Handi Quilter®

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Customer Instructions
Adjusting Thread Break Sensor

February 2021

Handi Quilter machines with a thread break sensor may occasionally need adjustment to maintain optimal performance.

How the thread break sensor works:

The circular sensor protruding near the tensioner senses the motion of the thin check spring wire as it passes back and forth in front of the sensor. Because this wire is so thin, the sensor must be as close to the wire as possible without the wire brushing against the sensor while stitching. If the processor does not get reports of the spring passing the sensor, then it assumes there is a thread break and the alarm is triggered. Any gap between the sensor and check spring greater than the thickness of a couple of business cards is likely to result in the sensor not detecting the spring movement and you will get false thread break alarms.

Common causes and solutions for false thread break alarms

Cause 1:
The check spring is not properly threaded, therefore it is not passing the sensor during the stitching process.

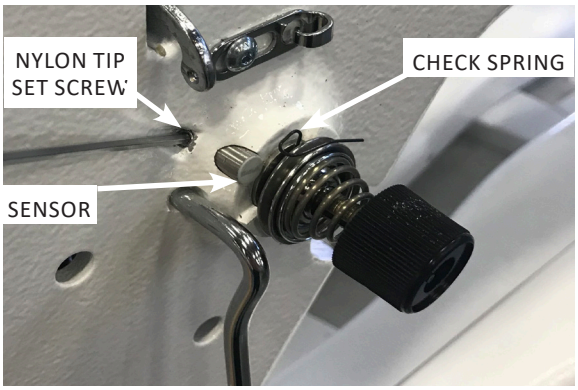
Solution 1:
Make sure the thread comes up and over the check spring immediately after it exits the tension disks and prior to going under the stirrup guide.

Cause 2:
Tension is set too loose to cause the check spring to flex past the sensor. Sometimes fragile threads require the quilter to loosen tension to the point that the check spring is no longer springing back and forth during the stitch cycle.

Solution 2:
The thread break sensor should be turned off or tension should be increased.

Cause 3:
The thin check spring has been flexed out, away from the sensor. Due to the amount of threading/unthreading that occurs, it is common for this spring to get bent a small amount, which can effect the sensor.

Solution 3:
Because the spring is hardened spring steel, it is not easy to bend it back toward the sensor. Instead, the sensor should be adjusted outward, to be as close to the spring as possible without touching the spring.



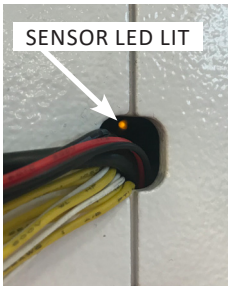
Adjust the Sensor

Step A: Loosen the set screw above and to the left of the thread break sensor with a 2mm Hex tool.

Step B: Using your finger tips or a strong magnet (if you cannot pull it with your fingers), pull the sensor out toward the check spring until it nearly touches the spring. **NOTE :** It is helpful to thread the machine and pull the thread at the needle to simulate how the thread will activate the spring.

Step C: If you cannot pull the sensor out toward the spring, you may need to access the rear of the sensor, which in some cases is behind a cover or an access hole.

Step D: On HQ Amara and HQ Forte machines you can take the plastic front face cover off by removing the cover screw with a 3mm Hex tool. Once the cover is off, you have a couple access holes. The top one is bigger and closer to the sensor. Amara machines built after mid-2020 (not yet on Forte) have an access hole on the opposite side of the machine from the sensor to help with the adjustment. On the HQ Fusion machine, you can remove the rubber micro-handle mount plug to obtain access for adjusting the sensor. With access at the rear of the sensor, use a blunt tool to push it out toward the spring. The blunt tool will ensure you do not damage any cables.



AMARA/FORTE WITH FACE COVER REMOVED FOR ACCESS


AMARA ACCESS HOLE ON OTHER SIDE FROM SENSOR


FUSION WITH FRONT RUBBER PLUG REMOVED FOR ACCESS

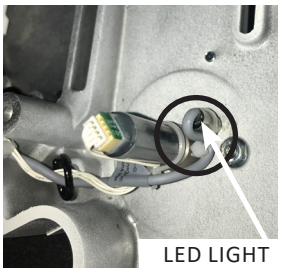
NOTE: The back of the sensor has an amber LED which will flash on and off as the sensor is activated. This will help you know if the sensor is close enough to the spring and functioning properly as the spring passes the sensor.

NOTE: If the LED will not flash, (is always off or always on, no matter how close or far away from the spring) the sensor may be damaged and needs to be replaced. If it is always off, it may have a loose or bad connection. If it is always on, it may have been crushed by over tightening the set screw.

The functionality of the sensor can be tested by touching the tip of the sensor with a metal tool, such as a screwdriver, and checking to see that the yellow LED turns on, and then turns off when the tool is pulled away.

On Amara or Forte machines with diagnostics, you can go into diagnostics under the tool menu to find a sensor beeper test. Use the pass code “quilt”. The beeper will go on and off when the LED goes on and off while moving the thread and the check spring. This can be helpful when adjusting the sensor.

If your Amara or Forte does not have diagnostics, this can be updated by going to HandiQuilter.com/machine-sofware-updates/ and downloading the latest version of software.



Notice the sensor cable is wire tied to the side of the sensor. This provides a little resistance when trying to move the sensor out.

Step E: Tighten the nylon tip set screw until it touches the sensor and you just feel some slight resistance. This will hold the sensor in place.

WARNING! The set screw just needs to lightly touch the sensor to hold it in place, it will crush and damage the sensor if over-tightened.

NOTE: If you are not able to adjust the sensor, the front metal casting cover will need to be removed. This is where things get a little more complicated and it is recommended that a trained Handi Quilter Technician perform the adjustment.

Troubleshooting Summary

Sensor LED will not come on:

- Sensor damaged
- Sensor has a loose connection
- Sensor not plugged in
- Sensor too far from check-spring
- Machine not threaded correctly
- Tensions are set too loose to move the spring past the sensor

Sensor will not shut off

- Sensor damaged or crushed by over tightening the nylon tip set screw.
- Sensor tip too close to something metal (usually the tension disks) or pulled too far into the casting so it is being triggered by the casting.