

Sewing Machine Troubleshooting Chart
Compiled from various sources

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Upper (Needle) Thread Breaks

- Cause:** The tension of the upper thread is too tight.
Solution: Loosen the tension of the upper thread by turning the Tension Nut counter-clockwise.
- Cause:** The machine is not threaded correctly.
Solution: Check whether the upper thread runs correctly from the spool of thread to the Needle.
- Cause:** The upper thread is of poor quality. The thread may be too weak or it may be rotten due to improper storage and does not withstand the tension imposed on it. The thread may also be too hard and not possess the necessary elasticity.
Solution: Loosen the tension of the upper thread by turning the Tension Nut counter-clockwise. If possible, replace the inferior thread with one of good quality
- Cause:** The upper thread is of irregular thickness and has small knots which cannot pass through the eye of the needle.
Solution: Replace the inferior thread with one of good quality.
- Cause:** The upper thread has wrapped itself around the spool pin on top of the machine.
Solution: Unwind the thread from the spool pin. Eventually, place a felt washer underneath the spool of thread. If necessary, remove some of the thread from the full spool.
- Cause:** The upper thread is held back somewhere on its way from the spool of thread to the needle.

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Solution: Examine the string of thread from the spool to the needle and eliminate any interference with the free motion of the thread.

7. **Cause:** The upper thread curls around itself before entering the tension disks.
Solution: Place a felt washer underneath the spool of thread. If necessary, remove some of the thread from the full spool.
8. **Cause:** The eye of the needle is rough or sharp, or the grooves in the needle are too shallow.
Solution: Insert a new needle.
9. **Cause:** The needle is not straight.
Solution: Insert a new needle.
10. **Cause:** The needle is too fine for the upper thread and for the fabric being sewn.
Solution: Consult the Needle and Thread chart in the manual and insert a needle of the correct size.
11. **Cause:** The upper thread is too coarse for the size of needle that is being used.
Solution: Consult the Needle and Thread chart in the manual and select a thread of the correct thickness.
12. **Cause:** The needle is not inserted correctly in the machine. The needle grooves do not line up correctly.
Solution: Insert the needle so that the short groove faces the point of the hook.
13. **Cause:** The needle is threaded incorrectly.
Solution: Thread the needle so that the thread passes through the eye of the needle from the long groove to the short groove of the needle.
14. **Cause:** The wrong type of needle is inserted.
Solution: Consult the Instruction Manual and replace needle with the one recommended for the machine.
15. **Cause:** The needle is bent and rubs against the stitch hole in the needle plate.
Solution: Check whether the needle is bent and replace it, if necessary with a new needle.
16. **Cause:** The operator pulls the fabric in the direction of sewing. The Feed Dog cuts the upper thread.

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Solution: The fabric must not be pulled during sewing. The machine alone must feed the fabric.

17. **Cause:** The machine is started at full speed.
Solution: Start the machine at low speed and increase speed gradually.
18. **Cause:** The machine is started with the thread take-up not in its highest position.
Solution: Start the machine with the thread take-up lever in its highest position.
19. **Cause:** The bobbin is bent and cannot revolve freely in the bobbin case.
Solution: Replace the defective bobbin with a new one.
20. **Cause:** Bobbin is wound too full.
Solution: Remove some of the thread from the bobbin.
21. **Cause:** Thread is wound unevenly around the bobbin.
Solution: Replace the bobbin with one wound correctly.
22. **Cause:** The lower end of the needle bar is bent. The needle strikes the presser foot, the throat plate, the feed dog, or the hook.
Solution: Turn the balance wheel by hand. If the machine turns easily, bring the needle bar to its lowest point and tap lightly with a hammer until the needle goes through the center of the stitch hole in the feed dog.
23. **Cause:** The throat plate is not held firmly in place and shifts around. The needle strikes the side of the stitch hole in the throat plate.
Solution: Tighten firmly the screws holding the throat plate to the machine.
24. **Cause:** The feed dog is not held firmly in place and shifts around. The needle strikes the side of the stitch hole in the feed dog.
Solution: Tighten firmly the screws holding the feed dog to the machine.
25. **Cause:** The needle is not pushed up entirely in the needle bar or in the needle clamp.
Solution: Push the needle up entirely in the needle bar. Tighten firmly the screw that holds the needle.
26. **Cause:** The needle is not held securely in the needle bar. The needle shifts slightly up and down.
Solution: Make sure the needle is pushed up entirely in the needle bar. Tighten firmly the screw that holds the needle.

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27. **Cause:** The bobbin case latch does not close entirely due to accumulation of dirt and lint underneath. The upper thread is prevented from sliding freely around the bobbin case and breaks.
Solution: Remove dirt and lint under the latch. Clean the entire bobbin case thoroughly with a small brush dipped in kerosene.
28. **Cause:** Lint or dirt has accumulated in the circular groove on top of the center post of the bobbin case holder (shuttle). The center post is the part upon which the bobbin case is placed. Due to the accumulation of dirt or lint, the bobbin case latch does not close entirely; the upper thread is prevented from sliding freely around the bobbin case and breaks.
Solution: Remove the dirt or lint from the circular groove of the center post. Clean bobbin case holder thoroughly with a small brush dipped in kerosene.
29. **Cause:** The feed dog is timed too early. Excessive tension of the upper thread is required to eliminate the small loops of thread which appear on the fabric. The excessive tension causes the upper thread to break.
Solution: See whether loops of thread appear on the underside of the fabric. If increased tension of the upper thread does not eliminate these loops, adjust timing of the feed dog.
30. **Cause:** The thread take-up spring is not adjusted correctly and does not take up the slack of the upper thread. The needle pierces and tears the upper thread.
Solution: Adjust the take-up spring. There must be no thread under the point of the needle when the needle is about to enter the fabric.
31. **Cause:** The thread take-up spring is bent out of shape or broken.
Solution: Bend the deformed spring back to its proper shape, if possible. Replace a badly defective or broken spring with a new one.
32. **Cause:** The loop of the upper thread twists around itself below the throat plate, forming two small loops. The point of the hook enters both loops, causing the upper thread to break.
Solution: The point of the hook is too close to the needle. Adjust the clearance between the needle and the point of the hook so that the point of the hook is as close as possible to the needle without touching it.
33. **Cause:** The hook has burrs, rough spots, or sharp edges that cut the upper thread. The point of the hook may be blunt or damaged.
Solution: All portions of the hook that come in contact with the upper thread must be perfectly smooth. Smoothen the defective portions of the hook with an oilstone or fine emery cloth, then polish with crocus cloth or on a buffing wheel. If the point of the hook is damaged to a minor degree, sharpen it with a fine emery stone and polish with crocus cloth or on a buffing wheel. The material must not be taken off the side of the hook point

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that faces the needle. If the hook point is defective beyond repair, replace the old hook with a new one.

