Installation Guide

eKnitter

(firmware 0.4.10)

for Brother KH 910 Knitting Machine

Last time updated: 01.07.2024

Should you encounter any questions or need further clarification as you proceed, please do not hesitate to reach out to us at: **Email:** mail@eKnitter.com
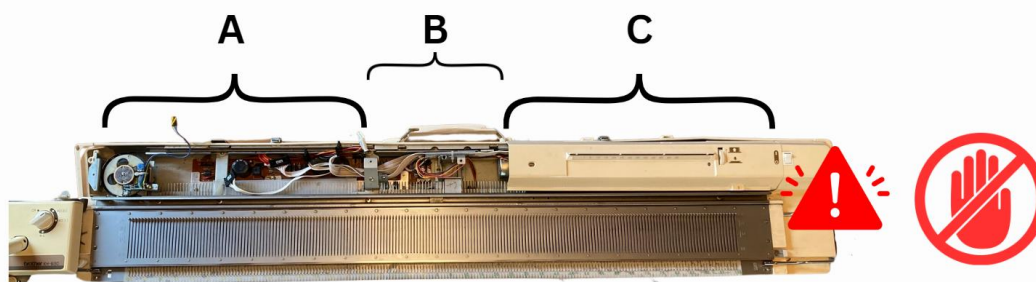
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Important Safety Notice

Installation of the mainboard must be carried out exclusively by qualified electrical professionals. Individuals without the appropriate electrical qualifications are strictly prohibited from attempting these tasks, as this poses significant risks and can lead to damage. If an inspection of the machine reveals that it has been altered in any way or does not match the previously provided descriptions, all further actions must be immediately ceased, and the eKnitter must not be used. Non-compliance can lead to serious accidents or damage and result in the loss of all warranty claims. It is strongly recommended that the machine's integrity be regularly checked by a certified professional to ensure that no unauthorized modifications have been made.

DANGER

Warning: Before Opening the Machine

- **Power Off**: It is imperative that the machine is completely turned off and disconnected from all power sources before starting work. Ignoring this instruction can lead to serious safety risks and will result in the loss of all claims.
- **Do Not Fully Open Lid C**: Under no circumstances should the right side of the machine (Lid C) be fully opened. It is only permitted to slightly lift Lid C in order to remove Lid B. The power supply is located on the right outer side of the machine; fully opening it is not only unnecessary but also poses significant dangers. Non-compliance with this guideline will immediately void any warranty provided by the manufacturer.

WARNING
- **Handling the eKnitter Mainboard**: Handle the eKnitter Mainboard with care. Avoid direct contact with electronic components and circuitry to prevent static damage.
- **Use Proper Tools**: Employ the appropriate tools when removing the old mainboard and installing the new one.
- **Clean Installation Area**: Ensure the installation area is clean, dry, and free from debris. Dust and moisture can harm electronic components.

- **Adequate Lighting**: Work in a well-lit area to easily see all connections and components during installation.
- **Correct Cable Connections**: Connect all cables as instructed in the manual. Incorrect cable connections can cause malfunction or damage.
- **Maintain Cleanliness**: Keep the mainboard and its surroundings clean and dust-free to ensure optimal performance.
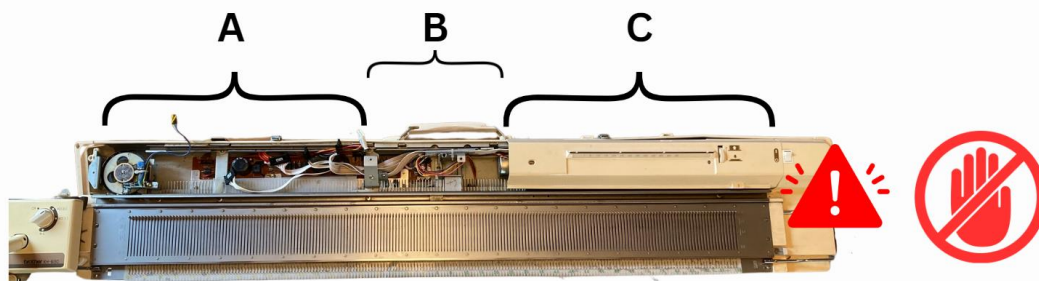
Installation Guide

