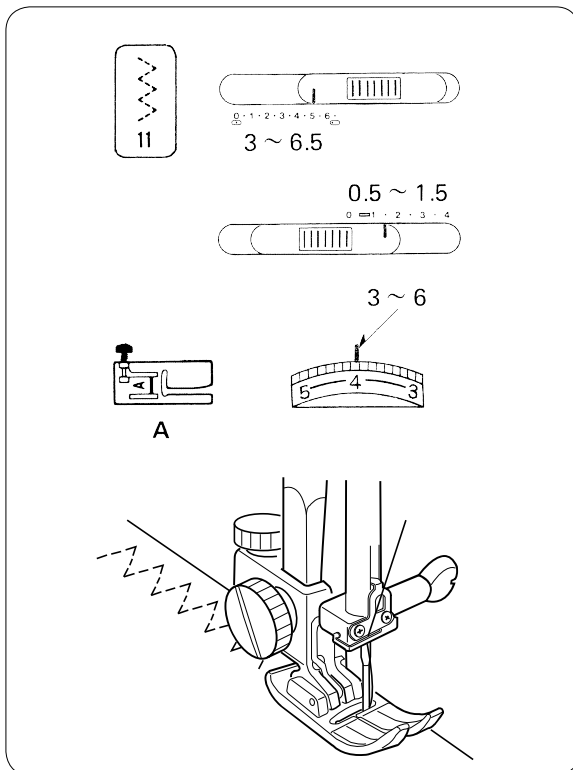
## SECTION IV UTILITY STITCHING

### Zigzag Stitch

Simple zigzag stitch is widely used for overcasting, applique, sewing on buttons, etc.



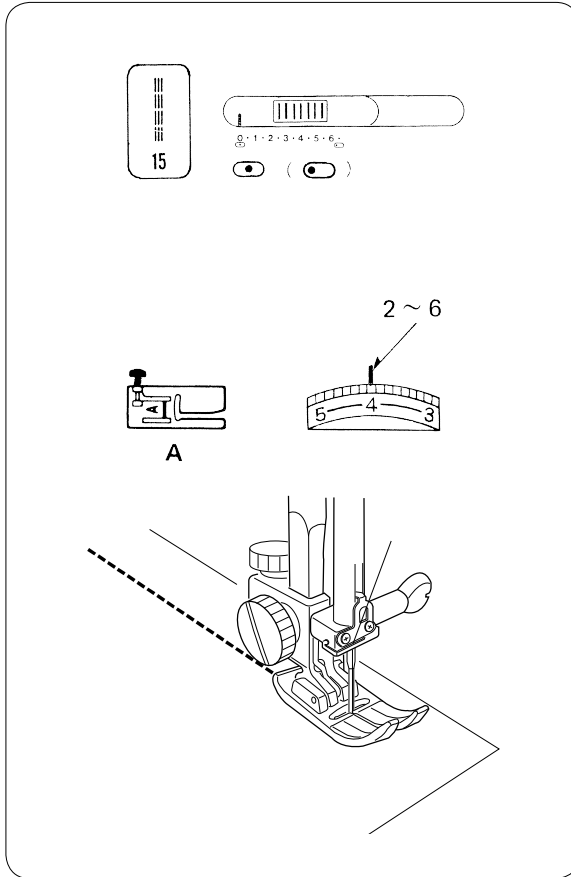




### Tricot Stitch

Place the fabric under the presser foot so that the edge will be slightly inside the right hand side of the presser foot.

Guide the work so the right hand stitches fall at the edge of the fabric.



### Triple Strength Stitch

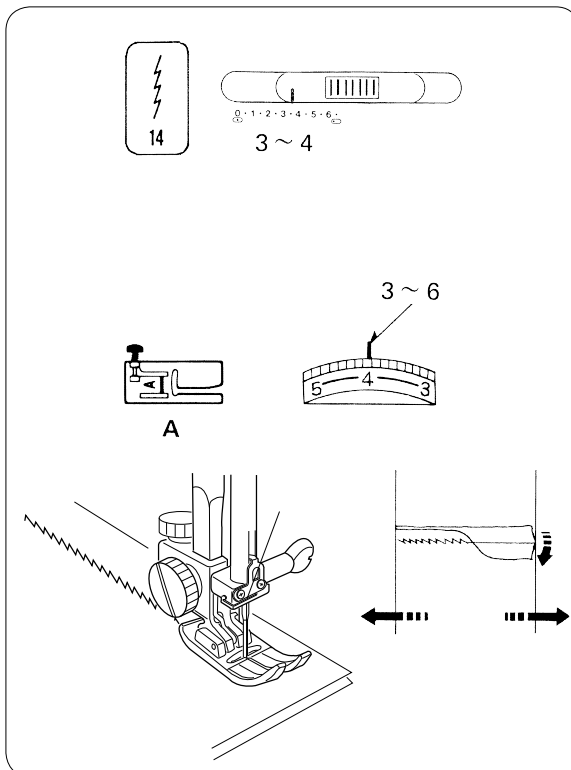
This strong, durable stitch is recommended where both elasticity and strength are needed to insure comfort and durability.