34. **Cause:** The head of the screw used for adjusting the tension of the bobbin case protrudes too far beyond the tension spring. This causes the upper thread to catch and break.
Solution: Adjust the screw so that the upper thread can slide smoothly over it. If necessary, remove some material from the head of the screw by grinding or filing. Polish the head of the screw after this correction. If a new screw can be obtained, replace the faulty screw with a new one.
35. **Cause:** The top surface of the bobbin case is damaged, or has burrs or rough spots preventing the upper thread from sliding smoothly around the bobbin case.
Solution: All portions of the bobbin case that come in contact with the upper thread must be perfectly smooth. Smoothen the defective portions of the bobbin case with an oilstone or fine emery cloth, then polish with crocus cloth or on a buffing wheel.
36. **Cause:** The small coil spring inside the bobbin case which presses against the bobbin case latch is either broken or has become weak, compressed, or clogged with dirt and lint. The bobbin case latch no longer closes entirely and catches the thread.
Solution: Remove the latch and latch lever from the bobbin case, then remove the spring with a needle. Clean the spring and stretch it somewhat, then replace in the bobbin case. If the spring is broken, badly deformed, or too weak, replace it with a new spring.
37. **Cause:** The bobbin case holder (shuttle) may have rough spots or sharp edges that cut the thread.
Solution: Smoothen the defective parts with an oilstone or fine emery cloth, and then polish with crocus cloth or on a buffing wheel.
38. **Cause:** The hook or bobbin case may be misshapen and not permit the thread to slide freely around these parts.
Solution: Remove the slide plate from the machine, turn the balance wheel by hand, and observe how the upper thread slides around the hook or bobbin case. Take those parts out of the machine and with fine emery cloth, remove any excess material from those portions where the upper thread gets caught. Polish these portions with crocus cloth or on a buffing wheel. If not successful, replace the defective part.
39. **Cause:** The hook is not adjusted (timed) correctly in relation to the needle.
Solution: Adjust the machine so that the point of the hook enters the loop of the upper thread at the correct time. For timing, follow this general rule: The needle must have risen about 3/32 of an inch from its lowest position at

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the moment the point of the hook is just at the center of the rising needle. At this moment, the point of the hook must be about 1/16 of an inch above the eye of the needle.

40. **Cause:** Some of the parts along which the upper thread passes (thread guides, tension discs, thread take-up spring, take-up lever, etc.) have become rough or sharp and possess deep, sharp grooves.
Solution: With fine emery cloth or emery cord remove all rough or sharp portions and grooves. If these parts are too badly worn, replace them with new parts.
41. **Cause:** The top edge and inside of the stitch hole in the feed dog have become rough, sharp, or chipped. This may be due to wear or broken needles.
Solution: Smoothen the stitch hole with fine emery cord. If the damage is excessive, replace the feed dog with a new one.
42. **Cause:** The needle is too close to the edge of the slot (or stitch hole) in the presser foot and rubs against the presser foot.
Solution: Check the straightness of the needle and replace it if necessary. If the presser foot is not correctly aligned, loosen the screw that holds the presser bar in position; turn the presser bar until the needle goes through the center of the slot (or hole in the presser foot; tighten the screw firmly.
43. **Cause:** The needle is too close to the hook and rubs against the point of the hook.
Solution: Check the straightness of the needle and replace it if necessary. If the new needle still touches the point of the hook, adjust the clearance between needle and hook by moving the hook somewhat from the needle. The point of the hook should be as close as possible to the needle without touching it.
44. **Cause:** The portions of the presser foot close to which the needle passes are rough, sharp, or chipped.
Solution: Remove the presser foot and smoothen the defective portions with fine emery cloth. Polish them afterward with crocus cloth.
45. **Cause:** The balance wheel revolves in the wrong direction.
Solution: The feed dog must move the fabric away from the operator. Observe the feed dog and change direction of the motor so that the above requirement is met.
46. **Cause:** Sometimes the fabric being sewn causes breakage of the upper thread.
Solution: Experiment with various grades of thread and with different thread tensions.

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47. **Cause:** A needle thread of the wrong twist is used, causing the thread to unravel or break
Solution: Use needle thread with twist recommended for the machine in use. Left twist thread is required for single needle machines.

The Needle Breaks

1. **Cause:** The operator pulls the fabric during sewing. The Needle strikes the presser foot or throat plate and bends or breaks.
Solution: The fabric must not be pulled during sewing. The machine alone must feed the fabric.
2. **Cause:** Some portions of the fabric are too hard or too thick. The Needle bends or breaks.
Solution: Sew SLOWLY over such hard or thick portions of the fabric. If necessary, use a heavier Needle.
3. **Cause:** The Needle has a blunt point and cannot penetrate the fabric.
Solution: Replace the blunt Needle with a new one that is pointed correctly.
4. **Cause:** The Needle is held loosely in the Needle Bar.
Solution: Insert a new Needle and make certain to tighten the needle clamping screw firmly.
5. **Cause:** The Needle is bent and strikes the Presser Foot or the feed dog.
Solution: Replace the defective Needle with a new straight Needle.
6. **Cause:** The Needle is too long and hits the Bobbin Case.
Solution: Replace the wrong Needle with one of correct length.
7. **Cause:** The Needle is set too low.
Solution: Insert a new Needle and push it entirely up into the Needle Bar. If the Needle Bar is set too low, adjust it correctly.
8. **Cause:** The stitch hole in the Feed Dog is too small for the Needle in use.
Solution: Select a Feed Dog with a sufficiently large stitch hole. The Needle must go through the center of the stitch hole.
9. **Cause:** The Throat Plate is not held firmly in place. Its screws are not tightened securely. The Throat Plate shifts around and is being hit by the Needle.
Solution: Locate the Throat Plate correctly and tighten firmly the throat plate screws.

