Attention

Please read this instruction manual before using the machine as it contains important operational and safety information. Keep this manual accessible so that you may refer to it at anytime while operating the machine.
IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic safety precautions should always be followed, including the following: Read all instructions before using this sewing machine.

DANGER -To reduce the risk of electric shock:

1. An appliance should never be left unattended when plugged in.
2. Always unplug this appliance from the electric outlet immediately after using and before cleaning.

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

1. Do not allow this appliance to be used as a toy. Close attention is necessary when this appliance is used by or near children.
2. Use this appliance only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.
3. Never operate this appliance 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 appliance to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.
4. Never operate the appliance with any air openings blocked. Keep ventilation openings of the sewing machine and foot controller free from the accumulation of lint, dust and loose cloth.
5. Keep fingers away from all moving parts. Special care is required around the sewing machine needle.
6. Always use the proper throat plate. The wrong plate can cause the needle to break.
7. Do not use bent needles.
8. Do not pull or push fabric while stitching. It may deflect the needle causing it to break.
9. Switch the sewing machine off (“O”) when making any adjustments in the needle area, such as threading needle, changing needle, threading bobbin, or changing presser foot and the like.
10. Always unplug sewing machine from the electrical outlet when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.
11. Never drop or insert any object into any opening.
12. Do not use outdoors.
13. Do not operate where aerosol (spray) products are being used or when oxygen is being administered.
14. To disconnect, turn all controls to the off (“O”) position, then remove plug from outlet.
15. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.

SAVE THESE INSTRUCTIONS

This sewing machine is intended for household use only.

Foot controller: Model JC-001 Foot controller can be used on sewing machine model HZL-F300, HZL-F400, or HZL-600.

The working temperature of sewing machine is from 5 to 40 degree Celsius. Do not use sewing machine under direct sunlight, near a heat source such as stove, iron, candle or any hot objects and in the place where temperature is high. Otherwise temperature inside sewing machine becomes high and/or vinyl of the power cord may be damaged, resulting in fire or an electric shock.

Always check a combination of material, thread and needle size. (Refer to page 24.) If the combination is not right, for example, sewing thick material such as denim with thin needle like size 11 and smaller, needle may break and it will cause injury to your body.
Thank you for purchasing our products.

To safely and properly use this product, please read the instruction manual carefully and understand the properties of this computer sewing machine. This machine is composed of well-chosen brand-name parts and is well quality controlled. Please try a variety of different sewing methods and have fun.

- Do not expose machine to direct sunlight or humid atmosphere.
- Do not use thinner or other similar solvents to clean machine.

As the microcomputer(s), semi-conductor(s) and precise wiring board(s) is built in this sewing machine, please pay attention that the following condition(s) may occur.

- Use this product in a temperature between 5 and 40 degree Celsius. If temperature is extremely low, this sewing machine may not work properly.
- This sewing machine will stop due to safety mechanism to prevent the machine from overheating, when it sews slowly and for a long time. In this event, Start and Stop button will not light. The sewing machine will return to working condition after about 10 minutes.
## Contents

- Important safety instructions .......... 1, 2
- Principal parts .................................. 5
- Accessories ..................................... 6

### Basic operations

- Function of operational buttons .......... 7
- Connecting to the power supply .......... 8, 9
- Name and function of other operational buttons ....................................................... 10, 11
- Speed control .................................... 12
- Presser foot lifting lever and installation of knee lifting lever ..................................... 13
- Changing the presser foot ..................... 14, 15
- Bobbin thread preparation .................. 16~19
- Needle thread preparation .................. 20~21
  - Threading the needle thread
  - Automatic needle threader
  - Pulling up the bobbin thread
- Attaching the needle ......................... 24
- Fabric, thread and needle table .......... 25
- How to adjust thread tension ................ 26
- How to adjust presser foot pressure ......... 27
- How to lower feed dog ......................... 27
- How to select a stitch pattern F600 .......... 28, 29
- How to select a stitch pattern F400 .......... 30, 31
- How to select a stitch pattern F300 .......... 32, 33

### Practical sewing

#### Straight stitch ................................. 34~38
  - How to use seam guide line on the throat plate
  - Automatic lock stitch and programmed thread trimming
  - How to change needle positions
  - How to change the stitch length
  - Other straight stitch patterns

#### Zigzag stitch ................................. 39
  - Overcasting stitch .......................... 40, 41
  - Blind stitch ................................. 42~44
  - Buttonhole stitches ......................... 45~50
  - Standard buttonholing
  - Keyhole buttonholing
  - Buttonhole with gimp
  - When changing the width of the buttonhole
  - When changing the density of the seam

#### Manual 2-step buttonhole ................. 51, 52
#### Bartacking .................................... 53, 54
#### Inserting zippers ............................ 55~57
  - Side zipper attachment
  - Butted zipper attachment

#### Shirring and gathering ..................... 58
#### Pintucking .................................... 59
#### Welt seam ..................................... 60
#### How to use quilt guide F600 / F400 .... 61
#### Scallop stitches ............................. 62
#### Decorative stitches ......................... 63
### Patchwork quilt

- Patchwork piecing (joining) ........................................................................ 64
- Applique (1) ................................................................................................. 65
- Applique (2) ................................................................................................. 66
- Crazy quilt ................................................................................................... 67
- Stitch in ditch quilting [F600 Only] ............................................................ 68
- Quilting (straight stitch) [F600 / F400] ......................................................... 69
- Quilting (free motion) [F600 / F400] .............................................................. 70, 71

### Decorative stitches

- One-point stitch/sewing letters .................................................................. 72~79
  - Preparation before stitching ................................................................. 72
  - Test sewing ............................................................................................. 72
  - Operational buttons and screen ............................................................ 73
  - How to select patterns (letters) .............................................................. 74, 75
  - How to edit patterns (letters) ................................................................. 76
  - How to stitch a pattern (letters) ............................................................ 77
  - Disposing thread ends of jump stitches ................................................. 77
  - Save / call of pattern (letters) ............................................................... 78, 79

- Character selecting methods ....................................................................... 80

---

<table>
<thead>
<tr>
<th>Type and usage of Options</th>
<th>81~90</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Change of seam width of buttonhole</td>
<td>81</td>
</tr>
<tr>
<td>2. Change of needle position</td>
<td>82</td>
</tr>
<tr>
<td>3. Setting the thread trimming foot switch to OFF</td>
<td>83</td>
</tr>
<tr>
<td>4. Twin needle sewing</td>
<td>84, 85</td>
</tr>
<tr>
<td>5. Guide</td>
<td>86</td>
</tr>
<tr>
<td>6. Contrast of liquid crystal display (LCD)</td>
<td>87</td>
</tr>
<tr>
<td>7. Button reception buzzer volume settings</td>
<td>88</td>
</tr>
<tr>
<td>8. Language setting</td>
<td>89</td>
</tr>
<tr>
<td>9. Elongation</td>
<td>90</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message catalog</th>
<th>91</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Introduction of optional accessory parts</th>
<th>92, 93</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to install wide table</td>
<td>94</td>
</tr>
<tr>
<td>Machine maintenance</td>
<td>95</td>
</tr>
<tr>
<td>Performance check list</td>
<td>96, 97</td>
</tr>
<tr>
<td>List of stitch patterns [F600]</td>
<td>98, 99</td>
</tr>
<tr>
<td>List of stitch patterns [F400]</td>
<td>100, 101</td>
</tr>
<tr>
<td>List of stitch patterns [F300]</td>
<td>102, 103</td>
</tr>
<tr>
<td>Specifications</td>
<td>104</td>
</tr>
</tbody>
</table>
**Principal parts**

- Speed controller
- Presser foot pressure adjustment dial
- Face plate cover
- Threading lever
- Needle up/down button
- Presser foot lifting lever
- Sensor pinhole for buttonholing
- Thread cutter
- Thread trimming button
- Start/stop button
- Auxiliary bed (accessory case)
- Drop feed knob

*Do not put heavy objects onto hard case and wide table.*

- Hand wheel (pulley)
- Power switch
- Machine-socket-inlet
- Spool cap (large)
- Spool pin
- Bobbin winding shaft
- LCD Screen
- Light under arm
- Reverse stitch button
- Operational buttons
- Knee lifting lever hole
- Pattern adjustment dial
- Thread cutter
- Reverse stitch button
- Thread tension adjustment dial

**Hard case**

**Wide table**

**Needle setscrew**

**Presser foot releasing button**

**Presser foot holder setscrew**

**Presser foot holder**

**Feed dog**

**Throat plate**

**Hook cover**

**Hook cover release button**

**F600 Only**

**F400**

**F300**

**Character selecting methods**

**Decorative stitches**

- One-point stitch/sewing letters

**Preparation before stitching**

**Test sewing**

**Operational buttons and screen**

**How to select patterns (letters)**

**How to edit patterns (letters)**

**How to stitch a pattern (letters)**

**Disposing thread ends of jump stitches**

**Save / call of pattern (letters)**

**Message catalog**

**Introduction of optional accessory parts**

**How to install wide table**

**Machine maintenance**

**Performance check list**

**List of stitch patterns**

**Specifications**

**Decorative stitches**

- One-point stitch/sewing letters

**Preparation before stitching**

**Test sewing**

**Operational buttons and screen**

**How to select patterns (letters)**

**How to edit patterns (letters)**

**How to stitch a pattern (letters)**

**Disposing thread ends of jump stitches**

**Save / call of pattern (letters)**

**Character selecting methods**
Accessories

● Inside the auxiliary bed.

- Buttonhole presser foot (E)
- Overcasting presser foot (C)
- Zipper presser foot (B)
- T-shape screwdriver
- Manual buttonhole presser foot (I)
- Blind stitch presser foot (D)
- Bobbin (3)
- Ripper
- Cleaning brush
- Spool cap (Small)
- Spool cap (Middle)

● Supplied with the machine

- Standard presser foot (A)
- Bobbin (1)
- Spool cap (large)

● Inside the accessories bag.

- Walking foot (N) [F600 / F400]
- Patchwork presser foot (P) [F600 / F400]
- Smooth presser foot (T) [F600 Only]
- Open toe presser foot (O) [F600 Only]
- Quilt presser foot (Q) [F600 Only]
- Edge Sewing presser foot (R) [F600 Only]
- Quilt guide [F600 / F400]
- Eyelet punch [F600 Only]
- Twin needle [F600 / F400]

● Inside hard case

- Foot Controller model name; JC-001 [F600 / F400]
- Knee-lifting lever [F600 / F400]
- Instruction manual (This manual)
- Power cord

Needle set
- HA X 1 # 11 (1)
- # 14 (1)
- # 16 (1)
- for knit # 11 (1)
Function of operational buttons

**Needle up/down button**
When machine stops, press this button to change the needle position. (When the needle is up, the needle moves down and vise versa.)
* when a stitch pattern is not selected, needle does not move downward but you can move the needle up.

**Speed controller**
While sewing, speed can be adjusted.

**Start/stop button**
When pressing this button, machine starts to sew slowly and then up to the speed set by speed controller.
When pressing this button again, machine stops with needle at its down position.

Color of button indicates machine status.

- **Green:** Ready to start and/or while sewing
- **Red:** Not ready to start (When it is pushed in red condition, needle moves by one stitch.)

**Reverse stitch button**
While pressing this button, machine sews reverse (lock stitch).

**Thread trimming button**
After sewing, press this button to trim both threads automatically.

**Notes for thread trimming:**
1. Do not use thread thicker than No.30.
2. After trimming, the stitch can be done without pulling up bobbin thread.
3. When sewing again after thread trimming, if you pull up the bobbin thread again and place it underneath the presser foot together with needle thread, you can avoid birds nest on the wrong side of the fabric.
4. Regularly clean the machine (refer to page 94), as dust in the area of the thread trimming unit may cause malfunction.
Connecting to the power supply

Connecting to the power supply

**Warning**

- Disconnect the plug and turn off the power switch (turn to “O”) that always sewing machine is not to use.

★ Operating power switch:

Turn OFF the machine, set the power switch to "0"
Turn ON the machine, set the power switch to "I"

★ WARNING (For U.S.A.,Canada 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.

