INSTRUCTION MANUAL

FOR

299U MACHINES

299U 1350
     1351
     1353S
     1353M
     1353L
     1357S
     1357M

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<td>24</td>
</tr>
<tr>
<td>Instructions</td>
<td>25</td>
</tr>
</tbody>
</table>
This SINGER 299U two thread chain-stitch buttonhole machine is for:

- Eyelet-end Buttonhole (With/Without Taper bar).
- Straight-end Buttonhole (With/Without Taper bar).

Model 299U 1350
1351
1353S
1353M
1355L
1357S
1357M

This machine is manufactured for buttonhole sewing and is suited for sewing light weight to heavy weight materials.

The machine must only be commissioned in full knowledge of the instruction manual and operated by persons with appropriate training.

Before putting into service, also read the safety notes and the instruction manual of the motor supplier.

The machine must be used only for the purpose intended. Use of the machine without the safety devices belonging to it is not permitted.

When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin), during threading, when the workplace is left unattended, and during service work, the machine must be isolated from the mains by switching off the main switch or disconnecting the mains plug.

On mechanically operated clutch motors without start inhibitor, it is necessary to wait until the motor has stopped.

General servicing work must be carried out only by appropriately trained persons.

Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.

For service or repair work on pneumatic systems, the machine must be isolated from the compressed air supply system. Exceptions to this are only adjustments and function checks made by appropriately trained technicians.

Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.

Work on parts and systems under electric current is not permitted, except as specified in regulations EN50110.

Conversions or changes to the machine must be made only on adherence to all safety regulations.

For repairs, only replacement parts approved by us must be used.

Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC regulations.

Be sure to replace the covers after making adjustments.

Meanings of the symbols:

Danger spot
Items requiring special attention

Danger of injury to operative or service staff.
Be sure to observe and adhere to these safety notes!

To avoid disturbances or damages, it is absolutely necessary to observe the following instructions:

Before you put the machine into operation for the first time, clean it thoroughly and oil it well (see page 16).

Have the mechanic check whether the motor can be used with existing mains voltage or not, and that junction box is correctly connected. Do not start the machine if the voltage is not correct!

When the machine runs, the balance wheel must rotate toward the operator. If it does not, have the electrician change the wires on the motor.
1. Attach needle to machine.
2. Thread the needle thread.
3. Thread the looper thread and gimp.
4. Adjust the needle thread tension
5. Adjust the looper thread tension.

Switch off the machine. (See page 6)
Do not run machine without eye guard, finger guard and needle bar guard!
Danger of injury!

---

Tighten screws firmly after making adjustments.
To operate the machine

NOTE: Be sure to add oil before running machine. (See page 16)

1. Connect machine plug to wall outlet and turn on main switch (from 0 to 1). (Pilot lamp will light up)
2. Press the starting lever.
3. To lower the work clamp check manually.
4. To raise the check manually.
5. To change the length of buttonhole.
6. To convert to CA or CB.

Caution: There are two types of motor i.e. 100 - 120V and 190 - 240V motors. Be sure to connect the machine plug to power source corresponding to the voltage of your motor.

If error is displayed on the control panel, bring machine to correct stop position as instructed on page 20.
4

Closing lever locking pawl

Work clamp check

Closing lever

The work clamp check will rise when closing lever is lowered while lowering the closing lever locking pawl.

5

Loosen knob on pattern wheel and set dial to desired setting.

Example: Buttonhole 1 inch

Sewing length 1 1/4 inch

Switch off the machine.
(See page 6)

Tighten knob after setting the sewing length

6

Turn conversion lever toward CB (cut before) or CA (cut after).

Note: NEVER convert to CA or CB during sewing because it may cause interference between clamping mechanism and spreading mechanism and damage these parts.
1. To stop machine during sewing.
2. To sew under slow start mode.
3. To effectuate function of needle thread breakage detector.
4. To reset production quantity.
5. To modify production quantity.

LED on upper left corner of the key will go on and off each time the key is pressed.

1. Stop switch

Push stop switch

Note: To start machine again, see page 20 1-1.

2. On

Slow start

Off

Quick start

3. On

Machine will stop automatically when needle thread breaks.

Off

Thread breakage will not be detected even when detector is provided.

Note: The above is effective only when machine is provided with a detector.