Before you start

Please keep in mind that if you have an old <u>machine that has not been used for a long time</u>, the capacitor of your machine could break the moment you turn it on or shortly after. You'll typically hear a sound and detect a smell, which are common signs of this issue. It's best to test your machine before switching to the eKnitter board. If this problem occurs, you should also consider using an external power supply. Alternatively, seeking assistance from an electronic expert to install a new capacitor.Remove the Old Mainboard
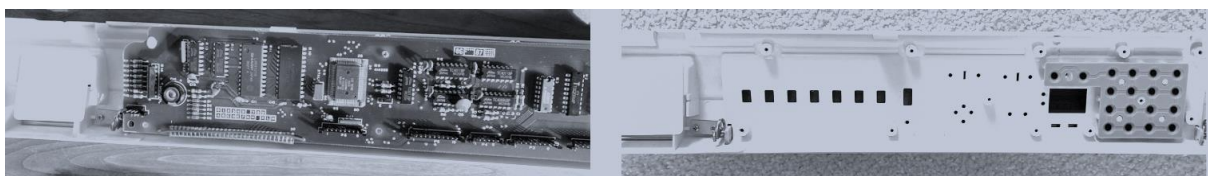
Warning: Before Opening the Machine

- **Power Off**: Ensure that the machine is completely turned off and unplugged from any power source.
- **Do Not Fully Open Lid C**: Do not fully open the right side of the machine (Lid C). You only need to slightly lift it to remove Lid B. Avoid opening Lid C completely, as the power supply is near this area and it is not necessary for the installation.

Open the Machine Case: Start by opening the machine case and removing the left and middle (**A** + **B**) lids. You will find that the mainboard is housed under the left lid (A) and is connected to the machine with various plugs. Carefully unplug each connection and remove both lids.
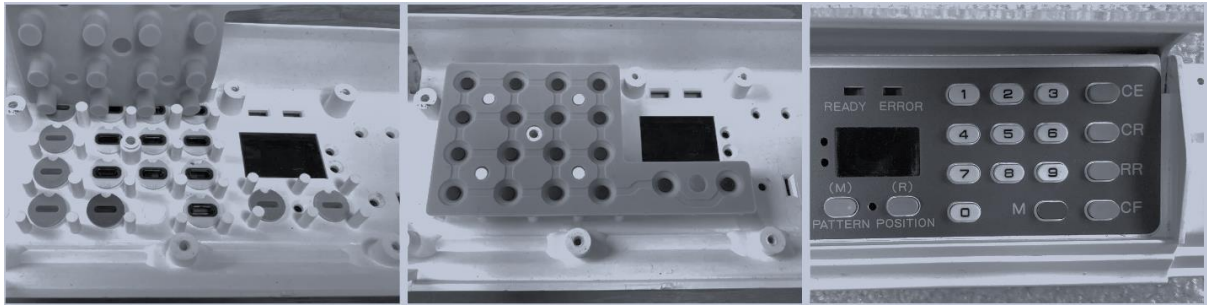

Remove the Mainboard: Unscrew and carefully remove the old mainboard from the lid, which consists of two separate boards. Both boards need to be removed. Once the mainboard is successfully removed, the lid will be empty. **Note**: Be cautious when removing the second board from the lid, as the button keys located beneath it can easily fall out. However, if they do fall out, they can be easily repositioned and put back into the case.

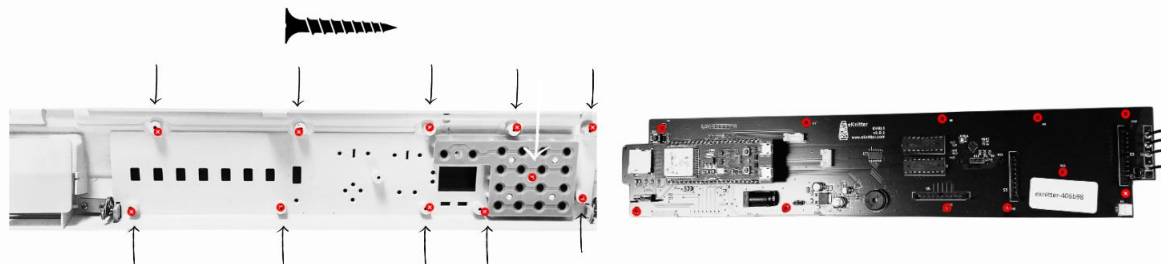The photos shows how the lid looks when you removed the old mainboard.