★ In case Start/stop button is used:

1. Turn OFF the power switch (turn to “O”)
2. Insert cord-connector into machine-socket-inlet.
3. Insert plug into socket-outlet.
4. Turn ON the power switch. (Turn to “I”)
Connecting to the power supply

Warning
- Disconnect the plug and turn off the power switch (turn to “O”) that always sewing machine is not to use.

In case Start/stop button is used:

1. Turn OFF the power switch (turn to “O”)
2. Insert cord-connector into machine-socket-inlet.
3. Insert plug into socket-outlet.
4. Turn ON the power switch. (Turn to “I”)

**Using the foot-controller:**

1. Turn OFF the power switch (turn to “O”)
2. Insert the foot-controller-plug into the foot-controller-jack.
3. Insert cord-connector into machine-socket-inlet.
4. Insert plug into socket-outlet.
5. Turn ON the power switch. (Turn to “I”)

* When the foot controller is plugged in, the start/stop button cannot be used to start sewing.
Start button: Can not operate to start sewing.
Stop button: Can operate to stop sewing.
Name and function of other operational buttons

Operational buttons and screen

Description of screen

Pattern number
- Direct patterns
- Practical patterns
- Buttonhole patterns
- Quilt patterns
- Decorative patterns
- One-point patterns
- Letters

Presser foot to be used (marking)

Needle position
(Center needle position in this pattern)

Zigzag width

Needle stop position
- Needle stops at its highest position
- Needle stops at its lowest position

Stitch pattern
* Patterns on the screen will be sewn.

Pattern select mode
- Direct select
- Select by number
- Cell phone input

Stitch length

Zigzag width adjusting dial
* Adjusting buttons on F400/F300.

Selection button

Clear button

Pattern selection mode switching button
- 10 most often used patterns can be selected.
- Practical patterns other than direct patterns can be selected.
- Patterns such as letters which can be combined, can be selected.

Pattern selection button
Direct pattern
- Number selection (input by number)
- Letters (Cell phone input)

Name of operational button

Save/Call button

Automatic lock stitch and thread trimming button

Needle stop position switching button

Continuous stitch button

Mirror image button

Option button
### Name and function of operational buttons

<table>
<thead>
<tr>
<th>Button</th>
<th>Name and Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zigzag width adjustment dial&lt;br&gt; * buttons on F400/F300.</td>
</tr>
<tr>
<td>2</td>
<td>Stitch length adjustment dial&lt;br&gt; * buttons on F400/F300.</td>
</tr>
<tr>
<td>3</td>
<td>Confirmation button</td>
</tr>
<tr>
<td>4</td>
<td>Selection button</td>
</tr>
<tr>
<td>5</td>
<td>Clear button</td>
</tr>
<tr>
<td>6</td>
<td>Automatic lock stitch and thread trimming button</td>
</tr>
<tr>
<td>7</td>
<td>Needle stop position switching button</td>
</tr>
<tr>
<td>8</td>
<td>Continuous stitch button</td>
</tr>
<tr>
<td>9</td>
<td>Mirror Image button</td>
</tr>
<tr>
<td>10</td>
<td>Option button</td>
</tr>
<tr>
<td>11</td>
<td>Save/call button</td>
</tr>
<tr>
<td>12</td>
<td>Pattern selection button&lt;br&gt; * Usage of the buttons varies by pattern selecting mode. (Refer to page 27~32 for more details.)</td>
</tr>
<tr>
<td>13</td>
<td>Pattern selection mode switching button</td>
</tr>
</tbody>
</table>

*When pressing the button continuously, all the saved stitch patterns will be deleted.*

*There are some patterns that can not make a mirror image.*

(Refer page 80~89 for more details.)
Speed control

★ Speed controller

Maximum sewing speed can be freely set by the speed controller.

★ Foot controller

To run the machine, press the foot controller. The harder you press, the faster the machine sews. Speed controller will set the maximum sewing speed.

Pressing harder → faster speed
Pressing weaker → slower speed

“Thread trimming foot switch”

When the heel side of the foot controller is pressed, the threads are trimmed.

→ It is also possible to cancel this function.
(Refer to page 82.)

* Always clean the foot controller.
It is important that you do not place any objects on the foot controller as it may cause injury to the user and may cause malfunctions.
Presser foot lifting lever and installation of knee lifting lever

Presser foot lifting lever

The presser foot can be up or down position by using the presser foot lifting lever.

1. Lowered position ..... Presser foot should be lowered when sewing.
2. Ordinary lift position ..... This position is used for fabric removal and/or changing the presser foot.
3. Extra lift position ..... This position is used to put heavy materials underneath the presser foot.

* Be careful that the presser foot and the needle should not interfere when the needle is in down position and the presser foot is raised to the extra lift position.

Installation of knee lifting lever

The knee lifting lever is useful when a guilt is being sewn and for other projects that require the use of both hands. With the knee lifting lever, you are able to control the position of the presser foot without using your hands.

Insert the knee lifting lever so that concave and convex meet.

Push the lever to right-hand side to lift the presser foot. The presser foot is lowered when the lever goes back to the original position.

* Do not touch the knee lifting lever while sewing. It may cause a deformation of a stitch pattern.
Changing the presser foot

Removing and installing the presser foot

1. Raise the needle and presser foot.
2. Press the presser foot releasing button to remove the presser foot.

Installing presser foot

Align the pin of the presser foot and the groove in the presser foot holder. Then lower the presser foot holder with the presser foot lifting lever.

* Each presser foot has a marking. Use the appropriate presser foot for the stitch pattern to be sewn.

Removing presser foot holder

1. Lift the needle and presser foot lifting lever.
2. Loosen the setscrew of the presser foot holder to the left and remove the presser foot holder.

Installing presser foot holder

Align the screw hole at the presser bar with the hole of presser foot holder (long groove). Tighten the setscrew firmly by turning it to the right side.

Attention
Turn OFF the power switch before replacing presser foot.
# The type and application of the presser foot

<table>
<thead>
<tr>
<th>Presser Foot Type</th>
<th>Marking</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard presser foot</td>
<td>A</td>
<td>Use this presser foot especially when sewing heavy-weight materials.</td>
</tr>
<tr>
<td>Zipper presser foot</td>
<td>B</td>
<td>This is used to attach zippers.</td>
</tr>
<tr>
<td>Overcasting presser foot</td>
<td>C</td>
<td>This presser foot is used exclusively for overcasting to prevent the cut edge of fabrics from fraying.</td>
</tr>
<tr>
<td>Blind stitch presser foot</td>
<td>D</td>
<td>This presser foot is used for blind stitch on hems of trousers and skirts, or sleeves.</td>
</tr>
<tr>
<td>Buttonhole presser foot</td>
<td>E</td>
<td>This presser foot is used for automatic buttonholing.</td>
</tr>
<tr>
<td>Manual buttonhole presser foot</td>
<td>I</td>
<td>This is used for sewing decorative stitches, letters and bartacks. Also for manual buttonhole (pattern No. 03).</td>
</tr>
<tr>
<td>Walking foot</td>
<td>N</td>
<td>In general, this presser foot is used for difficult-to-feed materials such as knits, jersies, vinyl, artificial leather and leather or quilting.</td>
</tr>
<tr>
<td>Patchwork presser foot</td>
<td>P</td>
<td>This presser foot is used for patchwork stitches. There are two seam lines, 1/4-inch and 1/8-inch from center needle position.</td>
</tr>
<tr>
<td>Smooth presser foot</td>
<td>T</td>
<td>This presser foot is used for non-slippery materials like vinyl and satin stitches.</td>
</tr>
<tr>
<td>Open toe presser foot</td>
<td>O</td>
<td>This is used for the applique and decorative stitches. (Front part of the presser foot is open for better visibility.)</td>
</tr>
<tr>
<td>Quilt presser foot</td>
<td>Q</td>
<td>This is used for the quilt stitch. (Machine setting: Straight Stitch and Center needle position)</td>
</tr>
<tr>
<td>Edge Sewing presser foot</td>
<td>R</td>
<td>This is used for patchwork, sewing center line of joined materials by using the center guide of the presser foot. *</td>
</tr>
</tbody>
</table>

* Fine tune the needle position by zigzag width adjustment dial.
Bobbin thread preparation

■ Taking out the bobbin

1 Open the hook cover.

2 Take out the bobbin.

* If the bobbin has too little thread, do not use it as the thread will get tangled.
* Use only the designated bobbin. Other bobbins may cause malfunction.

■ Setting thread spool

1 Place a thread spool to spool pin and a spool cap onto the spool pin.

* Do not use the thread cone with a small amount of thread. This may cause thread tangling and/or the thread coming out of the eye of the needle when starting to sew.

There are three types of the spool caps, large, medium and small. Choose the size of spool cap according to the thread spool to be used.
**Winding the bobbin thread**

1. Place the thread spool to the spool pin.

2. Thread the guide A and then thread the thread guide (guide in the circle) for bobbin winding.

3. Set the bobbin on the bobbin winding shaft.

4. Wind the thread to the bobbin 4-5 times in clockwise direction.

5. Put the thread end into the guide at the bobbin winding shaft and pull it to the right side to cut it.

6. Push the bobbin winding regulator towards the bobbin to start winding the bobbin.
   * Be careful that the bobbin winding regulator works as a switch.

7. When winding is finished, the shaft stops automatically, the bobbin winding regulator moves to right and return to the original position. Remove the bobbin from the bobbin winding shaft and cut the thread by cutter.
   * Bobbin winding will automatically stop even while winding, when the winding speed is reduced due to a load to the bobbin winding motor caused by thread tangling.
## Setting the bobbin

1. Put the bobbin in the bobbin case.
   
   * Place the bobbin so that thread winds counterclockwise.

2. Thread groove A and B by pulling the thread end.
   
   * It will be easier to thread grooves when you press the bobbin lightly with your finger.

3. Thread guide C by pulling the thread to left side.
4 Thread to guide D and E leave the thread underneath. (Thread guide E first and it will thread to guide D as well.)

* When pulling bobbin thread, bobbin rotates counterclockwise. If bobbin rotates clockwise, put the bobbin upside down.

5 Cut the thread with the built-in cutter F.

6 Close the hook cover.

You can start to sew in this condition (without pulling up the bobbin thread), however, if you want to sew with the bobbin thread pulled out, refer to “Pulling up the bobbin thread” in the page 22.
Needle thread preparation

Attention: Turn OFF the power switch before winding the bobbin thread.

Threading the needle thread

1. Lift the presser foot lifting lever.

2. Place a thread spool to the spool pin and a spool cap onto the spool pin.

   There are three types of the spool caps, large, medium and small. Choose the size of spool cap according to thread spool to be used.

   - Spool cap
   - Small spool
   - Large spool

Note:

Make sure to push the needle to the top.

It is impossible to perform stitching if the needle is not correctly installed or a bent needle is used. Pay close attention as this will cause machine malfunction.

* Use the needle: No.11-16 and the thread: No.30-90.
* When twin needle is used, the automatic needle threader can not be used.

* Align the marking at the hand wheel with the one on the machine body.
3 Thread to guide A.

4 Hold the thread end and thread according to the arrow marking.

* Make sure that the presser foot is raised. Otherwise the machine is not correctly threaded.

* Check that the thread take-up is correctly threaded.

5 Thread the guide B from the right-hand side.
**Automatic needle threader**

1. **Lower the presser foot.**
   * The automatic needle threader sometimes fails to thread the needle when the presser foot is raised.

2. **Thread to A and cut the thread with the thread cutter.**

3. **Lower the threading lever until it comes to a complete stop.**
   * Lower the threading lever slowly.

4. **Release the threading lever and the needle thread is threaded to the needle eye.**

5. **Pull the thread backward.**
   Pull out the thread from the needle eye by approx. 10 cm or 4 inches long.
Pulling up the bobbin thread

Basic operation:
You can start to sew without pulling up the bobbin thread, however, if you want to sew with the bobbin thread pulled out, follow the directions below.

1 Lift the presser foot and lightly hold the end of the needle thread.

2 Turn the hand wheel towards you to move the needle up and down. Loop of bobbin thread will be pulled out when you will pull the needle thread lightly.

