SINGER

4411A/566A
1-NEEDLE, UNISON FEED LOCKSTITCH MACHINE
WITH AUTOMATIC THREAD TRIMMER

4412A/566A
2-NEEDLE, UNISON FEED LOCKSTITCH MACHINE
WITH AUTOMATIC THREAD TRIMMER

Please read this Instruction Manual carefully
before using the unit, in order to get the most
out of it and to enjoy using it for a long time.
Please keep this Instruction Manual at hand
taking care not to lose it.

INSTRUCTION MANUAL

BEFORE OPERATION

1. Do not operate the machine even for trial before lubrication it.
2. Confirm that the voltage and phase (single or 3-phase) are correct by checking them ag
   —ains the *tings shown on the motor nameplate.
3. When running your machine for the first time after the set-up, check the rotational
direction of the handwheel. *Turn on the power switch. Run the machine at a low spe
—ed while checking the rotational direction of the handwheel. (The handwheel should
turn counterclockwise as observed from the handwheel side.)
4. For the first month, run the machine at speed of 1000 rpm or less.

CAUTIONS IN OPERATION

1. Keep your hands away from the needle when you turn on the power switch or while the
   machine is operating.
2. During operation, be careful not to allow your or any other person’s head or finger
   to come close the handwheel, V-belt, bobbin winder or motor. Also, do not place any
   —thing close to them.
3. Do not turn the machine with the finger guard, beltcover or any other protectors remo
   ved.
4. Be sure to turn off the power switch and confirm that the motor is completely stopped
   before removing the V-belt.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Part</th>
<th>4411A/566A</th>
<th>4412A/566A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Heavy material</td>
<td></td>
</tr>
<tr>
<td>Sewing speed Max.</td>
<td>2000 (spm)</td>
<td></td>
</tr>
<tr>
<td>Stitch length</td>
<td>0-9 (mm)</td>
<td></td>
</tr>
<tr>
<td>Needle bar stroke</td>
<td>35 (mm)</td>
<td></td>
</tr>
<tr>
<td>Presser foot stroke</td>
<td>15 (mm)</td>
<td></td>
</tr>
<tr>
<td>Knee lifter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needle</td>
<td>8 (mm)</td>
<td></td>
</tr>
<tr>
<td>Lubricating oil</td>
<td>Machine oil (white spindle oil)</td>
<td></td>
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</tbody>
</table>

1. MOUNTING POSITION OF THE KNEE LIFTER

1) Insert knee lifter crank ① in the knee lifter shaft ②.
2) Attach knee lifter plate rod asm. ③ to the knee lifter crank ④.
2. LUBRICATION (1)

Fill the oil reservoir with oil up to "H" mark. Oil level should be periodically checked.
If oil level is found below "L" level, refill with fresh oil to "H" level.
Using oil is white spindle oil.

3. LUBRICATION (2)

Before starting the machine,

1.) Prior to operation, be sure to properly lubricate the points marked with the arrows.

When oiling all sections requiring lubrication, after installation of the machine has been completed, wait for a while (approximately 10 minutes) so that oil can penetrate each section sufficiently before starting continuous operation.

When starting the machine initially and after kept away for a long time without using at all, apply two or three drops of oil each section noted with an arrow mark, and to operate the machine continuously, apply two or three drops of oil each section whenever starting operation in the morning and in the afternoon.
4. OILING CONDITION

1) See dripping of oil during operation through the oil sight window to check oiling condition in the machine arm.

Oil sight window

5. REFUELING ADJUSTMENT OF THE HOOK

⚠️ CAUTION ⚠️

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

If it is necessary to change the amount of oil supplied to the hook, adjust it using knob (1).

- Turn the knob clockwise (in direction “+”) to increase the oil supplied, or turn it counterclockwise (in direction “-”) to decrease it.

Attention:
After adjusting the knob and molder, run using more than 30 seconds, confirm oil which scatters from the hook.

