



KIOSHI

**INTERACTIVE PIANO SILENT
SYSTEM**

Kioshi Gen2: Installation Guide 2.1

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Product introduction

Kioshi Interactive Piano Silent System is an intelligent electronic device that allows a traditional piano to be muted, allowing the player to use the interactive functions and/or play with headphones.



Five parts of Kioshi:

1. Control box
2. Sensor rail
3. Mute rail
4. Pedal sensors
5. Accessories: Mute lever, signal cables, mute rail kit, power adapter, sensor rail holder, spring screw kit, and pedal bracket

Three key stages of installation:

1. Mute rail
2. Sensor rail and pedal sensors
3. Control box and calibration

Tools to use

- Flathead and Phillips screwdriver (preferably magnetic)
- Ruler (15cm)
- Pen/pencil
- Knife/scissors
- Handsaw (for metal)
- Steel file (small, for metal)
- Vacuum cleaner
- Pliers



Piano disassembly

1. Open top cover
2. Remove upper panel
3. Remove key lid
4. Remove key rail
5. Remove muffler
6. Remove lower panel
7. Take out action



Mute Rail installation

STEP 1: REMOVE ACTION

1. Put the action onto a workbench with the hammers and action rail towards you. Now remove the damper stop rail.
2. During removal, please properly protect the dampers.



STEP 2: PREPARATION OF MUTE RAIL

1. Prepare the mute rail: If your action has a mounting option in the middle, attach the extra bracket (fig. 1.1) in the middle of the action (fig. 1.2).
2. Install the threaded rods at both sides. Screw them in by hand (fig. 1.3) and tighten them with a flat-head screwdriver.
3. Install the hook of the mute rail. Lay the mute rail with the white strip downwards. Now position the hook downwards on the fabric (fig. 1.4) and mount the hook to the mute rail with the screws.



fig. 1.1: Extra brackets



fig. 1.3: Install support rod at both sides of mute rail



fig. 1.2: Position the bracket in the middle of the mute rail



fig. 1.4: Installation of hook of mute rail

4. Install the brackets at both ends:

- Slide the treble side bracket (fig. 1.5) onto the left threaded rod. Keep the concaved surface facing outwards. Fix the bracket with an M5 screw (included).
- Slide the bass side bracket (L-type) (fig. 1.6) onto the threaded rod on the right side (hook side) of the mute rail. Fix the bracket with an M5 screw (included).



fig. 1.5: Treble side bracket



fig. 1.6: Bass side bracket (L-type)

STEP 3: ASSEMBLY OF MUTE RAIL

1. If you have two mounting points: mount the mute rail onto the action with M5 screws (included). Mount them as low as possible (fig. 1.7). Confirm all hammer shanks can be stopped (fig. 1.8), and adjust to the left or right if needed.
2. If you have three mounting points (also a middle bracket): mount all 3 points with the M5 screws. At the middle bracket, mark the position for cutting (fig. 1.9), so that the mute rail can move freely back and forth. Reserve 5mm width on both left and right side, and mark the cutting position. After clear marking, disassemble the mute rail.



fig. 1.7: Installation of mute rail



fig. 1.8: Confirm that all hammer shanks can be stopped



fig. 1.9: Mark cutting/
sawing position for
middle bracket

3. At the marked spot, make two incisions with a metal saw, leaving the bottom intact (fig. 1.10). Make sure your incisions are deep enough, and reach the bottom part (fig. 1.11). Remove the sawn piece with pliers. (fig. 1.12)
4. After sawing, make sure you file any sharp edges. (fig. 1.13)