Thread breakage detector is available at additional cost.
4

LCD on control panel

※※※ 1 2 3 4 5 PC
↓
※※※ 0 PC

Display of production quantity will change to “0”.

Note: When LED on key to set the sewing speed is “On”, the sewing speed will be displayed on the LCD therefore, be sure to press key before pressing the reset key.

On

LCD on control panel.

※※※ 2 0 0 0 RPM
↓
※※※ 1 2 3 4 5 PC

Reset after changing the display as shown above.

5

Production quantity can be changed with L(+) and L(-) keys.

LCD on control panel

※※※ 1 2 3 4 6 PC
↑ L (+)キ－
※※※ 1 2 3 4 5 PC
↓ L (-)キ－
※※※ 1 2 3 4 4 PC

Production quantity can be counted from 0 up to 99,999.

Note: When LED on key to set the sewing speed is “On”, press key and turn off LED the same as item 4 above.
1. To change the sewing speed.
2. To decelerate sewing speed only at eyelet end of buttonhole.
3. To check function of machine.
4. To display function of the keys.

LED on upper left corner of the key will go and off each time the key is pressed.

Sewing speed is displayed at right side of the LCD and it can be changed with the L(+) and L(-) keys.

On

<table>
<thead>
<tr>
<th>LCD on control panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900 RPM</td>
</tr>
<tr>
<td>↑ L (+) key</td>
</tr>
<tr>
<td>1800 RPM</td>
</tr>
<tr>
<td>↓ L (-) key</td>
</tr>
<tr>
<td>1700 RPM</td>
</tr>
</tbody>
</table>

Speed can be set from 800 to 2,000 rpm in increments of 100 rpm.

2

Sewing speed at eyelet end of buttonhole as indicated by arrow is decelerated corresponding to the speed shown at left side of LCD.

Speed can be changed with P(+) P(-) keys.

On

<table>
<thead>
<tr>
<th>LCD on control panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM - 300 1 2 3 4 5 PC</td>
</tr>
<tr>
<td>↑ P (+) key</td>
</tr>
<tr>
<td>RPM - 200 1 2 3 4 5 PC</td>
</tr>
<tr>
<td>↓ P (-) key</td>
</tr>
<tr>
<td>RPM - 100 1 2 3 4 5 PC</td>
</tr>
</tbody>
</table>

Speed can be set from 100 to 600 rpm in increments of 100 rpm.

Off

Cutting mode will be shown at left side of display.

Example: When in cut before mode.

CB 1 2 3 4 5 PC
P(+) and P(-) keys are used to change the mode to knife function check mode and needle bar function check mode.

When key with its LED blinking is pressed, it will activate the next function necessary.

**Check function of knife**

When key is pressed, the cutting knife will function.

**Check function of needle bar**

When key is pressed, the electromagnetic clutch will be energized.

When key is pressed, the needle bar will function slowly.

---

If other key is pressed while LED is lighted up, the function of the key pressed will be displayed on LCD as shown below.

See page 3 for name and function of keys.
Adjustment for sewing
1. To adjust the length of start and end of sewing.
2. To change the style of buttonhole.
3. To reduce number of stitches at eyelet end of buttonhole.

⚠️ Switch off the machine. (See page 6)

---

Be sure to tighten screws and knob firmly after making adjustments.

---

![Diagram](image.png)
2

- Attach cam block
- Remove cam block

<table>
<thead>
<tr>
<th>Pattern Wheel cam block</th>
<th>Lever position</th>
</tr>
</thead>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye</td>
<td>1st side</td>
</tr>
<tr>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>—</td>
</tr>
</tbody>
</table>

Cam block
1st side

Cam block (eye)

Cam block
2nd side

Lever

Pattern wheel

3

Hand wheel

Screw (big)

Screw (small)

Adjustment of coarseness of stitches

A: Coarse stitches
B: Normal stitches

Loosen screw (small).
Rotate hand wheel one half turn.
Adjust as required screw (big).
Rotate hand wheel one half turn.
Tighten screw (small).

Fine
Coarse
To adjust buttonhole cutting mechanism.

1. To install the cutting knife.
2. To install the cutting block.
3. To adjust the pressure on the cutting knife.
4. Endwise adjustment in relation to stitching of buttonhole.
5. Sidewise adjustment in relation to stitching of buttonhole.

