IMPORTANT SAFETY INSTRUCTIONS

When using this machine, basic safety precautions should always be taken, including the following:

Read all instructions before using.

**DANGER -** To reduce the risk of electric shock:

1. The machine should never be left unattended while plugged in. Always unplug the machine from the electrical outlet immediately after using and before cleaning.
2. Always unplug the machine before you change the light bulb. Replace the bulb with same type rated 15 watts.

**WARNING -** To reduce the risk of burns, fire, electric shock, or injury to persons:

1. Do not allow this machine to be used as a toy. Close attention is necessary when the machine is used by or near children.
2. Use this machine only for its intended use as described in this manual. Use only accessories recommended by the manufacturer as contained in this manual.
3. Never operate this machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.
4. Never operate the machine with any air openings blocked. Keep ventilation openings of the machine and foot control free from the accumulation of lint, dust, and loose cloth.
5. Never drop or insert any object into any opening.
6. Do not use outdoors.
7. Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
8. To disconnect, turn the machine switch to the symbol “\" position which represents off, then remove plug from outlet.
9. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
10. Keep fingers away from all moving parts. Special care is required around the machine needle.
11. Always use the proper needle plate. The wrong plate can cause the needle to break.
12. Do not use bent needles.
13. Do not pull or push fabric while stitching. It may deflect the needle, causing it to break.
14. Switch the machine to the symbol “\" position to turn it off when making any adjustments in the needle area, such as threading needle, changing needle, threading bobbin, or changing presser foot, and the like.
15. Always unplug the machine from the electrical outlet when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.
16. This sewing machine is not intended for use by young children or infirm persons without supervision. (For Australia and New Zealand only)
17. Young children should be supervised to ensure that they do not play with this machine.

SAVE THESE INSTRUCTIONS

This machine is intended for household use.
FOR USERS IN THE UK, EIRE, MALTA AND CYPRUS ONLY

If this machine is fitted with a three-pin non-rewireable BS plug then please read the following.

IMPORTANT
If the available socket outlet is not suitable for the plug supplied with this equipment, it should be cut off and an appropriate three pin plug fitted. With alternative plugs an approved fuse must be fitted in the plug.

NOTE: The plug severed from the main leads must be destroyed as a plug with bared flexible cords is hazardous if engaged in a live socket outlet. In the event of replacing the plug fuse, use a fuse approved by ASTA to BS 1362, i.e. carrying the mark, rating as marked on plug.

Always replace the fuse cover. Never use plugs with the fuse cover omitted.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER ‘E’, BY THE EARTH SYMBOL OR COLOURED GREEN OR GREEN AND YELLOW.

The wires in this main lead are coloured in accordance with the following code:

Blue    Neutral
Brown    Live

As the colours of the wiring in the main lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter ‘N’ or coloured black or blue.

The wire which is coloured brown must be connected to the terminal which is marked with the letter ‘L’ or coloured red or brown.
UNPACKING/REPACKING INSTRUCTIONS

Keep the carton and packing materials. You may have to take or send the machine to be repaired. If you do not pack it properly, or do not use the right packing material, the machine could be damaged.

Please follow the diagram below to unpack and repack the machine.

PLEASE READ THESE INSTRUCTIONS BEFORE YOU USE THE MACHINE.

To use the machine safely
1. Make sure you watch the needle carefully while you are sewing. Do not touch the handwheel, thread take-up lever, needle, or other moving parts.
2. Turn off the main power and unplug the cord in the following circumstances:
   • When you have stopped using the machine
   • When you are replacing or removing the needle or any other part
   • If there is a power failure while you are using the machine
   • If you are checking or cleaning the machine
   • Leaving the machine unattended
3. Do not store anything on the foot controller.
4. Plug the machine directly into the wall. Do not use extension cords.

To give your machine a longer life
1. Do not store this machine in direct sunlight or in high humidity conditions. Do not use or store the machine near a heater, iron, halogen lamp or other hot objects.
2. Use only mild soaps or detergents to clean the case. Benzene, thinner, and scouring powders can damage the case and machine, and should never be used.
3. Do not drop or hit the machine.
4. Always consult this manual before you replace or fit presser feet, the needle, or any other parts to make sure you fit them correctly.

To repair or adjust the machine
If the machine breaks down or needs adjustment, first follow the troubleshooting table in the Appendix to inspect and adjust the machine yourself. If the problem is still there, consult your local authorized dealer.

For additional product information and updates, visit our web site at www.brother.com.

The contents of this manual and specifications of this product are subject to change without notice.
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1 KNOWING YOUR SEWING MACHINE

THE MAIN PARTS

1. Bobbin winder (Page 16)
This winds the thread onto the bobbin for use as the lower thread.

2. Spool pin (Page 16, 21)
This holds the spool of thread.

3. Thread guide (Page 16, 21)
This is used when winding the thread onto the bobbin and then threading the machine.

4. Thread take-up lever (Page 21)

5. Hole for extra spool pin (Page 25)
This holds a second spool of thread for sewing with the twin needle.

6. Stitch width dial (Page 15)
This controls the stitch width.

7. Upper tension-control dial (Page 25)
This controls the tension of the upper thread.

8. Thread cutter (Page 28)
Pass the threads through the thread cutter to cut them.

9. Needle threader (Page 22)
(This is only available on certain models.)

10. Quick-set bobbin (Page 19)
(This is only available on certain models.)

11. Flat bed attachment with accessory compartment (Page 10)

12. Presser foot (Page 9)

13. Reverse sewing lever (Page 15)
You can push this to stitch in the reverse direction.

14. Pattern selection dial (Page 11)
You can turn this in either direction to choose the stitch you want.

15. Stitch length dial (Page 14)
This controls the stitch length.

16. Buttonhole fine-adjustment screw (Page 35)

17. Handwheel
Used to manually raise and lower the needle.

18. Main power and sewing light switch (Page 8)
You can turn the main power and sewing light switch on and off.

19. Foot controller jack / socket (Page 7)
Plug in the foot controller plug and connect the machine to the power supply.

20. Presser foot lever (Page 21)
Used to raise and lower the presser foot.

21. Foot controller (Page 8)
You can use this to control the sewing speed, and to start and stop sewing.

Parts Code for Zigzag Presser Foot: XC4901-051

Foot Controller: Model KD-1902
Parts Code: XC7359-021 (110/120V Area)
XC7438-221 (220/240V Area)
XC7456-221 (U.K.)
XC7455-021 (Australia, New Zealand)
KNOWING YOUR SEWING MACHINE

ACCESSORIES

The following accessories are stored in the flat bed attachment. We have designed these accessories to help you be able to carry out most sewing tasks.

1. Zipper foot (1 pc.)
2. Bobbin (3 pcs.)
3. Needle Pack (Regular Single Needle HAX130 (3 pcs.)
4. Twin Needle (1 pc.)
5. Buttonhole Foot (1 pc.)
6. Button Sewing Foot (1 pc.)
7. Extra Spool Pin (1 pc.)
8. Screwdriver (1 pc.)
9. Darning Plate (1 pc.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Part Name</th>
<th>Part Code</th>
<th>USA</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zipper foot (1 pc.)</td>
<td>X59370-021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bobbin (3 pcs.)</td>
<td>SA156</td>
<td>SFB: XA5539-151</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Needle Pack (Regular Single Needle HAX130 (3 pcs.))</td>
<td>129583-021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Twin Needle (1 pc.)</td>
<td>X57521-021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Buttonhole Foot (1 pc.)</td>
<td>X59369-121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Button Sewing Foot (1 pc.)</td>
<td>X59375-121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Extra Spool Pin (1 pc.)</td>
<td>130920-021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Screwdriver (1 pc.)</td>
<td>X55467-021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Darning Plate (1 pc.)</td>
<td>XC6063-021</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note
- The included accessories vary depending on the machine model.