fig.1.10: Cutting of white glue strip at marked position

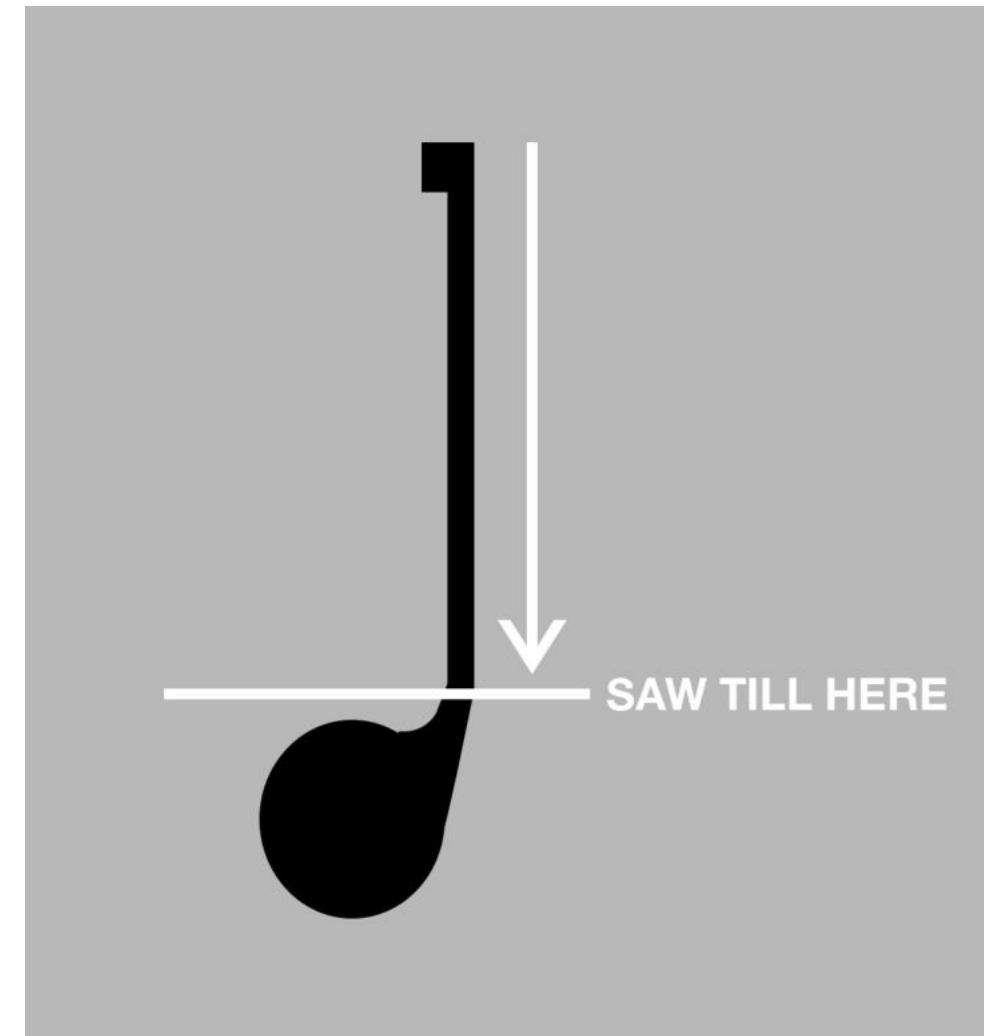


fig 1.11: Sideview mute tail, cut deep enough until the thick rounded part.