Install eKnitter

Check Button Keys: First, ensure that all button keys are correctly positioned in their designated places, including the rubber mat that lies on top of the keys.
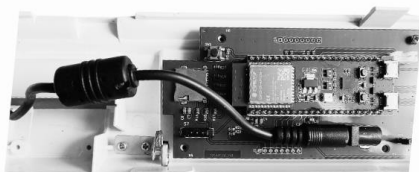

Position the eKnitter Board: Place the eKnitter board in its designated spot, aligning the board's screw holes directly above the corresponding screw holes on the lid.

Secure the Board: Fasten all screws tightly to ensure that the board is securely mounted and remains in the correct position.

Decide your power source

With the eKnitter board, you can choose between an internal or external power supply. This is controlled by adjusting a jumper—a small black plastic piece—located on the eKnitter board. For internal power, set the jumper to position JP2. For external power, switch the jumper to position JP1. Ensure that the jumper is set to one of these positions at all times. Information on the tested and recommended power supply options is available on our website at www.eknitter.com.

Connecting cables to eKnitter

Connect all cables—S1, S2, S3, S5, S6 (if given), and S7—to the eKnitter board. Each connector is clearly labelled to help you identify where each cable should be attached. **Also, if you use an external power supply, make sure S1 is connected.**

Test if your machine works correctly with eKnitter

Attention: Before turning on the machine

Carefully inspect all connections to make sure they are firmly in place. Ensure there are no loose wires or connectors touching the board. Make sure the eKnitter board isn't touching any metal surface.

Turning machine on before closing the lid with screws

Before Turning on the Machine: Double-check all connections to ensure they are secure. Then, turn on the machine and verify that the display lights up.

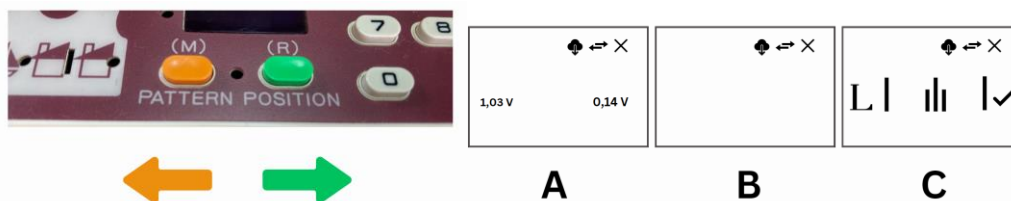If the display lights up, proceed with the next step.

Check if the Keyboard of your machine Works:

Button	Function
1	Toggle download on /off ♠
2	Toggle endless repeat on /off ⇌
(M)	Moves Menu to the left
(R)	Menu to the

Navigate the Menu on the Display

Use the green key to move the menu to the left and the orange key to move it to the right. You will find three menu options: A, B, and C.

Note: The options to toggle download and endless repeat are available only in menu B.

Test Each Carriage

Test carriages K, L, and G on both the left and right hall sensors to ensure they are recognized correctly. Note: The K carriage must be set in either the KC I or KC II position for this test. If any carriage is not recognized properly, please refer to the section "Set and Check the Hall Sensor."