---

Switch off the machine. (See page 6)

Be sure to tighten screws firmly after making adjustments

---

Tighten screw lightly
Push lever strongly
Firmly tighten the screw

---

Push cutting block against stop and tighten screw with hand.

---

A : More pressure
B : Less pressure

Note: Never use excessive pressure on the cutting knife.
4

Loosen nut and adjust

Nut

Direction A  Direction B

5

To move toward left
Loosen screw 2
Turn screw 3 toward A
(Knife will move)
Tighten screw 1
Tighten screw 2

To move toward right
Turn screw toward B
(Knife will move)
Tighten screw 1
Tighten screw 2

Tighten screw 1 after adjustment.
1. When machine is in normal use, the loopers and area around the loopers should be cleaned once every day. When used more frequently, it should be cleaned more often.

2. Lubrication
   When machine is under normal use (approx. 2,000 buttonholes / day), apply oil once every week.

3. The area never to apply oil.
2

- Oil filled in oil sump A and B lubricates the arm shaft and bed shaft by means of a wick.
- Fill oil in oil sump A and B slowly to about 70% of its capacity. Rapid and/or excessive filling may result in overflow of the oil.

3

Note: 1. Electromagnetic clutch is used in A and B areas. Therefore oil should never be applied to these areas with the exception of applying grease to the gears.
2. Pattern wheel shaft, cutting shaft and rapid feed shaft do not require lubrication.
To set up the machine

1. Unpack the machine.
2. Fasten machine support to table with wood screws.
3. Set machine on machine support.
4. Install belt and adjust belt tensions.
5. Attach fittings to machine.

Switch off the machine. (See page 6)
Danger of crushing between sewing head and table top.

Be sure to tighten screws firmly after making adjustments.
1. Loosen nut and adjust belt tension so that belt will deflect 10mm when 800g force is applied to point A.
2. Loosen bolt and adjust belt tension so that belt will deflect 5mm when 500g force is applied to point A.

Set height of needle thread pull-off to same as upper dead point of needle bar.
1. When error is displayed on LCD on control panel.
   1.1 When LED on \( \text{key} \), \( \text{key} \), and \( \text{key} \) keys light up.
   1.2 In case of error other than above.
2. Others

Be careful not to start the machine when adjusting the stop position manually.

1-1

On Cutting shaft not in correct stop position.

On Needle bar not in correct stop position.

On Pattern wheel shaft not in correct stop position.

Corrective measure: Press key with blinking LED to correct the problem.

LED blinking Error can be corrected by rotating machine manually. (See page 24 for detail)
(LED is blinking only to indicate error therefore no function can be obtained by pressing the key.)

LED blinking When key is pressed, the machine will continue to complete the sewing cycle.

LED blinking When key is pressed, the machine will stop sewing and return the carrier to its stop position by rapid feed.
If LED on , , keys does not light up when error number is displayed.
1. Turn off power switch.
2. Wait over 10 seconds and then turn on power switch.
3. If error mentioned in item 1-1 above is displayed, return machine to stop position as instructed above.
4. If same error occurs repeatedly, contact your dealer or your nearest service center.

Following is displayed on LCD.

※※※ → → 3 → →

This display is not indicating error but is indicating that the machine is in the midst of sewing.

Manual adjustment and use of and keys the same as in item 1-1 above is an effectual method in correcting this problem.

### Others

<table>
<thead>
<tr>
<th>NO.</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Movement of needle bar is slow only at start of sewing.</td>
<td>If LED on key is &quot;On&quot;, press key and turn off the LED.</td>
</tr>
<tr>
<td>2</td>
<td>Though the machine is fitted with needle thread breakage detector, it does not stop even when thread breaks.</td>
<td>If LED on key is &quot;Off&quot;, press key and turn on the LED.</td>
</tr>
<tr>
<td>3</td>
<td>Sewing speed slow down at eyelet end of buttonhole.</td>
<td>If LED on key is &quot;On&quot;, press key and turn off the LED.</td>
</tr>
<tr>
<td>4</td>
<td>Work clamp check can not be raised by hand.</td>
<td>Lower closing lever while lowering the closing lever locking pawl as instructed on page 7.</td>
</tr>
<tr>
<td>5</td>
<td>Error 4 is displayed on LCD and machine stops.</td>
<td>Adjust the length of start and end of sewing. (See page 12)</td>
</tr>
<tr>
<td>6</td>
<td>Cutting knife stops functioning while in cutting motion and error 25 is displayed on LCD.</td>
<td>Return cutting knife to its rest position as instructed on page 23. Adjust pressure on the cutting knife (page 14) and also check wear of cutting block.</td>
</tr>
<tr>
<td>7</td>
<td>Cutting handle can not be turned.</td>
<td>When carrier is not in correct stop position, the safety device prevents the cutting handle from rotating. Return carrier to its correct stop position. (See page 23)</td>
</tr>
</tbody>
</table>
To adjust machine stop position