Decrease Increase
6. INSTALLATION OF NEEDLES

**CAUTION**

**Double Needle**

1) Turn the handwheel to move the needle b up to its highest position.
2) Loosen needle set screw 2, and hold needle in the long groove opp. each other. (For Double needle)
3) Insert the needle into the needle bar u -until it will go no further.
4) Securely tighten the needle set screws 2.

7. WINDING OF BOBBIN THREAD

**CAUTION**

**Thread guide**

- Tension of wound thread
  - Slack winding is recommended for polyester thread and nylon thread.
- Conically wound thread
  - Move the thread guide to wound small
  -er diameter of wound thread layer.
- Length of wound thread
  - Loosen the thread length adjusting screw to increase length of thread
  - Tighten the screw to decrease length of thread.

Bobbin should be filled with coil -radially wound thread up to 20% of bobbin capacity.

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CAUTION

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.
9. ADJUSTMENT OF STITCH LENGTH AND STITCH
REVERSING (TOUCH-BACK)

○ Stitch length setting dial
   Turn the dial (1).

○ Feed reverse lever
   How to operate
   1) Push feed reverse lever down.
   2) The machine performs reverse feed stitching as long as the lever is held depressed.
   3) When you release the lever, the machine resumes the normal stitching.

○ Touch-back button
   How to operate
   1) When the moment you press touch-back button, the machine performs reverse feed stitching as long as the button is held pressed.
   2) The machine continues reverse feed stitching as long as the touch-back button is held pressed.
   3) When you release the switch, the machine resumes normal stitching.

10. THREADING OF BOBBIN THREADS

[Diagram showing threading procedure]

CAUTION

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION
OF THE MOTOR BEFORE OPERATIONS.

○ Setting bobbin
   1) Pull out 5cm thread tail from the bobbin.
   2) Hold the bobbin so that the bobbin thread is wound in right direction and put it into the bobbin case.

○ Threading of bobbin threads
   Put bobbin thread into the slit (1). Pass under the loop (2) and extend it below the bed.

NOTE: Fit the bobbin in the bobbin case so that the bobbin turns in the direction of the arrow when the bobbin thread is pulled.
11. THREAD TENSION

**CAUTION**

Turn the switch off the power supply to prevent from unexpected injury. Be sure to confirm the stop of rotation of the motor before operations.

1. Adjusting the needle thread tension
   - Turn the thread tension adjusting nut clockwise to increase or counterclockwise to decrease the needle thread tension.

2. Adjusting the bobbin thread tension
   - Turn the tension adjusting screw clockwise to increase or counterclockwise to decrease the bobbin thread tension.

12. THREAD TAKE-UP SPRING

**CAUTION**

Turn the switch off the power supply to prevent from unexpected injury. Be sure to confirm the stop of rotation of the motor before operations.

- Adjusting the thread take-up spring stroke
  1. Loosen setscrew (1) and turn the adjusting plate (2).
  2. Turn the adjusting plate (2) to the right counterclockwise, increase its moving range.
  3. Turn the adjusting plate (2) to the left, decrease its moving range.

- Adjusting the thread take-up spring tension
  1. Loosen setscrew (1) and turn the tension stud (2) over toward left to increase tension.
  2. Turn it to the right, decrease tension.
  3. After adjustment, securely tighten the setscrew.

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1. Lift the hand lifter (1) toward (2), presser foot lifts 6 mm.

2. Using the knee lever, presser foot lifts 14 mm.

14. Adjusting the Presser Foot Pressure

1. Turn the presser spring regulator to the right to increase and to the left to decrease pressure.

15. Needle to Hook Relationship

⚠️ CAUTION ⚠️

Turn the switch off the power supply to prevent from unexpected injury. Be sure to confirm the stop of rotation of the motor before operations.

