

BERNINA
eBook Series



JUST EMBROIDER IT!

Troubleshooting Embroidery Designs

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**Qualities of a Good Design ▪ Maintenance
Proper Setup ▪ Problem / Solution Scenarios ▪ Pressing Matters**



made to create

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There is nothing quite as satisfying as stitching a perfect embroidery design for that special project. But it can also be frustrating when things go wrong.

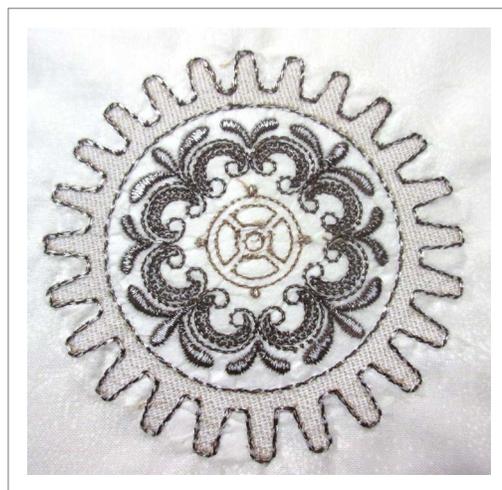
In order to troubleshoot and fix embroidery design problems, we need to first understand the qualities of a good design and how preventative maintenance can prevent a lot of issues from occurring in the first place.

QUALITIES OF A GOOD DESIGN

- The fabric is smooth and pucker-free around the outer edges of the design.
- There are no traces of the bobbin thread showing on the top side.
- There is no gapping between individual elements of a design or between the fill stitches and the design outlines.



FRONT SIDE



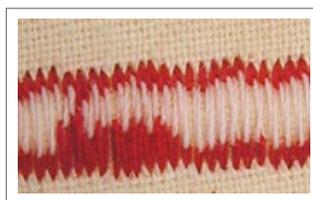
BACK SIDE

- On the back (bobbin) side, you should see the bobbin thread. You should also see the needle threads around the edges of a fill or either side of a column type design.

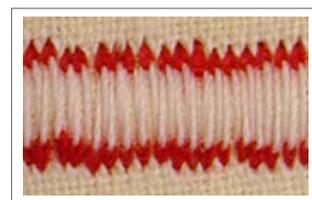
MAINTENANCE

Preventative maintenance can go a long way to aid in getting a good stitch out.

- Clean the machine every 3 to 4 hours of stitching time. This is especially crucial because the high speed of the embroidery creates more lint and fuzz than you encounter during normal sewing. Remove all fuzz and check for tiny bits of thread that might be stuck in the bobbin case.
- Oil the machine. Apply two drops of oil every 3 to 4 hours of stitching time. If the hook area of your machine becomes too dry it can cause the bobbin tension to become irregular.



BEFORE HOOK OIL



AFTER HOOK OIL

- Follow the manufacturer's suggestions and take the machine into your local dealer for its routine cleaning. Technicians are trained to clean areas that are inaccessible to the consumer.

PROPER SETUP

Use a good quality embroidery thread designed specifically for machine embroidery. These threads can withstand the heat and friction that is associated with the high speeds of the embroidery process. Most embroidery designs are digitized to be stitched with a 40 wt. thread.

Use a good quality 60 wt. thread in the bobbin. Typically the bobbin thread is a lighter weight than the needle thread. This difference in weight aids in pulling the needle thread to the back side.



Ensure that the needle is free of burrs and is not dull or bent.

Thread the bobbin area for embroidery as directed in your machine's manual. Some machines may have a separate bobbin case with a pigtail, some may need to be threaded through the finger of the bobbin case, and other machines may need the bobbin to be threaded differently than for regular sewing.

The needle thread should be threaded with the foot up to allow for the thread to seat itself properly between the tension disks.

Always clip the thread between the thread spool and the tension dials and pull the thread toward you at the needle. Never pull the thread backwards as this can cause lint to build up in the dials.

PROBLEM SOLVING

PROBLEM

Bobbin thread is pulling to the top side.



POSSIBLE CAUSE / SOLUTION

- **The machine needs oiling.**

Clean and oil the machine as stated in the Maintenance section on page 2. Following this simple routine will solve issues without the need for further adjustments.