Use it to reinforce areas such as crotch and armhole seams.

Also use when constructing items such as backpacks for extra strength.

The stitch is sewn with two stitches forward and one stitch backward forming a seam that does not rip easily.

Garments should be basted for fitting before seaming.



### Outline Stretch Stitch

Pattern 14 is a narrow stretch stitch designed to eliminate puckering on knit fabrics and bias seams, while permitting the seam to be pressed completely flat.

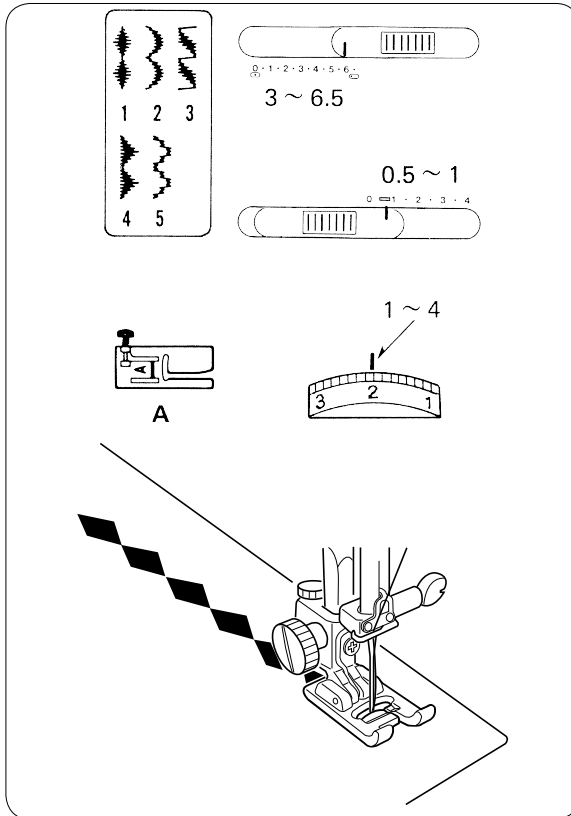
For a 1.5 cm (5/8") seams, use the 2 cm (6/8") marking on the needle plate.

When sewing light weight fabrics, set the pressure dial at "1" or "2".