1. Set stitch length to "5" on the stitch length dial.

2. When needle is lifted 2.4 mm from the lowest position, the following positional relationship should be maintained:
   - The upper edge of needle eye should be 2.3 mm below the hook point.
   - The hook point should be located at the center of needle axis.
   - Gap between the hook point and the side face of needle should be 0.05 mm.

3. Needle rotating hook position can be adjusted as follows:
   - (For easy adjustment, it is recommended that the presser foot, throat plate, and feed dog assemblies are removed.)
16. ADJUSTMENT OF FEED FOOT HEIGHT

**CAUTION**

- TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

Position adjustment of hook point

1. Approximate position of hook point
   - A screw of hook should be found c lose to the needle when the needle is at "DOWN" position.
   - Loosen the set screw of large gear wheel and move the gear wheel in the axial direction within a range from 1 mm to 2 mm.

   **Note:** In the adjustment, do not excessively loosen set screws and always maintain meshing of hook shaft gear and lower shaft gear.

2. To finely adjust timing between the needle motion and hook motion, loosen the set screw of large gear wheel and move the gear wheel in the axial direction within a range from 1 mm to 2 mm.****

**Adjustment procedure**

1. Lean the machine head backward.
2. Turn the handwheel by hand and stop when the feed dog rises to the maximum height.
3. Loosen the feed bar set screw.
4. Vertically move the feed bar in the direction indicated by arrow in the direction indicated by arrow in the diagram to adjust it to adequate height.
5. After the adjustment, tighten the feed bar set screw.

The feed dog height is factory-adjusted as shown in the table.

<table>
<thead>
<tr>
<th>Model</th>
<th>A (mm)</th>
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<tbody>
<tr>
<td>441A/566A</td>
<td>1.2</td>
</tr>
<tr>
<td>4412A/566A</td>
<td>1.0</td>
</tr>
</tbody>
</table>
17. RELATIONSHIP BETWEEN ROTATING HOOK MOTION AND TAKE-UP LEVER MOTION

**CAUTION**

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

When the timing belt was removed for its replacement, for example, the relationship between rotating hook motion and take-up lever motion should be adjusted as follows:

1. Turn the handwheel and stop when the take-up lever is lifted to its top position.
2. Lean the machine head backward and make sure the arrow on the timing mark put on the timing belt is on line with the line on the boss of hook shaft bearing.
3. If the timing mark is not in line with the line on the boss, re-move the timing belt and install it again to adjust.

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18. RELATIONSHIP BETWEEN HOOK MOTION AND OPENER MOTION

**CAUTION**

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

1. Turn the handwheel by hand and stop, when the opener holder is located most remotely from the throat plate.
2. Make sure gap between the inner hook and the opener is approximately 0.2mm.
3. If the gap is too large or small, loosen the opener set screw and adjust position of the opener.
19. RELATIONSHIP BETWEEN NEEDLE MOTION AND FEED DOG MOTION

**CAUTION**

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

The feed dog should be adjusted so that the needle can plunge into the feed dog needle hole at the center of the hole.

1. Set stitch length to "0" on the stitch length setting dial.
2. Lean the machine head backward.
3. Loosen the feed shaft crank set screw 1 and 2.
4. Set the needle at the lowest position.
5. Adjust the distance between the pressure bar and the needle bar to be 0 mm and tentatively tight on the screws 1 and 2 of the feed shaft crank.
6. Set stitch length to "0" on the stitch length setting dial. Turn the handwheel toward. Match the hinge screw 3 with the feed shaft crank 2 in horizontally at most upper position.
   - If the connection is not at right position, remove the back cover, loosen the screw 1 and move the needle bar rocking rod 3 in the arrow direction, and adjust.
7. After the completion of adjustment, quickly tighten the screws 1, 2, and 3.

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11 mm vibration area
20. DIFFERENTIAL FEED MOUNT OF THE NEEDLE BAR FRAME

**CAUTION**

Turn the switch off the power supply to prevent from unexpected injury. Be sure to confirm the stop of rotation of the motor before operations.