Optional Accessories

1. Walking Foot
2. Quilting Foot
3. 1/4-inch Quilting Foot

<table>
<thead>
<tr>
<th>No.</th>
<th>Part Name</th>
<th>Part Code</th>
<th>U.S.A.</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Walking Foot</td>
<td>SA107</td>
<td>F034N: XC2165-002</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Quilting Foot</td>
<td>SA129</td>
<td>F003N: XC1948-002</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1/4-inch Quilting Foot</td>
<td>SA125</td>
<td>F001N: XC1944-002</td>
<td></td>
</tr>
</tbody>
</table>
USING YOUR SEWING MACHINE

**WARNING**

- Use only regular household electricity for the power source. Using other power sources may result in fire, electric shock, or damage to the machine.
- Turn off the main power and remove the plug in the following circumstances:
  - When you are away from the machine
  - After using the machine
  - When the power fails during use
  - When the machine does not operate correctly due to a bad connection or a disconnection
  - During electrical storms

**CAUTION**

- Do not use extension cords or multi-plug adapters with many other appliances plugged in to them. Fire or electric shock may result.
- Do not touch the plug with wet hands. Electric shock may result.
- When unplugging the machine, always turn off the main power first. Always grasp the plug to remove it from the outlet. Pulling on the cord may damage the cord, or lead to fire or electric shock.
- Do not allow the power cord to be cut, damaged, modified, forcefully bent, pulled, twisted, or bundled. Do not place heavy objects on the cord. Do not subject the cord to heat. These things may damage the cord and cause fire or electric shock. If the cord or plug is damaged, take the machine to your authorized dealer for repairs before continuing use.
- Unplug the power cord if the machine is not to be used for a long period of time, otherwise a fire may result.

**Note**

- When leaving the machine unattended, the main switch of the machine should be switched off or the plug must be removed from the wall outlet.
- When servicing the machine, or when removing covers or changing bulbs, the machine must be unplugged.

(For U.S.A. only)

- This appliance has a polarized plug (one blade wider than the other). To reduce the risk of electric shock, this plug is intended to fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug.
- If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.

---

**Connecting Plugs**

1. Connect the foot controller plug to the machine.
2. Connect the power supply plug to a wall outlet.
Main Power and Sewing Light Switch
This switch turns the main power and sewing light on or off.

1 Turn on (toward the 'I' mark)
2 Turn off (toward the 'O' mark)

Foot Controller
When you press the foot controller down lightly, the machine will run at a low speed. When you press harder, the machine's speed will increase. When you take your foot off the foot controller, the machine will stop. You should make sure that nothing is placed on the foot controller when the machine is not in use.

Foot controller

Note
(For U.S.A. only)
● Foot Controller: Model KD-1902
This foot controller can be used for Model XL-3500, XL-2600, XL-3510, XL-2610, XL-3520, XL-2620.

Checking the Needle
The sewing needle must always be straight and sharp for smooth sewing.

■ Checking the Needle Correctly
Put the flat side of the needle on a flat surface. Check the needle from the top and the sides. Dispose of any bent needles safely.

Replacing the Needle

CAUTION
● Turn the main power switch off before you change the needle. If you leave the main power on and step on the foot controller, the machine will start and you may be injured.
● Only use sewing machine needles for home use. Other needles may bend or break and cause injury.
● Never sew with a bent needle. A bent needle will easily break and cause injury.

1 Remove the power supply plug from the outlet.
2 Raise the needle to its highest position by turning the handwheel toward you (counterclockwise) so that the mark on the handwheel points directly up.
3 Lower the presser foot lever.

CAUTION
Do not allow pieces of cloth and dust to build up on the foot controller. Doing so could cause a fire or an electric shock.
4 Hold the needle with your left hand, and then use a screwdriver to turn the needle clamp screw counterclockwise to remove the needle.

- Do not use excessive force when loosening or tightening the needle clamp screw, otherwise certain parts of the sewing machine may be damaged.

5 With the flat side of the needle toward the back of the machine, insert the needle until it touches the needle stopper. Next, tighten the needle clamp using the screwdriver.

- Make sure you insert the needle until it touches the stopper, and securely tighten the needle clamp screw with a screwdriver. If the needle is not fully inserted, or if the needle clamp screw is loose, the needle may break or the machine may be damaged.

Changing the Presser Foot

- Always turn off the power before you change the presser foot. If you leave the power on and step on the controller, the machine will start and you may be injured.

- Always use the correct presser foot for the stitch pattern you have chosen. If you use the wrong presser foot, the needle may strike the presser foot and bend or break, and may cause injury.

- Only use presser feet that have been designed to be used with this machine. Using any other presser foot may cause accident or injury.

You will have to change the presser foot depending on what you want to sew and how.

Snap-on Type

1 Raise the needle to its highest position by turning the handwheel toward you (counterclockwise), and then raise the presser foot lever.

2 Release the foot by raising the lever at the back of the holder.
3 Put a different presser foot on the needle plate so that the bar on the presser foot is in line with the slot on the shank.

4 Lower the presser foot lever and fix the presser foot onto the shank. If the presser foot is in the correct place, the bar should snap in.

---

Flat Bed Attachment

The accessories are stored in a compartment inside the flat bed attachment.

1 Slide the flat bed attachment to the left to open it.

Flats bed attachment

Storage compartment

Note

- Put the accessories inside a bag, and then store the bag inside the compartment. If the accessories are not in a bag, they may fall out and be lost or damaged.

Using a Free-arm Style

Free-arm sewing is convenient for sewing tubular and hard-to-reach areas. To change your machine to the free-arm style, lift out the flat bed attachment.

1 Slide the flat bed attachment to the left to release it.

Flat bed attachment

---

CAUTION

- If the presser foot is not installed with the correct orientation, the needle may strike the presser foot, which may bend or break the needle and cause injury.
THE CONTROLS

Pattern Selection Dial

To choose a stitch, simply turn the pattern selection dial in either direction. The next section shows recommended stitch lengths and widths.

CAUTION

- When you use the pattern selection dial to choose a pattern, turn the handwheel toward you (counterclockwise) to set the needle in the highest position. If the needle is in the down position when you turn the pattern selection dial, the needle, presser foot or fabric may be damaged.

- 35 Stitches (only available on certain models)

- 25 Stitches

SS1

SS2

SS
## Patterns and Stitch Names

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Stitch Name</th>
<th>Recommended Width (mm (inch))</th>
<th>Recommended Length (mm (inch))</th>
<th>Instruction Manual Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-STEP AUTOMATIC BUTTONHOLE</td>
<td>3-5 (1/8 – 3/16)</td>
<td>F- 1.5 (1/64-1/16)</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>STRAIGHT STITCH</td>
<td>0-5 (0-3/16) (Changes needle position)</td>
<td>1-4 (1/16-3/16)</td>
<td>27, 37, 38, 41, 42, 43</td>
<td></td>
</tr>
<tr>
<td>ZIGZAG STITCH</td>
<td>0-5 (0-3/16)</td>
<td>F-4 (1/64-3/16)</td>
<td>28, 36, 39, 41</td>
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</tr>
<tr>
<td>BLIND HEM STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>F-2 (1/64-1/16)</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>SHELL TUCK STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>F-3 (1/64-1/8)</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>ELASTIC STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>F-2.5 (1/64-3/32)</td>
<td>30</td>
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<tr>
<td>STRETCH BLIND HEM STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>F-1.5 (1/64-1/16)</td>
<td>29</td>
<td></td>
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<tr>
<td>STRETCH BLIND HEM STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>F-1.5 (1/64-1/16)</td>
<td>29</td>
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<tr>
<td>ELASTIC SHELL TUCK STITCH</td>
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<td>F-3 (1/64-1/8)</td>
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<td>DOUBLE ACTION STITCH</td>
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<td>F-3 (1/64-1/8)</td>
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<td>BRIDGING STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>F-3 (1/64-1/8)</td>
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<td>RAMPART STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>F-3 (1/64-1/8)</td>
<td>31</td>
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<tr>
<td>TRIANGLE STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>F-1.5 (1/64-1/16)</td>
<td>33</td>
<td></td>
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<tr>
<td>TRIPLE STRETCH STITCH</td>
<td>0-5 (0-3/16) (Changes needle position)</td>
<td>35</td>
<td>27, 25 (3/32)* Fixed</td>
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<tr>
<td>TRIPLE ZIGZAG STRETCH STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>32</td>
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<tr>
<td>STRETCH OVERLOCK STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>31</td>
<td></td>
<td></td>
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</tbody>
</table>