- **The needle is incorrectly threaded.**

Re-thread the needle and make sure that the thread is feeding smoothly and is not caught on anything as it goes through the threading path.

- **The needle may be dull or burred.**

Insert a new needle even if you had just inserted one at the beginning of the project. Sometimes even new needles can be flawed.

- **Correct bobbin thread is not being used.**

The bobbin thread should be a lighter weight than the needle thread. The typical embroidery thread is 40 wt. and the typical bobbin thread is 60 wt. The difference in the weight helps to pull the needle thread to the back side.

- **The design has narrow satin stitches or triple straight stitches.**

These types of stitches have a natural tendency to pull the bobbin thread to the top. It is very common to need to loosen the needle tension for these types of stitches.

NOTE: *Using the same color bobbin thread as used in the needle will help to disguise this issue and will look better.*

- **Needle tension is too tight.**

Loosen the tension. Loosen the tension by ¼ to ½ increments until you are satisfied with the results. The lower the number, the looser the tension. The higher the number, the tighter the tension.

- **Bobbin tension is too loose.**

Check that the correct bobbin case is being used and that the bobbin has been threaded correctly.

NOTE: *If the bobbin case is correctly threaded, most issues can be resolved by adjusting the needle tension instead of adjusting the tension on the bobbin case.*

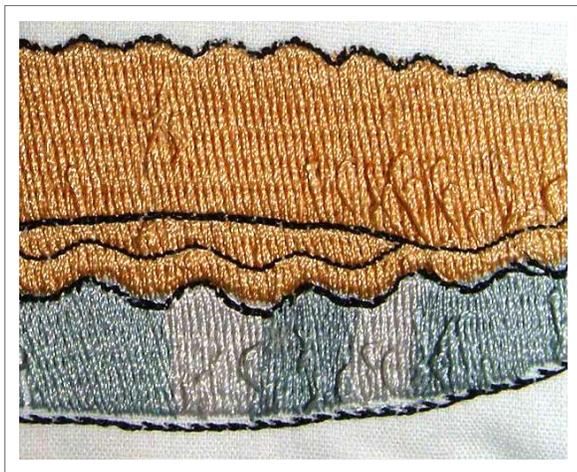
PROBLEM

There is an excessive nest of thread on bobbin side of design, also known as **birdnesting**.



PROBLEM

Needle thread is loose or loopy.



POSSIBLE CAUSE / SOLUTION

- **Birdnesting is caused by an extreme lack of needle thread tension.**

This is almost always a result of the thread not being seated in the tension dial properly during the threading process. It can usually be heard as an audible "ca-chunk".

- **If the thread nest happens at the beginning of a color change:**

Make sure the needle was threaded with the presser foot up and in the highest position.

This opens the tension disks so that the thread will be seated properly. When the foot is lowered, the dials will close against the thread and securely hold it in place thereby creating the proper tension on the thread for stitching.

If the foot is down, the tension dials are closed and the thread will not be seated between the dials but sitting on the top of the dials so there is virtually no tension on the thread. When the machine starts, excess thread will be shot to the bobbin area. The machine will make an audible "ca-chunking" noise when this happens.

POSSIBLE CAUSE / SOLUTION

- **The machine is not threaded properly.**

Re-thread the machine and ensure that the thread is seated in the tension dials securely.

- **The needle tension is too loose.**

Tighten the needle tension in ¼ to ½ increments until you are satisfied with the results.

- **If the thread nest occurred in the middle of stitching:**

Check to see if the thread became entangled or was caught on something.

This can cause the thread to be pulled out of the tension dials and will create the thread nest. You will hear the same "ca-chunk" sound. Your machine may then continue to stitch normally since the thread nest may have pulled the needle thread and forced it back into the thread guides.



NOTE: Stop the machine and cut away the thread nest as soon as it occurs so that the threads don't become trapped as the design continues to stitch.

PROBLEM

The needle bends or breaks.



POSSIBLE CAUSE / SOLUTION

- **Check needle thread and threading paths.**
If the needle thread gets caught or entangled, it can pull on the needle and cause it to bend or break.
- **Don't use a dull needle.**
A dull needle may not penetrate the fabric correctly and bend and/or break.
- **Use a larger needle if stitching over thick seams.**
Use a larger needle when stitching over areas with thick seams, i.e. blue jeans seams.
- **The needle size may be too small for the fabric type.**
The most common size of embroidery needle is a 75/11 or 80/12. Use a smaller needle for lightweight fabrics and sheers. Use a larger needle for heavier fabrics such as denim and home decor fabrics.