fig. 1.12: Remove cutout with pliers

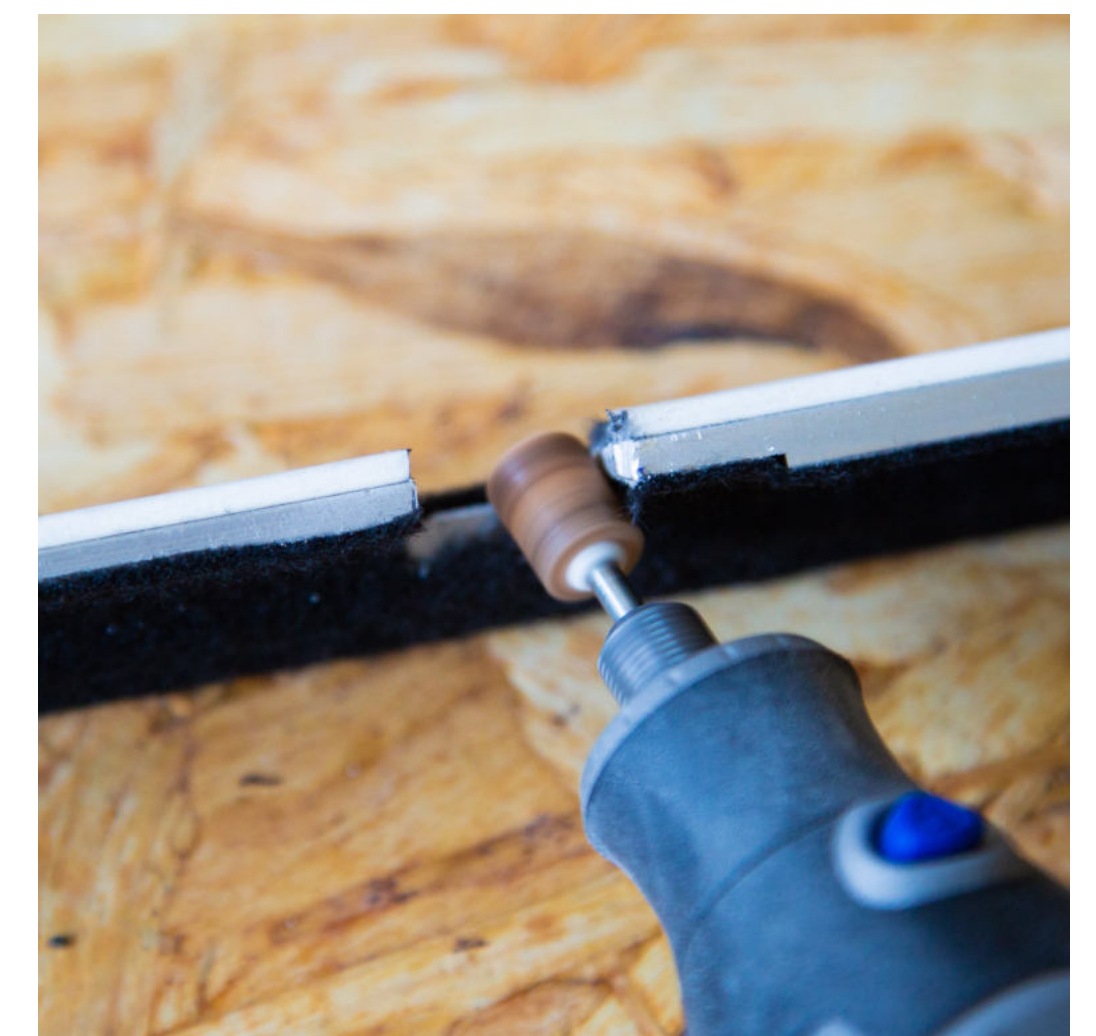


fig. 1.13: file the sharp edges with a multitool or file

STEP 4: INSTALLATION OF MUTE RAIL AND MUTE LEVER

1. Fix the mute rail onto the action like before. (fig. 1.14, 1.15 and 1.16).

- **Horizontal:** Make sure all hammer shanks can be stopped.
- **Vertical:** Brackets at both sides should be mounted as low as possible.
- **Depth:** Sometimes the mute rail is too close to the hammer shanks. To adjust this distance, pads can be inserted between the action bracket and the fixation. These pads are included in the parts bag.



fig. 1.14: Fixing of mute rail



fig. 1.16: Height check: Hammers cannot touch the mute rail.



fig. 1.15: Make sure all hammer shanks can be stopped

2. Installation of spring: Put the hook of the spring under the end of the black hook to support it upwards. The steel wire end below the spring should be inserted inside the L-type bracket. (fig. 1.17-1.19).



fig. 1.17



fig. 1.18



fig. 1.19

3. Take out the mute lever and brake cable. Check that the position of the lock buckle is 48mm from the end of the cable shell (fig. 1.20) when the mute lever is closed (lever in a 90° angle). Tighten the lock buckle. Hang the lock buckle in the hook opening while keeping the cable shell in the circular slot of the L-bracket (fig. 1.21).