* The stitch can also be sewn when the stitch length dial is set to .
<table>
<thead>
<tr>
<th>Pattern</th>
<th>Stitch Name</th>
<th>Recommended Width (mm (inch))</th>
<th>Recommended Length (mm (inch))</th>
<th>Instruction Manual Page</th>
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<tbody>
<tr>
<td>17</td>
<td>ELASTIC OVERLOCK STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>Fixed 2.5 (3/32)</td>
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<tr>
<td>18</td>
<td>FEATHER STITCH</td>
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<tr>
<td>19</td>
<td>ARROWHEAD STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>Fixed 2.5 (3/32)</td>
<td>31</td>
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<tr>
<td>20</td>
<td>ARROWHEAD STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>Fixed 2.5 (3/32)</td>
<td>31</td>
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<tr>
<td>21</td>
<td>DECORATIVE STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>Fixed 2.5 (3/32)</td>
<td>33</td>
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<td>22</td>
<td>LEAF STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>Fixed 2.5 (3/32)</td>
<td>33</td>
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<td>23</td>
<td>TREE STITCH</td>
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<td>Fixed 2.5 (3/32)</td>
<td>33</td>
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<td>24</td>
<td>LEGS STITCH</td>
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<td>Fixed 2.5 (3/32)</td>
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<td>25</td>
<td>DECORATIVE STITCH</td>
<td>3-5 (1/8-3/16)</td>
<td>Fixed 2.5 (3/32)</td>
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<td>26</td>
<td>STRETCH OVERLOCK STITCH</td>
<td>3-5 (1/8-13/64)</td>
<td>Fixed 2.5 (3/32)</td>
<td>33</td>
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<tr>
<td>27</td>
<td>STRETCH OVERLOCK STITCH</td>
<td>3-5 (1/8-13/64)</td>
<td>Fixed 2.5 (3/32)</td>
<td>33</td>
</tr>
<tr>
<td>28</td>
<td>SMOKING STITCH</td>
<td>3-5 (1/8-13/64)</td>
<td>Fixed 2.5 (3/32)</td>
<td>31</td>
</tr>
</tbody>
</table>
Stitch Length Dial

Depending on the selected stitch, you may need to adjust the stitch length for best results. The numbers marked on the stitch length dial represent the stitch length in millimeters (mm) (1/25 inch). The higher the number, the longer the stitch. With the “0” setting, material is not fed. This is used when sewing a button.

The “F” range is for making a satin stitch (close zigzag stitch), which is used for making buttonholes and decorative stitches. The position needed for making the satin stitch varies according to the material and thread being used. To determine the exact dial position, first test the stitch and length settings on a scrap piece of fabric to observe the feeding of the material.

---

**CAUTION**

- If the stitches are bunched together, lengthen the stitch length and continue sewing. Do not continue sewing without lengthening the stitch length, otherwise the needle may break and cause injury.
Stretch Stitching

■ 35 Stitches

Selecting a Stretch Stitch
Setting the stitch length dial to "SS" or "SS2" changes the selected pattern to a stretch stitch.

■ 25 Stitches

Selecting a Stretch Stitch
Setting the stitch length dial to "SS" changes the selected pattern to a stretch stitch.

Stitch Width Dial

The numbers marked on the dial represent the stitch width. THE HIGHER THE NUMBER, THE WIDER THE STITCH.

Note

● When the Straight or Triple Stretch Stitch is selected, the needle position can be changed from left to right by adjusting the stitch width dial.

Reverse Sewing Lever

You can use reverse sewing for back tacking and reinforcing seams.

To sew in reverse, push the reverse sewing lever in as far as possible and hold it in that position while you lightly push the foot controller. To sew forward, release the reverse sewing lever. The machine will then sew forward.

Reverse sewing lever
THREADING THE MACHINE

Winding the Bobbin

**CAUTION**

- Only use bobbins (part code: SA156, SFB (XA5539-151)) that have been designed for this sewing machine. Using other bobbins may cause damage to the machine.
- We designed the bobbin that comes with this machine. If you use bobbins from other models, the machine will not work properly. Only use the bobbin that comes with this machine or bobbins of the same type (part code: SA156, SFB (XA5539-151)).

**CAUTION**

- If the spool of thread is not in the right place, the thread may tangle on the spool pin.

1. Put the spool of thread on the spool pin and pass the thread around the pre-tension disk.

2. Pass the end of the thread through the hole on the bobbin from the inside of the bobbin.

3. Put the bobbin onto the bobbin winder shaft and slide the bobbin winder shaft to the right. Turn the bobbin clockwise, by hand, until the spring on the shaft slides into the groove of the bobbin.
While holding the end of the thread, gently press the foot controller to wind the thread around the bobbin a few times. Then stop the machine.

Trim the excess thread above the bobbin.

Press the foot controller to start.

When the bobbin seems full and begins spinning slowly, take your foot off the foot controller.

Cut the thread, slide the bobbin winder shaft to the left and remove the bobbin.

**Note**
- The needle bar does not move when you slide the bobbin winder shaft to the right.
- Immediately after winding the bobbin, it is normal to hear the sound of the clutch engaging when beginning to sew or turning the handwheel.

**CAUTION**
- Make sure you follow the instructions carefully. If you do not cut the excess thread completely before winding the bobbin, when the thread runs low it may tangle around the bobbin and cause the needle to break.

- Not winding the bobbin properly may cause the thread tension to loosen, and may break the needle.

1. Wound evenly
2. Wound poorly
**Lower Threading**

- For more details on using the quick-set bobbin, see page 19.

**CAUTION**

- Not winding the bobbin properly may cause the thread tension to loosen, and may break the needle.

![Diagram of winding bobbins correctly and incorrectly]

1. Wound evenly
2. Wound poorly

- The bobbin was designed specifically for this sewing machine. If bobbins from other models are used, the machine will not operate correctly. Use only the enclosed bobbin or bobbins of the same type (part code: SA156, SFB (XA5539-151)).

![Actual size comparison of bobbins for this model and other models]

**CAUTION**

- Make sure you set the bobbin so the thread unrolls in the right direction. If the thread unrolls in the wrong direction, it may cause the thread tension to be incorrect or break the needle.

- Make sure you turn the power off while threading the machine. If you accidentally step on the foot controller and the machine starts to sew, you could be injured.

**CAUTION**

- Make sure that the thread is correctly inserted through the tension-adjusting spring of the bobbin case. If it is not inserted, re-insert the thread.

- Only use bobbins that were designed to be used with this machine.
4 Hold the end of the thread, push the bobbin down with your finger, and then pass the thread through the slit, as shown.

5 Reattach the bobbin cover. Put the left tab in place (see arrow ①), and then press lightly on the right side (see arrow ②) until the cover clicks into place.

- Replace the cover so that the end of the thread comes out from the left side of the cover (as shown by the line in the illustration).

---

**Lower Threading (for models equipped with a quick-set bobbin)**

This feature is only available on certain models.

**CAUTION**

- Winding the bobbin improperly may cause the thread tension to loosen, breaking the needle and resulting in injury.

1. Wound evenly
2. Wound poorly

- The bobbin was designed specifically for this sewing machine. If bobbins from other models are used, the machine will not operate correctly. Use only the enclosed bobbin or bobbins of the same type (part code: SA156, SFB (XA5539-151)).

---

**CAUTION**

- Be sure to turn off the power. If you accidentally step on the foot controller and the machine begins to operate, injury could result.
Follow steps 1 and 2 from “Lower Threading”.

Put the bobbin in, feed the end of the thread through the slit, and then pull the thread to cut it.

- Only use bobbins that were designed to be used with this machine.

**CAUTION**

- Make sure you set the bobbin so the thread unrolls in the right direction. If the thread unrolls in the wrong direction, it may cause the thread tension to be incorrect or break the needle.

1. Cutter

- Make sure that the thread is correctly inserted through the tension-adjusting spring of the bobbin case. If it is not inserted, re-insert the thread.

3. Reattach the bobbin cover. Put the left tab in place (see arrow ①), and then press lightly on the right side (see arrow ②) until the cover clicks into place.

- You can begin sewing immediately without drawing up the bobbin thread. If you want to draw up the bobbin thread before you start to sew, follow the procedure in “Drawing up the Lower Thread” (page 24).
Upper Threading

1. Spool pin
2. Thread guide (back)
3. Thread guide (front)
4. Thread take-up lever
5. Mark on the handwheel

**IMPORTANT:**
Raise the presser foot using the presser foot lever.

1. Presser foot lever

2. Raise the needle to its highest position by turning the handwheel toward you (counterclockwise) so that the mark on the handwheel points directly up.
   - If the needle is not correctly raised, the sewing machine can not be threaded.
   - Be sure to turn the handwheel so that the mark on the wheel points up before threading the sewing machine.