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10. **Cause:** The Presser Foot is not attached firmly to the Presser Bar and shifts sideways. The Needle hits the Presser Foot.
Solution: Tighten firmly the Presser Foot Screw.

11. **Cause:** The Presser Foot is not lined up correctly in the machine and is being struck by the Needle.
Solution: Line up the Presser Foot as follows: Loosen the screw that holds the Presser Bar in position. This screw is located behind the Face Plate of the machine. Now turn the Presser Bar until the Needle goes through the center of the slot (or of the stitch hole) in the Presser Foot. Tighten firmly the above screw after this adjustment.

Cause: The Hinge Type Presser Foot, when installed, is worn excessively. The lower portion (plate) of the Presser Foot has too much looseness and shifts sideways, causing the Needle to strike it.
Solution: Replace the worn Presser Foot with a new one.

13. **Cause:** The upper thread is too heavy for the Needle in use. The Needle bends, strikes the Throat Plate or Feed Dog and breaks.
Solution: Replace the wrong Needle with a correct one, or change the size of the upper thread. Consult the Needle and Thread" chart.

14. **Cause:** The upper thread has knots that cannot pass through the eye of the Needle.
Solution: Replace the inferior thread with one of good quality.

15. **Cause:** There is not sufficient pressure on the Presser Foot while sewing heavy fabrics.
Solution: When sewing heavy fabrics, increase the pressure on the Presser Foot.

16. **Cause:** The user of the machine removes the fabric from underneath the Presser Foot without releasing the upper thread tension.
Solution: Every time the fabric is withdrawn from the machine, the Presser Bar must be raised to its highest position by means of the Presser Bar or knee Lifter. This will release the tension of the upper thread. The fabric must always be withdrawn AWAY from the operator.

17. **Cause:** The Needle is still in the fabric while the operator tries to remove the material from the machine.
Solution: The Needle must always have risen ABOVE the fabric before the material is removed from the machine.

18. **Cause:** Dirt in the Needle Clamp prevents the Needle from stitching straight into the fabric.

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Solution: Remove all dirt from the Needle Clamp, insert a new straight Needle and tighten firmly the screw that holds the Needle.

19. **Cause:** The lower end of the Needle Bar is bent. The Needle, therefore, does not stitch straight into the fabric.
Solution: If the machine still turns easily, bring the Needle Bar up to its highest position and tap its lower end lightly with a hammer until the straight Needle goes through the center of the stitch hole in the feed dog. If the machine turns heavily, remove the bent Needle Bar and replace it with a new one.
20. **Cause:** The Needle Bar or the Bearings of the Needle Bar are worn excessively. The Needle Bar sways sideways; the Needle strikes the Presser Foot, the Feed Dog or the Throat Plate and breaks.
Solution: Replace the worn Needle Bar or the worn Needle Bar Frame with new parts.
21. **Cause:** The Thread Take-up Spring (Check Spring) is not adjusted correctly. It exerts too much pull on the upper thread at the moment the Needle enters the fabric. The Needle bends, strikes the feed dog, etc. and breaks.
Solution: Adjust the Thread Take-up Spring. The loop of this spring must have finished its upward motion at the moment the Needle enters the fabric.
22. **Cause:** The Thread Take-up Lever is not adjusted correctly and pulls the upper thread at the moment the Needle enters the fabric. The Needle bends, strikes the feed dog, etc. and breaks.
Solution: Adjust the Thread Take-up Lever. This lever must move downward and "give" thread when the Needle enters the fabric.
23. **Cause:** The point of the Loop Taker is too close to the Needle.
Solution: Adjust the clearance between the Needle and the Loop Taker by moving the Loop Taker somewhat away from the Needle. The point of the Loop Taker should be set as close as possible to the Needle without touching it.
24. **Cause:** There is no material between Presser Foot and Throat Plate during sewing. The thread gets en-tangled below the Throat Plate and the Needle breaks.
Solution: Make certain that there is always material between Presser Foot and Throat Plate during sewing.

Lower Thread (Bobbin Thread) Breaks

1. **Cause** The tension of the lower thread is too tight.
Solution: Loosen the tension of the Tension Spring on the Bobbin Case by means of the Tension Adjusting Screw.

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2. **Cause:** The Bobbin Case is threaded incorrectly.
Solution: Thread the Bobbin Case correctly.
3. **Cause:** The Bobbin is wound too full and cannot revolve freely in the Bobbin Case.
Solution: Remove some of the thread so that the Bobbin can revolve freely in the Bobbin Case.
4. **Cause:** Lint or dirt have accumulated in the Bobbin Case, thus preventing the Bobbin from revolving freely.
Solution: With a pointed pin remove lint and dirt from these parts. Clean with kerosene, and then dry thoroughly.
5. **Cause:** The Bobbin (inserted in the Bobbin Case) is bent and cannot revolve freely.
Solution: Replace the defective Bobbin with a new one.
6. **Cause:** The edges of the bobbin flanges are rough, sharp, or have nicks.
Solution: Remove the Bobbin and smoothen the defective portion with an oilstone. If badly defective, replace the old Bobbin with a new one.
7. **Cause:** The edges of the Tension Spring on the Bobbin Case are rough or sharp. The thread has cut a groove into the Tension Spring.
Solution: Smoothen, if possible, the defective portion of the spring with an oilstone. If the damage is too severe or if the thread has worn a deep groove in the underside of the Tension Spring, replace the old spring with a new one.
8. **Cause:** Lint, dirt or a piece of thread has accumulated underneath the Tension Spring of the Bobbin Case.
Solution: Remove the Tension Spring. Clean all parts with kerosene then dry them thoroughly. Replace the Tension Spring and adjust it correctly.
9. **Cause:** The pressure upon the fabric is too heavy.
Solution: Reduce the pressure upon the Presser Foot.
10. **Cause:** The lower thread runs incorrectly from the Bobbin Case up through the stitch hole of the feed dog. This causes the lower thread to be caught and torn by the point of the Loop Taker (hook). This may happen if either the Bobbin Case is damaged and cannot be seated correctly in the machine, or if the Hook is damaged in a manner so as to prevent the Bobbin Case from being seated correctly.
Solution: Remove the Slide Plate and observe how the lower thread runs from the Bobbin Case to the underside of the feed dog. Replace the defective part (Bobbin Case), if the damage cannot be repaired.

