

Technical Advisory Bulletin (TAB)

Bulletin #: TBBE1611A

August 25, 2016

Product: BERNINA E16

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

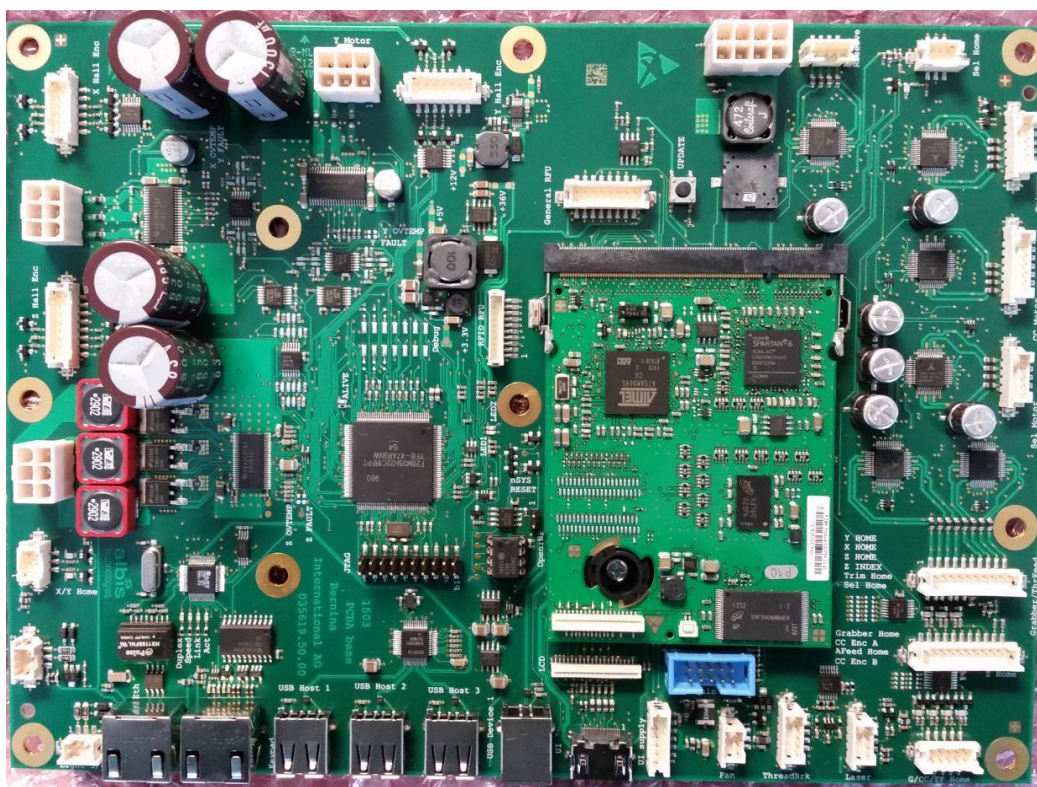
Reference: EC3339

Subject: New Control Board

SITUATION:

In Q4 of 2016 BERNINA implemented a new and completely redesigned Main Control Board in the production of BERNINA E16 machines. The new Control Board design reflects modern design principles and components and is much advanced in performance and capabilities as compared to the previous 34543 Control Board.

The new Control Board supports all current machine functions and is compatible with previous BERNINA E16 machines.



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SOLUTION:

BERNINA E16 machines starting with serial number 120361096 are equipped with the new Control Board, PN 34801.

Sales of new 34543 Control Boards can be supported until roughly end of September 2016 (based on estimated demand). After the inventory of new 34543 Control Boards is depleted, the new Control Board will take its place

Warranty support for machines factory equipped with the 34543 Control Board will be fulfilled with factory refurbished and tested U34543 Control Boards.

RECOMMENDED ACTION:

Information only, no action required.

ADDITIONAL INFORMATION:

1. Hardware Differences to Current 34543 Control Board:

- 1) Reduced Control Board size by 50% of current Control Board.
- 2) Board Memory: New Control Board allows up to 2.5 million stitch designs to be loaded.

2. Behavioral Differences to Current 34543 Control Board and Related OS:

- 1) **Sewing Lights** stay on during E-Stop.
- 2) **Frame and Needle Case movements:** The previous Control Board would only do one function at a time while the new Control Board multi tasks. It will color change and move X and Y Axis at the same time.
- 3) During boot up the **boot sequence** is different. The new Control Board homes Needle Case and the X and Y Axis at the same time.
- 4) **Reset TBS** (Thread Break Sensor): New Control Board does not use the same MSP chip, hence there is no need for TBS reset. TBS is greyed out.

Calibration window for TBS has been hidden. This has been done due to the fact that factory calibration should be solid enough for the majority of the users.