Now use the adjustment bus (fig. 1.22) to fine tune the tension on the cable. Make sure all hammer shanks are properly blocked when the mute lever is pulled, and all hammer shanks can move freely when the mute lever is in neutral position. If the range of the adjustment bus is not sufficient, adjust the position of the lock buckle.



fig. 1.20: Distance of the lock buckle

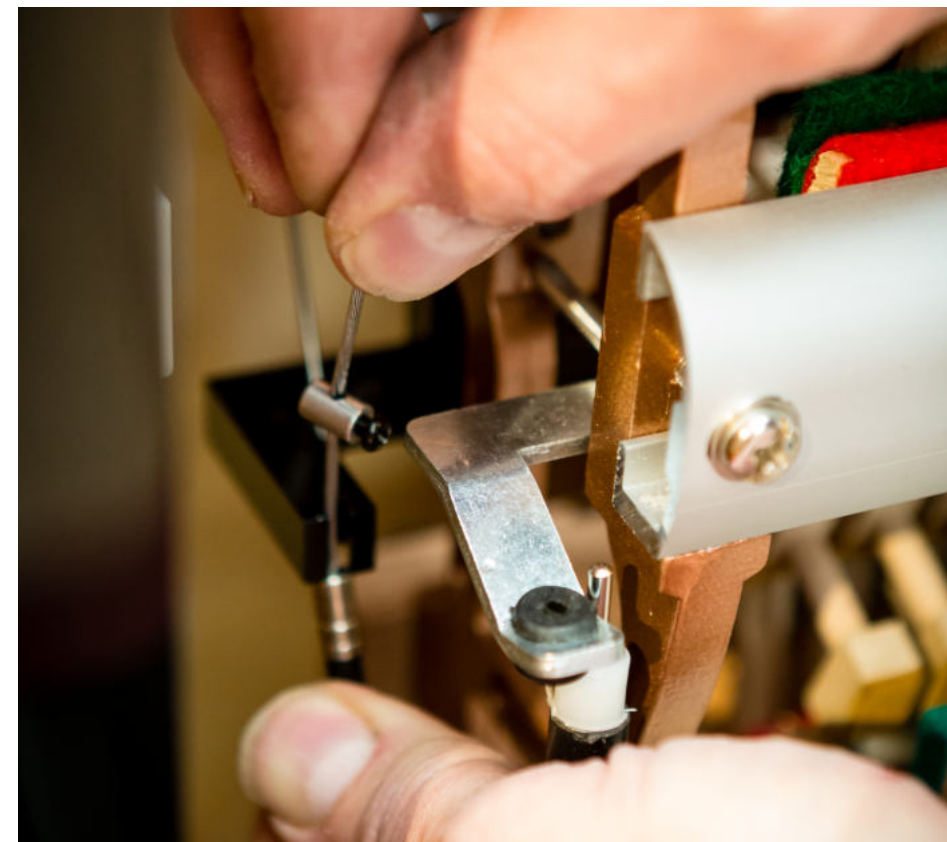


fig. 1.21: Cable shell in L-bracket



fig. 1.22: Adjustment bus

STEP 5: INSTALLATION OF ACTION

1. Remove the brake cable of the mute lever and install the action back into the piano.
2. Guide the brake cable from under the piano upwards through the bottom of the keybed, and attach the cable to the hook and L-bracket as before. Check if the action functions as normal, and if the mute rail responds to the mute lever as before. Adjust where needed.
3. Install the lever box at the lower left underside of the key bed with the supplied screws. Install the lever box in a position, so that the lever is flush with the piano when pulled (fig. 1.25).