## SECTION V DECORATIVE STITCHING

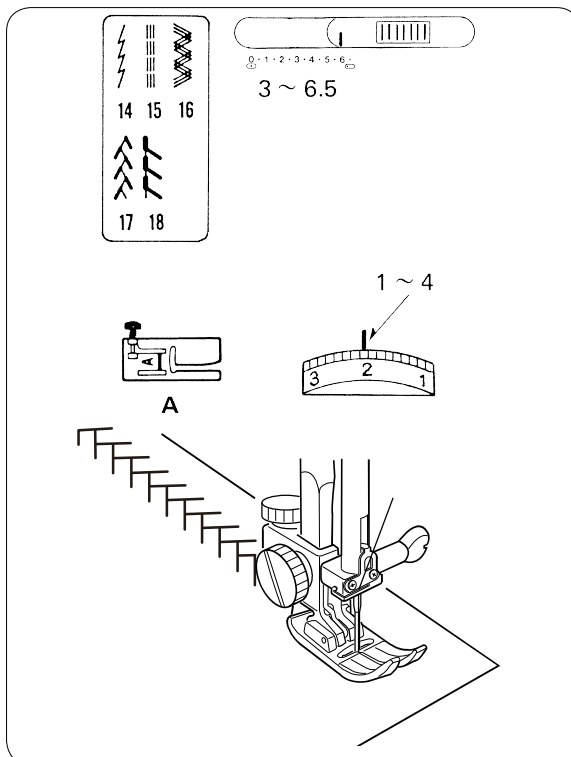
### Decorative Satin Stitch Patterns

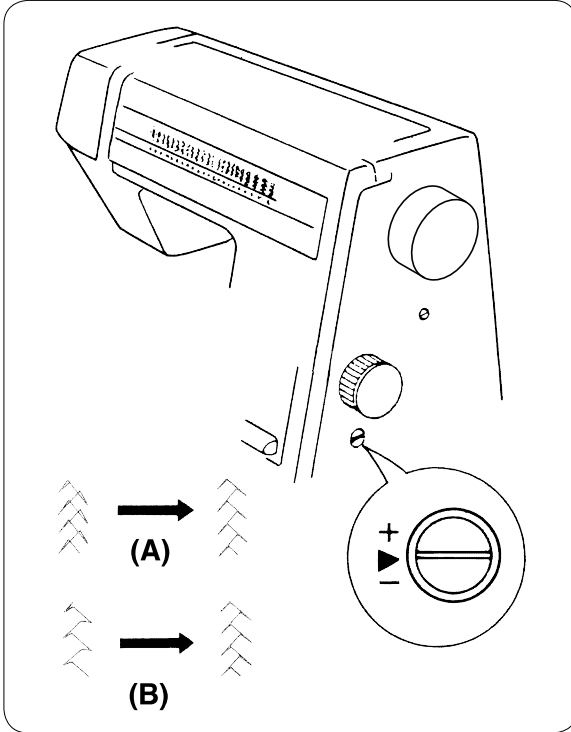
Sew a row of stitches and adjust the thread tension so the needle thread should appear on the reverse side of the fabric.  
Test the stitch on the actual fabric for the best results.



### Stretch Stitch Patterns

Stitch length of the automatic patterns (No.14 to 18) are preset, so you do not need to select the stitch length for these patterns.





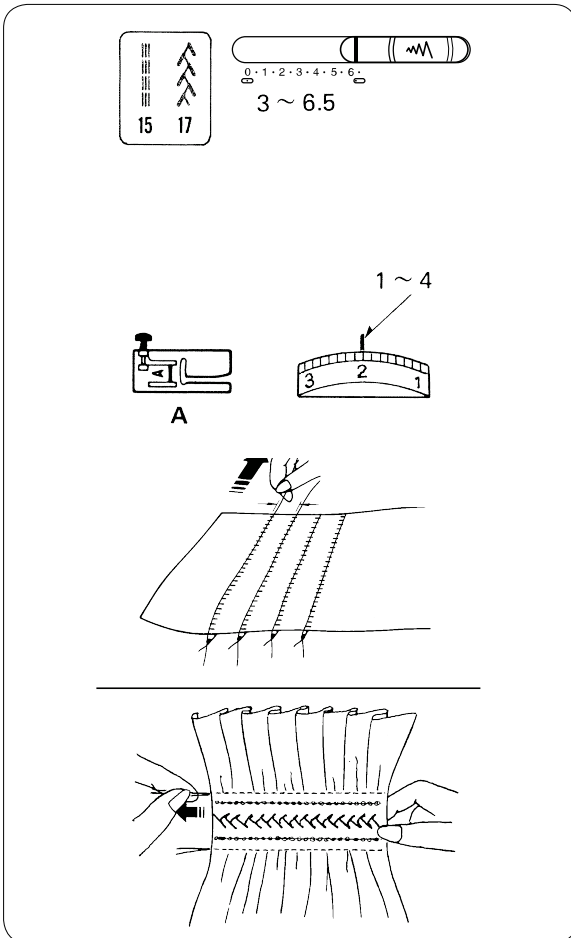
### Adjusting Stretch Stitch Balance

If patterns are uneven when sewing with a particular fabric, adjust them with the feed balance dial.

After sewing with an altered dial setting, you must reset the dial to [▶].

(A) When patterns are compressed, correct by turning the dial in the direction of “+”.