3 Pull out both needle and bobbin threads by approx. 10 cm (4 inches) long and pass them under the presser foot towards the back of the machine.
Attaching the needle

1 Removing needle

1. Turn the hand wheel towards you until the needle comes to the highest position and lower the presser foot.

2. Turn the needle setscrew towards you 1-2 times and remove the needle.

2 Attaching the needle

(The needle cannot be inserted unless it is correctly positioned.)

Hold the needle with its flat part facing away from you, and insert it fully until it touches the stopper pin. Securely tighten the needle setscrew.

Warning

Turn OFF the power switch before changing the needle.

Needles to be purchased

When purchasing spare needles, specify HA X 1 (130/705H) or HA X 1 SP (needle for knits).

Needle size:
The larger the number, the thicker the needle.

Checking the needle

Check the needle for its straightness occasionally. Any bent needle would cause skipped stitches, thread breakage or damage to materials.

Attention: The machine will not sew if the needle is not inserted correctly and/or a bent needle is used. It will cause damage to the machine.
## Fabric, thread and needle table

<table>
<thead>
<tr>
<th>Fabric, thread and needle table</th>
<th>Needle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Light-weight materials</strong></td>
<td><strong>HA×1</strong></td>
</tr>
<tr>
<td>Lawn</td>
<td>Silk thread No.80,90</td>
</tr>
<tr>
<td>Georgette</td>
<td>Spun thread No.80,90</td>
</tr>
<tr>
<td>Tricot</td>
<td>Spun thread No.60-90</td>
</tr>
<tr>
<td>Wool and synthetic fabrics</td>
<td>Silk thread No.80</td>
</tr>
<tr>
<td></td>
<td>Spun thread No.60-90</td>
</tr>
<tr>
<td><strong>Medium-weight materials</strong></td>
<td><strong>No.11-14</strong></td>
</tr>
<tr>
<td>Cotton and synthetic fabrics</td>
<td>Spun thread No.50, 60</td>
</tr>
<tr>
<td>Light jersey</td>
<td>Silk thread No.50</td>
</tr>
<tr>
<td></td>
<td>Spun thread No.50, 60</td>
</tr>
<tr>
<td>Ordinary wool and synthetic fabrics</td>
<td>Silk thread No.50</td>
</tr>
<tr>
<td></td>
<td>Spun thread No.50, 60</td>
</tr>
<tr>
<td><strong>Heavy-weight materials</strong></td>
<td><strong>No.14-16</strong></td>
</tr>
<tr>
<td>Denim</td>
<td>Spun thread No.30-50</td>
</tr>
<tr>
<td>Jersey</td>
<td>Silk thread No.50</td>
</tr>
<tr>
<td></td>
<td>Spun thread No.50, 60</td>
</tr>
<tr>
<td>Coat</td>
<td>Silk thread No.50</td>
</tr>
</tbody>
</table>

* In general, the same thread is used for both needle and bobbin threads.
* Thin thread and needle will be used for light-weight fabrics and thick thread and needle will be used for heavy-weight materials.
* Check that the combination of needle and thread is OK by trial sewing on the material which will be sewn.
* Knit needle is good for stretchy fabrics (such as knits) and synthetic fabrics.
* Use thread No. 30 - 90.
* When it is difficult to go over an overlapped section, guide the fabric by hand.
* When sewing decorative stitches or letters (Page 28, 30 and 32), use knit needle for better finish.
How to adjust thread tension

- **Well-balanced thread tension**
  Straight stitch: Needle and bobbin threads interlace with each other at the middle of the fabric thickness. (A)
  Zigzag stitch: Needle thread is pulled a little bit to the wrong side of the fabric.

If the machine is set to “Auto”, it is suitable for most fabrics. However, adjustment may be necessary according to fabrics and sewing applications.

If the tension is not correctly set, it will cause imbalanced stitch formation, puckering, and/or thread breakage.

- **When the needle thread is too strong:**
  The bobbin thread will be pulled to the front side of the fabric. Turn the thread tension adjustment dial towards "-1" to "-3".

- **When the needle thread is too low:**
  The needle thread will be pulled to the wrong side of fabric. Turn the thread tension adjustment dial towards "+1" to "+3".

In case a correct tension setting is not obtained, check thread paths for both needle and bobbin threads.
How to adjust the presser foot pressure / How to lower the feed dog

I How to adjust presser foot pressure

Turn the presser foot pressure adjustment dial to set the proper pressure.

When sewing in general, set the presser foot pressure adjustment dial to “5”.

When sewing on light synthetic fabrics, stretchy fabrics, appliqué which seam allowance is overlapped, etc., lower the number on the presser foot pressure adjustment dial. (reducing the presser foot pressure)

II How to lower the feed dog

Move the drop feed knob to the right-hand side, in case the feed dog is in the down position for free motion quilting, button sewing, etc.

* Move the drop feed knob to the left-hand side after sewing. The feed dog will be engaged automatically when the machine starts to sew.

★ When lowering the feed dog

★ When lifting the feed dog
How to select a stitch pattern

☆ There are 225 types of stitch patterns.
☆ When turning on the machine, the straight stitch of the center needle position is chosen automatically.
☆ There are 4 methods to select stitch pattern.

1 Direct patterns

Push and check the stitch pattern in this portion and select. will be indicated on top right side of the screen.

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Center needle position</td>
<td>Pieceing</td>
<td>Straight stitch</td>
<td>Zigzag stitch</td>
<td>Applique</td>
<td>Over casting</td>
<td>Blind stitch</td>
<td>Straight reinforced stitch</td>
<td>Buttonhole</td>
<td></td>
</tr>
<tr>
<td>Refer to page</td>
<td>33</td>
<td>63</td>
<td>37</td>
<td>38</td>
<td>64</td>
<td>65</td>
<td>39</td>
<td>41</td>
<td>37</td>
<td>44</td>
</tr>
</tbody>
</table>

2 Other patterns

Push and choose stitch pattern type. Select stitch pattern by number. will be indicated on top right side of the screen.

| Pattern No. | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pattern    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Application|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|            | Left needle position | Straight stitch | Lock stitch (slant) | Zigzag stitch | Three point zig zag | Two point zig zag | Overcasting stitch | Used for lightweight material | Overcasting stitch | Used for flexible material | Overcasting stitch | Used for lightweight material | Ornamental pattern | Shell tuck | Back straight stitch | Shell stitch | Back zig zag stitch | Fly stitch | Bar tack | Eyelet | Darning | Button sewing |
| Refer to page | 33 | 37 | 38 | 40 | - | 39 | 40 | - | - | - | - | - | 41 | - | 37 | - | - | 52 | - | - | 71 | - | - |
How to select a stitch pattern

Push and choose stitch pattern type.
Select stitch pattern by number.
Will be indicated on top right side of the screen.

Direct patterns

☆ There are 225 types of stitch patterns.
☆ When turning on the machine, the straight stitch of the center needle position is chosen automatically.
☆ There are 4 methods to select stitch pattern.

Pattern

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Center needle position</td>
<td>Piecing</td>
<td>Straight stitch for elastic</td>
<td>Zigzag stitch</td>
<td>Applique</td>
<td>Over casting stitch</td>
<td>Blind stitch</td>
<td>Straight reinforced stitch</td>
<td>Buttonhole stitch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refer to page

Other patterns

- Buttonhole patterns
- Quilt patterns
- Decorative patterns

Refer to page

Practical patterns

Push and choose.
Check the number in this portion and select.
Will be indicated on top right side of the screen.

Pattern

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Standard buttonholes</td>
<td>2-step buttonholes</td>
<td>Eyehole</td>
<td>Keyhole buttonholes</td>
<td>For knit</td>
<td>Decorative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refer to page

One point pattern

Push and choose.
Check the number in this portion and select.
Will be indicated on top right side of the screen.

Pattern

Patterns for elongation

Patterns for crazy quilt

Refer to page

Letters

Push and choose.
Check this portion.
Input letters by cell phone input. (Refer to page 73)
Will be indicated on top right side of the screen.

Pattern

Patterns for elongation

Patterns for crazy quilt

Refer to page

Decorative patterns

Refer to page
How to select a stitch pattern

☆ There are 157 types of stitch patterns.
☆ When turning on the machine, the straight stitch of the center needle position is chosen automatically.
☆ There are 4 methods to select stitch pattern.

1. Direct patterns

Push and choose stitch pattern type. Select stitch pattern by number. will be indicated on top right side of the screen.

![Pattern selection](image)

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Center needle position</td>
<td>Pictative stitch</td>
<td>Straight stitch</td>
<td>Zigzag stitch</td>
<td>Applique stitch</td>
<td>Overcasting stitch</td>
<td>Blind stitch</td>
<td>Straight reinforced stitch</td>
<td>Buttonhole stitch</td>
<td></td>
</tr>
<tr>
<td>Refer to page</td>
<td>33</td>
<td>63</td>
<td>37</td>
<td>38</td>
<td>64</td>
<td>65</td>
<td>39</td>
<td>41</td>
<td>37</td>
<td>44</td>
</tr>
</tbody>
</table>

2. Other patterns

Push and choose stitch pattern type. Select stitch pattern by number. will be indicated on top right side of the screen.

![Pattern selection](image)

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>Straight stitch</td>
<td>Lock stitch (stitch length)</td>
<td>Zigzag stitch</td>
<td>Three point zigzag</td>
<td>Two point zigzag</td>
<td>Overcasting stitch</td>
<td>Used for lightweight material</td>
<td>Overcasting stitch</td>
<td>Used for flexible material</td>
<td>Ornamental pattern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refer to page</td>
<td>33</td>
<td>37</td>
<td>38</td>
<td>40</td>
<td>-</td>
<td>39</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>41</td>
<td>-</td>
<td>-</td>
<td>52</td>
<td>-</td>
<td>71</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

On the LCD screen you will see the selected stitch pattern and the marking of the presser foot to be used.

![LCD screen](image)
### · Buttonhole patterns

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td><img src="image1" alt="Pattern 01" /></td>
<td><img src="image2" alt="Pattern 02" /></td>
<td><img src="image3" alt="Pattern 03" /></td>
<td><img src="image4" alt="Pattern 04" /></td>
<td><img src="image5" alt="Pattern 05" /></td>
<td><img src="image6" alt="Pattern 06" /></td>
<td><img src="image7" alt="Pattern 07" /></td>
<td><img src="image8" alt="Pattern 08" /></td>
<td><img src="image9" alt="Pattern 09" /></td>
<td><img src="image10" alt="Pattern 10" /></td>
<td><img src="image11" alt="Pattern 11" /></td>
<td><img src="image12" alt="Pattern 12" /></td>
<td><img src="image13" alt="Pattern 13" /></td>
<td><img src="image14" alt="Pattern 14" /></td>
<td><img src="image15" alt="Pattern 15" /></td>
</tr>
<tr>
<td>Application</td>
<td>Standard buttonholes</td>
<td>2-step buttonholes</td>
<td>Round end</td>
<td>Keyhole buttonholes</td>
<td>For knit</td>
<td>Decorative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refer to page 44

### · Quilt patterns

<table>
<thead>
<tr>
<th>Pattern</th>
<th><img src="image16" alt="Pattern 01" /></th>
<th><img src="image17" alt="Pattern 02" /></th>
<th><img src="image18" alt="Pattern 03" /></th>
<th><img src="image19" alt="Pattern 04" /></th>
<th><img src="image20" alt="Pattern 05" /></th>
<th><img src="image21" alt="Pattern 06" /></th>
<th><img src="image22" alt="Pattern 07" /></th>
<th><img src="image23" alt="Pattern 08" /></th>
<th><img src="image24" alt="Pattern 09" /></th>
<th><img src="image25" alt="Pattern 10" /></th>
<th><img src="image26" alt="Pattern 11" /></th>
<th><img src="image27" alt="Pattern 12" /></th>
<th><img src="image28" alt="Pattern 13" /></th>
<th><img src="image29" alt="Pattern 14" /></th>
<th><img src="image30" alt="Pattern 15" /></th>
</tr>
</thead>
</table>

Refer to page 65

### · Decorative patterns

![Pattern 01](image31) | ![Pattern 02](image32) | ![Pattern 03](image33) | ![Pattern 04](image34) | ![Pattern 05](image35) | ![Pattern 06](image36) | ![Pattern 07](image37) | ![Pattern 08](image38) | ![Pattern 09](image39) | ![Pattern 10](image40) | ![Pattern 11](image41) | ![Pattern 12](image42) | ![Pattern 13](image43) | ![Pattern 14](image44) |

Refer to page 62

### 3 One point pattern

Push ![Pattern 01](image45) and choose. Check the number in this portion and select. will be indicated on top right side of the screen.