Set Hall Sensor if necessary

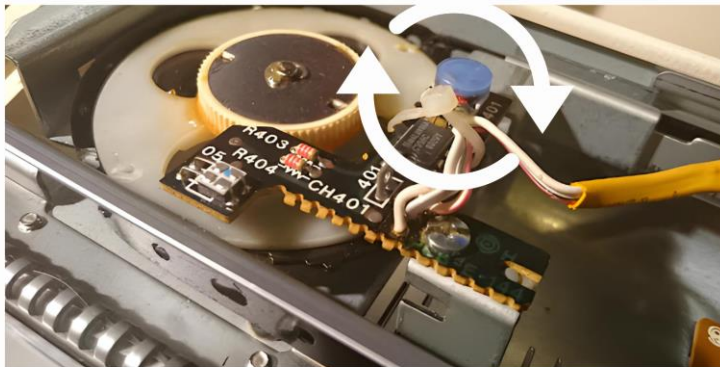**This step is only necessary if your carriages are not recognized correctly by the eKnitter.**

Accessing the Sensor Display: Press the green key (located below the display) repeatedly until the specific sensor screen appears. This screen will show whether the left (L) hall sensor is calibrated correctly.

Interpreting the Display:

- If you see a little "x" on the right side of the display, the sensor is not set correctly.
- If you see a checkmark on the right side, the sensor is set correctly.
- Adjusting the Sensor: To correct the hall sensor, turn the blue screw located under the lid on the left side of the machine.

If you slightly turn the blue screw you see directly on the display how the small bar moves to left or right. The little bar, you need to place in the canter between the two smaller bars. If it is done correctly, you should see a checkmark on the right side.

Right Hall Sensor Settings

The settings for the right hall sensor are not provided as they differ for the KH 910 model the shown value do not represent the real value and therefore cannot be set in the same way as the left side. If this sensor is not recognized correctly, it should be measured manually with a multimeter. We highly recommend that this part of the machine be handled by an electrician or someone with appropriate electrical expertise.

Set Wi-Fi

Before you can start knitting, you need to connect your eKnitter with your home Wi-Fi, so you can send images to your knitting machine via Wi-Fi. This step only needs to be done once. Make sure you have a functional Wi-Fi network in your knitting space.

- Turn the machine on.
- You should find a new device in your Wi-Fi network list on your computer.
- Connect with this device by clicking on it.
- Once you are connected, you should be directed to a setting page on your web browser (this may take a few seconds).
- In case you are not automatically directed to the setting page, you can also type in: http://192.168.4.1/WifiConfig/
- Save your wi-fi connection by typing in the name of your Wi-Fi network and password (make sure it is correct and pay attention to upper and lower case letters).
- If done correctly, you should see a Wi-Fi symbol on your eKnitter display.
- Next time you turn on your machine, eKnitter will automatically connect with your Wi-Fi. In case you do not see a Wi-Fi symbol, the eKnitter could not connect to your home Wi-Fi. The main reason is that your name or password was incorrect. In this case, you need to reset your eKnitter so your password setting will be deleted.

Install eKnitter-AYAB software

Download and install the eKnitter-AYAB desktop software, and design your pattern using any design software of your choice:

Install the **eKnitter-AYAB** software, which is specifically adapted to work with eKnitter. You can download the latest version on, www.eKnitter.com.Make sure you only open the software once on your computer.