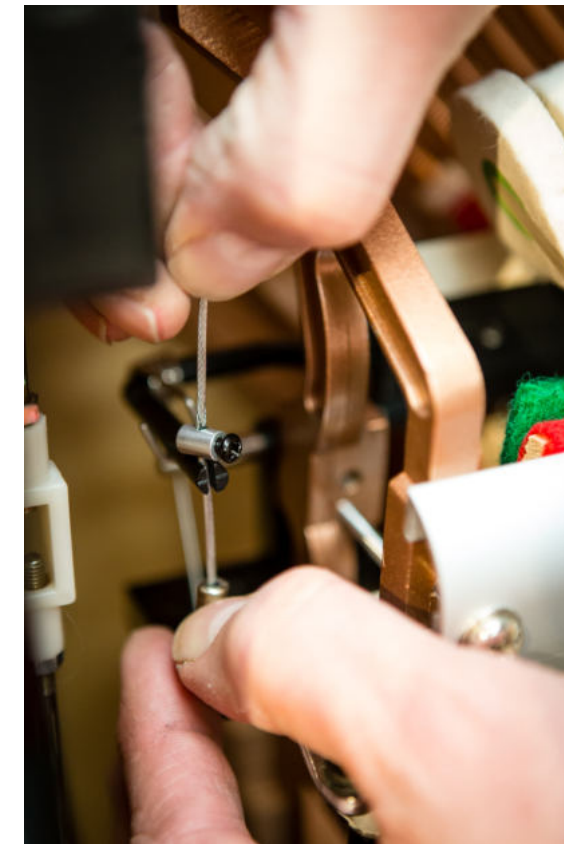


fig. 1.23: Micro adjustment of brake cable

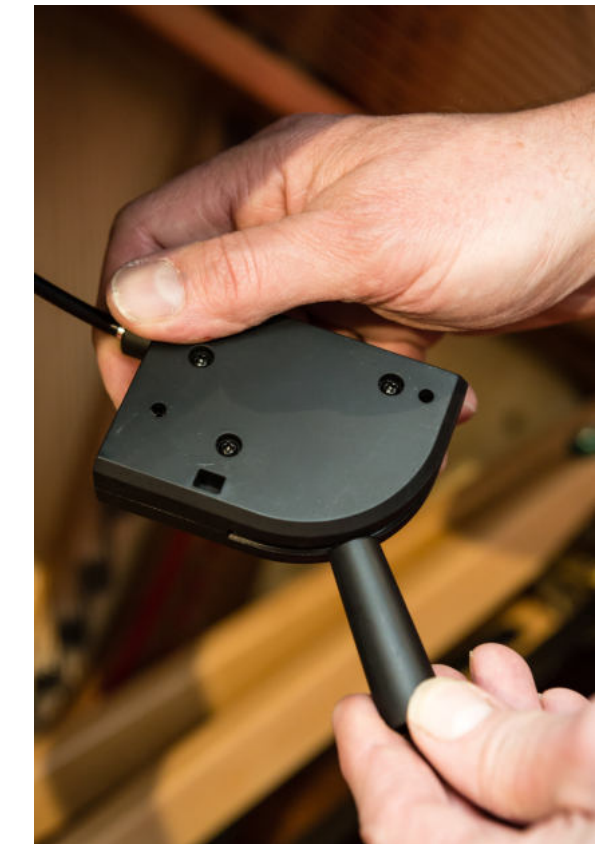


fig. 1.24: Lever box

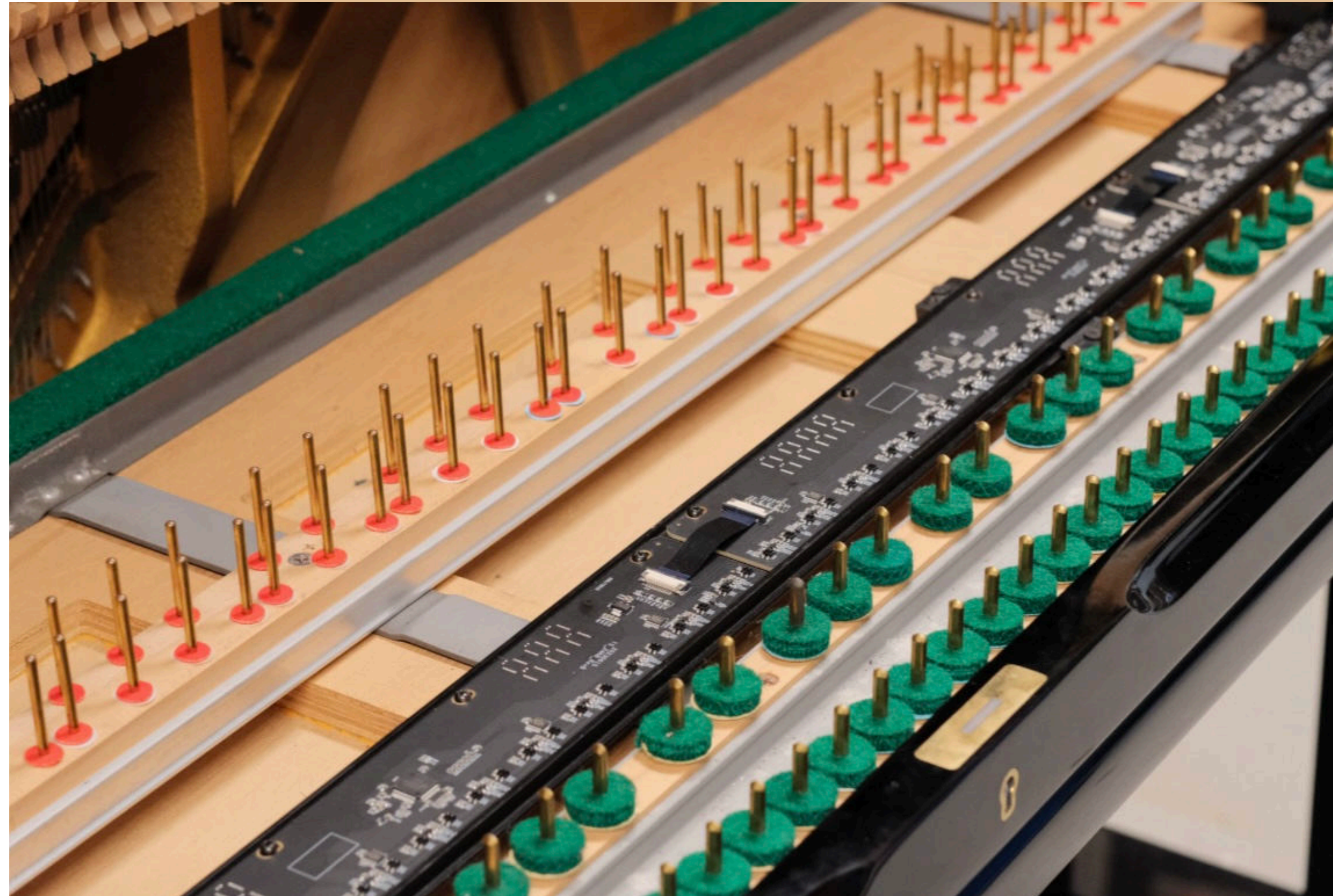


fig. 1.25: The mute lever is flush with the front of the piano when pulled

Sensor Rail Installation

STEP 1: ASSEMBLY AND PLACEMENT OF SENSOR RAIL

1. Remove all the keys as per their numbering and put them aside. Clean the key bed with a vacuum cleaner and/or brush.



2. Take the 4 sensor rail brackets and spring screws; place the springs onto the stud bolt on the bottom side of the brackets (Fig. 2.1) and slide the 4 brackets onto the sensor rail.
3. Two sensor rail brackets are placed around the wooden bracket at both sides of the keyboard frame, while the two middle holders are placed on thirds of the sensor rail. As a result, the four sensor rail brackets are evenly distributed onto the sensor rail (fig. 2.2).
4. Put the sensor rail onto the key bed: The side with LED's should be pointed towards yourself. Meanwhile, insert the flat keyboard signal cable on the right side of the sensor rail.