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11. **Cause:** The lower thread runs incorrectly from the Bobbin Case up through the stitch hole of the feed dog and is caught and pierced by the Needle.
Solution: Remove the Slide Plate and observe how the lower thread runs from the Bobbin Case, to the underside of the feed dog. Check also whether the Needle is of correct length and whether it is inserted properly in the Needle Bar. Eliminate any interference of the Needle with the lower thread by either exchanging the wrong Needle with a correct one, by pushing the correct Needle entirely up in the Needle Bar or by adjusting the Needle Bar upward in the machine, if it is set too low.
12. **Cause:** The stitch hole in the feed dog has rough spots or sharp edges.
Solution: Smoothen the stitch hole in the feed dog with fine emery cord.
13. **Cause:** The end of the small screw, inside of the Bobbin Case, presses against the Bobbin and prevents it from revolving freely.
Solution: If this small screw has become loose, tighten it firmly. If the trouble still persists, remove the screw and carefully file or grind off part of the material from the end of this screw until the Bobbin revolves freely. If necessary, replace the defective screw with a new one.
14. **Cause:** There may be rough or sharp spots at any of the holes, slots and edges of the Bobbin Case, where the lower thread passes.
Solution: With fine emery cloth or with emery cord smoothen these defective portions, and then polish them with crocus cloth or on a buffing wheel
15. **Cause:** The Feed Dog is adjusted too low. The lower thread catches somewhere on the Feed Dog and breaks.
Solution: Adjust the Feed Dog to its correct position by raising somewhat the Feed Bar to which the Feed Dog is attached.
16. **Cause:** The Feed Dog has a rough or sharp spot somewhere at its underside. The lower thread, sliding over this defective portion, breaks.
Solution: Smoothen the defective portion of the Feed Dog with an oilstone or with fine emery cloth. Polish with crocus cloth.
17. **Cause:** The teeth of the Feed Dog are too sharp and cut the lower thread.
Solution: With a flat oilstone or with a strip of fine emery cloth, which is folded over a flat file, gently remove the keen sharpness from the teeth of the Feed Dog.
18. **Cause:** There are rough spots or sharp edges somewhere below the bed of the machine where the lower thread passes.

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Solution: Examine all parts along which the lower thread passes. Smoothen any defective portions with fine emery cloth and polish them with crocus cloth.

19. **Cause:** The lower thread is of poor quality. The thread may be too weak or rotten due to improper storage. The thread may have small knots that cannot pass underneath the Tension Spring of the Bobbin Case.
Solution: Replace the inferior thread with one of good quality.

Loop. or Knot. on Top Surface of Fabric.

The upper thread lies straight on the top surface of the fabric and the lower thread appears there in form of small knots.

1. **Cause:** The tension of the upper thread is too tight or the tension of the lower thread is too weak.
Solution: Loosen the tension of the upper thread or tighten the tension of the lower thread, until the tensions of both threads are correctly balanced.
2. **Cause:** The Tension Spring of the Bobbin Case is bent out of its proper shape. This condition does not provide sufficient tension of the lower thread.
Solution: Try to correct the deformed spring by carefully r~shaping it with a small round-nosed pliers. If not successful, replace the defective spring with a new one.
3. **Cause:** Lint, dirt, or pieces of thread have accumulated underneath the Tension Spring of the Bobbin Case.
Solution: Remove the Tension Spring. Clean the spring and the Bobbin Case, then replace the spring and adjust it correctly.
4. **Cause:** Rusty or rough spots between the Tension Discs.
Solution: Remove rusty or rough spots with fine emery cloth and polish with crocus cloth. Replace badly defective Tension Discs with new ones.

Loops or Knots on the Underside of the Fabric

The lower thread lies straight on the underside of fabric and the upper thread appears there in form of loops or small knots.

1. **Cause:** The tension of the upper thread is too weak or the tension of the lower thread is too tight.
Solution: Tighten the tension of the upper thread, or loosen the tension of the lower thread, until the tensions of both threads are correctly balanced.
2. **Cause:** There are dirt, lint or pieces of thread between the Tension Discs.
Solution: Take apart the upper tension, clean the Tension Discs thoroughly, then replace the upper tension and adjust it correctly.