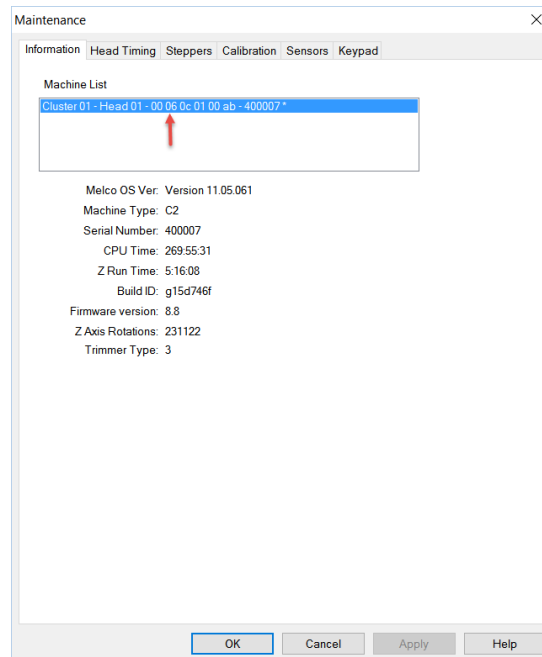
To expose TBS calibration:

1. Computer\HKEY_CURRENT-USER\SOFTWARE\BERNINA\MC\Settings
 2. Create a new DWORD (32-bit) Value
 3. Name = ShowTBS
 4. Value 1 = on
 5. Value 0 = off
- 5) **Homing Frame:** New Control Board homes both X and Y axes at the same time.
 - 6) **Trimming:** New Control Board has a slightly different behavior during the trim sequence. This is mainly due to the way all motors work with the new Control Board and how the new firmware processes all the steps involved. The difference is mostly in how quiet/smooth the grabber moves in and out.
 - 7) When exiting the timing window in **maintenance mode** the machine no longer beeps. There has been user feedback that this was not needed.
 - 8) In **Maintenance** pressing speed  + Left  will take the Z-Axis to 120° which is just above the Needle Plate hole. This is a good placement for Needle Plate adjustment.

- 9) **Z-Axis index LED in Maintenance Mode/Head Timing:** When adjusting the flag during the Z-Axis timing process, we were previously using LED 52 on the Control Board as our trigger LED for Z Home Flag adjustment. Since this LED is in a hard to view area on the new Control Board, we now utilize the Keypad LED instead. The Keypad LED will toggle as the Z Home Flag triggers the sensor “0° Index”. In some cases it may be necessary to remove the machine’s Right Upper Side Cover so that the Keypad can swivel back far enough for the user to view the LED (Cover is indicated by red arrow in image below).



- 10) **Force Download:** this function is not required on the new Control Board. The new Control Board no longer uses the RSA and CSA files like the current Control Board does. If there are firmware updates for the new Control Board the OS software will update and let the user know during this process.
- 11) **Speed drop for long stitches:** The slowdown speeds work differently from the previous versions. It now not only calculates the ideal speed for the X and Y-axis, but it also takes into consideration the thread feed capability so that the extremely long stitches are perfectly executed.
- 12) **Beeper sound:** The beeper sound on the new Control Board is softer. In some cases, where the environmental noise is high, it may be harder to hear.
- 13) **Machines are now logged and tracked** by their MAC address and no longer by their serial number. For example, the file name in the Jobs folder is now the machine’s MAC address and serial number. To find the machine’s MAC address, select the machine in OS and go to Tools> Maintenance. In the Machines List box the machine’s MAC address + serial number are displayed.



- 14) **Thread Clamp:** All the hardware related to the Thread Clamp function is still physically built into the machine (for now) but the Thread Clamp function is not being activated by the software. In future machines (implementation SN to be communicated), the hardware will be removed. The reason for the discontinued use of the Thread Clamp function is that the tie-in stitches have been improved. This additional control of the upper thread has eliminated the need for the Thread Clamp. In some cases, the Thread Clamp was causing issues by interfering with the initial startup stitching. In those cases the stitches could end up entangled around the Thread Clamp hardware.
- 15) **Color Change:** The noise emitted from the Color Change Motor is different. When the machine moves from needle 1 to 16 and from 16 to 1 it will now slightly overshoot the needle origin and then re-adjust. This is a new feature as to increase needle centering precision.
- 16) **Move to next color on Keypad (Skip Color) Keys = (Needle + Up) skip to next color or (Needle + Down) skip to previous color:** On the previous version the user could only do one skip at a time and wait for the machine to finish its process before being able to repeat the color skip. Now if you press the color skip numerous times, the machine will skip by the value that was inputted.
- 17) During a **color change**, for example needle 1 to 10, if the Stop button is pressed during the color change the machine will stop at the next needle, then, when the Start button is pressed, the machine will resume the color change until it reaches the target needle (10 in this example) and resume embroidering.
- 18) **During embroidery**, with the current Control Board, if the machine is stopped and a thread trim is executed, the frame can be manually moved using the keypad. To then resume back to the last stitch position, the Left  + right  keys were pressed simultaneously, and the machine would move to the position of the last executed stitch and stop. The new Control Board now has an additional feature. Instead of pressing the Left + Right keys, the user can just press the Start key. This will cause the machine to move to the position of the last executed stitch and automatically continue embroidery.
- 19) **Short/Medium/Long tail lengths** in OS under Tools>Settings: This will now adjust the upper thread tail length.
- 20) **3rd party security firewalls need to be turned off.** Windows Defender is ok to use but any of the 3rd party security programs may block the Ethernet traffic between the PC and the new board.