3. Pull up the spool pin and put a spool of thread on this pin.

**CAUTION**
- Make sure you thread the machine properly. Otherwise, the thread could tangle and break the needle.

**CAUTION**
- If the spool of thread is in the wrong place, or is set incorrectly, the thread may tangle on the spool pin and cause the needle to break.

4. Feed the upper thread as shown in the illustration above. Pass the thread through both thread guides: the back one first, and then the front one.

5. Make sure you guide the thread through the thread take-up lever from right to left.

**CAUTION**
- If the spool of thread is in the wrong place, or is set incorrectly, the thread may tangle on the spool pin and cause the needle to break.
6 Put the thread behind the guide above the needle.
   • The thread can easily be passed behind the needle bar thread guide by holding the thread in your left hand, then feeding the thread with your right hand.

   ![Image of needle bar thread guide]

   ① Needle bar thread guide

7 IMPORTANT:
Thread the needle from front to back leaving a thread tail of about 5 cm (2 inch).
   • If your sewing machine is equipped with a needle threader, use the needle threader to thread the needle (see next section).

   ![Image of needle holder and needle threader]

   ① Needle holder
   ② Needle threader lever

   ![Image of thread guide]

   ① Needle holder
   ② Needle threader lever
   ③ Guide

   **Note**
   • When you use the needle threader, make sure the needle holder is in the highest position, otherwise the hook may be damaged.

   **Note**
   • If the thread take-up lever is lowered, the upper thread can not be wrapped around the thread take-up lever. Make sure you raise the presser foot lever and the thread take-up lever before you feed the upper thread.
   • If you incorrectly feed the thread you may cause sewing problems.

Using the Needle Threader (for models equipped with a needle threader)
This feature is only available on certain models.

1 Turn the power off and lower the presser foot lever.

2 Raise the needle to its highest position by turning the handwheel toward you (counterclockwise) so that the mark on the handwheel points directly up.

3 While lowering the needle threader lever, hook the thread onto the guide.
Pull down the needle threader lever as much as possible, and then turn the lever toward the back of the machine (away from you). Make sure that the hook passes through the eye of the needle and grabs the thread.

While lightly holding the thread, turn the needle threader lever toward the front of the machine (toward you). The hook will pull the thread through the needle.

Raise the needle threader lever and pull out about 5 cm (2 inch) of thread through the needle toward the back of the sewing machine.

The needle threader can only be used with home sewing machine needles size 75/11-100/16. Check the table on page 26 for the appropriate needle and thread combinations. If you are using transparent nylon mono-filament thread, you can only use needles in the range of 90/14-100/16.

You cannot use the needle threader if you are using decorative threads or special needles, such as the twin needle and wing needle. When using these needles or threads you will need to thread the needle by hand. Make sure the main power switch is off when threading.
Drawing up the Lower Thread

1. While lightly holding the end of the upper thread, slowly turn the handwheel toward you (counterclockwise) by hand to lower and then raise the needle.

2. Pull on the upper thread to draw up the lower thread.

3. Pull out about 10 cm (4 inch) of both threads and put them toward the back of the machine under the presser foot.

Quick-set Bobbin Threading
This is only available on certain models. You can begin sewing immediately without drawing up the bobbin thread. When sewing gathers or darts, you can draw up the lower thread by hand so that some thread will be left over. Before you draw up the lower thread, put the bobbin back in.

1. Pass the thread along the slit in the direction of the arrow, and leave it there without cutting it.

- The bobbin cover should still be removed.

2. Draw up the lower thread as described in the previous steps 1 to 3.

3. Replace the bobbin cover.

Sewing with a Twin Needle

We have designed your machine so you can sew with this needle and two top threads. You can use the same color or two different colors of thread for making decorative stitches.

**CAUTION**

- Use only twin needles that have been made for this machine (part code: X57521-021). Other needles could break and damage the machine.
- When using the twin needle, make sure the stitch width is not set above 3 since this may cause the needle to hit the needle plate and break.
- Make sure that the needle does not strike the presser foot.
- Do not sew with bent needles. The needle could break and injure you.
- When using the twin needle, make sure you use the zigzag presser foot only.
Attaching the Twin Needle
Attach the twin needle in the same way as a single needle (see page 8). The flat side of the needle should face toward the back and the rounded side should face toward you.

Attaching the Extra Spool Pin
Put the extra spool pin in the hole on the top of the machine. Put the second spool of thread onto the extra spool pin.

Twin Needle Threading
You should thread each needle separately.

1 Thread the left needle.
Follow the same instructions for threading a single needle (see page 21).

2 Thread the right needle.
Thread the right needle in the same way that you threaded the left needle using the thread from the spool on the extra spool pin, but do not pass the thread through the guide above the needle before you pass it through the eye of the right needle.

Thread Tension
The tension of the thread will affect the quality of your stitches. You may need to adjust it when you change fabric or thread.

Memo
We recommend that you do a test sample on scrap of a fabric before you start to sew.

Correct Tension
Correct tension is important as too much or too little tension will weaken your seams or cause puckers on your fabric.

Upper Tension is too Tight
Loops will appear on the surface of the fabric.

Solution
Reduce the tension by turning the upper tension control dial to a lower number.

Upper Tension is too Loose
Loops appear on the back of the fabric.

Solution
Increase the tension by turning the upper tension control dial to a higher number.

Note
Models Equipped with a Needle Threader
You can not use the needle threader to thread the twin needle. Instead, thread the twin needle by hand, from front to back. Using the needle threader may damage the machine.
MEMO

For clear nylon thread, always use needle 90/14 - 100/16.

You can also use the same thread for the bobbin thread and upper threading.

CAUTION

Make sure you follow the needle, thread, and fabric combinations listed in the table. Using the wrong combination, such as heavyweight fabric like denim with a small needle (65/9-75/11), may bend or break the needle. The wrong combination may also cause the seam to be uneven, the fabric to pucker, or the machine to skip stitches.
STRAIGHT AND ZIGZAG STITCHING

Please Read Before Sewing

----- CAUTION -----

- To avoid being injured, watch the needle carefully while you are using the machine. Keep your hands away from moving parts.
- Do not stretch or pull the fabric during sewing, otherwise the needle may be damaged and you may be injured.
- Do not use bent or broken needles, otherwise you may be injured.
- Take care that the needle does not hit basting pins or other objects during sewing. The needle may break and you may be injured.
- Always use the correct presser foot. If you use the wrong presser foot, the needle may hit the presser foot and bend or break and you may be injured.
- When you turn the handwheel by hand, always turn it toward you (counterclockwise). Turning it the other way may cause the thread to tangle and damage the needle or fabric, and you may be injured.

---

Straight Stitching

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Stitch</td>
<td>2</td>
<td>1-4 (1/64-3/16)</td>
<td>5-0* (3/16-0)</td>
</tr>
<tr>
<td>Triple Stretch Stitch</td>
<td>14</td>
<td>Fixed 2.5 (3/32)</td>
<td>Fixed 2.5 (3/32)</td>
</tr>
</tbody>
</table>

*Turn the stitch width dial to adjust the needle position. Setting the dial to 5 selects the left needle position; setting the dial to 0 selects the right needle position.

---

Starting Sewing

1. Turn the pattern selection dial to choose the stitch number you want. You also need to set the pattern selection dial to the Straight Stitch or Triple Stretch Stitch.

2. Raise the needle to its highest position and lift the presser foot lever.

3. Pull the upper thread though the toes of the presser foot.

4. Put the fabric under the presser foot and position the needle 1 cm (3/8 inch) from the edge of the fabric.

5. Lower the presser foot.

6. To back tack, push down the reverse sewing lever as far as possible, and then press the foot controller to start reverse sewing. Release the foot controller to stop sewing.

7. Release the reverse sewing lever and start sewing in the forward direction by pressing the foot controller.

---

CAUTION

- Make sure the needle does not hit a pin or any other object during sewing. The thread could tangle or the needle could break, and you may be injured.
Changing Sewing Direction

1. Stop the machine at the point where you want to change direction with the needle still in the fabric.
2. Raise the presser foot and turn the fabric to its new direction using the needle as a pivot.
3. Lower the presser foot and start sewing in the new direction.

Finishing Sewing
You can use stitching to lock the threads at the end of the seam or to strengthen a stitch.