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3. **Cause:** The upper thread has cut deep grooves into the Tension Discs.
Solution: Replace the defective Tension Discs with new ones.
4. **Cause:** The Bobbin Case is not threaded correctly. The Bobbin unwinds itself in the wrong direction.
Solution: Thread the Bobbin Case correctly.
5. **Cause:** The head of the Tension Adjusting Screw of the Bobbin Case protrudes too much and catches and retards the upper thread.
Solution: Adjust this screw correctly. If this condition continues to persist, smoothen the head of this screw with fine emery cloth or replace the defective screw with a new one.
6. **Cause:** The stitch hole in the Throat Plate or Feed Dog is too small.
Solution: Replace the Throat Plate or Feed Dog with one that has a larger stitch hole.
7. **Cause:** The point of the Needle is bent over ("hooked point").
Solution: Replace the defective Needle with a new one.
8. **Cause:** The Bobbin is not evenly wound. It unwinds itself irregularly.
Solution: Replace the Bobbin with one that is wound evenly.
9. **Cause:** The Bobbin is damaged or bent and does not revolve freely and evenly.
Solution: Replace the defective Bobbin with a new one.
10. **Cause:** Lint or dirt in the Bobbin Case prevents the Bobbin from revolving freely.
Solution: With a pointed pin remove all dirt from this part. Clean with kerosene and dry thoroughly before replacing in the machine.
11. **Cause:** The needle is not correctly timed in relation to the Loop Taker (Hook).
Solution: Make certain that the Needle is pushed all the way up into the Needle Bar and held there firmly. Adjust the point of the Loop Taker in relation to the Needle. For "Timing" follow this general rule: The Needle must have risen about 3/32 of an inch from its lowest position at the moment the point of the Loop Taker is just at the center of the rising Needle. At this moment the point of the Loop Taker must be about 1/16 of an inch above the eye of the Needle.
12. **Cause:** There is insufficient clearance between the Bobbin Case Holder and the Bobbin Case Holder Position Bracket in horizontal axis Rotary Hook Machines. On vertical axis rotating hook types may be insufficient clearance

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between tab extending from Bobbin Case to the left and the notch at the underside of the Throat Plate.

Solution: Turn the machine by hand and observe where the upper thread gets caught.

Increase the clearance, where required, by carefully removing material from the component parts of the machine (by means of fine emery cloth).

Smoothen the repaired portions with crocus cloth. The heaviest thread to be used must pass freely between these parts.

13. **Cause:** The mechanism for releasing the upper thread tension is incorrectly adjusted. It releases the tension of the upper thread too early.

Solution: Adjust this mechanism so that the tension of the upper thread is released only during the last moment of the upward motion of the Presser Bar Lifter.

14. **Cause:** The upper thread gets caught somewhere below the Throat Plate.

Solution: Examine Hook and Bobbin Case with regard to rough spots which may catch the upper thread and retard it, thus causing the loops on the underside of the fabric. Eliminate all rough spots with the aid of an oilstone or with fine emery cloth, and then polish these portions with crocus cloth or on a buffing wheel.

15. **Cause:** The Thread Take-up Spring (Check Spring) is not adjusted and does not work properly.

Solution: Adjust the Thread Take-up Spring until it has the correct tension and its upward motion is just finished at the moment the Needle enters the fabric.

Skipping Stitches

1. **Cause:** The machine is not threaded correctly.

Solution: Check whether the upper thread runs correctly from the spool of thread to the Needle.

2. **Cause:** An incorrect Needle is used in the machine. The Needle may be too short or too long.

Solution: Remove the wrong Needle and insert a Needle recommended for the machine in use.

3. **Cause:** The Needle is inserted incorrectly in the Needle Bar. The eye of the Needle is turned in the wrong direction.

Solution: Insert the Needle so that its eye is at a right angle with the direction of sewing and the short groove of the Needle faces the point of the Loop Taker (Hook).

4. **Cause:** The Needle is bent and does not stitch straight into the fabric.

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Solution: Replace the bent Needle with a new straight needle.

5. **Cause:** Lint or dirt in the Needle hole prevent the Needle from stitching straight into the fabric.
Solution: Remove lint and dirt from the Needle Clamp, insert a new straight Needle and tighten firmly the screw which holds the Needle.
6. **Cause:** The Needle is too close to the edge of the stitch hole in the Feed Dog and even strikes the edge of this hole.
Solution: Check whether the Needle is bent. Replace a bent Needle with a new straight Needle. Check also whether the Feed Dog Screws are loose and tighten these screws firmly, if necessary.
7. **Cause:** The stitch hole in the Feed Dog is too large.
Solution: Replace the Feed Dog with one that has a smaller stitch hole.
8. **Cause:** The grooves in the Needle are clogged with dirt and do not permit the loop of the upper thread to form properly.
Solution: Clean the Needle with a soft rag. Be careful not to bend the Needle.
9. **Cause:** The slot (or the stitch hole) in the Presser Foot is too wide (or the stitch hole is too large). This causes the rising Needle to carry the fabric with it when sewing over thin fabrics, thus preventing the loop of the upper thread to form properly.
Solution: Replace the incorrect Presser Foot with one having a correct slot (or stitch hole).
10. **Cause:** If a one-piece Presser Foot is used, the foot, when sewing from thick to thin fabrics, or conversely, does not hold the fabric down firmly.
Solution: Hold the fabric down by hand while sewing, or replace the one-piece Presser Foot with a Hinged Presser Foot.
11. **Cause:** The pressure of the Presser Foot upon the fabric is insufficient. The fabric is not held down firmly.
Solution: Hold the fabric down by hand while sewing, or replace the one-piece Presser Foot with a Hinged Presser Foot.
12. **Cause:** The pressure of the Presser Foot upon the fabric is insufficient. The fabric is not held down firmly.
Solution: Increase the pressure upon the fabric.
13. **Cause:** The Needle is too close to the edge of the slot (or of the stitch hole) in the Presser Foot.
Solution: Line up the Presser Foot as follows: Loosen the screw that holds the Presser Bar in position. This screw is located behind the Face Plate of the machine. Now turn the Presser Bar until the Needle goes through the

Sewing Machine Troubleshooting Chart
Compiled from various sources

center of the slot (or of the stitch hole) in the Presser Foot. Tighten firmly the above screw after this adjustment.