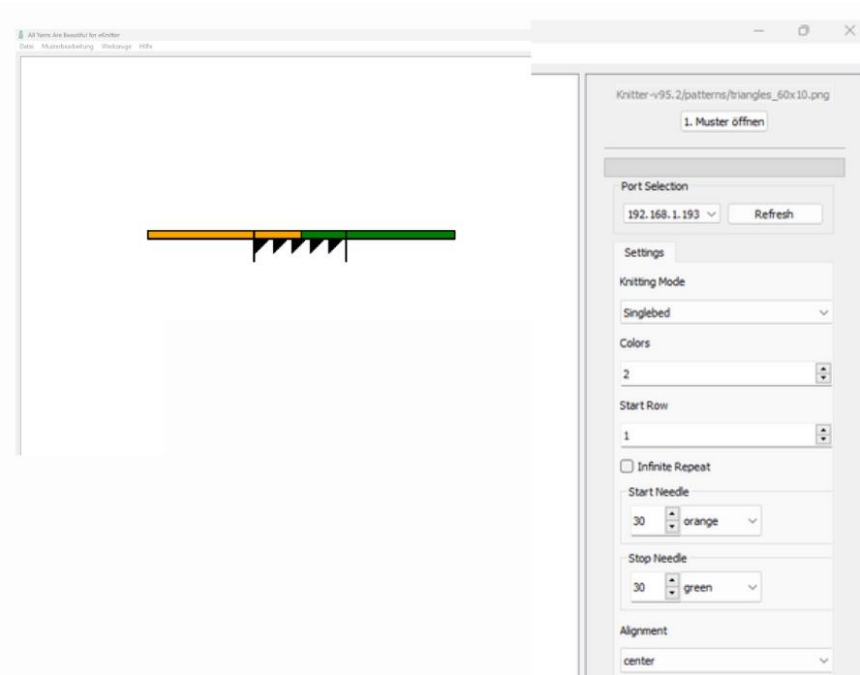**Getting Started with Your eKnitter**

Powering Your Machine

Internal Power Supply: Simply turn on the machine.

External Power Supply: Activate the external power source.

Software Setup

- Open the eKnitter-AYAB software on your computer.
- Load the knitting pattern you wish to use.
- Connecting the Software to Your Machine by clicking Refresh in the eKnitter-AYAB software

- Proceed by clicking on Config and then Knit. Depending on your settings, the software will either transmit the entire pattern to the eKnitter at once or send it row by row as you progress.
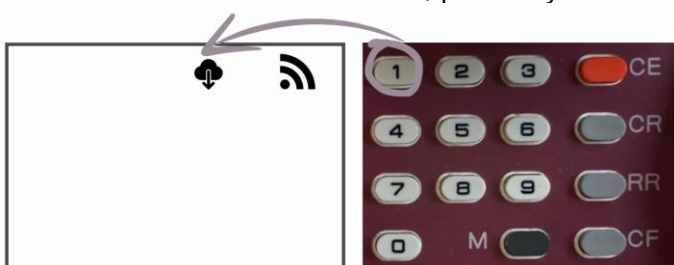

Pattern Transmission Options

You have two options for sending patterns to your machine:

Download Feature (Recommended): This mode transmits the entire pattern to the machine at once. It enables you to use the machine's buttons to navigate through the pattern, which is particularly useful for making adjustments or repeating rows. The pattern is stored in the machine's memory, allowing you to continue knitting even if the computer goes to sleep.

Advantage: Allows continuous knitting without computer assistance. You can manage the rows directly using the machine's buttons, such as moving forwards or backwards through rows.

Disadvantage: The current row is not displayed on the computer screen.

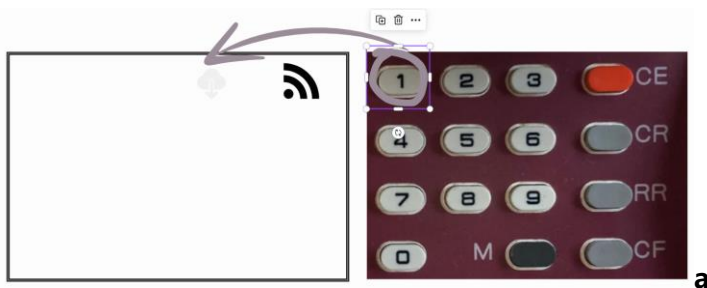To activate the download feature, press key 1.

Row-by-Row Transmission: This mode sends the pattern to the machine one row at a time, which may be especially beneficial for complex colorwork.

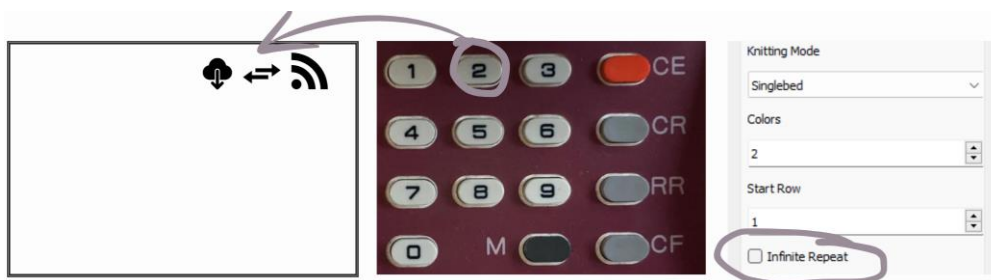**Advantage:** Each row is highlighted on the computer screen, making it easier to track your progress.

