

Quilter's Cruise Control Troubleshooting Guide

General Set-up and Operation: the speed the sewing machine goes when you are using the QCC is determined by the speed that you are moving the sewing machine/carriages. The optical encoders pick up on the speed. The one on the upper carriage determines the speed you're moving front to back and the one on the bottom carriage determines the speed you're moving left to right.

If you're moving the platform more than 2 inches per second, you are moving too fast. The sewing machine will go only about 1500 stitches per minute (about two inches per second maximum). Faster than that, the sewing machine can't go fast enough and then the needle coming out of the fabric can't move fast enough to come out straight up. This can cause thread breakage.

The Quilter's Cruise Control has nothing to do with thread breakage. It serves basically the same purpose as the foot pedal. And the foot pedal has nothing to do with thread breakage.

If your sewing machine has a speed slide, it should be in the **middle range** as this is the speed that works optimally with the usual settings on the Quilter's Cruise Control. The stitch length on the sewing machine should be set to **zero**. The pressure on the foot should be very low or zero.

Troubleshooting for the QCC

First, unthread your needle.

Turn on the sewing machine and the QCC. Ensure the machine light is on and the needle is slowly moving up and down. Move the carriages front to back only. This checks the operation of the optical encoder on the top carriage. Do the same moving the carriages left to right. This checks the operation of the optical encoder on the bottom carriage.

If the problem seems to be the front to back stitching, follow this sequence:

First we need to narrow down if it is something wrong with the optical encoder or the wiring harness or if it is an installation problem. With the encoder wheel on the top carriage between your thumb and forefinger, spin the encoder.

1) Does the machine change speed? **Yes/No**

If yes, that encoder and the wiring harness to it are working just fine and there is something wrong with the installation. If the sewing machine does not speed up and slow down, something is not right with the encoder or the wiring harness to it or the installation (see below for a couple of suggestions).

If the problem seems to be the left to right stitching, check the optical encoder on the lower carriage instead.

If this is an installation problem, follow this sequence: Make sure that the optical encoder "tires" or o-rings on the upper carriage are making good contact on the lower carriage. Gravity should hold the encoder down, although it should not be so tight that you can't raise it up and let gravity take it down again.

2) Are the O-rings making good contact? **Yes/No**

Make sure that the encoder is spinning smoothly. If it's hard to see, you might want to put a dot of white paint or fingernail polish on one of the edges to help see.

3) Is the encoder spinning smoothly? **Yes/No**

If it is not an installation problem, follow this sequence: Now we need to figure out if it is the optical encoder or the wiring harness. The way to tell is by gently, very gently, unplugging the wire from the optical encoder and swapping it over to the other optical encoder. If the problem moved, then the wiring harness is the culprit. If it stayed in the same place, then the optical encoder is the culprit.

4) What is the culprit? Wiring harness/Optical encoder

Best Practices...You may also want to check:

Bobbin tension. Be sure to check the tension in the bobbin. You can do this by taking the bobbin case with the bobbin in it and the thread coming out of it. Pretend that it is like a yoyo. Take the protruding thread into your right hand. Hold your left hand (if you're right-handed, otherwise just the opposite) below your right hand. With your right hand holding the thread, allow the bobbin case to move down the thread into your left hand. If it moves so quickly you don't need to coax it like a yoyo, the tension is too loose. Tighten it up (tighten the screw on the bobbin case until such time you test it, it needs to be coaxed down the thread into your left hand). If the bobbin case doesn't move down at all, loosen it (loosen the screw on the bobbin case until such time you test it, it needs only a bit of coaxing, but does move down into your left hand).

Thread path. Refer to your sewing machine manual and follow the directions for threading the machine. For example, from the pin holding your thread spool, guide the thread up through the two loops on the telescoping pole, then down through the third hole on the pre-tension arm. Do not go around the screw-like part that is used only for winding a bobbin. Then guide the thread through the tension disks over the tension spring, under the lower hook, up through the reciprocating arm, then down and through the thread guides and through the hole in the needle. This ensures that the thread tension, together with the correct bobbin tension, is appropriate and won't cause any thread breakage.

If the thread is correctly routed, there should be no problem. If there is still a problem, there could be a burr in the tension spring. Or there could be some other mechanical anomaly in the sewing machine.

New needle. Needles should not be used more than 8 hours.

Make sure that your **feed dogs** are down all the way. If they're rubbing up against the bottom of the fabric, then you could have a problem with the fabric "sticking" and then maybe not "moving" away from the needle quickly enough to avoid broken thread or even a broken needle.

Make sure that you have appropriately raised the **frame's take-up bar** that goes through the throat of the sewing machine. If the fabric isn't just on or barely above the throat of the machine all the way across the frame, you could have one of two problems: If too low, it will bog down your movement of the carriages. If too high, the fabric is tenting up, meaning that it is too high above the throat and when the foot goes down and then comes back up again, the fabric comes up before the needle has had a chance to come out of the fabric. This could also cause broken thread and broken needle.

If you are unable to make any determination of the culprit causing the troubles, you may wish to send the unit in for diagnosis/evaluation/service/repair/replacement. There is a minimum service fee required for all Service Tickets, please contact us for information.

Best Regards,
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