PROBLEM

The thread breaks and/or shreds.

POSSIBLE CAUSE / SOLUTION

- **The needle is burred.**
Change to a new needle.
- **The needle thread has caught on something as it comes off the spool.**
Even a small twist in the thread is enough to add extra tension and cause the thread to break or shred.
- **Thread is not unwinding correctly or is caught between the spool and the cap.**
Crosswound threads feed better from the top of the spool. Place this type of thread on a horizontal spindle or on a separate thread stand.
Stacked threads generally work best if the thread feeds from the side by being placed on a vertical spindle.

- **Poor quality thread is being used.**

Always use a thread specifically designed to withstand the high speeds of embroidery.

- **There is a burr or rough spot on the stitch plate or bobbin case.**

If your thread continually breaks or shreds after following all of the suggestions above, it is possible that there could be a burr or a rough spot on the stitch plate or the bobbin case. Take your machine into your local dealer for servicing. Technicians are trained to check for these problems.

PROBLEM

The stitched outline is slightly off.



NOTE: This is one of the easiest mistakes to repair. Keep a set of fine tipped markers in various shades. Color in the area and it will be barely noticeable.



POSSIBLE CAUSE / SOLUTION

- **The fabric was hooped incorrectly.**

Outlines that are only slightly off are most usually caused by incorrect hooping.

Make sure that the hoop is properly tightened after fabric and stabilizer have been hooped. If the screw is not tightened enough, the compression between the inner and outer ring is not tight and the stitching process can pull the fabric toward the center of the hoop.

- **Fabric and stabilizer are shifting.**

Use a temporary adhesive spray to adhere the stabilizer to the wrong side of the fabric.

- **Hoop is too large for the design.**

Choose a hoop size as close to the size of the design as possible. This will help to secure the fabric better.

If you are using a hoop that is quite a bit larger than the design, slow the machine down to improve the quality of the stitch out.



For more information on hooping, check out the Just Embroider It eBook, *The Art of Hooping*.

- **Stabilizer chosen is not the right weight for the fabric or the number of stitches in the design.**



For more information on stabilizers, check out the Just Embroider It eBook, *All About Stabilizers*.

- **Machine is stitching too fast.**

The speed on most machines can be adjusted. It is a good idea to slow the machine down when it is stitching outlines or triple straight stitches.

PROBLEM

The outlines or other registration areas are completely off.



POSSIBLE CAUSE / SOLUTION

- **There was a fluctuation in the power to the machine.**

Use a surge protector with a surge limiting voltage of 330 volts to prevent electrical problems to the machine.

- **The arm of the machine was bumped during the stitching process.**

Check to make sure that there is enough space behind the machine that the arm does not bump into the wall.

Make sure that the chair in front of the machine is positioned so that it does not bump the arm.

PROBLEM

The fabric is puckered around the design.



POSSIBLE CAUSE / SOLUTION

- **Fabric was stretched as it was hooped.**

Even a woven fabric can be stretched. Take care not to stretch the fabric as it is placed in the hoop and do not pull the fabric once the hoop is tightened.

- **Hoop screw was not tightened enough.**

If the outer ring is not tightened sufficiently, the stitches can pull the fabric inward.

NOTE: A small amount of puckering is to be expected with almost any embroidery design. The act of adding stitches to a fabric will cause it to draw up. For a quick fix for this type of puckering, refer to the Pressing Matters section on the next page.

PRESSING MATTERS

Pressing will almost always improve the appearance of a design especially if there is puckering around the design. You will be surprised at how much difference this does make.

BEFORE PRESSING



AFTER PRESSING



TIPS FOR PRESSING

- Place the design right side down on a fluffy towel.
The key is to use a fluffy towel...the fluffier the better.
- Press the wrong side with an up and down motion.
- Allow the fabric to cool before moving the item.



FOR MORE INFORMATION ON TROUBLESHOOTING,
CLICK TO VIEW THE BERNINA TOOL TIP --
TROUBLESHOOTING EMBROIDERY ISSUES