1. Loosen hinge screw (A). As you move it in direction "B", the stroke of the needle bar frame is increased, and differential feed with respect to the feed dog is provided. As you move it in direction "D", the stroke is decreased.

Precaution

Be sure to make this adjustment within the needle hole in the feed dog.

2.1 RE-ENGAGE SAFETY CLUTCH MECHANISM

**CAUTION**

Turn the switch off the power supply to prevent from unexpected injury. Be sure to confirm the stop of rotation of the motor before operations.

1. Remove any foreign matter which may have lodged in hook. Do not use any sharp-edged tool.

2. Pressing button (D) and turn bar (E) wheel rearward slowly to re-engage safety clutch.
22. ADJUSTING THE WALKING FOOT

**CAUTION**

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

- **Alternate vertical motions of the walking foot and the presser foot**
  1) The alternate vertical stroke of the walking foot and the presser foot are normally equal.
  2) Depending on the type of material how even, the vertical stroke of the presser foot and walking foot should be changed.
  3) For instance, when sewing slippery material or sewing many overlapping sections, a better result may be obtained by adjusting the vertical stroke of the walking foot larger than that of the presser foot.
  1. Turn the handwheel by hand until the thread take-up reaches its lowest point.
  2. Lower hand lifter D.
  3. Loosen screw B.
  4. As you move top feed crank to the left (in direction A), the vertical stroke of the presser foot decreases 'D' whereas the vertical stroke of the walking foot increases 'G'.
  5. On the contrary, as you move the top feed crank to the right (in direction B), the vertical stroke of the walking foot becomes closer 'C' to that of the presser foot when the walking foot sole is in contact with the throat plate surface.
  6. After adjustment, securely tighten screw B.

- **Height of the walking foot and the presser foot**
  1) When sewing elastic material or overlap sections, a better result may be obtained by changing the height of the presser foot and walking foot.
  1. Loosen hinge screw C.
  2. When you move the cam rod boss toward 0 'A' within the slot, the height increases.
  3. When you move it toward 0 'B', the height is decreased.
  4. After adjustment, securely tighten hinge screw C.

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23. INSTALLATION OF MOVABLE KNIFE

⚠ CAUTION ⚠
TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM THE
EXPECTED INJURY, BE SURE TO CONFIRM THE STOP OF ROTATION
OF THE MOTOR BEFORE OPERATIONS.

1. Initial position of movable knife
   (1) Turn the handwheel and lower the see
       -die bar to the lowest position.
   (2) Push the cam follower crank so that
       the cam roller enters into the thread
       trimmer cam groove when the handwheel
       of the knife with red point meets the arm
       point.
   (3) Turn the handwheel until the mark po-
       int on the arm meets the white mark
       point on the handwheel.
       Set the cam follower crank at the pu-
       tation with a screwdriver temporarily,
       i.e., preventing the cam roller coming
       out from the cam groove.
   (4) Loosen the thread trimmer rocking or
       rack clamp bolts ⑩ and ⑪.
   (5) Adjust the movable knife so that the
       movable knife end want pitting prot-
       rudes ⑩ 0.5 mm from the fixed knife
       end, as shown in figure and tighten the
       bolts ⑩ and ⑪.

2. Gap between movable knife and inner hook stopper
   (1) Turn the handwheel by hand until see-
       die reaches the lowest position.
   (2) With the needle at the lowest posi-
       tion, depress cam follower crank, tur-
       the handwheel until the movable k-
       nife reaches the extremity of its a-
       troke.
   (3) Manually rotate the inner hook in th-
       e direction indicated by arrow in fig-
       ure and adjust gap between the mo-
      ovable knife and the inner hook stop-
       per to about 0.2 mm (the screws ③
       and ⑤ should be loosened for this ad-
       justment.)
24. ADJUSTMENT OF THREAD TRIMMER CAM

⚠️ CAUTION ⚠️
TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

(1) Turn the handwheel by hand until the needle reach the lowest position.