Disadvantage: Any necessary corrections require re-sending the pattern starting from the specific row that needs adjustment.
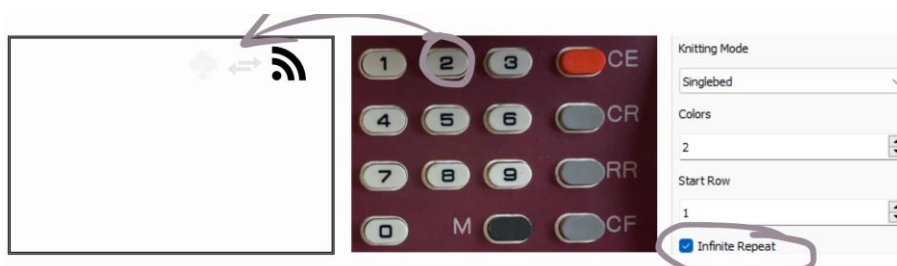
To deactivate the download feature, press key 1 again.

a

Setting Up for Endless Pattern Repeats

With Download Feature on: To enable endless repetition of the pattern, press button 2 which will display two arrows on the screen. Ensure that the infinite repeat is deactivated in the eKnitter-AYAB software to prevent multiple downloads.

Without Download Feature on: Activate the infinite repeat directly in the eKnitter-AYAB software to allow the pattern to continuously repeat.

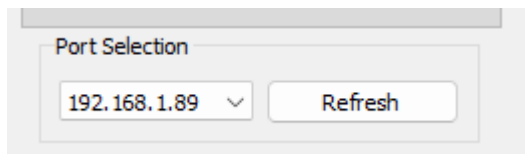| Button	Function
1	Toggle download on /off
2	Toggle endless repeat on /off
CE	Start pattern from 0 (only works when you saved the pattern on eKnitter)
RR	Go one row back (only works when you saved the pattern on eKnitter)
CF	Go one row forward (only works when you saved the pattern on eKnitter)
(M)	Moves Menu to the left
(R)	Menu to the

Debug Page

The debug page is a tool that allows you to adjust settings directly on your computer without needing to use physical buttons. This is particularly useful if the buttons are missing or non-functional.

To access the debug page, ensure your eKnitter is powered on and connected to your Wi-Fi. Enter the following URL: http://yourIP/Debug. For example, http://192.168.1.89/Debug. You can find the IP address of your eKnitter in the AYAB-eKnitter software.

How to Activate Download and Infinity Repeat via Computer:

With the dropdown menu "Ayba Download," you can toggle the download feature on or off. This is equivalent to pressing button "1". An icon of a cloud with an arrow will either appear or disappear on your eKnitter screen.

Using the "Infinity Repeat" dropdown menu, you can switch the Infinity Repeat feature on or off, just as if you were pressing button "2". Two small arrows will appear or disappear on your eKnitter screen.

Additionally, you will find dropdown menus for selecting the machine type and setting the debug level. Your eKnitter is preset to the KH 910; other machine types are not yet supported. The Debug Level is set to NONE to ensure optimal performance of the eKnitter and should only be changed if instructed by us.

How to Check the Hall Sensor Value If the Green or Orange Buttons Don't Work:

On the debug page, you can also find the left sensor value. If you turn the blue screw beneath the lid, you will see this value change when you hit refresh. To correctly set the value, it should be close to 1.00V (as indicated in the brackets).

Encoder

Parameter	Value
Firmware	0.4.10 (gba61ff2)
Hardware	KH910 HW 1.0.1 (3)
NeedleNo	0
Direction	Unknown
Carriage	Unknown
Knitting	1
Rowcounter	65535
Hall Left	1319 (1.08V)
Hall Right Ext (J13)	629 (0.53V)

REFRESH

Reset eKnitter

For resetting eKnitter, press key A and keep it hold. While still keeping key A held, press key B once. Keep holding key A for another 6 seconds and then release. If the reset was successful, the LED on the eKnitter board goes from blue to red. Your Wi-Fi settings are deleted, which means eKnitter will show again in your Wi-Fi network list on your computer again.