<table>
<thead>
<tr>
<th>Pattern</th>
<th><img src="image46" alt="Pattern 01" /></th>
<th><img src="image47" alt="Pattern 02" /></th>
<th><img src="image48" alt="Pattern 03" /></th>
<th><img src="image49" alt="Pattern 04" /></th>
<th><img src="image50" alt="Pattern 05" /></th>
<th><img src="image51" alt="Pattern 06" /></th>
<th><img src="image52" alt="Pattern 07" /></th>
<th><img src="image53" alt="Pattern 08" /></th>
<th><img src="image54" alt="Pattern 09" /></th>
<th><img src="image55" alt="Pattern 10" /></th>
<th><img src="image56" alt="Pattern 11" /></th>
<th><img src="image57" alt="Pattern 12" /></th>
<th><img src="image58" alt="Pattern 13" /></th>
<th><img src="image59" alt="Pattern 14" /></th>
<th><img src="image60" alt="Pattern 15" /></th>
</tr>
</thead>
</table>

Patterns for elongation:

24 25 26 27 28 29 30 31 32 33

Refer to page 71–78, 89

### 4 Letters

Push ![Pattern 01](image61) and choose. Check this portion. Input letters by cell phone input. (Refer to page 73) will be indicated on top right side of the screen.

<table>
<thead>
<tr>
<th>Pattern</th>
<th><img src="image62" alt="Pattern 01" /></th>
<th><img src="image63" alt="Pattern 02" /></th>
<th><img src="image64" alt="Pattern 03" /></th>
<th><img src="image65" alt="Pattern 04" /></th>
<th><img src="image66" alt="Pattern 05" /></th>
<th><img src="image67" alt="Pattern 06" /></th>
<th><img src="image68" alt="Pattern 07" /></th>
<th><img src="image69" alt="Pattern 08" /></th>
<th><img src="image70" alt="Pattern 09" /></th>
<th><img src="image71" alt="Pattern 10" /></th>
<th><img src="image72" alt="Pattern 11" /></th>
<th><img src="image73" alt="Pattern 12" /></th>
<th><img src="image74" alt="Pattern 13" /></th>
<th><img src="image75" alt="Pattern 14" /></th>
<th><img src="image76" alt="Pattern 15" /></th>
</tr>
</thead>
</table>

Refer to page 71–78
How to select a stitch pattern

☆ There are 105 types of stitch patterns.
☆ When turning on the machine, the straight stitch of the center needle position is chosen automatically.
☆ There are 4 methods to select stitch pattern.

1 Direct patterns

Push and choose stitch pattern type. Select stitch pattern by number. will be indicated on top right side of the screen.

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>Center needle position</td>
<td>Straight stitch</td>
<td>Zigzag stitch</td>
<td>Applique</td>
<td>Overcasting stitch</td>
<td>Blind stitch</td>
<td>Straight reinforced stitch</td>
<td>Buttonhole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refer to page</td>
<td>33</td>
<td>63</td>
<td>37</td>
<td>38</td>
<td>64</td>
<td>65</td>
<td>39</td>
<td>41</td>
<td>37</td>
<td>44</td>
</tr>
</tbody>
</table>

2 Other patterns

Push and choose stitch pattern type. Select stitch pattern by number. will be indicated on top right side of the screen.

Practical patterns

| Pattern No. | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pattern | | | | | | | | | | | | | | | | | | | | | |
| Application | Left needle position | Center needle position | Right needle position | Straight stitch | Lock stitch (stitches) | Three point zig zag | Two point zig zag | Overcasting stitch | Used for lightweight material | Overcasting stitch | Used for flexible material | Overcasting stitch | Used for lightweight material | Ornamental pattern | Shell tuck | Fly stitch | Bar tack | Eyelet | Darning | Button sewing |
| Refer to page | 33 | 37 | 38 | 40 | - | 39 | 40 | - | - | - | - | - | 41 | - | - | 52 | - | 71 | - |
• Buttonhole patterns

| Pattern No. | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pattern     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Application | Standard buttonholes | 2-step buttonhole | Rounded | Keyhole buttonholes | For knit | Decorative |

Refer to page 44

• Quilt patterns

| Pattern | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pattern |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Refer to page 65

3 One point pattern

Push and choose . Check the number in this portion and select. will be indicated on top right side of the screen.

| Pattern | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pattern |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Refer to page 71–78, 89

4 Letters

Push and choose . Check this portion. Input letters by cell phone input. (Refer to page 73) will be indicated on top right side of the screen.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>0</td>
<td>@</td>
<td>!</td>
</tr>
</tbody>
</table>

Refer to page 71–78
Straight stitch

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Direct 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Standard presser foot (A)</td>
</tr>
<tr>
<td>Thread tension</td>
<td>Auto</td>
</tr>
</tbody>
</table>

**Attention**

Turn OFF the power switch before replacing the presser foot.

**Sewing start**

Pull the needle and bobbin threads under the presser foot to the rear of the machine and lower the presser foot to start sewing.

This means presser foot is up. Lower the presser foot to start sewing.

**Sewing end**

Stop sewing and push the thread trimming button to trim the threads.

*by thread trimming button*
Push the thread trimming button to trim the threads.

*by foot controller*
Push heel side of the foot controller to trim the threads.

* This function can be cancelled.
(Refer to page 82.)

* You can also cut the threads by the thread cutter at the face plate cover.
■ When sewing the edge of thick fabrics

Turn the hand wheel and let the needle enter at the position of sewing start. Push the black button by finger and lower the presser foot. Release the finger from the black button and start sewing. When the presser foot will be on the fabric completely, the black button will be disengaged automatically.

■ When changing the sewing direction

Stop sewing in front of the predetermined position and then continue to sew, stitch by stitch, by using needle up/down button until the target point. Leave the needle inside the fabrics and raise the presser foot. With the needle inside the fabrics change the sewing direction, lower the presser foot and then start sewing.

■ Lock stitch after sewing-end

<When start/stop button is used>
After the sewing is finished, push the reverse stitch button. While it is pressed, the machine will sew reverse and when it is released, the machine will stop sewing reverse.
*When reverse stitching, the sewing speed is slow.

<When foot controller is used>
The machine will sew reverse at almost the same speed as the normal sewing. When the reverse stitch button is released, the machine sews straight.

★ Seam guide line on the throat plate

Align the fabric edge with a seam guide line and sew.
* Numbers on the guide line show the distance in mm and inches between the center needle position and the guide line.

Numbers, 7, 10 and 20 are millimeter.
Numbers, 1/4, 5/8 and 1 are inches.
After selecting a stitch pattern, push \( \text{Reverse Stitch} \) one time.

The machine will sew a few reverse stitches (lock stitches), trim both needle and bobbin threads and stop.

Symbol on screen: \( \overline{\text{x}} \)

When \( \overline{\text{x}} \) is pushed once again, this function will be cancelled.

1. After selecting a pattern, you can press \( \overline{\text{x}} \) to display \( \overline{\text{x}} \) on the screen.

2. Place the fabric in the sewing start position and begin sewing. A

   The machine sews a few back stitches and continue.

3. Press the reverse stitch button. B

   The machine sews reverse stitches, stop sewing and trim both needle and bobbin threads automatically.
★ How to change needle positions / How to change the stitch length

- **When changing the needle position of straight stitch**
  
  It is possible to change the needle position with the zigzag width adjusting dial/button.

  **F600 Only**
  
  Turning to the left (- side), the needle moves to the left.
  Turning to the right (+ side), the needle moves to the right.

  **F400 / F300**
  
  Pushing "-"*, the needle moves to the left.
  Pushing "+"*, the needle moves to the right.

- **When changing the stitch length**
  
  It is possible to change the stitch length with the stitch length adjusting dial/button.

  **F600 Only**
  
  Turning to the left (- side), the displayed value becomes smaller and the stitch length becomes smaller accordingly.
  Turning to the right (+ side), the displayed value becomes larger and the stitch length becomes larger.

  **F400 / F300**
  
  Pushing "-"*, the displayed value becomes smaller and the stitch length becomes smaller accordingly.
  Pushing "+"*, the displayed value becomes larger and the stitch length becomes larger.
★ Other straight stitch patterns

- **Lock stitch (stay stitches)**
  At the sewing-end, push the reverse stitch button. The machine will sew several stay stitches and stop.

- **Reinforced stretch stitch**
  The reinforcing stretch stitch helps reinforce seams when used for sewing of elastic fabric or the force-exerted part of fabric that is likely to fray.

- **Straight stitch for elastic fabric**
  Finished seams are elastic. This stitch system can be used for producing straight stitches on elastic fabrics such as knits and jersey.

- **Reverse straight stitch**
  Machine starts to sew reverse and when reverse stitch button is pushed, it sews forward.
Zigzag stitch

When changing the zigzag width

The zigzag width can be adjusted while sewing.

**F600 Only**

Turning to the left (- side), displayed value becomes smaller and the zigzag width becomes smaller accordingly.

Turning to the right (+ side), displayed value becomes larger and the zigzag width becomes larger accordingly.

**F400 / F300**

Pushing "-", displayed value becomes smaller and the zigzag width becomes smaller accordingly.

Pushing "+", displayed value becomes larger and the zigzag width becomes larger accordingly.

When changing the stitch length

The stitch length can be adjusted while sewing.

**F600 Only**

Turning to the left (- side), the displayed value becomes smaller and the stitch length becomes smaller accordingly.

Turning to the right (+ side), the displayed value becomes larger and the stitch length becomes larger accordingly.

**F400 / F300**

Pushing "-", the displayed value becomes smaller and the stitch length becomes smaller accordingly.

Pushing "+", the displayed value becomes larger and the stitch length becomes larger accordingly.
Overcasting stitch

- This stitch is used to prevent the edge of fabric from fraying.

**Overcasting stitch 1**

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Direct 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Overcasting presser foot (C)</td>
</tr>
</tbody>
</table>

Push the fabric towards the guide and sew. If the fabric and guide are apart, it will not make a nice stitch formation. Make sure to guide the fabric along the guide and sew slowly.

* Before sewing, make sure to check that the needle will not hit the presser foot.

**Attention**

- Turn OFF the power switch before replacing the presser foot.

**Overcasting stitch 2**

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Practical 07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Overcasting presser foot (C)</td>
</tr>
</tbody>
</table>

This stitch is used for overcasting medium- to heavyweight materials. Guide the fabric along the guide and sew.

* Before sewing, make sure to check that the needle will not hit the presser foot.
Overcasting stitch 3

This overcasting stitch is used for overcasting light-weight materials.
Guide the fabric along the guide and sew.

* Before sewing, make sure to check that the needle will not hit the presser foot.

Overcasting by 3-point zigzag

This stitch is used to prevent the cut edge of fabric from fraying.
Keep some seam allowance and cut the sewn fabric carefully so that stitches are not cut by the scissors.

* Do not use overcasting presser foot (C).
Blind stitch

**Folding fabrics**

1. **Sewing overcasting stitches on the edge of fabric.**
   - Refer to pages 39 and 40 for overcasting stitches.

2. **Basting.**

3. **Fold from basting line.**
   - Leave 0.5 to 0.6 cm.
4 Align the guide of the presser foot with the folded edge. Turn the hand wheel and adjust with the zigzag width adjusting dial so that stitches reach the folded edge.

* Pay attention so that needle will not hit the presser foot.

5 Position the folded edge against the guide and sew.

6 Turn over the fabric after sewing.
When changing the needle entry point

1. If the stitches reach too far beyond the folded edge

   - Turn the zigzag width adjusting dial to the left side.
   - Push the zigzag width adjusting button "-".
   - Turn the handwheel to check the needle entry point. When adjusting, make sure the needle is in the up position.