(2) Maintaining the needle position, depress the cam follower crank and put the cam roller into the groove of the thread trimmer cam.

(3) Turning the handwheel by hand, adjust the thread trimmer cam so that the movable knife starts moving when the green mark point on the handwheel comes in line with the mark point on the arm.
To adjust, loosen two thread trimmer cam clamp screws A.

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Cam follower crank
Screw A
Thread trimmer cam
Cam roller
Cam groove
25. ADJUSTMENT OF THREAD TENSION REGULATOR

⚠ CAUTION

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

1. Turn the handwheel by hand until the needle reaches the lowest position.
2. Maintaining the needle position, express the cam follower crank and put the cam roller into the groove of thread trimmer cam.
3. Turning the handwheel by hand, adjust the thread tension release cam so that the tension disc closes when the white mark point on the hand wheel comes in line with the mark point on the arm.
4. To adjust, loosen two tension release cam, as shown in Fig. The screws, and draw the wire.
5. Make fine adjustment by loosening the nut.

26. ADJUSTMENT OF MESHING PRESSURE OF MOVABLE KNIFE AND FIXED KNIFE

⚠ CAUTION

TURN THE SWITCH OFF THE POWER SUPPLY TO PREVENT FROM UNEXPECTED INJURY. BE SURE TO CONFIRM THE STOP OF ROTATION OF THE MOTOR BEFORE OPERATIONS.

1. Loosen the fixed knife bracket clamped by a hexagon socket head cap screw.
2. Turn the vertical position adjusting screw to adjust meshing pressure and then tighten the hexagon socket head cap screw.

Note: Excess pressure causes large torque to the thread trimming part. If the thread trimming part is damaged, adjust it so that the thread trimming part can be trimmed with minimum pressure.

3. Move the movable knife and check that the thread can be sharply trimmed.
**CAUTION**

Turn the switch off the power supply to prevent from unexpected injury. Be sure to confirm the stop of rotation of the motor before operations.

1. Replace the throat plate, feed dog and needle clamp.
   (Since the throat plate and feed dog are special parts designed for thread trimming machine, be sure to use those specified by us.)
2. Lean the machine head backward.
3. Loosen two connecting link clamp bolts①.
4. Remove the spring②.
5. Loosen the hook bracket clamp screws③ and ④ and adjust gap between each needle and hook.
6. When the needles and hooks have been adjusted, install the spring②.
7. Contact the rocking cranks⑥ and ⑦ to the stopper pins⑧ and ⑨ and tighten the connecting link clamp bolt⑩.
8. Turn the handwheel by hand until the needles reach the lowest position.
9. Loosen the nut⑪ and ⑫.
10. Depress the cam follower crank⑬ and adjust the connecting rod⑭ so that the cam roller can smoothly enter the groove of thread trimmer cam. Then tighten the nut⑪ and ⑫.
11. Adjustment of the cam groove and the cam roller.
   a. Push the cam follower crank⑬ so that the cam roller enters into the cam groove.
   b. Turn the connecting rod⑭ and adjust the clearance between the cam roller and the cam groove surface⑬ as small as possible, and tighten the nuts⑪ and ⑫.
   c. Push the cam follower crank⑬ again and check that the cam roller enters into the thread trimmer cam groove smoothly.