14. **Cause:** The Bobbin is empty.
Solution: Replace with a filled Bobbin.
15. **Cause:** The end of the lower thread, which extends from the Bobbin, is too short and cannot be carried along and brought above the Feed Dog by the upper thread.
Solution: Pull more thread (about four to five inches) out of the Bobbin Case.
16. **Cause:** The upper thread is too heavy for the Needle in use.
Solution: Replace the Needle with one of the correct size. Consult the "Needle and Thread" chapter.
17. **Cause:** The Needle is too heavy for the thread in use. The thread has too much space in the eye of the Needle.
Solution: Replace the Needle with one of the correct size. Consult the "Needle and Thread" chapter.
18. **Cause:** The thickness of the upper thread is not uniform. The thread has knots or heavy and thin portions.
Solution: Replace the inferior thread with one of uniform thickness.
19. **Cause:** The upper thread may be too soft and does not form a proper loop underneath the Throat Plate.
Solution: Replace the thread with one of proper quality. Use a somewhat stiffer thread.
20. **Cause:** Oil on the upper thread prevents proper formation of the loop underneath the Throat Plate.
Solution: Remove the oily portion of the thread and prevent the upper thread from getting soaked with oil. Carefully wipe oil from Needle, Throat Plate and Loop Taker (Hook) and feed dog.
21. **Cause:** The Thread Take-up Spring (Check Spring) is not adjusted correctly. It has too much tension or releases the upper thread too late.
Solution: Adjust the Thread Take-up Spring. The upper thread must become loose at the moment the Needle enters the fabric.
22. **Cause:** The Loop Taker (Hook) is timed too early or too late in relation to the Needle. If timed too early, the loop of the upper thread is still too small to be caught and entered by the point of the Loop Taker. If too late, the loop of the upper thread is already too large and twists sideways, thereby being missed by the point of the Loop Taker.

Sewing Machine Troubleshooting Chart
Compiled from various sources

Solution: Make certain that the Needle is pushed all the way up into the Needle Bar. Also check whether the Needle is timed correctly in relation to the Loop Taker. For "Timing" follow this general rule: The Needle must have risen about 3/32 of an inch from its lowest position at the moment the point of the Loop Taker is just at the center of the rising Needle. At this moment the point of the Loop Taker must be about 1/16 of an inch above the eye of the Needle (see page 00).

23. **Cause:** The clearance between the Needle and the point of the Loop Taker (Hook) is too large.
Solution: Bring the point of the Loop Taker closer to the Needle. The point of the Loop Taker should be set as close as possible to the needle without touching it.
24. **Cause:** The point of the Loop Taker (Hook) is blunt, damaged or broken off.
Solution: If the point of the loop Taker is worn or damaged to a minor degree only, sharpen it with a fine emery stone or with fine emery cloth, then polish it with crocus cloth or on a buffing wheel. The material of the Loop Taker must not be taken off from that side of the point that faces the Needle. If the point of the Loop Taker is broken off or if the Loop Taker is defective beyond repair, replace the old Loop Taker with a new one.
25. **Cause:** The lower end of the Needle Bar is bent. The Needle, therefore, does not stitch straight into the fabric.
Solution: If the machine turns easily, bring' the Needle Bar to its highest position, then tap the Needle Bar lightly with a hammer until the Needle goes through the center of the stitch hole in the Feed Dog.
26. **Cause:** The Needle Bar or Needle Bar Frame is badly worn. The Needle Bar is too loose in its bearings and sways sideways.
Solution: Replace the worn Needle Bar with a new one. Replace also worn Needle Bar Frame.
27. **Cause:** The Needle Bar has play (lost motion) in vertical direction. This may be due to the Needle Bar linkage being badly worn.
Solution: Replace the worn and defective parts with new ones.
28. **Cause:** The Throat Plate is not flat, but is slightly bent downward due to repeated dropping of the Presser.
Solution: If facilities for repairs are available, place the old Throat Plate, top surface down, on a flat surface (surface plate) and straighten it by tapping it carefully with a hammer. If badly defective, replace the old Throat Plate with a new one.
29. **Cause:** The bottom surface of the Presser Foot does not rest fully (flush) upon the fabric.

Sewing Machine Troubleshooting Chart
Compiled from various sources

Solution: Check whether there is lint or dirt between the Presser Foot and the Presser Bar. Remove lint or dirt and tighten firmly the Presser Foot Screw. Check whether the Presser Foot rests upon the machine. If the Presser Foot is defective, replace it with a Foot that rests with its entire bottom face upon the machine.

30. **Cause:** The type of fabric to be sewn makes the formation of the loop of the upper thread difficult. The fabric may also be sticky and, therefore, does not permit the proper formation of the loop of the upper thread.
Solution: Experiment with various grades of threads and needles, until a proper stitch can be obtained. It may also be necessary to adjust the Loop Taker (Hook) in relation to the Needle in such a manner that a proper stitch can be obtained. Sometimes it will help to give a different tension to the upper thread or to the Thread Take-up Spring (Check Spring).
31. **Cause:** A needle thread of the wrong twist is used. The thread unravels and forms an improper loop above the needle eye, thereby being missed by the point of the Loop Taker (Hook).
Solution: Use a needle thread with left twist.

Staggered Stitches

1. **Cause:** The pressure of the Presser Foot is insufficient. The fabric is not held down firmly.
Solution: Increase the pressure of the Presser Foot.
2. **Cause:** The Presser Foot is not firmly attached to the Presser Bar.
Solution: Tighten firmly the screw that holds the Presser Foot to the Presser Bar.
3. **Cause:** The Feed Dog is not firmly attached to the Feed Bar.
Solution: Tighten firmly the screws that hold the Feed Dog to the Feed Bar.
4. **Cause:** The Feed Dog is not adjusted straight in the machine.
Solution: Loosen somewhat the screws that hold the Feed Dog to the Feed Bar, and then adjust the Feed Dog so that it is in line with the direction of sewing. Tighten the above screws firmly after this adjustment.
5. **Cause:** The Thread Take-up Spring (Check Spring) may be defective. It is also possible that it is not adjusted correctly and that its tension is too weak.
Solution: Replace a defective spring with a new one.
Adjust the movement and the tension of the spring. The upward movement of the loop of the spring must have stopped at the moment the Needle is about to enter the fabric.
6. **Cause:** The loop of the Thread Take-up Spring is bent sideways.