2. If the stitches fail to reach the folded edge

   - Turn the zigzag width adjusting dial to the right side.
   - Push the zigzag width adjusting button "+".
   - Turn the handwheel to check the needle entry point. When adjusting, make sure the needle is in the up position.
Buttonhole stitches

* The buttonhole length is automatically determined only by placing a button on the buttonhole presser foot.
* The machine can sew buttonholes for buttons with diameters of 0.7 - 3.2 cm.
* In case of stretchy fabrics, use non-elastic interlining on the wrong side of the fabric.
* Make sure to perform test sewing to see that the machine sews buttonholes correctly.
* Buttonhole Nos. 09 - 12 are for knit fabrics and should be used with a knit needle.

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Direct 0 Buttonhole 01, 02, 04~15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Buttonhole presser foot (E)</td>
</tr>
</tbody>
</table>

**Attention**

Turn OFF the power switch before replacing the presser foot.

---

**Buttonhole type**

<table>
<thead>
<tr>
<th>No.</th>
<th>Buttonhole type</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Standard buttonhole</td>
</tr>
<tr>
<td>01</td>
<td>Buttonhole for medium to heavy weight materials</td>
</tr>
<tr>
<td>02</td>
<td>Stitch length is larger. Buttonhole for heavy weight materials</td>
</tr>
<tr>
<td>03</td>
<td>Sews buttonhole double</td>
</tr>
<tr>
<td>04</td>
<td>Manual 2-step buttonhole</td>
</tr>
<tr>
<td>05</td>
<td>Use this buttonhole, when there is an overlapped section in the fabric or when you want to sew larger buttonhole than 3.2cm diameter. (Refer to page 50)</td>
</tr>
<tr>
<td>06</td>
<td>Buttonholes for women’s blouses and children’s clothes. Also for light weight materials</td>
</tr>
<tr>
<td>07</td>
<td>Keyhole buttonhole for heavy weight materials such as suits, jackets, coats, etc.</td>
</tr>
<tr>
<td>08</td>
<td>Round keyhole</td>
</tr>
<tr>
<td>09</td>
<td>Large and thick keyholes for heavy weight materials</td>
</tr>
<tr>
<td>10</td>
<td>Buttonhole for light weight knit (also used as decorative buttonhole)</td>
</tr>
<tr>
<td>11</td>
<td>Buttonhole for medium weight knit (also used as decorative buttonhole)</td>
</tr>
<tr>
<td>12</td>
<td>Buttonhole for light weight knit</td>
</tr>
<tr>
<td>13</td>
<td>Sews buttonhole double</td>
</tr>
<tr>
<td>14</td>
<td>Buttonhole for medium weight knit</td>
</tr>
<tr>
<td>15</td>
<td>Sews double buttonhole</td>
</tr>
<tr>
<td>16</td>
<td>Decorative buttonholes</td>
</tr>
<tr>
<td>17</td>
<td>Decorative buttonhole which look like hand-sewn</td>
</tr>
</tbody>
</table>
1 Set the presser foot.

Push the needle up/down button to raise the needle and lift the presser foot. Align the groove of the presser foot holder with the pin of the presser foot and lower the presser foot holder to set.

2 Set the button.

Pull the button holder toward A, place the button on the button holder, and then push the holder toward B to set the buttonhole length.

* It is impossible to set a button thicker than 4mm.

* Check the following points after setting the presser foot and then start to sew buttonholes.

Check that there is a clearance.

If there is not a clearance, the machine will not sew neat stitches.

3 Set the buttonhole sensor pin.

Insert the sensor pin into the sensor pin hole at the face plate cover.

* Insert the pin into the hole completely.
* If the machine starts to sew without inserting the pin into the hole, the following message will be shown on the display.

Set the sensor pin and restart.
4 Place the fabric under the presser foot.
Raise the presser foot, pass the needle thread through the hole on the presser foot and pull it out sideways. Place the fabric under the presser foot, align the marking with the sewing-start point. Penetrate the needle into the fabric by turning the hand wheel and lower the presser foot.

5 Start sewing.
The machine will stop automatically after sewing the buttonhole.

* If a buttonhole of the same size will be sewn again, push the thread trimming button to trim the threads and raise the presser foot. Under this condition move to another point, lower the presser foot and then start sewing.
* Do not change stitch length and/or zigzag width during buttonholing. Otherwise this will cause imbalanced stitches.
* If thread trimming button is pushed while sewing buttonhole, the machine will stop and will not complete the buttonhole.
* Depending on material to be sewn and weaving direction of the material, there might be a slight difference in zigzag widths between right and left lines of buttonholes. Test sewing is recommended.
6 Unplug the sensor pin after sewing.

7 Opening the buttonhole using a ripper.

[double bartack]
Pierce a stopper pin at the bartack and open the buttonhole with a ripper. Be careful not to cut the stitches.

[Keyhole buttonhole]
Place a cardboard under the buttonhole and make a hole with the eyelet punch. Then pierce a stopper pin at the bartack and open the buttonhole with a ripper.

● Buttonhole clamping plate

⚠️ Caution
Turn off the power switch before setting the clamping plate.

It will be easier to sew buttonholes on the thin fabrics and/or near the overlapped sections, if the clamping plate is used.

1. Attach the buttonhole presser foot to the presser foot holder, with the clamping plate together.
2. Place the fabric between the presser foot and the clamping plate.

* You can remove the clamping plate by holding A.
### Buttonhole with gimp

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Direct 0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Presser foot** | **Buttonhole presser foot (E)**

1. **Pass the needle thread through under the presser foot and then draw the thread to the side of the presser foot.**
2. **Put one end of gimp thread into the notch at the front right side of buttonhole presser foot, pull the gimp thread under the presser foot and thread it at the hook of the presser foot.**
3. **After threading at the hook, pull the gimp thread back under the presser foot and put it into the notch at the front left side of the presser foot firmly.**
4. **Bring down the needle to the sewing start point and lower the presser foot.**
5. **Sew the buttonhole.**
6. **Pull the left gimp thread to take off slack and cut excess gimp thread.**

**Attention**

Turn OFF the power switch before replacing the presser foot.

Buttonholes with gimp thread prevent the buttonholes from stretching and can make them more secure. Use thread such as hand-sewn buttonholes and similar for gimp thread.
When changing the width of the buttonhole

Turn the zigzag width adjusting dial/button.

* The setting of the buttonhole width and stitch length will be cancelled when the power is shut down or another pattern is selected.

Turn to the left

Pushing "+"  

The width becomes wide

Turn to the right

Pushing "-"  

The width becomes narrow

When changing the density of the seam

Turn the stitch length adjusting dial/button.

* The width of buttonhole can be changed by ( ) option. (Refer to page 80)
Manual 2-step buttonhole

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Buttonhole 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Manual buttonhole presser foot (I)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Width</th>
<th>Stitch length</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>0.4</td>
</tr>
</tbody>
</table>

> * The setting of the buttonhole width and stitch length will be cancelled when the power is shut down or another pattern is selected.

> * The setting of the buttonhole width and stitch length will be cancelled when the power is shut down or another pattern is selected.

1 Set the manual buttonhole presser foot (I).

2 Pass the needle thread through the hole of the presser foot and pull it out sideways together.

3 Bring down the needle on the sewing start point and lower the presser foot.

4 Push start/stop button to sew.

   * At this time, if the start/stop button is pushed, the machine will stop sewing. And if the start/stop button is pushed again, then the machine will continue to sew the left side of the buttonhole.

   Push the reverse stitch button when it reaches the necessary length of the left side of the buttonhole.

   Sew bartack and the right side of the buttonhole, then the machine sews bartack and right side of the buttonhole.
5 Push reverse stitch button when it comes to the sewing start point.

6 Sew bartack and lock stitches until the machine stops automatically.

7 Pierce a stopper pin at the bartack and open the buttonhole with a ripper. Be careful not to cut the stitches.

As the numbers of stitches of both right and left lines of buttonhole is memorized in the sewing machine, the buttonhole of the same size can be sewn.

* If you want to change the memory, select the stitch pattern once again.

* In the case of a 2-step buttonhole, sewing direction of the left and that of the right side is different. Due to this and according to fabrics to be sewn, it may be possible that the density of each side looks different.
Bartacking

Bartacking is used to reinforce the part of the seam that is likely to ravel.
* The length of the bartack is determined by pushing the reverse stitch button, but it will automatically make a u-turn when it reaches the maximum of 20 stitches.
* If the presser foot cannot be parallel to throat plate, use filler fabric or cardboard.

**Example of use**

1. Pass the needle thread through the presser foot.
2. Place the fabric under the presser foot.
3 Start sewing.
Push the start/stop button and the machine starts to sew straight stitches.

4 When it comes to the turning point, push the reverse stitch button.
The machine goes back to the starting point by sewing straight stitches and then it sews zigzag stitches to the point where the reverse stitch button is pushed.

5 When the machine comes to the sewing end point, push the reverse stitch button.
The machine sews lock stitches and stops.

To sew a bartack of the same length again...
when the length of the first bartack has been memorized,

- When the start/stop button is pushed, the machine starts to sew and makes a u-turn automatically at the same point as the first bartack.
- When it comes to the sewing end point, push the reverse stitch button.

* If you want to change the memorized length of the bar tack, please select stitch pattern again.
Inserting zippers

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Direct 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Zipper presser foot (B)</td>
</tr>
</tbody>
</table>

Zippers are set in two different ways: by inserting into the side seam of the garment and by centering in position.

* Make sure to use center needle position (Stitch pattern No. Direct 1).

**Preparation before attaching zipper**

1. **Use the standard presser foot (A) to sew.**

   Place the fabrics face-to-face. Check the runstitching length and the length of the zipper to be inserted. Machine baste the zipper onto the fabrics.

   Machine basting = zipper opening length + 1 cm

2. **Attach the zipper presser foot (B) to the machine.**

   When sewing the left side of the zipper, place the zipper under the right portion of the zipper presser foot. When sewing the right side of the zipper, place the zipper under the left portion of the foot.
Lapped insertion

1. Open the seam allowance.

Neatly open the seam allowance. Adjust the back seam allowance so that it projects 3 mm from the seam. Press with an iron to make a crease. Fit the crease along the edge of the teeth.

2. Sew the zipper tape on the seam allowance from bottom to top.

Fitting the edge of the zipper presser foot along the edge of the zipper teeth, sew the zipper tape on the seam allowance. At the slider part of the zipper, stop the machine at 5 cm (2 inches) before the slider. Move the slider to the far side of the presser foot and sew the zipper until its top end is reached.

3. Put the fabric over the zipper.

Baste the zipper and set it on the fabric.

* Baste the zipper tape with the fabric with hand basting stitches. Move the slider to the top of the zipper. Put the fabric over the zipper and perform basting.

4. Sew reverse stitches and sew the right-hand side.

After sewing reverse stitches, set the left hand side of the zipper presser foot to the zipper teeth. Sew until 5 cm (2 inches) of the zipper end. Undo the basting stitches and move the slider to the far end of the presser foot. Then sew the rest of the way.
**Centered insertion**

1. **Baste zipper and garment body.**
   - Open the seam allowance. Fit the teeth of the zipper at the end of the seam line and perform basting by hand. Pull the slider tab to the up side.

2. **Sew the left part of the zipper on the seam allowance from the bottom of the opening to the top.**
   - Sew 0.7 to 1 cm from the seam line.

3. **Sew the right part of the zipper.**
   - Sew reverse stitches a few times.
   - Sew the other side 0.7 to 1 cm from the seam line.

4. **Undo only the basting stitches.**
Shirring and gathering

### Shirring and Gathering

- **Shirring**: such as the shoulder line and waist of the skirt, on which shirring is not seen.
- **Gathering**: such as shoulder joining and the frills of a skirt.

### Instructions

1. **Change the stitch length.**
   - Set 3.0 - 4.0 for gathering and 1.5 - 2.0 for shirring.

2. **Loosen the needle thread tension.**

3. **Start sewing.**
   - Leave about 5 cm of needle and bobbin threads both at the sewing start and at the sewing end and sew a parallel line.

4. **Pull the lower thread by hand to shrink the fabrics.**

### Table

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Direct 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Standard presser foot (A)</td>
</tr>
</tbody>
</table>

### Attention

Turn OFF the power switch before replacing the presser foot.
Pintucking

This stitch is used to sew decorations on the front of blouses and/or aprons, etc.