1. Stitch to the end of the seam and stop.
2. Push the reverse sewing lever and stitch backwards for 1 cm (3/8 inch) from the end of the fabric.

Removing the Material from the Machine

1. Stop the machine. Raise the needle to its highest position and make sure that the thread take-up lever is also in its highest position.
2. Lift the presser foot and pull the fabric out gently to the left hand side.
3. Cut both threads with the thread cutter on the left hand side of the machine.

To prepare the machine for the next seam, pull about 10 cm (4 inch) of thread through the toes of the presser foot toward the back of the machine.

Top Stitching and Stretch Materials
You can use a straight stitch for top stitching and sewing lightweight fabrics.
You can use a triple stretch stitch for sewing stretch fabrics.

Zigzag Stitching

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zigzag Stitch</td>
<td>F-4 (1/64-3/16)</td>
<td>0-5 (0-3/16)</td>
<td></td>
</tr>
</tbody>
</table>

Satin Stitch
Setting the Zigzag Stitch length in the “F” range produces a satin stitch (close zigzag stitch). The Satin Stitch can be used for making buttonholes and decorative stitches. Set the pattern selection dial to the Zigzag Stitch, set the stitch length in the “F” range, and set the stitch width dial between 0 and 5.
3 BUILT-IN STITCHES

Blind Hem Stitching

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Hem Stitch</td>
<td>F-2</td>
<td>1/64-1/16</td>
<td>1/8-3/16</td>
</tr>
<tr>
<td>Stretch Blind Hem Stitch</td>
<td>F-1.5</td>
<td>1/64-1/16</td>
<td>1/8-3/16</td>
</tr>
<tr>
<td>Stretch Blind Hem Stitch</td>
<td>F-1.5</td>
<td>1/64-1/16</td>
<td>1/8-3/16</td>
</tr>
</tbody>
</table>

Both threads should be the same color as the fabric.

1. Fold back the hem, as shown in Fig. A. Then fold the edge of the fabric as in Fig. B. Leave a 6 mm (1/4 inch) overlap at the edge.

2. Set the pattern selection dial to the Blind Hem Stitch or Stretch Blind Hem Stitch, and then set the stitch length.

3. Sew on the fold as in Fig. C.

When the fabric is unfolded you will have a Blind Hem Stitch as shown in Fig. D.

- Right side of fabric
- Wrong side of fabric
- 10 mm (3/8 inch)
- 5 mm (3/16 inch)

Note
- The Stretch Blind Hem Stitch is useful for stretch fabrics.

Shell Tuck Stitching

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell Tuck Stitch</td>
<td>F-3</td>
<td>1/64-1/8</td>
<td>1/8-3/16</td>
</tr>
</tbody>
</table>

The Shell Tuck Stitch can be used to sew a picot (lace-like) edge on lightweight fabric.

1. Set the pattern selection dial to the Shell Tuck Stitch.

2. Adjust the thread tension so that it is tighter than normal.

3. Place the fabric under the presser foot so that it will be sewn along the bias, with the straight stitches sewn on the seamline and the zigzag stitches sewn slightly over the folded edge.
4 Sew at a slow speed.

Elastic Stitching

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elastic Stitch</td>
<td>F-2.5</td>
<td>(1/64-3/32)</td>
<td>3.5</td>
</tr>
</tbody>
</table>

You can use the Elastic Stitch for mending, sewing elastic or joining fabric. Each is explained below. Set the pattern selection dial to the Elastic Stitch.

**Mending**

1. Set the stitch length dial between “F” and 2.5.
2. Place the reinforcement fabric under the area you want to mend.
3. Following the line of the tear, sew using the Elastic Stitch as shown.

**Sewing Elastic**

1. Place the elastic on the fabric.
2. As you sew, stretch the elastic in front of and behind the presser foot.

**Joining Fabric**

You can use the Elastic Stitch to join two pieces of fabric together and it is very effective when sewing knitted fabrics. If you are using nylon thread, the stitch will not be visible.

1. Put the edge of the two pieces of fabric together and center them under the presser foot.
Double Action Stitching

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Action Stitch</td>
<td><img src="https://example.com/pattern1.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Bridging Stitch</td>
<td><img src="https://example.com/pattern2.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Rampart Stitch</td>
<td><img src="https://example.com/pattern3.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
</tbody>
</table>

These stitches are used for joining two pieces of fabric, such as when making patchwork. Set the pattern selection dial to the Double Action Stitch, Bridging Stitch, or Rampart Stitch.

Overedge Stitching

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elastic Shell Tuck Stitch</td>
<td><img src="https://example.com/pattern4.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Stretch Overlock Stitch</td>
<td><img src="https://example.com/pattern5.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Elastic Overlock Stitch</td>
<td><img src="https://example.com/pattern6.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Arrowhead Stitch</td>
<td><img src="https://example.com/pattern7.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Arrowhead Stitch</td>
<td><img src="https://example.com/pattern8.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Comb Stitch</td>
<td><img src="https://example.com/pattern9.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Comb Stitch</td>
<td><img src="https://example.com/pattern10.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
</tbody>
</table>

Patchworking

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smocking Stitch</td>
<td><img src="https://example.com/pattern11.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Fagoting Stitch</td>
<td><img src="https://example.com/pattern12.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Decorative Stitch</td>
<td><img src="https://example.com/pattern13.png" alt="Pattern" /></td>
<td>F-3 (1/64-1/8)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
</tbody>
</table>

These stitches are used to join two pieces of fabric while leaving a space between their edges.

1. Fold over the edges of the two pieces of fabric for the hem and baste the edges to a thin piece of paper leaving a small space between them.

2. Set the pattern selection dial to the Smocking Stitch, Fagoting Stitch, or Decorative Stitch.

3. Stitch along the edge, pulling both threads slightly when beginning to sew. Use thicker than normal threads for sewing.

4. After sewing, remove the basting and the paper. Finish by tying knots on the reverse side at the beginning and the end of the seams.
You can use these stitches to join together seams and finish them in one operation. The Overlock Stitches are also useful for sewing stretch materials while the Arrowhead Stitch is ideal for sewing the edge of a blanket.

1. Set the pattern selection dial to an overedge stitch.

2. Put the fabric under the presser foot so that the seamline (or arrowhead point) is approximately 3 mm (1/8 inch) to the left of the center of the presser foot. This stitch works best with a seam allowance of approximately 5 mm (3/16 inch) as this allows the right (zigzag) side of the stitch to overlock the cut edge of the fabric.

3. If the seam allowance is wider than the stitch pattern, trim away any excess fabric after stitching.

A finished Elastic Overlock Stitch is shown in the illustration below.

---

**Feather Stitching**

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feather Stitch</td>
<td>16</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
</tbody>
</table>

Use the Feather Stitch as a decorative top stitch when embroidering or when hemming blankets, tablecloths, or draperies.

1. Set the pattern selection dial to the Feather Stitch.

2. Place the fabric right side up and sew 1 cm (3/8 inch) from the edge of the fabric.

3. Trim close to the stitching.

The stitch will prevent the fabric from unravelling.

---

**Triple Zigzag Stretch Stitching**

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triple Zigzag Stretch Stitch</td>
<td>15</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
</tbody>
</table>

This stitch can be used wherever a zigzag stitch would be used to sew heavyweight stretch fabrics. The Triple Zigzag Stretch Stitch can also be used as a decorative top stitch. Set the pattern selection dial to the Triple Zigzag Stretch Stitch.
Decorative Stitching

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triangle Stitch</td>
<td>13</td>
<td>F-1.5 (1/64-1/16)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Decorative Stitch</td>
<td>21</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Leaf Stitch</td>
<td>22</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Tree Stitch</td>
<td>23</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Legs Stitch</td>
<td>24</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Decorative Stitch</td>
<td>25</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Stretch Overlock Stich</td>
<td>26</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-13/64)</td>
</tr>
<tr>
<td>Stretch Overlock Stich</td>
<td>27</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-13/64)</td>
</tr>
<tr>
<td>Decorative Stitch</td>
<td>28</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Decorative Hem Stitch</td>
<td>31</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
<tr>
<td>Decorative Stitch</td>
<td>32</td>
<td>Fixed 2.5 (3/32)</td>
<td>3-5 (1/8-3/16)</td>
</tr>
</tbody>
</table>

These stitches can be used for decorative top stitching and for smocking. Set the pattern selection dial to the Triangle Stitch, Leaf Stitch, etc.
### Making a Buttonhole

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
<th>Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-1.5 (1/64-1/16)</td>
<td>3-5 (1/8 – 3/16)</td>
<td>Buttonhole Foot</td>
<td></td>
</tr>
</tbody>
</table>

#### Memo
- We recommend that you practice making a buttonhole on a scrap piece of fabric before you try it on an actual garment.
- When making buttonholes on soft fabrics, place a stabilizer material on the underside of the fabric.