Sewing Machine Troubleshooting Chart
Compiled from various sources

Solution: Bend back the loop of this spring to its correct shape. If badly defective, replace the spring with a new one.

7. **Cause:** The color of upper and lower thread, being different from the color of the fabric, will make staggered stitches more obvious.

Solution: If possible, choose threads of the same color as that of the fabric to be sewn.

Uneven and Loose Stitches Cause

1. **Cause:** The machine is not threaded correctly.

Solution: Check whether the upper thread runs correctly from the spool of thread to the Needle. See illustration showing threading of the machine being used. Consult instruction book.

2. **Cause:** The upper thread is somehow prevented from unwinding itself from its spool.

Solution: Free the upper thread so that it can unwind itself easily.

3. **Cause:** Some of the parts of the tension mechanism for the upper thread are incorrectly assembled or are defective.

Solution: Examine and adjust the tension mechanism for the upper thread. Replace defective parts or repair them, if possible.

4. **Cause:** The upper thread is of irregular thickness and has also small knots.

Solution: Replace the inferior thread with one of good quality.

5. **Cause:** The Needle is too heavy or too fine for the upper thread.

Solution: Select a Needle of proper size for the thread in use. Consult "Needle and Thread" chapter.

6. **Cause:** The upper thread is too coarse for the type of work.

Solution: Use an upper thread suitable for the type of fabric in work. See "Needle and Thread" chapter.

7. **Cause:** The upper thread is too heavy or too thin in relation to the lower thread.

Solution: It is desirable that both threads are of equal thickness. The lower thread may be somewhat thinner but not heavier) than the upper thread.

8. **Cause:** Some of the Thread Guides through which the upper thread passes are rough or have deep grooves.

Solution: Remove rough portions or grooves with fine emery cloth or emery cord. Replace badly defective parts with new ones.

9. **Cause:** The stitch hole in the Feed Dog is too small or too large.

Sewing Machine Troubleshooting Chart
Compiled from various sources

Solution: Replace the feed dog with one that has the correct stitch hole.

10. **Cause:** The edges of the stitch hole in the Feed Dog, along which both threads slide, are not sufficiently smooth and retard the threads.
Solution: With fine emery cord, round off those portions of the stitch hole.
11. **Cause:** The edges of the slot (or of the stitch hole) in the Presser Foot are not smooth.
Solution: With fine emery cloth or emery board round off these edges of the Presser Foot.
12. **Cause:** The lower thread gets caught somewhere underneath the tension spring of the bobbin case.
Solution: Remove the tension spring. Examine the spring and bobbin case, clean these parts thoroughly and remove any rough spots with fine emery cloth. If badly defective, replace the tension spring with a new one.
13. **Cause:** The mechanism of the thread take-up lever is worn. The take-up lever cannot properly tie up the stitch.
Solution: Examine the mechanism of the thread take-up lever and replace worn or defective parts with new ones.

Improper Feeding of the Fabric.

1. **Cause:** The pressure of the Presser Foot is insufficient. The fabric slips and is not fed in a straight line. As a result, the seam may be curved.
Solution: Increase the pressure of the Presser Foot.
2. **Cause:** The Presser Bar is set too high in the machine. The Presser Foot does not rest firmly or does not rest at all upon the fabric.
Solution: Loosen the screw that holds the Presser Bar in position. This screw can be found behind the Face Plate of the machine. Push down the Presser Bar until the Presser Foot rests firmly on the Feed Dog. Make certain that the Presser Foot is lined up correctly with the Needle. Tighten the above screw securely.
3. **Cause:** The Presser Bar, due to gummed oil, cannot move freely up and down and sticks in the machine.
Solution: Remove the Presser Bar. Clean the bar and its bearings in the machine with kerosene, and then replace the Presser Bar.
4. **Cause:** The Needle is bent. The fabric does not move in a straight line.
Solution: Replace the defective Needle with a new straight Needle.
5. **Cause:** The Stitch Regulator may be in the neutral position (on zero). The machine does not feed at all.

Sewing Machine Troubleshooting Chart
Compiled from various sources

Solution: Set the Stitch Regulator to the desired length of stitch.

6. **Cause:** The Presser Foot is not firmly attached to the Presser Bar.
Solution: Tighten firmly the screw that holds the Presser Foot to the Presser Bar.
7. **Cause:** The bottom face of the Presser Foot is too short and, as a result, there is too much pressure on the fabric. The Feed Dog shifts the lower ply of the fabric against the upper ply.
Solution: Reduce the pressure of the Presser Foot. If possible, use a Presser Foot with a longer bottom plate.
8. **Cause:** The teeth of the Feed Dog are clogged with lint, dirt, and gummed oil. The Feed Dog, therefore, cannot move the fabric, properly.
Solution: Remove the Feed Dog; clean it thoroughly with a pointed pin or with a small stiff brush, frequently dipped in kerosene. Replace the Feed Dog in the machine.
9. **Cause:** The Feed Dog is not attached firmly to the Feed Bar.
Solution: Tighten firmly the screws that hold the Feed Dog to the Feed Bar.
10. **Cause:** An accumulation of lint, dirt and gummed oil, below the Throat Plate and between the rows of teeth of the Feed Dog hampers the free motion of the Feed Dog.
Solution: Remove the Throat Plate and Feed Dog. Clean them thoroughly with a small stiff brush and kerosene, and then replace them in the machine.
11. **Cause:** The feed dog is adjusted too low.
Solution: Adjust the feed dog higher by raising the feed bar to which the feed dog is attached. The teeth of the feed dog at its highest position should be fully above the top surface of the throat plate.
12. **Cause:** The feed dog is adjusted too high.
Solution: Adjust the feed dog by lowering the feed bar to which the feed dog is attached. After this adjustment, make certain that the full height of the teeth is still visible above the top surface of the throat plate when the feed dog is at its highest position.
13. **Cause:** The teeth of the feed dog are worn or blunt.
Solution: The teeth may be sharpened with a small file. After sharpening, polish any rough spots with fine emery cloth and crocus cloth. If the feed dog is worn excessively, replace with a new feed dog.