1. Iron the creases of the pintuck.

2. Sew the creases one by one and avoid it stretching.

3. After sewing, turn over pintucks and iron them.

**Example of use**
- **Blouse**
- **Apron**

**Attention**
Turn OFF the power switch before replacing the presser foot.
Welt seam

This stitch is used for securing an edge.

1. Put the fabrics together and sew.

2. Cut half of the seam allowance.

3. Open the fabrics from the finish line and fold the seam allowance together and iron.

4. Wrap up the shorter seam allowance with the longer one and sew the edge of the crease.

Attention

Turn OFF the power switch before replacing the presser foot.

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Direct 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Standard presser foot (A)</td>
</tr>
</tbody>
</table>
How to use the quilt guide

1. Insert the quilt guide into the groove of the presser foot holder.

2. Sew while tracing the stitches with the tip of the quilt guide.

   Distance between sewing lines can be adjusted freely.
Scallop stitches

This stitch is used for decorating edging on items such as table cloths, collars on blouse, etc.

1 To keep the pattern intact, leave some margin and sew on the edge of the cloth.

2 Cut the sewn fabric carefully so that stitches are not cut by the scissors.

* Adjust stitch length of the decorative stitches according to the fabric to be sewn. Sewing on fabric too thick may cause jamming.


**Decorative stitches**

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Decorative 01~72</th>
<th>Decorative 01~49</th>
<th>Decorative 01~20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Manual buttonhole presser foot (I)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Decorative 01~72</th>
<th>Decorative 01~49</th>
<th>Decorative 01~20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Manual buttonhole presser foot (I)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Image of sewing machine with decorative stitches]

**Attention**

Turn OFF the power switch before replacing the presser foot.

---

**Display of the length of one cycle**

Although the length of one cycle of the decorative pattern is displayed, treat it only as a reference, as this will be changeable based on fabric and thread.

**Example**

![Display of the length of one cycle]

- The length of one cycle is displayed.

---

Place the fabric under the presser foot and start.
Patchwork piecing

To sew pieces of cloth together is called piecing in patchwork. When piecing, the seam allowance is usually 1/4" (6.4 mm).

1 Cut the fabric with seam allowance.

2 Align the right end of the presser foot and the edge of the fabric and sew.

The needle will enter 1/4" (6.4 mm) from the edge of the fabric, so the seam allowance of 1/4" (6.4 mm) can be sewn.

**Attention**

Turn OFF the power switch before replacing the presser foot.

---

* You can change the needle position as you like. Needle position change: Refer to page 81
Applique (1)

The edge of the applique fabric is sewn with a compact zigzag, so it is suitable for the applique of cut fabric.

1 Cut the applique fabric at the finish line, put it on the base fabric and fix it temporarily.

It is recommended to use both-sided adhesive interlining or the similar to fix the appliqué fabric on the base fabric. Use the interlining to the edge of the appliqué fabric.

2 Turn the hand wheel towards you and start sewing along with the outer side of the applique fabric.

When you start sewing, the machine will automatically sew 3 lock stitches.

* When sewing steep angles, keep the needle inside the fabric, raise the presser foot, change sewing direction and sew slowly.

3 At the end of sewing, push the reverse stitch button to sew lock stitches for 3~5 stitches.

* Usually center needle position is used for appliqué stitches but right or left needle position can be used. Changing needle position: Refer to page 81
To make the stitch un conspicuous, an applique can be sewn.

1. Cut the applique fabric with seam allowance of 3~5mm.

2. Put the pattern paper onto the wrong side of the fabric and fold the seam allowance at the finish line.

3. Put the applique fabric on the base fabric. Temporarily fix it with basting stitches or glue.

4. Turn the hand wheel towards you and start sewing along with the outer side of the applique fabric.

   When you start sewing, the machine will automatically sew 3 lock stitches.

   * When sewing steep angles, keep the needle inside the fabric, raise the presser foot, change sewing direction and sew slowly.

5. Lock stitch at the end of sewing.

   Push the reverse stitch button and the machine will automatically sew 3 lock stitches.

   It is better to lock stitch at the outer side of the applique fabric.

* Usually center needle position is used for appliqué stitches but right or left needle position can be used. Changing needle position: Refer to page 81
**Crazy quilt**

**Attention**

To make the stitch inconspicuous, an applique can be sewn.

**Seam allowance**

1. Put the pattern paper onto the wrong side of the fabric and fold the seam allowance at the finish line.

2. Cut the applique fabric with seam allowance of 3~5mm.

3. Put the applique fabric on the base fabric. Temporarily fix it with basting stitches or glue.

4. Turn the hand wheel towards you and start sewing along with the outer side of the applique fabric. When you start sewing, the machine will automatically sew 3 lock stitches.

   * When sewing steep angles, keep the needle inside the fabric, raise the presser foot, change sewing direction and sew slowly.

5. Lock stitch at the end of sewing. Push the reverse stitch button and the machine will automatically sew 3 lock stitches. It is better to lock stitch at the outer side of the applique fabric.

   * Usually center needle position is used for appliqué stitches but right or left needle position can be used. Changing needle position: Refer to page 81

**Basting**

F600 Only

Pattern paper

Turn OFF the power switch before replacing the presser foot.

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Quilting 01~67</th>
<th>F600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quilting 01~29</td>
<td>F400</td>
<td></td>
</tr>
<tr>
<td>Quilting 01~22</td>
<td>F300</td>
<td></td>
</tr>
</tbody>
</table>

| Presser foot | Manual buttonhole presser foot (I) |

**Using a decorative stitch, this gives a decorative look to the joining of patchworks. It is recommended to use decorative thread such as embroidery thread.**

**Example 1) Quilting 08**

Sew patterns so that they extend over both pieces of fabric.

**Example 2) Quilting 10**

Sew patterns so that the presser foot holds one side of fabric.

**F600 Only**

★ **Random pattern**

Random stitch patterns (Quilting 18~34) are transformations of Quilting 01~17. The width can be changed automatically by section, so that you can enjoy those patterns.
Stitch in ditch quilting

Pattern No. Direct 1
Presser foot Edge sewing presser foot (R)

This is for quilting the edge of patchworks and appliqués. The machine will sew the lower (thinner) side of the fabric layers. As a result, the stitches will not be noticeable and have an effect to make the design look three dimensional or emphasized.

1 Put the top layer of fabric with patchwork and/or appliqués, quilting cotton and bottom layer of fabric together by pin or basting stitches.

2 Put the guide of the presser foot along with the crease and sew.
   The needle enters behind the guide, so that the edge of the crease can be sewn.

* If the desired points can not be sewn, adjust the needle position.
   Needle position change: refer to page 81

★ Curved concealed quilting

Use manual buttonhole presser foot (I) or the open toe presser foot (O). Sew curves by lifting the presser foot and changing the direction very often.

Also this can be done by free motion with the quilt presser foot. (Refer to page 69.)
Quilting (straight stitch)

Quilting is the process of sewing the top layer of fabric, with quilting cotton in between and a bottom layer of fabric underneath. By using the walking foot, the machine feeds both top and bottom fabrics together at the same time, so fabric shifting is eliminated.

1. Put top layer of fabric with patchwork and/or appliqué, quilting cotton and bottom fabric together by using pin or basting stitches.

2. Assemble the walking foot.

   Raise the presser bar. Loosen the setscrew for presser foot holder and remove the presser foot holder. (Refer to page 13)
   Set the actuating lever on the needle clamp and insert the assembling point to the presser bar and tighten the setscrew for presser foot.

3. Place your hands to both sides of the presser foot and sew by pulling the fabrics apart.

   * Sew with slow to medium sewing speed.

   * To further avoid fabric shifts, set the presser foot pressure lower.

   Adjustment of presser foot pressure: Refer to page 26

Attention

Turn OFF the power switch before replacing the presser foot.
Quilting (free motion)

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Direct 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser foot</td>
<td>Quilt presser foot (Q)</td>
</tr>
<tr>
<td>3.5</td>
<td>2.4</td>
</tr>
</tbody>
</table>

1. Put top layer of fabric with patchwork and/or appliqué, quilting cotton and bottom fabric together by using pin or basting stitches.

2. Assemble the quilt presser foot.

   Raise the presser bar. Loosen the setscrew for presser foot holder and remove the presser foot holder. (Refer to page 13)

   Set the quilting foot and tighten the setscrew for presser foot.

3. Move the drop feed knob to the right hand side.

   Feed dog is now down.

4. Place the fabric underneath the presser foot and lower the presser foot.

5. Adjust the height of presser foot according to the thickness of the fabrics by screw. When the height is 1mm from the surface of the fabrics, it will be easier to move the fabrics without interference.

Attention

Turn OFF the power switch before replacing the presser foot.

It is called free motion quilting when moving the fabrics freely towards any directions without using the feed dog of sewing machine.

When the feed dog is lowered (drop feed condition), it is possible to sew various curves and/or any directions by moving the fabrics by hands.
6 Use both hands to hold the fabrics and move it without letting it loose. The target stitch length is about 1.5~2.0mm.

7 When free motion sewing is finished, move the drop feed knob back to the left side.
The feed dog will be up and engaged at the same time as the machine starts to sew.

Tips

- How to lock stitches
  1. At sewing start, pull up the bobbin thread on the top layer of the fabric, hold both needle and bobbin threads together and sew 3 stitches on the same point. After that move fabrics as you wish. In this way, stitches on the wrong side of the fabrics look neat.
  2. At sewing-end sew 3 stitches on the same point and stop.

- How to sew stitches with the same stitch length
  1. When the foot controller is used, the fabrics can be guided by both hands and you can move the fabrics freely.
  2. Set the speed controller to medium or medium low first, press the foot controller completely and move the fabrics.
     -- if stitches become too large, set the speed controller to “faster”
     -- if stitches become too small, set the speed controller to “slower”.

☆ When doing the free motion with zigzag stitch, use the quilt presser foot (transparent type) which is optionally available from your dealer.
One-point stitch/sewing letters

Preparation before sewing
(in order to sew a pattern neatly, apply interlining and conduct a test sewing first.)

Use an iron to attach a fusible interlining to the wrong side of fabric.

* When stitch length becomes too small, the bobbin thread will come out to the front side of fabric and/or stitches might get stuck. Therefore make sure to conduct a test sewing beforehand.

Test sewing

Since the pattern might be deformed according to the type and thickness of fabric and fusible interlining to be used, make sure to conduct test sewing on the same fabric and interlining.

Select stitch pattern No. 22 (F600) (No. 20 F400 / F300) for test sewing; If the stitch pattern deforms, adjust it by the pattern adjustment dial.

Attention
Turn OFF the power switch before replacing the presser foot.

Pattern adjustment dial

Correct shape
When right side is higher than left side,
When right side is lower than left side,

Turn the pattern adjustment dial to the left side.
Turn the pattern adjustment dial to the right side.
Pattern adjustment dial

One-point stitch/sewing letters
(in order to sew a pattern neatly, apply interlining and conduct a test sewing first.)

Use an iron to attach a fusible interlining to the wrong side of fabric.

* When stitch length becomes too small, the bobbin thread will come out to the front side of fabric and/or stitches might get stuck. Therefore make sure to conduct a test sewing beforehand.

Fabric
Since the pattern might be deformed according to the type and thickness of fabric and fusible interlining to be used, make sure to conduct test sewing on the same fabric and interlining.

Select stitch pattern No. 22 F600 (No. 20 F400 / F300) for test sewing; If the stitch pattern deforms, adjust it by the pattern adjustment dial.

Preparation before sewing
Correct shape
Test sewing
When right side is higher than left side, turn the pattern adjustment dial to the left side.
When right side is lower than left side, turn the pattern adjustment dial to the right side.

Pattern No.
One point 01~38
One point 01~33
One point 01~18
Letters
Presser foot
Manual buttonhole presser foot (I)

Attention
F600
F400
F300
F400 / F300
F600

Turn OFF the power switch before replacing the presser foot.
How to select pattern (letters)

Press F400  F300

Example:

Press three times.

Press twice.

Press one time.

Press twice.

Press twice.

Press three times.

F400  F300

have 3 fonts
When you want to change the size of pattern (letters) …..

Move the cursor to the desired pattern (letter). You can change the height and width by:

Height: Zigzag width adjusting dial
Width: Stitch length adjusting dial

(Pattern No. 13)
How to edit patterns (letters)

Example)

Change ★ to ☆.

