

Technical Advisory Bulletin (TAB)

Bulletin #: TBBE1602A

February 27, 2015

Product: BERNINA E16

Implementation: ☐ Urgent ☐ Mandatory ☒ As Required ☐ Info Only

Reference: N/A

Subject: Troubleshooting False Thread Break, False Bobbin Breaks, and Non-Detected Thread Breaks

SITUATION:

BERNINA E16 (P/N 35000) machines might show the following symptoms:

- Frequent False Thread Breaks
- Frequent False Bobbin Breaks
- No Thread Break detection

SOLUTION:

Go through the troubleshooting sequence listed below.

RECOMMENDED ACTION:

STEP #1

Ensure you run the currently released Operating and User Interface software:

BERNINA OS version: 11.01.045 or higher
RSA Version: 4.48 or higher
CSA Version: 02.118 or higher

STEP #2

Load a known good reference test design, sew it out, and see if the issues above continue. If so, go to step #3 below. If not, the problems are most likely caused by the design itself (digitizing) or are a result of design and material combination chosen for the sew out (application).

STEP #3

Check all normal machine settings as listed below:

- **Bobbin Tension** → Bobbin tension should be set to 22-25 grams (use Towa TM-1 Tension Gauge), or, when holding the bobbin thread while dropping the bobbin case (with a full new bobbin) with a small flicking movement, the bobbin case should drop around 1" (25mm).

- **Presser Foot Height** → Needs to be set such that the Presser Foot touches the fabric at its bottom position, or, 0.1-0.6mm gap between bottom of Presser Foot and top of the Needle Plate at z axis bottom dead center position.
- **Needle Orientation** → Needs to be set between 5 and 20 degrees to the right.
- **Retaining Finger to Hook Distance** → Needs to be set to 0.46-0.56mm at closest and farthest needle. Check with Feeler Gauge provided in the machine operator's kit.
- **Needle Depth** → Needs to be set to ¼ to ½ of a needle eye.
- **Thread Break Sensor** → Check that the rubber dampener washers located between the thread break sensor stainless steel tube and the plastic mountings on the left and right side of the Thread Break Sensor Assembly are mounted correctly and are not being pinched.

If all settings/adjustments under step #3 have been verified and are to specifications then proceed to step #4.

STEP #4:

Thread Feed/Thread Break Sensor Calibration:

A. Calibration Steps

- 1) Calibration needs to be run on needle 9. Needle has to be threaded.
- 2) Material to be used:
 - a. Upper Thread: Madeira Polyester Neon No. 40
 - b. Bobbin Thread: Coats Style L 132 yds. V15 White (Melco PN 761002-01)
 - c. Backing: 1 layer of Madeira PN 30-24-100-M (Melco PN 34254) or similar
 - d. Broad Cloth: 1 layer of Melco PN 344754-01 or similar
 - e. Hoop: 12cm round plastic (Melco PN 11988)
 - f. Machine Speed: 1,000 spm
- 3) Load the test design "*Calibration Adjust.OFM*" (located in the BERNINA OS / Test Designs folder).
- 4) Calibrate the Bobbin – Using a Towa TM-1 Tension Gauge pull the thread slowly until the bobbin starts feeding. This should happen between 22 to 25 grams (see "Bobbin Tension" under step #3).
- 5) Run test run with default parameters [Cal = 20; Offset = -50]. These settings are found in the Tools => Settings tab in Melco or BRAVO OS.
- 6) The width of the bobbin column on the back side of the test design should be between 1.2mm to 2mm.

B. Adjustment

- 1) If the width of the bobbin column is less than 1.2mm then reduce the "Cal" value by 1 pt. to 19 (in the Tools => Settings tab). Click on >Apply< and then re-run the test.
- 2) If the width of the bobbin column is more than 2mm then increase the "Cal" value by 1pt to 21 (in the Tools => Settings tab). Click on >Apply< and then re-run the test.
- 3) Keep adjusting the "Cal" value until the bobbin column width falls within the 1.2mm to 2mm range. (Note: when in doubt on which setting is the ideal, run the design a second time without any changes. There are slight variations that can occur between runs.)
- 4) NOTE: if the "Cal" value is higher than 25 or lower than 15 then the machine most likely has mechanical or electrical issues and should be checked (bobbin tension, Thread Break Sensor assembly).

C. Thread Break Test

Once the calibration procedure above is completed, re-run the test design but this time create a thread break (cut the top thread while the machine is running). The machine should detect the thread break within around 25 to 30 stitches.

- 1) If machine stops within above, the calibration process is completed.
- 2) If machine does not stop within above then increase the negative value of the "Offset" parameter by 25 points to -75 (in the Tools => Settings tab). Click on >Apply< and then re-run the test.
- 3) Repeat previous step until machine detects thread break within listed range.

NOTE: If you start the machine with no thread on the active needle then you will need to add 9 to 10 stitches to the detect window above. E.g. 34 to 39 stitches (since machine starts counting failed stitches only from stitch 10 on).