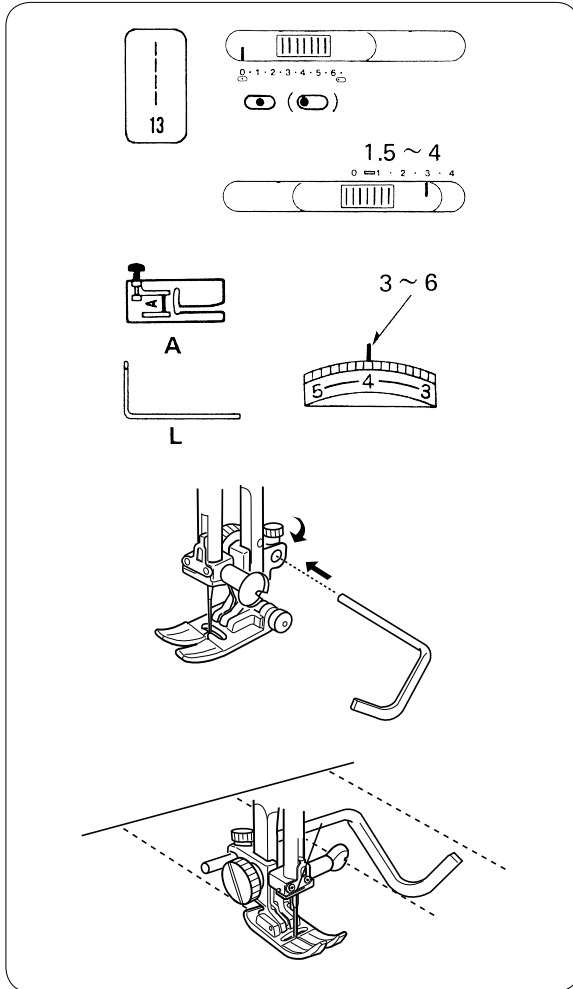
(B) When patterns are drawn out, correct by turning the dial in the direction of “-”.



### Smocking

With the stitch length control at “4”, sew straight lines 1 cm(3/8”) apart across the area to be smocked. Knot the threads along the edge.

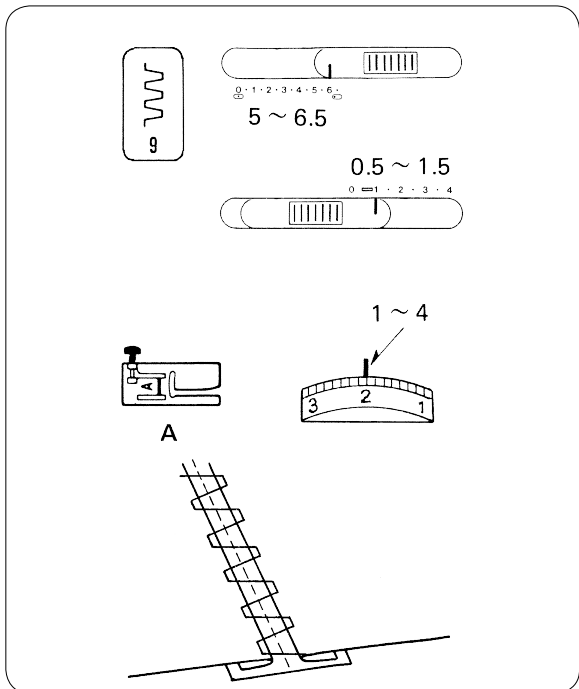
Pull the bobbin threads and distribute gathers evenly. Sew pattern stitches between the straight seams. Pull out the gathering stitches.



## Quilting

The quilting guide will help to keep the stitching lines straight.  
 Insert the quilting guide in the opening, and slide it at the desired width.

Sew guiding the quilting over the previous row of stitching.



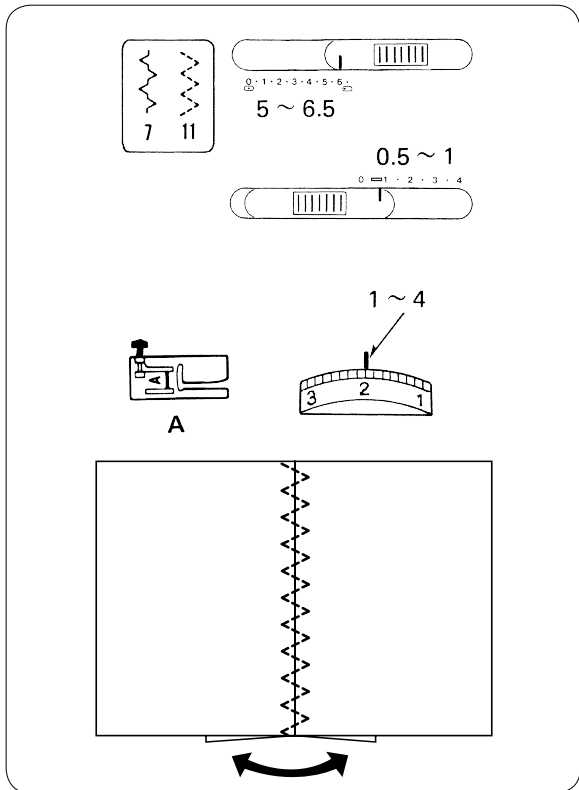
## Fagoting

Fold under 1.5cm (1/2") on each fabric edge and press.

Pin the two edges to paper 0.3cm (1/8") apart.