Press , and move the "_'(cursor) to the position where you wish to delete.

By pressing , the pattern on the cursor "★" will be deleted.

Press ,

F400 F300 have 3 fonts
How to stitch a pattern (letters)

Place the fabric underneath the presser foot and start.

The machine will stop automatically when sewing is finished.

Notes:
1. Note that the sewing speed varies according to stitch patterns (letters) to be sewn.
2. If the automatic thread trimmer is used while sewing, the machine starts to sew from the beginning.
3. In case of condensed sewing, if the stitch length is too small, the stitches may get stuck.

Disposing thread ends of jump stitches

Get rid of unnecessary thread on the front side of fabric by scissors.
Save/call of patterns (letters)

The letters and one point patterns can be combined and saved for later use. There are 10 folders in total for saving.

(Save)

Press \[ \text{Save} \]

Use \[ \text{Folder selection} \] to select folder to save and press \[ \text{OK} \]

Notes: \[ \text{Filled} \] means there exists already a pattern. \[ \text{Empty} \] means empty and available for saving pattern.

Press \[ \text{OK} \]

Pattern was saved.

(Call)

Press \[ \text{Call} \]

Press \[ \text{Folder selection} \] to select the folder where you wish to call the desired combination.

Press \[ \text{OK} \]

Press \[ \text{OK} \]

Delete the previously selected patterns?

\[ \text{YES} \] \[ \text{NO} \]

Press \[ \text{OK} \]
To delete the content stored inside a folder.

1. Press (Trash) to delete the content stored inside a folder.
2. Use (Next) to select the target folder where content to be deleted is stored.
3. Press (OK) to delete the content.
4. Use (Next) to select “delete” and press (OK) to confirm.
5. Press (OK) to complete the deletion.
## Character selecting methods

<table>
<thead>
<tr>
<th>No. of pressing a button</th>
<th>Immediately after selecting A</th>
<th>Immediately after selecting a</th>
<th>Immediately after selecting C</th>
<th>Immediately after selecting c</th>
<th>Immediately after selecting e</th>
<th>Immediately after selecting i</th>
<th>Immediately after selecting N</th>
<th>Immediately after selecting n</th>
<th>Immediately after selecting O</th>
<th>Immediately after selecting o</th>
<th>Immediately after selecting U</th>
<th>Immediately after selecting u</th>
<th>Other than the above letters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>@</td>
<td>!</td>
<td>&amp;</td>
<td>'</td>
<td>(</td>
<td>)</td>
<td>.</td>
<td>?</td>
<td>-</td>
<td>·</td>
<td>/</td>
<td>:</td>
<td>Ineffective</td>
</tr>
<tr>
<td>1</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>a</td>
<td>å</td>
<td>ä</td>
<td>Å</td>
<td>Å</td>
<td>Æ</td>
<td>Æ</td>
<td>Á</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>d</td>
<td>Æ</td>
<td>Æ</td>
<td>Å</td>
<td>Å</td>
<td>Æ</td>
<td>Æ</td>
<td>Á</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>G</td>
<td>H</td>
<td>I</td>
<td>g</td>
<td>g</td>
<td>g</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>J</td>
<td>K</td>
<td>L</td>
<td>j</td>
<td>j</td>
<td>j</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>N</td>
<td>O</td>
<td>m</td>
<td>n</td>
<td>n</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>P</td>
<td>Q</td>
<td>R</td>
<td>p</td>
<td>q</td>
<td>q</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>S</td>
<td>T</td>
<td>U</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>W</td>
<td>X</td>
<td>Y</td>
<td>w</td>
<td>x</td>
<td>x</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Z</td>
<td>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of pressing a button</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of pressing a button</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
<td>_</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Type and usage of options

① Change of seam width of buttonhole

The seam width of buttonhole is changeable.
* It is changeable when sewing a buttonhole.

Small  Standard  Large

* Default setting is “standard”.

Example) narrowing (reducing) the seam width

Press  Press  Press  Press

The width is now changed.
* When opening buttonhole with a ripper, make sure not to cut the stitches.
* The setting goes back to the default setting after the sewing machine is turned off and on.
2 Change of needle position

Example) change the needle position of zigzag stitch to left needle position.
* Default setting is center needle position.

Press

Press

Press

Press

Setting completed.

It is now changed to left needle position.

* In case of a combined stitch pattern, if the needle position is changed, the needle position of the selected patterns is all changed to the same needle position at the same time. However, if letter is included in the combined stitch pattern, needle position will not be changed.
* After a change of needle position and in the event that other stitch pattern is selected, the sewing machine goes back to the default setting.
3 Setting the thread trimming foot switch to OFF

In order to avoid trimming the thread by mistake while sewing, you can set the thread trimming foot switch to “off” beforehand.

![Diagram of the sewing machine's screen showing the steps to change the thread trimming foot switch to OFF.]

Press [ ]
Press [ ]
Press [ ]
Press [ ]

* There is not a change in the display, however, even if the foot switch is pressed, threads will not be trimmed.
* The setting is memorized even when the machine is turned off and on.
## Twin needle sewing

By using two needles beautiful decorative stitches can be sewn.

* When using twin needles, make sure to set twin needle sewing in Option and perform test sewing.
* When twin needle sewing, make sure to use thread size smaller than No. 60.
* Make sure to use a twin needle with size of 2.0 mm (including needle: 2.0 mm).
* When twin needle sewing, the sewing speed will become slower.

### How to thread the needles

1. Place the supplementary spool pin.
2. Thread to the thread guide first. After that, thread paths are same up from to .
3. Do not thread for right-hand needle.
4. Thread to right-hand and left-hand needles separately.
   * Automatic needle threader cannot be used. Thread each needle manually.
   * Automatic thread trimmer cannot be used in case of twin needle sewing.

### Attention

Turn OFF the power switch before replacing the presser foot.
## Setting of twin needle sewing

* Select a stitch pattern suitable for twin needle sewing.

Press \( \Rightarrow \)

Press three times.

Press \( \Rightarrow \)

Press \( \Rightarrow \)

Symbol of twin needle sewing will be shown on the display.

* When in twin needle sewing, the stitch patterns will be limited. In addition, the stitch length and zigzag width will be also adjusted to suit the twin needle sewing.

* The setting is memorized even when the machine is turned off and on.

* Twin needle setting can not be done while a stitch pattern other than those for twin needle sewing is selected.

\[ \text{\( \Rightarrow \) mark will be shown.} \]

The twin needle setting can only be carried out when suitable pattern is selected and center needle position is selected at the same time.

* Maximum zigzag width is 7.0 mm, however, display shows \( \Rightarrow 5.0 \).

The sewing image
5 Guide

The guide for winding bobbin thread, setting of bobbin, threading of needle thread, changing presser foot and needle can be seen on the LCD display.

Press

Press twice.

Press

The page will proceed when pressing

Press \( \text{C} \) or \( \text{OK} \) to end the guide.
6 Contrast of Liquid Crystal Display (LCD)

The LCD contrast can be chosen from 11 levels.

Example) Reduce the contrast of display.

![Diagram showing steps to adjust LCD contrast]

Press twice.

Press three times.

Press OK

The contrast is now changed.

* The setting is memorized even when the machine is turned off and on.
Button reception buzzer volume settings

The volume of buzzer can be adjusted.

Mute  low  loud

Example) Setting the volume to “mute”

Now the volume setting is changed and it will not produce a sound even when a button is pressed.

* The setting is memorized even when the machine is turned off and on.


8 Language setting

You can select language from 8 languages or pictographs.
((Default setting is English.)

<table>
<thead>
<tr>
<th>English</th>
<th>Español</th>
<th>Italian</th>
<th>Français</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Spanish</td>
<td>Italian</td>
<td>French</td>
</tr>
<tr>
<td>Nederlands</td>
<td>Deutsch</td>
<td>Русский</td>
<td>日本語</td>
</tr>
<tr>
<td>Dutch</td>
<td>German</td>
<td>Russian</td>
<td>Japanese</td>
</tr>
</tbody>
</table>

Example) Change the language to Italian.

Press twice.

Press five times.

Press OK

The language is now changed to Italian and all messages will be displayed in Italian from now on.

* The setting is memorized even when the machine is turned off and on.
9 Elongation

The length of the patterns (stitch pattern \textbf{F600} No.24 $\sim$ 38, \textbf{F400} No.24 $\sim$ 33, \textbf{F300} No.13 $\sim$ 18) can be adjusted.

\[ \uparrow \text{ Adjusting range is from size 1 to size 5. (Default setting is size 3.)} \]

\textbf{Example) changing to size 5}

* Select a pattern which size can be elongated.

\[ \uparrow \text{The size is now changed.} \]

* The setting is memorized even when the machine is turned off and on.
### Message catalog

<table>
<thead>
<tr>
<th></th>
<th>Message</th>
<th>Cause (Reason to display such messages)</th>
</tr>
</thead>
</table>
| 1 | ![Lower presser foot](image)                | A. When “start/stop”, “reverse stitch” or “thread-trimming” button is pressed while the presser foot is raised.  
B. When presser foot is raised while sewing.                                                                                                                      |
| 2 | ![Pattern selection](image)                 | A. When one of the buttonhole stitches is selected and the buttonhole sensor pin is not connected, the machine starts to sew.                                                                                                           |
| 3 | ![Pattern selection](image)                 | A. When a stitch pattern other than buttonholes is selected but the buttonhole sensor pin is connected, the machine starts to sew.                                                                                                      |
| 4 | ![Memory](image)                            | A. When in the 📚 mode, user attempts to select stitch patterns more than the maximum number of memory (70).                                                                                                                           |
| 5 | ![Delete selected patterns](image)          | A. When in the 📚 mode and more than one stitch pattern is selected, user attempts to move to mode 📚 and/or 📚.                                                                                                                           |
B. When in the 📚 mode and more than one stitch pattern is selected, user presses the 📚 button for more than two seconds (deleting all). |
C. When in the 📚 mode and more than one stitch pattern is selected, user presses the 📚 button (calling a memory). |
| 6 | ![Pattern saved](image)                     | A. When the process of saving a pattern into folder is completed.                                                                                                                                                            |
| 7 | ![Setting completed](image)                 | A. When in the option setting, settings which will be kept after turning off the machines are changed. (Thread trimming by foot controller, LCD contrast, buzzer volume and language setting)                                         |
| 8 | ![Machine setting](image)                   | A. When the setting of the machine is changed to twin needle sewing (option setting).                                                                                                                                                 |
| 9 | ![Check machine](image)                     | A. When in twin needle sewing, a stitch pattern other than twin needle sewing is selected.                                                                                                                                           |
| 10| ![Motor locked](image)                      | A. When the motor is locked, the machine stops temporarily for safety.                                                                                                                                                        |
Introduction of optional accessory parts

Make your home sewing more pleasant!
Please purchase the following items in the shop where you buy our products.

- **Rolled hemming presser foot**
  Fabric edge is hemmed while rolling it under. Used for bottom of shirts, blouses, frills and the edge of handkerchiefs.

- **Binder presser foot**
  It is possible to attach tapes such as bias tape into four folds.

- **Button attaching presser foot**
  This presser foot is used to attach buttons on garments.

- **Hemming presser foot for zigzag**
  Fabric edge is hemmed by zigzag while rolling it under. Used for bottom of shirts, blouses, frills and the edge of handkerchiefs.

- **Quilt presser foot (transparent type)**
  It is used for free-motion quilting. Zigzag stitch is also possible with this presser foot.

- **Quilt presser foot (open type)**
  It is used in free motion sewing. As the front portion is open, it is easy to see the needle entry point.

- **Cording and Embroidery presser foot**
  It is used in free motion quilting and a cord can be sewn together with this presser foot.

- **Appliqué presser foot**
  Since the front and back of the presser foot is short, it is easy to move the materials at curve points. Also fabrics can be seen easily because it is transparent.

- **Cording presser foot (for 3 cords)**
  It is possible to attach 1 - 3 cords by three-point zigzag or decorative stitch.

- **Pearl attaching presser foot**
  With this presser foot it is possible to attach pearls, beads and thick cord.

- **Invisible zipper foot**
  As a seam does not appear on the right side of the fabric, an opening can be finished with fabric edges neatly butted.