1. Using tailor’s chalk, mark the position and length of the buttonhole on the fabric.

2. Attach the buttonhole foot and push the frame back until it stops with the plastic insert at the front of the frame.

3. You need to sew the front bar tack first. Line the bar tack mark under the center of the presser foot and match it up to the two lines on the presser foot.

#### CAUTION
- If the presser foot is not installed with the correct orientation, the needle may strike the presser foot, which may bend or break the needle and cause injury. (See page 9 for the correct presser foot orientation.)

---

### Securing the Stitching and Cutting the Buttonhole

1. To secure the stitching, turn the material 90 degrees counterclockwise and sew straight stitches to the end of the front bar tack of the buttonhole.

2. Remove the material from the machine. We recommend that you put pins across both ends of the buttonhole to prevent the stitches from being cut.
Cut an opening in the middle of the buttonhole with the seam ripper tool. Be careful not to cut through any stitches.

Adjusting Buttonholes

If the stitching on the two sides of the buttonhole is not the same, you can make the following adjustments.

1. Set the stitch length dial between "F" and 1.5 and sew the buttonhole on a scrap piece of fabric to observe how the material is fed.

2. If the right side of the buttonhole is too coarse or fine, adjust the feeding of the material with the stitch length dial.

3. After obtaining a satisfactory feed on the right side, stitch the buttonhole and observe the feeding.

4. If the left side is too coarse or fine compared with the right side, adjust the buttonhole fine-adjustment screw as described below.

   - If the left side is too coarse, turn the buttonhole fine-adjustment screw with a large screwdriver in the + direction.
   - If the left side is too fine, turn the buttonhole fine-adjustment screw with a large screwdriver in the – direction.

   - This adjustment ensures both sides of the buttonhole are the same.

- When using the seam ripper to open the buttonhole, do not put your hand or finger in the path of the ripper. The seam ripper may slip and you may be injured.
SEWING BUTTONHOLES AND BUTTONS

Sewing Buttons

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
<th>Foot</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zigzag Stitch</td>
<td>F</td>
<td>(1/64)</td>
<td>Any</td>
<td>Button Sewing Foot</td>
<td>Darning Plate</td>
</tr>
</tbody>
</table>

1. Measure the distance between the buttonholes and set the pattern selection dial to the Zigzag Stitch, and set the width you want.

2. Remove the power supply plug from the outlet.

3. Change the foot to the button sewing foot.

4. Place the darning plate on the needle plate.

5. Connect the power supply plug into the wall outlet.

6. Put a button between the foot and the fabric and make sure that the needle enters the holes without hitting the button. If it hits, see step 1.

7. At a slow speed, sew about 10 stitches.

8. Remove the material from the machine. Cut the upper and lower threads and tie both threads at the back of the material.

CAUTION

- Make sure the needle does not hit the button during sewing. The needle may break and you may be injured.
USING ATTACHMENTS AND APPLICATIONS

Zipper Insertion

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
<th>Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Stitch</td>
<td>2</td>
<td>2-3 (1/16-1/8)</td>
<td>2.5 (center) 3/32</td>
<td>Zipper Foot</td>
</tr>
</tbody>
</table>

You can use the zipper foot to sew different types of zippers, and can easily position it to the right or left side of the needle.

When sewing the right side of the zipper, attach the shank to the left pin of the zipper foot. When sewing the left side of the zipper, attach the shank to the right pin of the zipper foot.

1. Set the pattern selection dial to the Straight Stitch. Set the stitch length between 2 (1/16 inch) and 3 (1/8 inch). Set the stitch width at 2.5 (3/32 inch).

2. Lower the presser foot lever and fix either the left or right pin of the zipper foot onto the shank.

3. Fold the edge of the material 2 cm (3/4 inch) and place the zipper under the folded section. Lower the needle into the notch located either on the left or right side of the zipper foot.

4. Sew from the bottom of the zipper toward the top on both sides. The needle should be positioned on the zipper side of the foot for best results.

5. To sew the opposite side of the zipper, first turn the machine off and raise the presser foot lever. Release the zipper foot by pressing the button located at the back of the foot, then fit the foot on the other side of the zipper. Continue sewing using the pin on that side of the zipper foot.

**CAUTION**

- Make sure the needle does not hit the zipper during sewing. If the needle hits the zipper, the needle may break and you may be injured.

- Turn the handwheel by hand to make sure the needle does not hit the zipper foot before you start sewing. Choosing a different stitch will cause the needle to hit the presser foot and break, and you may be injured.
### Gathering

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Stitch</td>
<td>2</td>
<td>4 (3/16)</td>
</tr>
</tbody>
</table>

1. Set the pattern selection dial to Straight Stitch.
2. Loosen the tension of the upper thread so that the lower thread lies on the underside of the material.
3. Sew a single row (or many rows) of straight stitches.
4. Pull the lower threads to gather the material.

### Darning

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Foot</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Stitch</td>
<td>2</td>
<td>Any</td>
<td>Zigzag Presser Foot</td>
<td>Darning Plate</td>
</tr>
</tbody>
</table>

1. Remove the power supply plug from the outlet. Put the darning plate on the needle plate. Connect the power supply plug to the wall outlet.
2. Set the pattern selection dial to the Straight Stitch.
3. Put the section you want to darn under the presser foot together with fabric for reinforcement.
4. Lower the presser foot.
5. Begin sewing by alternating between gently drawing the work away from you and pulling it toward you.
6. Repeat this motion until the darn section is filled with parallel lines of stitching.
**Appliqués**

You can create an applique by cutting a different piece of fabric into a shape and using it as a decoration.

1. Baste the cut design to the fabric.
2. Carefully sew around the edge of the design with a zigzag stitch.
3. Cut away any fabric that is left outside the stitching.
4. Remove the basting, if necessary.

**Memo**

- Make reinforcing straight stitches at the beginning and the end of the zigzag stitching.

**CAUTION**

- Be careful that the needle does not hit a pin during sewing. The needle could break, and you may be injured.

---

**Monogramming and Embroidering**

**Preparing for Monogramming and Embroidering**

1. Remove the power supply plug from the outlet. Place the darning plate on the needle plate, and reconnect the power supply plug to the wall outlet.

2. Set the pattern selection dial to Zigzag Stitch.
3. Draw the lettering (for monogramming) or design (for embroidering) on the surface of the fabric.
4. Stretch the fabric between embroidery hoops as firmly as possible, with the underside of the fabric on the bottom of the inside hoop.
5. Put the work under the needle and lower the presser bar with the foot removed.
6. Pull the lower thread up through the starting position by turning the handwheel and make a few holding stitches.

---

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zigzag Stitch</td>
<td>3</td>
<td>F-2 (1/64-1/16)</td>
<td>Any</td>
</tr>
</tbody>
</table>

---

**Memo**

- Make reinforcing straight stitches at the beginning and the end of the zigzag stitching.

---

**CAUTION**

- Be careful that the needle does not hit a pin during sewing. The needle could break, and you may be injured.
7 Grip the hoop with your thumbs and forefingers while pressing the fabric with your middle and third fingers and supporting the outside of the hoop with your little fingers.

---

**CAUTION**
- Keep fingers away from moving parts, especially needles.

---

**Monogramming**

1 Sew by moving the hoop slowly along the lettering at a constant speed.

2 Secure with a few straight stitches at the end of the last letter.

---

**Embroidering**

1 Stitch the outline of the design by moving the embroidery hoop.

2 Fill in the design alternating from the outline of the design to the inside and from the inside to the edge of the outline until the design is completely filled in. Keep the stitching close together.