Sew slowly guiding the fabric so the needle catches the folded edge on each side.

Peel off the paper from the wrong side of the fabric.



### Patch Work

Sew seam and press seam allowance open.  
 Sew pattern stitch on the right side of garment centering stitches over the seam line.

## Trouble Shooting

Condition	Cause	Reference
The machine does not run smoothly and is noisy.	<ol style="list-style-type: none"> <li>1. Threads have been caught in hook mechanism.</li> <li>2. The feed dog is packed with lint.</li> </ol>	<p>See Page 38 See Page 38</p>
The needle thread breaks.	<ol style="list-style-type: none"> <li>1. The needle thread is not threaded properly.</li> <li>2. The needle thread tension is too tight.</li> <li>3. The needle is bent or blunt.</li> <li>4. The needle is incorrectly inserted.</li> <li>5. The fabric is not being drawn to the rear when sewing is finished.</li> <li>6. The thread is either too heavy or too fine for the needle.</li> </ol>	<p>See Page 12 See Page 15 See Page 8 See Page 8 See Page 17 See Page 8</p>
The bobbin thread breaks.	<ol style="list-style-type: none"> <li>1. The bobbin thread is not threaded properly in the bobbin holder.</li> <li>2. Lint has collected in the bobbin holder.</li> <li>3. The bobbin is damaged and does not turn smoothly.</li> </ol>	<p>See Page 11 See Page 38 Exchange bobbin.</p>
The needle breaks.	<ol style="list-style-type: none"> <li>1. The needle is incorrectly inserted.</li> <li>2. The needle is bent or blunt.</li> <li>3. The needle clamp screw is loose.</li> <li>4. The tension of the needle thread is too tight.</li> <li>5. The fabric is not drawn to the rear when sewing is finished.</li> <li>6. The needle is too fine for the fabric being sewn.</li> <li>7. The pattern selector dial has been turned while the needle was in the material.</li> </ol>	<p>See Page 8 See Page 8 See Page 8 See Page 15 See Page 17 See Page 8 See Page 16</p>
Skipped stitches.	<ol style="list-style-type: none"> <li>1. The needle is incorrectly inserted.</li> <li>2. The needle is bent or blunt.</li> <li>3. The needle and/or threads are not suitable for the work being sewn.</li> <li>4. A BLUE TIPPED needle is not being used for sewing stretch, very fine fabrics and synthetics.</li> <li>5. The needle thread is not threaded properly.</li> <li>6. The presser foot pressure is not strong enough.</li> </ol>	<p>See Page 8 See Page 8 See Page 8 See Page 8 See Page 12 See Page 5</p>



<b>Condition</b>	<b>Cause</b>	<b>Reference</b>
Seam Puckering.	<ol style="list-style-type: none"> <li>1. The needle thread tension is too tight.</li> <li>2. The needle thread is not threaded correctly.</li> <li>3. The needle is too heavy for the cloth being sewn.</li> <li>4. The stitches are too coarse for the fabric being sewn.</li> <li>5. The presser foot pressure is not correctly adjusted.</li> </ol> <p>*When sewing extremely light weight materials, place a sheet of paper underneath the fabric.</p>	<p>See Page 15 See Page 12 See Page 8</p> <p>Make the stitches denser. See Page 5</p>
Stitches form loops below the work.	<ol style="list-style-type: none"> <li>1. The needle thread tension is too loose.</li> <li>2. The needle is either too heavy or too fine for the thread.</li> </ol>	<p>See Page 15 See Page 8</p>
The cloth is not feeding smoothly.	<ol style="list-style-type: none"> <li>1. The feed dog is packed with lint.</li> <li>2. The presser foot pressure is too weak.</li> <li>3. The stitches are too fine.</li> <li>4. The feed dog is not raised after "Drop feed" has been used.</li> </ol>	<p>See Page 38 See Page 5 Make the stitches coarser. See Page 5</p>
The machine does not work.	<ol style="list-style-type: none"> <li>1. The machine is not plugged in.</li> <li>2. A thread is caught in the hook race.</li> <li>3. Bobbin winder spindle is in the winding position.</li> </ol>	<p>See Page 4 See Page 38 See Page 10</p>
The buttonhole stitches are not balanced.	<ol style="list-style-type: none"> <li>1. The stitch length is not suitable for the fabric being sewn.</li> <li>2. The work is being pulled or held back.</li> <li>3. Interfacing is not used with stretch fine fabrics.</li> </ol>	<p>See Page 23, 25 and 26 Do not force the fabric for guiding. See Page 23</p>