Sewing Machine Troubleshooting Chart
Compiled from various sources

14. **Cause:** The presser foot shank is bent and the bottom face of the presser foot rests with only one side on the feed dog.
Solution: Bend the shank of the presser foot or grind the bottom face of the presser foot until it rests fully (flush) on the throat plate and feed dog. If the presser foot cannot be repaired, replace with a new presser foot.
15. **Cause:** The lower end of the presser bar is bent and the bottom face of the presser foot rests with only one side on the feed dog.
Solution: Bring the presser bar to its highest position and straighten its lower end by tapping it lightly with a hammer. Do not damage the end portion of the presser bar during this procedure.
16. **Cause:** The toes of the presser foot are not bent up sufficiently, causing the material to get caught when sewing from thin to thick fabrics.
Solution: Bend up the toes of the presser foot.
17. **Cause:** The throat plate is bent downward due to repeated dropping of the presser foot. As a result, the fabric is not held firmly between the throat plate and presser foot and slips.
Solution: Place the old throat plate. Top surface down, on a flat surface and straighten it by tapping it carefully with a hammer. If badly distorted, replace the throat plate with a new one.

The Fabric Puckers

1. **Cause:** The tension of the upper thread or the lower thread, or both, are too tight or not correctly balanced.
Solution: Loosen tensions of both threads and adjust them until they are correctly balanced. Try to sew with light tension only.
2. **Cause:** The stitch is too long for the type of fabric in work.
Solution: Reduce the length of the stitch by means of the stitch regulator, especially when sewing fine fabrics.
3. **Cause:** The feed dog is set too high for the type of fabric in work.
Solution: Adjust the feed dog by lowering the feed bar to which the feed dog is attached.
4. **Cause:** The point of the needle is blunt.
Solution: Replace the defective needle.
5. **Cause:** The feed dog does not rise with all its teeth simultaneously above the throat plate and the teeth are not parallel to the top surface of the throat plate.
Solution: Adjust the feed dog so that all its teeth rise at the same time above the throat plate and the tips of all the teeth are parallel to the top surface

Sewing Machine Troubleshooting Chart
Compiled from various sources

of the throat plate. This is done by adjusting the feed bar to which the feed dog is attached.

6. **Cause:** The fabric being sewn is thin and the pressure on the presser foot is too heavy.

Solution: Reduce the pressure on the presser foot. Loosen both tensions.

7. **Cause:** The bottom plate of the presser foot that rests on the feed dog is too short.

Solution: Replace the old presser foot with one that has a longer bottom plate. The entire bottom plate must rest fully (flush) on the feed dog.

8. **Cause:** The heel portion of the presser foot is not correctly rounded off.

Solution: Round off the heel portion of the presser foot on a fine emery wheel or with emery cloth folded over a flat file.

The Machine Turns Heavily or Jams

1. **Cause:** Sewing thread has wedged itself between the balance wheel and the arm of the machine.

Solution: Take off the balance wheel and remove the thread.

2. **Cause:** The balance wheel is forced too tight against the arm of the machine.

Solution: Loosen the close contact between the balance wheel and the arm of the machine. This can be done by LIGHTLY tapping the balance wheel away from the arm of the machine with a hammer. Revolve the balance wheel by hand during this procedure.

3. **Cause:** There is too much pressure on the fabric.

Solution: Reduce the pressure of the presser foot.

4. **Cause:** The feed dog rubs against the sides of the slots in the throat plate.

Solution: Loosen somewhat the screws that hold the feed dog to the feed bar, then adjust the feed dog so that it can move freely in the slots of the throat plate. Tighten the feed dog screws firmly after this adjustment. If throat plate slots are badly damaged, replace the throat plate.

5. **Cause:** Due to accumulation of dirt and gummed oil between the throat plate and the feed dog, the feed dog presses against the underside of the throat plate.

Solution: Remove throat plate and clean it and the feed dog with kerosene. Also clean the parts of the machine to which these parts are attached.

6. **Cause:** The belt running to the balance wheel is too tight.

Sewing Machine Troubleshooting Chart
Compiled from various sources

Solution: Adjust or replace the belt. The belt should have just enough tension so as not to slip.

7. **Cause:** Dirt, thread, and pieces of broken needles have wedged between the bobbin case holder and the hook.
Solution: Disassemble these parts, clean them thoroughly, and replace them on the machine.
8. **Cause:** The bearings of the machine are tight due to rust or the use of improper oil. The oil may be gummed in the bearings; there may also be dirt in the bearings.
Solution: With an oilcan, squirt clean kerosene into all bearings and run the machine for a while. Oil the machine afterwards with good sewing machine oil. Do not use thick oil or vegetable oils.
9. **Cause:** One or several parts inside the machine are tight. This may be due to improper assembly, lack of oil, or bent parts.
Solution: Disassemble the machine systematically, always trying whether it turns freely or not. Stop disassembling once you can turn it freely. Examine all removed parts and repair or replace them as necessary. Clean all parts thoroughly in kerosene. Assemble the machine carefully, making sure it turns freely every time a part has been inserted. Oil the machine properly after it has been reassembled.
10. **Cause:** The thread take-up lever is bent.
Solution: Remove the thread take-up lever and straighten it, if possible. Replace the lever if it is badly defective.
11. **Cause:** The throat plate is bent downward due to repeated dropping of the presser foot. As a result, the feed dog rubs against the underside of the throat plate.
Solution: Place the old throat plate. Top surface down, on a flat surface and straighten it by tapping it carefully with a hammer. If badly distorted, replace the throat plate with a new one.
12. **Cause:** The needle bar is bent.
Solution: Remove the needle bar and turn the balance wheel by hand. If the machine turns easily now, it indicates that the needle bar is bent. Straighten the bent needle bar on a flat surface, if possible. If the old needle bar is defective beyond repair, replace with a new needle bar.

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