---

**Memo**
- You can make long stitches by moving the embroidery hoop rapidly and short stitches by moving it slowly.

3 Secure with a few straight stitches at the end of the design.

---

**CAUTION**
- Keep fingers away from moving parts, especially needles.
OPTIONAL ACCESSORIES

Using the Walking Foot

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Stitch</td>
<td>2</td>
<td>1-4 (1/16-3/16)</td>
<td>2-3 (1/16-1/8)</td>
</tr>
<tr>
<td>Zigzag Stitch</td>
<td>2</td>
<td>1-4 (1/16-3/16)</td>
<td>0-5 (0-3/16)</td>
</tr>
</tbody>
</table>

This foot is very useful for sewing materials such as vinyl cloth, synthetic leather, thin leather, etc. These materials are difficult to feed when sewing. The walking foot prevents these materials from crumpling, slipping or sticking between the presser foot and the material.

**Note**

- Only use the walking foot with straight or zigzag stitches. Do not use other patterns. Reverse stitches can not be sewn with the walking foot.

1. Remove the power supply plug from the outlet.
2. Raise the needle and the presser foot.
3. Loosen the presser foot screw to remove the presser foot holder.
4. Attach the forked section of the connecting lever to the needle clamp, and fit the walking foot to the presser bar.
5. Lower the presser foot lever and then tighten the presser foot screw.
Using the Quilting Foot

1. Remove the power supply plug from the outlet.
2. Raise the needle and the presser foot.
3. Loosen the presser foot screw to remove the presser foot holder.

The Quilting Foot is useful for darning and free-motion machine quilting.

4. Attach the quilting foot, making sure that part A shown in the illustration is above the needle clamp screw. Then lower the presser foot lever and tighten the presser foot screw.
   - Make sure that the needle clamp screw is firmly tightened.

5. Put the darning plate on the needle plate. Connect the power supply plug to the wall outlet.

6. Set the pattern selection dial to the Straight Stitch.
   - Before starting to sew, draw the quilting design on the fabric.

CAUTION

- Use a screwdriver to tighten the screw securely. If the screw is loose, the needle may hit the presser foot and you may be injured.
- Before you start sewing, make sure you turn the handwheel toward you (counterclockwise) to check that the needle does not hit the presser foot.
- Be careful not to touch the needle, otherwise you may be injured.

Note

- When sewing with the walking foot, sew at medium to low speeds.

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Stitch</td>
<td>2</td>
<td>Any</td>
<td>2.5 (3/32)</td>
<td>Darning Plate</td>
</tr>
</tbody>
</table>
Use both hands to keep the fabric firmly stretched and move the fabric to sew over the drawn design.

The length of the stitch depends on how quickly you move the fabric and on the machine’s sewing speed. Sew while moving the fabric slowly.

Using the 1/4-inch Quilting Foot

<table>
<thead>
<tr>
<th>Stitch Name</th>
<th>Pattern</th>
<th>Stitch Length [mm (inch)]</th>
<th>Stitch Width [mm (inch)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Stitch</td>
<td>2</td>
<td>2-2.5 (1/16-3/32)</td>
<td>2.5 (center) (3/32)</td>
</tr>
</tbody>
</table>

You can use the 1/4-inch Quilting Foot to sew fixed seams when piecing together a quilt.

Attach the 1/4-inch Quilting Foot.

Position the presser foot over the fabric and sew as shown in the illustration below.

Achieving an Accurate Seam Allowance

Quickly Stitch Together a Quilt

1. Remove the power supply plug from the outlet.
2. Set the pattern selection dial to the Straight Stitch. Set the stitch length between 2 (1/16 inch) and 2.5 (3/32 inch). Set the stitch width at 2.5 (3/32 inch) (center).
MAINTENANCE

Changing the Light Bulb

**CAUTION**

- Turn off the main power switch and unplug the machine before you change the light bulb. If the main power switch is on when you change the light bulb, you may get an electric shock. If the machine is on and you step on the foot controller, you may be injured.
- To avoid burns, let the light bulb cool down before you change it.

1. **Remove the power supply plug from the outlet.**
2. **Loosen the screw on the back of the sewing head. Then remove the light cover from the machine.**
3. **Replace the sewing light bulb.**
4. **Put the light cover back on and fasten the screw.**

---

Cleaning

**CAUTION**

- Make sure you unplug the machine before you clean it, otherwise you risk getting an electric shock or being injured.

1. **Switch the machine off and unplug it.**
2. **Raise the needle and the presser foot.**
3. **Loosen the presser foot screw and the needle clamp screw to remove the presser foot holder and the needle.**
4. **Grasp both sides of the needle plate cover, and then slide it toward you to remove the needle plate cover.**

---

**Symbols:**

- ① Bulb
- ② Loosen
- ③ Tighten

- ① Needle plate cover
5. Using a coin, remove the two screws. Lift up the needle plate as shown in the illustration, and then slide the needle plate to the left to remove it.

6. Grasp the bobbin case, and then lift it out to the left.

7. Use the cleaning brush or a vacuum cleaner to remove any dust from the race and its surrounding area.

8. Insert the bobbin case so that the projection on the bobbin case aligns with the spring.

9. Install the needle plate, sliding it to the right to secure it, and then tighten the screws. Make sure that the tab on the left side of the needle plate is aligned with the notch in the bobbin case.

10. Install the needle plate cover. Insert the tabs on the needle plate cover into the notches in the needle plate, and then slide the cover back into position.

**CAUTION**

- Never use a bobbin case that is scratched; otherwise the upper thread may become tangled, the needle may break, or sewing performance may suffer. For a new bobbin case (part code: XC8993-021), contact your nearest authorized service center.
- Make sure that you fit the bobbin case properly, otherwise the needle may break.