1. Needle up stop position
2. Buttonhole cutting shaft stop position
3. Pattern wheel shaft stop position

Be careful not to start the machine when adjusting the stop position manually.

1. Push hand wheel inward and turn it in the direction indicated by arrow until needle is at its highest position on the left side.
2. LED on control panel indicating needle up error will go out.
2

1. Push cutting handle toward machine.
2. If ERROR 1 occurs, turn cutting handle until mark on cutting shaft is at the front.
   If ERROR 8 occurs, turn cutting handle until mark on cutting shaft is at the bottom.
3. LED on control panel indicating cutting shaft error will go out.
4. Pull up the cutting releaser lever. (Clutch will disengage)

3

1. Using a wrench furnished with the machine, turn nut in the direction indicated by arrow until the pattern wheel rides over just beyond the roller.
2. LED on the control panel indicating pattern wheel shaft error will go out.
LCD on control panel

Highest priority is given to the display of modes noted below.

1. Error display. (including display indicating that the machine is in the midst of sewing)
2. Test mode. (LED on key lighted up)
3. The following is displayed on the LCD when machine is in condition other than above.

![Diagram of LCD display]

- CB mode
- CA mode
- Production quantity display
- Display of reduced speed at eyelet end of buttonhole
- Sewing speed display
<table>
<thead>
<tr>
<th>Variety</th>
<th>1350</th>
<th>1351</th>
<th>1353 S</th>
<th>1353 M</th>
<th>1353 L</th>
<th>1357 S</th>
<th>1357 M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stitch type</td>
<td>Two thread chain stitch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Style of buttonhole</td>
<td>Eyelet-end buttonhole/Straight-end buttonhole (w/taper bar / w/o taper bar)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>Light to heavy weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needle bar stroke</td>
<td>34.1mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Max. sewing speed</td>
<td>2,000 SPM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. b/hole length (w/taper bar)</td>
<td>38mm</td>
<td>35mm</td>
<td>22mm</td>
<td>29mm</td>
<td>35mm</td>
<td>22mm</td>
<td>29mm</td>
</tr>
<tr>
<td>Min. b/hole length (w/taper bar)</td>
<td>13mm</td>
<td>13mm</td>
<td>13mm</td>
<td>16mm</td>
<td>22mm</td>
<td>13mm</td>
<td>16mm</td>
</tr>
<tr>
<td>Max. sewing length</td>
<td>40mm</td>
<td>35mm</td>
<td>25mm</td>
<td>32mm</td>
<td>38mm</td>
<td>25mm</td>
<td>32mm</td>
</tr>
<tr>
<td>Min. sewing length</td>
<td>16mm</td>
<td>16mm</td>
<td>19mm</td>
<td>25mm</td>
<td>32mm</td>
<td>19mm</td>
<td>25mm</td>
</tr>
<tr>
<td>Clamp lift</td>
<td>9.5mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12.7mm</td>
</tr>
<tr>
<td>Needle</td>
<td>Cat. No. 1413</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looper (threaded)</td>
<td>#548232</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looper (non-threaded)</td>
<td>#548231</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop retainer (left)</td>
<td>#548205</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop retainer (right)</td>
<td>#544520</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thread trimmer</td>
<td>Needle thread</td>
<td></td>
<td>Needle thread, looper thread, gimp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubrication system</td>
<td>Semi-automatic lubrication system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil</td>
<td>Singer type ‘B’ oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working space (width)</td>
<td>300mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working space (behind needle)</td>
<td>53mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td>82 dB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>80 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>350x550x480 mm (Width x Length x Height)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The machine should be operated at a speed slower than maximum recommended speed depending on material and thread used and type of work being done.

Alteration may be made to design, dimensions and weight without notice.