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Cam follower crank

Thread trimmer cam

Cam groove surface⑬

Lower shaft

Cam follower crank

Thread trimmer cam

Cam follower crank⑬

Lower shaft

Thread trimmer

Screw⑬

Cam groove surface⑬

Connecting link

Screw⑬

Bolt⑬

Stopper pin②

Hook bracket

Screw⑬

Nuts⑬

Connecting rod⑭}

1. ---
<table>
<thead>
<tr>
<th>Trouble Description</th>
<th>Cause</th>
<th>Corrective Measures</th>
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<tbody>
<tr>
<td>Thread breakage (thread fray or wears out)</td>
<td>1. Thread path, needle point, bobbin case positioning finger has scratches. 2. The needle thread tension is too high. 3. The needle hits the hook point. 4. Lubrication to hook is inadequate. 5. The needle thread tension is too low. 6. The thread take-up spring has an excessively high tension while it has an excessively small stroke. 7. The timing between the needle and hook is too early or late.</td>
<td>1. Remove the scratches on the hook point using a fine sandpaper. Buff the bobbin case positioning finger. 2. Properly adjust the needle thread tension. 3. See &quot; Needle to Hook Relationship&quot;. 4. Properly adjust the lubrication. See &quot; NEEDLE TO HOOK ADJUSTMENT OF THE HOOK&quot;. 5. Properly adjust the needle thread tension. 6. Decrease the tension, and increase the stroke. 7. See &quot; Needle to Hook Relationship&quot;.</td>
</tr>
<tr>
<td>Needle thread remains 2 to 3 cm. on the wrong side of the cloth</td>
<td>1. The clearance between the needle hook point and the is too large. 2. The timing between the needle and hook is too early or late. 3. The presser foot pressure is too low. 4. The clearance between the top edge of the needle plate and the hook point is not correct. 5. The size of the needle is wrong. 6. A synthetic fiber thread or thin thread is used.</td>
<td>1. See &quot; Needle to Hook Relationship&quot;. 2. See &quot; Needle to Hook Relationship&quot;. 3. Increase the presser foot pressure. 4. See &quot; Needle to Hook Relationship&quot;. 5. Replace the needle by one which one grade thicker. 6. Wind the thread round the needle as illustrated.</td>
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<tr>
<td>Stitch skipping</td>
<td>1. The thread has not been passed through the notch of the bobbin case tension spring. 2. The thread path is poorly finished. 3. The bobbin does not rotate smoothly. 4. The bobbin thread tension is too low. 5. The bobbin thread has been wound too tight.</td>
<td>1. Properly thread the bobbin case. 2. Grind it using a fine sand paper of a buff. 3. Replace the bobbin or hook. 4. Properly adjust the tension. 5. Decrease the bobbin thread winding tension.</td>
</tr>
<tr>
<td>Loose stitches</td>
<td>1. The tension of the auxiliary thread tension controller is too high. 2. The thread trimming timing is too early. 3. The returning force of the thread take-up spring is too high.</td>
<td>1. Decrease the tension. 2. See &quot; ADJUSTMENT OF THREAD TENSION REGULATOR&quot;. See &quot; NEEDLE TO HOOK ADJUSTMENT&quot;. 3. Adjust the high of the thread take-up spring.</td>
</tr>
<tr>
<td>The thread slips off the needle -ile up on being trimmed</td>
<td>1. The last stitch has been skipped. (The clearance between the needle and the hook is too large.)</td>
<td>1. See &quot; Needle to Hook Relationship&quot;.</td>
</tr>
<tr>
<td>The needle thread -ad cannot be trimmed smoothly</td>
<td>1. The thread trimming timing is wrong. 2. The knife has been damaged. 3. The knife pressure is inadequate. 4. The home position of the movable knife is inaccurate. 5. The movable knife fails to work. 6. The thread trimming solenoid fails to work.</td>
<td>1. See &quot; ADJUSTMENT OF THREAD TRIMMER UNIT&quot;. 2. Replace the knife. 3. Increase the knife pressure. 4. See &quot; ADJUSTMENT OF THREAD TRIMMER UNIT&quot;. 5. Check it by actuating it by hand. 6. Check the motor solenoid or propeller operation.</td>
</tr>
<tr>
<td>Both needle and bobbin thread cannot be trimmed smoothly</td>
<td>1. The thread trimming timing is wrong. 2. The knife pressure is inadequate. 3. The knife blade is blunt.</td>
<td>1. See &quot; ADJUSTMENT OF THREAD TRIMMER UNIT&quot;. 2. Increase the knife pressure. 3. Replace the knife.</td>
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