- Do not apply oil to the bobbin case.
# Troubleshooting

If the machine stops working properly, check the following possible problems. If the problem is still there, contact your retailer or the nearest authorized service center.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>How to put it right</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The sewing machine does not work.</strong></td>
<td>The machine is not plugged in.</td>
<td>Plug the machine in.</td>
<td>page 7</td>
</tr>
<tr>
<td></td>
<td>The main power switch is turned off.</td>
<td>Turn on the main power switch</td>
<td>page 8</td>
</tr>
<tr>
<td></td>
<td>The bobbin-winder shaft is pushed to the right.</td>
<td>Move the bobbin-winder shaft to the left.</td>
<td>page 17</td>
</tr>
<tr>
<td></td>
<td>You have not used the foot controller properly.</td>
<td>Use the foot controller properly.</td>
<td>page 8</td>
</tr>
<tr>
<td><strong>The needle breaks.</strong></td>
<td>The needle is not fitted properly.</td>
<td>Fit the needle properly.</td>
<td>page 8</td>
</tr>
<tr>
<td></td>
<td>The needle clamp screw is loose.</td>
<td>Use the screwdriver to firmly tighten the screw.</td>
<td>page 9</td>
</tr>
<tr>
<td></td>
<td>The needle is bent or blunt.</td>
<td>Replace the needle.</td>
<td>page 8</td>
</tr>
<tr>
<td></td>
<td>You have not used the right combination of fabric, thread and needle.</td>
<td>Choose a thread and needle that are appropriate for the type of fabric.</td>
<td>page 26</td>
</tr>
<tr>
<td></td>
<td>The presser foot you are using is not appropriate for the type of stitch that you want to sew.</td>
<td>Attach the presser foot that is correct for the type of stitch that you want to sew.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The upper thread tension is too tight.</td>
<td>Loosen the upper thread tension.</td>
<td>page 25</td>
</tr>
<tr>
<td></td>
<td>You are pulling the fabric too much.</td>
<td>Lightly guide the fabric.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>You have not fitted the spool properly.</td>
<td>Fit the spool properly.</td>
<td>page 21, 25</td>
</tr>
<tr>
<td></td>
<td>The area around the hole in the needle plate is scratched.</td>
<td>Replace the needle plate. Contact your retailer or the nearest authorized service center.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The area around the hole in the presser foot is scratched.</td>
<td>Replace the presser foot. Contact your retailer or the nearest authorized service center.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The bobbin case is scratched.</td>
<td>Replace the bobbin case.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>You have not used a bobbin that has been designed for this machine.</td>
<td>Incorrect bobbins will not work properly. Only use a bobbin that has been designed for this machine.</td>
<td>page 16</td>
</tr>
<tr>
<td><strong>The upper thread breaks.</strong></td>
<td>You have not threaded the upper thread properly. (For example, you have not fitted the spool properly, or the thread has come out of the guide above the needle.)</td>
<td>Correct the upper threading.</td>
<td>page 21</td>
</tr>
<tr>
<td></td>
<td>There are knots or tangles in the thread.</td>
<td>Remove any knots or tangles.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The needle is not appropriate for the thread you are using.</td>
<td>Choose a needle that is appropriate for the type of stitch.</td>
<td>page 26</td>
</tr>
<tr>
<td></td>
<td>The upper-thread tension is too tight.</td>
<td>Loosen the upper thread tension.</td>
<td>page 25</td>
</tr>
<tr>
<td></td>
<td>The thread is tangled.</td>
<td>Remove the tangled thread. If the thread is tangled in the bobbin case, clean the bobbin case.</td>
<td>page 44</td>
</tr>
<tr>
<td></td>
<td>The needle is bent or blunt.</td>
<td>Replace the needle.</td>
<td>page 8</td>
</tr>
<tr>
<td></td>
<td>You have not inserted the needle properly.</td>
<td>Insert the needle properly.</td>
<td>page 8</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible cause</td>
<td>How to put it right</td>
<td>Reference</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>---------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>The upper thread breaks.</strong></td>
<td>The area around the hole in the needle plate is scratched.</td>
<td>Replace the needle plate. Contact your retailer or the nearest authorized service center.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The area around the hole in the presser foot is scratched.</td>
<td>Replace the presser foot. Contact your retailer or the nearest authorized service center.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The bobbin case is scratched, or has a burr on it.</td>
<td>Replace the bobbin case. Contact your retailer or the nearest authorized service center.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>You have not used a bobbin that has been designed for this machine.</td>
<td>Incorrect bobbins will not work properly. Only use a bobbin that has been designed for this machine.</td>
<td>page 16</td>
</tr>
<tr>
<td><strong>The lower thread is tangled or breaks.</strong></td>
<td>You have not wound the bobbin thread properly.</td>
<td>Wind the bobbin properly.</td>
<td>page 16</td>
</tr>
<tr>
<td></td>
<td>The bobbin is scratched or does not turn smoothly.</td>
<td>Replace the bobbin.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The thread is tangled.</td>
<td>Remove the tangled thread and clean the bobbin case.</td>
<td>page 44</td>
</tr>
<tr>
<td></td>
<td>You have not used a bobbin that has been designed for this machine.</td>
<td>Incorrect bobbins will not work properly. Only use a bobbin that has been designed for this machine.</td>
<td>page 16</td>
</tr>
<tr>
<td></td>
<td>Bobbin is set incorrectly.</td>
<td>Reset the bobbin thread correctly.</td>
<td>page 18, 19, 20</td>
</tr>
<tr>
<td><strong>The thread tension is incorrect.</strong></td>
<td>You have not threaded the upper thread properly.</td>
<td>Correct the upper threading.</td>
<td>page 21</td>
</tr>
<tr>
<td></td>
<td>You have not wound the bobbin thread properly.</td>
<td>Wind the bobbin thread properly.</td>
<td>page 16</td>
</tr>
<tr>
<td></td>
<td>You have not threaded the right combination of thread and needle for the fabric you are using.</td>
<td>Choose a thread and needle that are appropriate for the type of fabric.</td>
<td>page 26</td>
</tr>
<tr>
<td></td>
<td>You have not attached the presser foot holder properly.</td>
<td>Attach the presser foot holder properly.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The thread tension is incorrect.</td>
<td>Adjust the tension of the upper thread.</td>
<td>page 25</td>
</tr>
<tr>
<td></td>
<td>You have not used a bobbin that has been designed for this machine.</td>
<td>Incorrect bobbins will not work properly. Only use a bobbin that has been designed for this machine.</td>
<td>page 16</td>
</tr>
<tr>
<td></td>
<td>Bobbin is set incorrectly.</td>
<td>Reset the bobbin thread correctly.</td>
<td>page 18, 19, 20</td>
</tr>
<tr>
<td><strong>The fabric is wrinkled.</strong></td>
<td>You have not threaded the upper thread properly or fitted the bobbin properly.</td>
<td>Thread the upper thread and wind the bobbin thread properly.</td>
<td>page 18, 19, 21</td>
</tr>
<tr>
<td></td>
<td>You have not fitted the spool properly.</td>
<td>Fit the spool properly.</td>
<td>page 21, 25</td>
</tr>
<tr>
<td></td>
<td>You have not used the right combination of fabric, thread and needle.</td>
<td>Choose a thread and needle that are appropriate for the type of fabric.</td>
<td>page 26</td>
</tr>
<tr>
<td></td>
<td>The needle is bent or blunt.</td>
<td>Replace the needle.</td>
<td>page 8</td>
</tr>
<tr>
<td></td>
<td>If you are sewing thin fabric, the stitch is too thick.</td>
<td>Sew with stabiliser material under the fabric.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The thread tension is incorrect.</td>
<td>Adjust the tension of the upper thread.</td>
<td>page 25</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible cause</td>
<td>How to put it right</td>
<td>Reference</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Stitches are skipped.</td>
<td>You have not threaded the upper thread properly.</td>
<td>Correct the upper threading.</td>
<td>page 21</td>
</tr>
<tr>
<td></td>
<td>You have not used the right combination of fabric, thread and needle.</td>
<td>Choose a thread and needle that are appropriate for the type of fabric.</td>
<td>page 26</td>
</tr>
<tr>
<td></td>
<td>The needle is bent or blunt.</td>
<td>Replace the needle.</td>
<td>page 8</td>
</tr>
<tr>
<td></td>
<td>You have not inserted the needle properly.</td>
<td>Insert the needle properly.</td>
<td>page 8</td>
</tr>
<tr>
<td></td>
<td>Dust has accumulated under the needle plate or in the bobbin case.</td>
<td>Remove the needle plate cover and clean the plate and the bobbin case.</td>
<td>page 44</td>
</tr>
<tr>
<td></td>
<td>Dust has built up in the feed dogs or in the bobbin case.</td>
<td>Clean the bobbin case.</td>
<td>page 44</td>
</tr>
<tr>
<td></td>
<td>You have not threaded the upper thread properly.</td>
<td>Correct the upper threading.</td>
<td>page 21</td>
</tr>
<tr>
<td></td>
<td>The bobbin case is scratched.</td>
<td>Replace the bobbin case. Contact your retailer or the nearest authorized service center.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>You have not used a bobbin that has been designed for this machine.</td>
<td>Incorrect bobbins will not work properly. Only use a bobbin that has been designed for this machine.</td>
<td>page 16</td>
</tr>
<tr>
<td>There is a high-pitched noise while sewing.</td>
<td>You have not moved the needle holder to its highest position.</td>
<td>Turn the handwheel toward you (counterclockwise) to raise the needle holder to the highest position.</td>
<td>page 22</td>
</tr>
<tr>
<td></td>
<td>You have not inserted the needle properly.</td>
<td>Insert the needle properly.</td>
<td>page 8</td>
</tr>
<tr>
<td>The needle threader can not be used.</td>
<td>You have not moved the needle holder to its highest position.</td>
<td>Turn the handwheel toward you (counterclockwise) to raise the needle holder to the highest position.</td>
<td>page 22</td>
</tr>
<tr>
<td></td>
<td>You have not inserted the needle properly.</td>
<td>Insert the needle properly.</td>
<td>page 8</td>
</tr>
<tr>
<td>The stitch is not sewn correctly.</td>
<td>The presser foot that you are using is not correct for the type of stitch.</td>
<td>Attach the presser foot that is correct for the type of stitch that you want to sew.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The thread tension is incorrect.</td>
<td>Adjust the tension of the upper thread.</td>
<td>page 25</td>
</tr>
<tr>
<td></td>
<td>The thread is tangled.</td>
<td>Remove the tangled thread. If the thread is tangled in the bobbin case, clean the bobbin case.</td>
<td>page 44</td>
</tr>
<tr>
<td>The fabric does not feed.</td>
<td>The stitch is too fine.</td>
<td>Lengthen the stitch length.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The darning plate is fitted on the needle plate.</td>
<td>Remove the darning plate.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>You have not used the right combination of fabric, thread and needle.</td>
<td>Choose a thread and needle that are appropriate for the type of fabric.</td>
<td>page 26</td>
</tr>
<tr>
<td></td>
<td>The thread is tangled.</td>
<td>Remove the tangled thread. If the thread is tangled in the bobbin case, clean the bobbin case.</td>
<td>page 44</td>
</tr>
<tr>
<td>The sewing light bulb does not come on.</td>
<td>The sewing light bulb is damaged.</td>
<td>Replace the sewing light bulb.</td>
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