- **Presser foot with guide**
  As the presser foot has markings, which show 2 mm distance, these marking will serve as a guide.

- **Throat plate for straight stitch**
  Use with patchwork presser foot for better stitch quality.
With this presser foot it is possible to attach pearls, beads and thick cord.

**Rolling hemming presser foot**
Make your home sewing more pleasant!
Please purchase the following items in the shop where you buy our products.

*Fabric edge is hemmed while rolling it under.*
Used for bottom of shirts, blouses, frills and the edge of handkerchiefs.

**Button attaching presser foot**
This presser foot is used to attach buttons on garments.

**Cording and Embroidery presser foot**
This presser foot is used in free-motion sewing. As the front portion is open, it is easy to see the needle entry point.

As the presser foot has markings, which show 2 mm distance, these markings will serve as a guide.

It is possible to attach tapes such as bias tape into four folds.

**Cording presser foot (for 3 cords)**
It is possible to attach 1 - 3 cords by three-point zigzag or decorative stitch.

**Appliqué presser foot**
This presser foot is used for appliqué and decorative stitches. (Front part of the presser foot is open for better visibility.)

For sewing large projects such as quilts, etc.

**Patchwork presser foot**
This presser foot is used for patchwork stitches.

**Quilt presser foot**
This presser foot is used for quilt stitches (free motion quilting).

**Quilt guide**
This is a guide to sew lines in the same distance.

**Knee lifting lever**
You can raise or lower presser foot by knee, without using your hand.

**Smooth presser foot**
This presser foot is used for non-slippery materials like vinyl and satin stitches.

**Walking foot**
This presser foot is used for "difficult-to-feed" materials such knit, jersies, vinyl, artificial leather and leather or quilting.

**Eyelet punch**
This is to open hole at round area of keyhole buttonhole.

**Auxiliary spool pin**
This spool pin is used for twin needle sewing or for bobbin thread winding.

**Wide Table**
For sewing large projects such as quilts, etc.

**Quilt presser foot**
This presser foot is used for patchwork stitches.

**Open toe presser foot**
This presser foot is used for appliqué and decorative stitches. (Front part of the presser foot is open for better visibility.)

**Edge sewing presser foot**
This presser foot is used for patchwork, sewing center line of joined materials by using the center guide of the presser foot.

**Walking foot**
This presser foot is used for "difficult-to-feed" materials such knit, jersies, vinyl, artificial leather and leather or quilting.

**Eyelet punch**
This is to open hole at round area of keyhole buttonhole.

**Auxiliary spool pin**
This spool pin is used for twin needle sewing or for bobbin thread winding.

**Wide Table**
For sewing large projects such as quilts, etc.

**Quilt presser foot**
This presser foot is used for quilt stitches (free motion quilting).

**Open toe presser foot**
This presser foot is used for appliqué and decorative stitches. (Front part of the presser foot is open for better visibility.)

**Edge sewing presser foot**
This presser foot is used for patchwork, sewing center line of joined materials by using the center guide of the presser foot.
How to install Wide Table

1. Remove auxiliary bed.

2. Open legs of Wide Table until they stop securely at the stopping position.

3. Assemble Wide Table to sewing machine body.
   Attach it to free arm of sewing machine.

4. Adjust the height of legs so that the top surface of Wide Table is the same height of sewing machine body.

⚠️ Attention
* Don't put any heavy materials on the Wide Table.
* Don't move sewing machine with Wide Table attached.
Machine Maintenance

When lint and/or dirt has built up, it may cause machine failures. Therefore, clean the machine frequently.

1 Remove the throat plate
   Remove needle and presser foot and remove the needle plate by using T-shape screwdriver.

2 Remove the bobbin case holder.

3 Remove lint and dirt.
   Remove lint and dirt around the feed dog and bobbin case holder with the cleaning brush.

4 Install the bobbin case holder.
   Install the bobbin case holder so that points A and B touch each other.

Install the throat plate.
   When attaching the throat plate, align the positioning pins with holes of throat plate.

Attention

Always must be disconnected plug from socket-outlet before remove throat-plate and remove bobbin-case-holder.
# Performance check list

If sewing difficulties occur, make sure the instructions are correctly followed. If a problem still exists, the reminders below may help solve it.

<table>
<thead>
<tr>
<th>Case</th>
<th>Cause (Reason)</th>
<th>Solution</th>
<th>Reference page</th>
</tr>
</thead>
<tbody>
<tr>
<td>● The machine stops sewing suddenly. (This is in case you can turn hand wheel by hand.)</td>
<td>● The machine sews at slow speed continuously. (The machine has a mechanism to automatically cut off the power to prevent the motor from overheating.)</td>
<td>● Turn off the power and wait for a while (about 10 minutes). The safety mechanism will be reset and the machine will return to normal.</td>
<td>2</td>
</tr>
<tr>
<td>● The machine will not work even when started.</td>
<td>● Presser foot is in up position.</td>
<td>● Lower the presser foot and start to sew.</td>
<td>12</td>
</tr>
<tr>
<td>● The machine will not work even when start/stop button is pressed. (This is in case sewing light is still on.)</td>
<td>● The needle hits presser foot due to an installation of incorrect presser foot. ● The needle fell into the hook area and tried to start.</td>
<td>● Use the appropriate presser foot to the selected stitch pattern. ● Remove the needle from the hook area.</td>
<td>-</td>
</tr>
<tr>
<td>● Needle breaks.</td>
<td>● Thick material is sewn with a thin needle. ● The needle is not inserted fully. ● The needle setscrew is not securely tightened. ● The wrong presser foot is used for a certain pattern.</td>
<td>● Check the combination of fabric, thread and needle. ● Check the installation of needle. ● Securely tighten the needle setscrew. ● Check the combination of stitch pattern and presser foot to be used.</td>
<td>24 23 23 21</td>
</tr>
<tr>
<td>● Loud noise and/or keen noise while sewing</td>
<td>● Lint or dust has accumulated in the feed dog. ● Lint or dust has accumulated in the hook.</td>
<td>● Clean the feed dog area. ● Clean the hook area.</td>
<td>94 94</td>
</tr>
<tr>
<td>● Machine fails to feed fabrics.</td>
<td>● The stitch length is set at “0”. ● Soft fabrics such as towels are being sewn. ● The machine is set in drop feed condition. (the drop feed knob is on the right side)</td>
<td>● When the stitch pattern is reselected, the machine goes back to the default setting. ● Set the stitch length to 3 – 5. ● Set the drop feed knob to left side.</td>
<td>36 26</td>
</tr>
<tr>
<td>● Needle can not be threaded. (This is in case needle threader will not turn.) ● The hook of needle threader does not go through the needle eye.</td>
<td>● The needle is not in the up position. (When needle is not in the up position, needle threader will not turn. This is to avoid damages to the hook.) ● The needle is not inserted fully.</td>
<td>● Rotate the hand wheel and lift the needle upwards. ● Check the installation of the needle.</td>
<td>21 23</td>
</tr>
<tr>
<td>Case</td>
<td>Cause (Reason)</td>
<td>Solution</td>
<td>Reference page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>● The needle threading lever will not return to the original position and the machine cannot turn properly. (This is in case the hook of needle threader remains in the needles eye.)</td>
<td>● Hand wheel is turned by mistake while the needle threading lever is in down position. (in the process of threading to the needle.)</td>
<td>● Turn hand wheel slightly away from you. (to the opposite side when sewing).</td>
<td>-</td>
</tr>
<tr>
<td>● The machine will not start even when start/stop button is pressed.</td>
<td>● The foot controller is plugged in.</td>
<td>● Start/stop button can function when foot controller is removed.</td>
<td>8</td>
</tr>
</tbody>
</table>
| ● Thread breaks.  
● Stitch is skipped.                                             | ● The machine is incorrectly threaded.                                       | ● Rethread the machine correctly.                                        | 19              |
| ● The needle is not inserted fully.                                | ● There is knot or knurl on the thread.                                       | ● Remove knot or knurl from thread.                                      | -               |
| ● The needle is not in the up position.                            | ● The setting of manual thread tension is incorrect.                         | ● Adjust thread tension manually according to fabrics and thread to be used. | 25              |
| ● The needle is bent or the tip of needle is broken.                | ● The needle is installed incorrectly.                                        | ● Change needle.                                                         | 23              |
| ● The needle is not inserted fully.                                | ● Threading of bobbin thread is not correct.                                 | ● Install needle correctly.                                               | 23              |
| ● The bobbin can not turn smoothly inside the hook holder.         | ● The bobbin can not turn smoothly inside the hook holder.                   | ● Check the correct way of setting bobbin thread.                         | 17              |
| ● The needle size does not match the thread.                       | ● The needle size does not match the thread.                                 | ● Check the correct way of winding bobbin thread.                         | -               |
| ● Thread take-up is not threaded.                                 | ● Check the combination of thread and needle.                                | ● Check the combination of thread and needle.                             | 24              |
| ● Rethread the machine correctly.                                 | ● Rethread the machine correctly.                                            | ● Rethread the machine correctly.                                        | 19              |
| ● Change needle.                                                   | ● Adjust thread tension manually according to fabrics and thread to be used. |                                                                        |                 |
| ● Install needle correctly.                                       | ● Remove knot or knurl from thread.                                          |                                                                        |                 |
| ● Check the correct way of setting bobbin thread.                  | ● Check the correct way of setting bobbin thread.                            |                                                                        |                 |
| ● Check the correct way of winding bobbin thread.                  | ● Check the combination of thread and needle.                                |                                                                        |                 |
| ● Rethread the machine correctly.                                 | ● Attach the spool cap in a correct direction.                               |                                                                        |                 |
| ● Rethread the machine correctly.                                 | ● Check the correct way of setting bobbin thread.                            |                                                                        |                 |
| ● Change the thread tension.                                      | ● Attach the spool cap in a correct direction.                               |                                                                        |                 |
| ● Thread tension is not good.                                      | ● Make the stitch length smaller (shorter).                                  |                                                                        | 19              |
| ● The needle thread is threaded in correctly.                      | ● Change needle.                                                             |                                                                        | 17              |
| ● The bobbin thread is threaded incorrectly.                      | ● Attach the spool cap in a correct direction.                               |                                                                        | 19              |
| ● The direction of spool cap doesn’t match the spool.              |                                                                        |                                                                        |                 |
| ● Puckering occurs.                                               | ● Make the stitch length smaller (shorter).                                  |                                                                        | 36              |
| ● The stitch length is too large on light-weight fabrics.          | ● Change needle.                                                             |                                                                        | 23              |
| ● The needle tip is broken.                                       |                                                                        |                                                                        |                 |
| ● Safety mechanism works when machine stops due to motor lock.     | ● The safety mechanism will be reset in a short while (about 10 minute) and the machine will return to normal. (At this time, the start/stop button will not light up.) |                                                                        | -               |
List of stitch patterns

Patterns for crazy quilt
List of stitch patterns
List of stitch patterns

One-point

Pattern for elongation

Letters/numbers/signs
List of stitch patterns

1 2 3 4 5 6 7 8 9 0

01 02 03 04 05 06 07 08 09 10 11 12 13

14 15 16 17 18 19 20 21

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

12 13 14 15 16 17 18 19 20 21 22
List of stitch patterns

101 F300

One-point

Pattern for elongation

Letters/numbers/signs
<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body size</td>
<td>44.5 (W) X 29.1 (H) X 21.0 (D) cm</td>
</tr>
<tr>
<td>Body size with hard case</td>
<td>51.0 (W) X 30.5 (H) X 25.7 (D) cm</td>
</tr>
<tr>
<td>Weight (Weight with hard case)</td>
<td>9.8 KGS / 21.6 LBS</td>
</tr>
<tr>
<td>Item</td>
<td>Specification</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------</td>
</tr>
<tr>
<td>Body size</td>
<td>44.5 (W) X 29.1 (H) X 21.0 (D) cm</td>
</tr>
<tr>
<td>Body size with hard case</td>
<td>51.0 (W) X 30.5 (H) X 25.7 (D) cm</td>
</tr>
<tr>
<td>Weight</td>
<td>9.8 KGS / 21.6 LBS</td>
</tr>
<tr>
<td>Weight with hard case</td>
<td></td>
</tr>
</tbody>
</table>