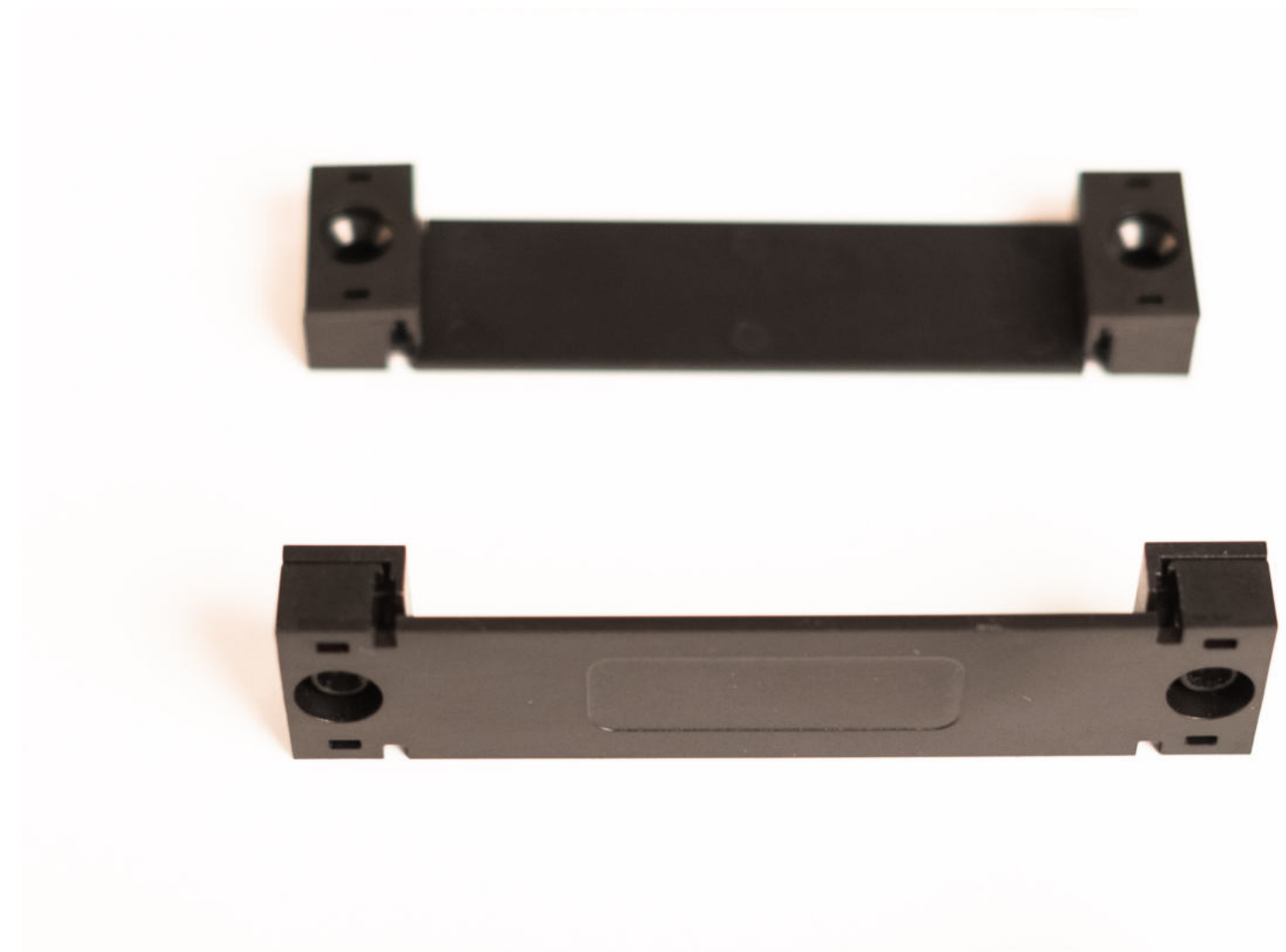


fig. 2.1: The sensor rail brackets

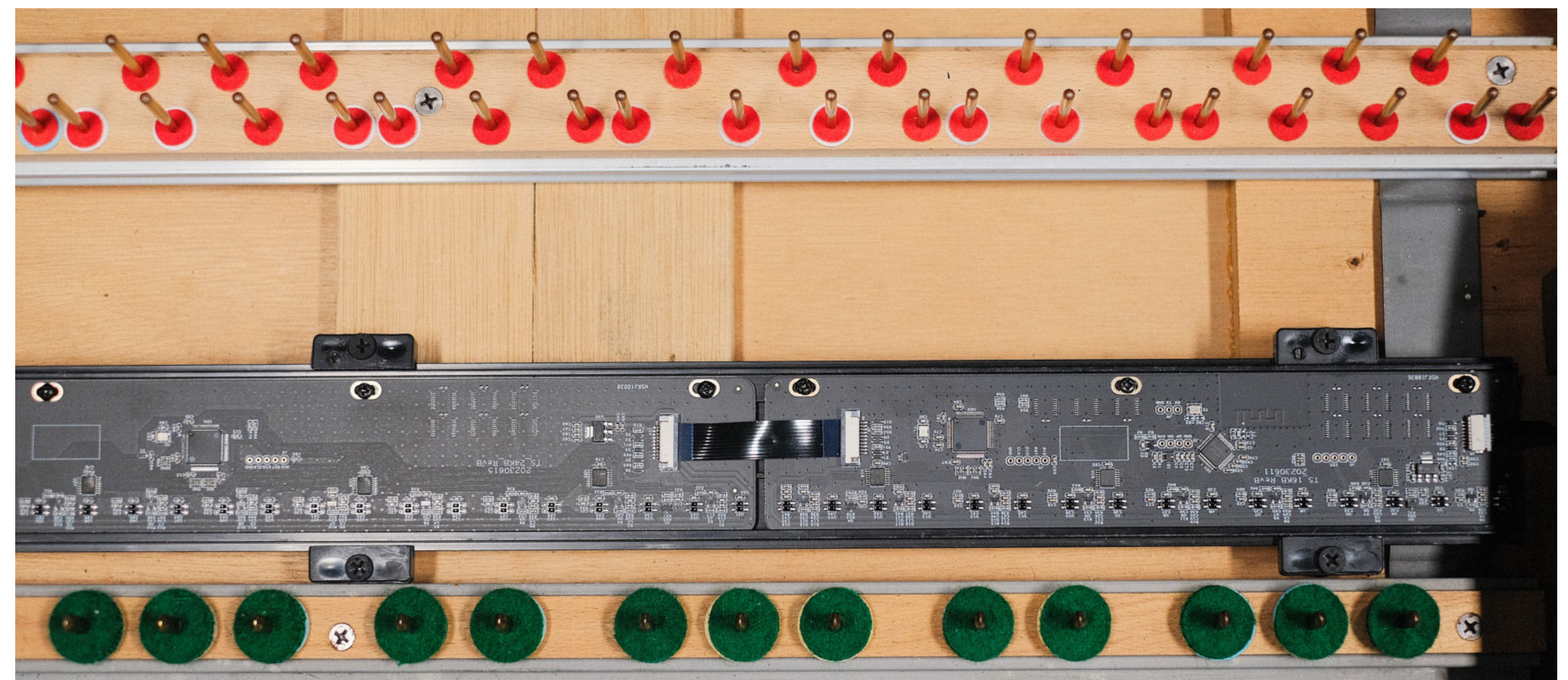


fig. 2.2: Evenly distribute the four sensor rail brackets.

STEP 2: INSTALLATION OF SENSOR RAIL

Horizontal position: Find 4 black keys near the sensor rail brackets and put them onto the keyboard (fig. 2.3). Align the sensor LED's sideways with the 4 black keys. Make sure the corresponding LED's are under the black keys and precisely in the middle (fig. 2.4). Double check the four black keys with a good look from above. After adjustment, lock the black grub screws in the plastic brackets. At last, install all the other keys, and the keyboard sensor has been installed completely. In some cases the sensor LED distance doesn't match the key width. If the key-sensor alignment on one side causes a misalignment on the other side of the keybed, follow these steps:

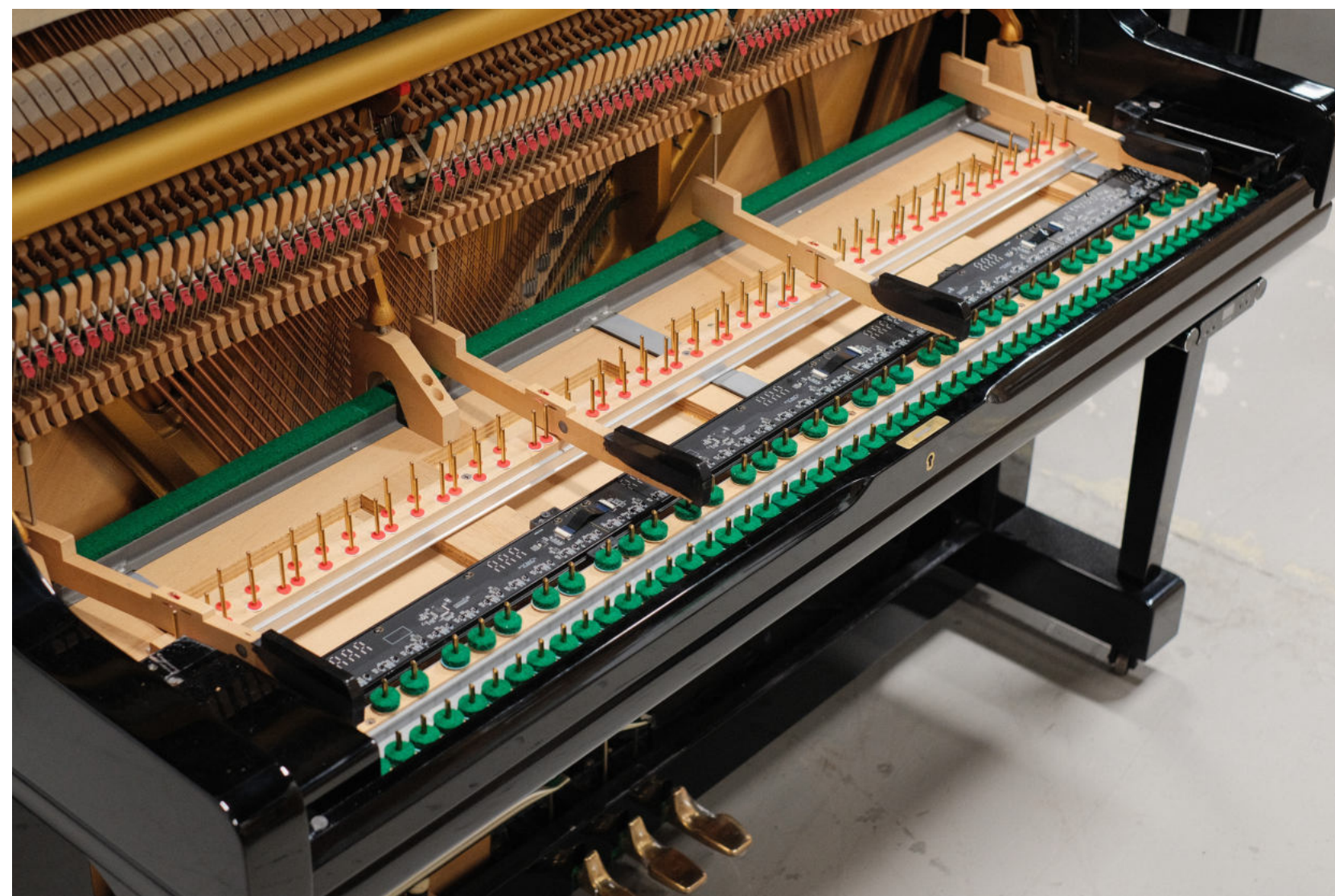


fig. 2.3: Adjustment of sensor rail position

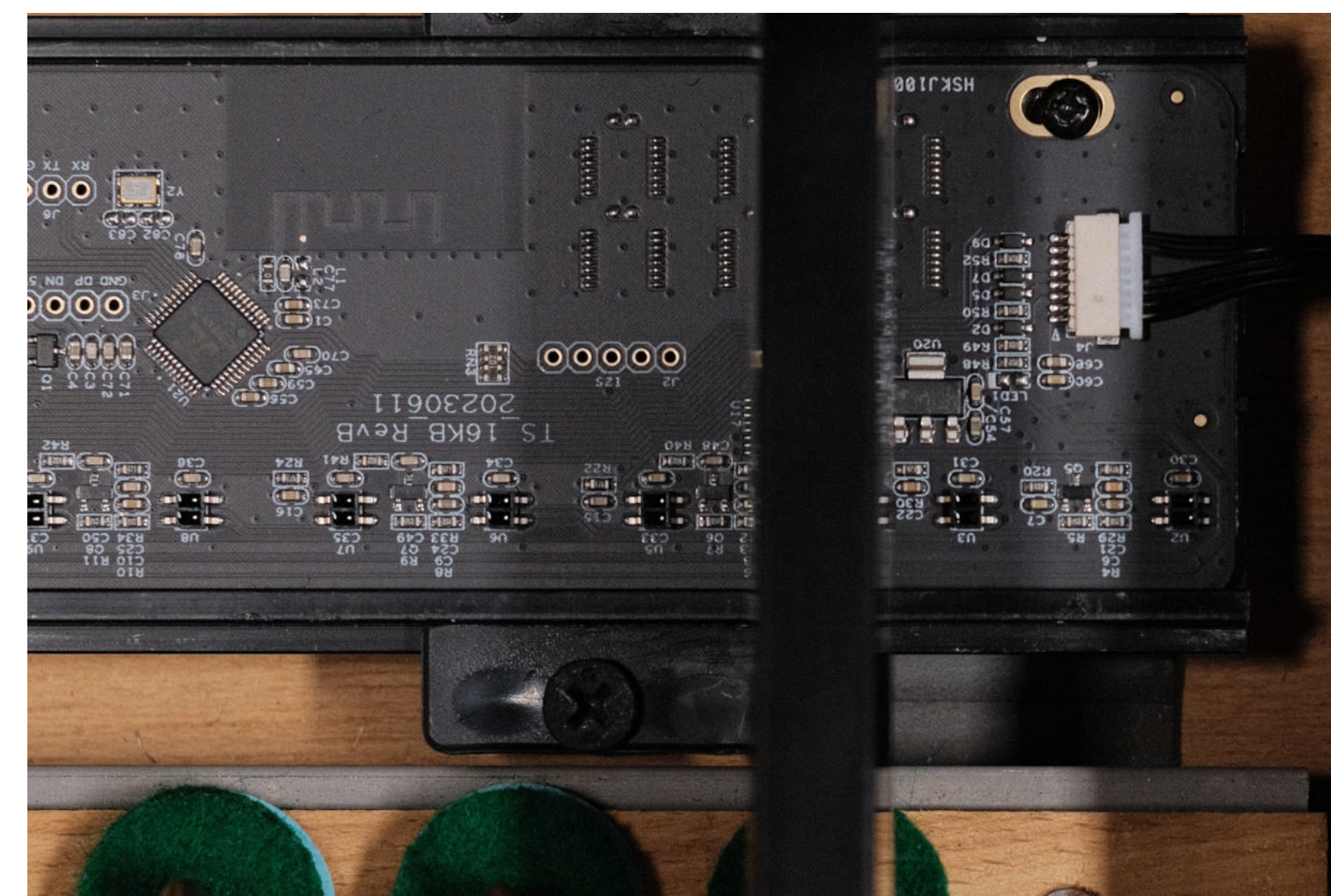


fig. 2.4: The sensor LED is precisely in the middle.

1. Align the black key and corresponding sensor LED on the bass side of the piano, and lock the rail with the grub screw in all four rail brackets.
2. Now loosen the Phillips screws of three sensor rail boards, leaving the screws tightened of the far left (bass side) board.
3. Slightly slide the loosened boards to the treble side until a proper alignment of black keys and corresponding sensor LED's is made across the whole keyboard. The three flex-cables between the boards will give you sufficient flexibility for a proper alignment (Fig. 2.5).
4. Tighten all philips screws along the different boards, and double-check the sensor-key alignment at all four black keys.

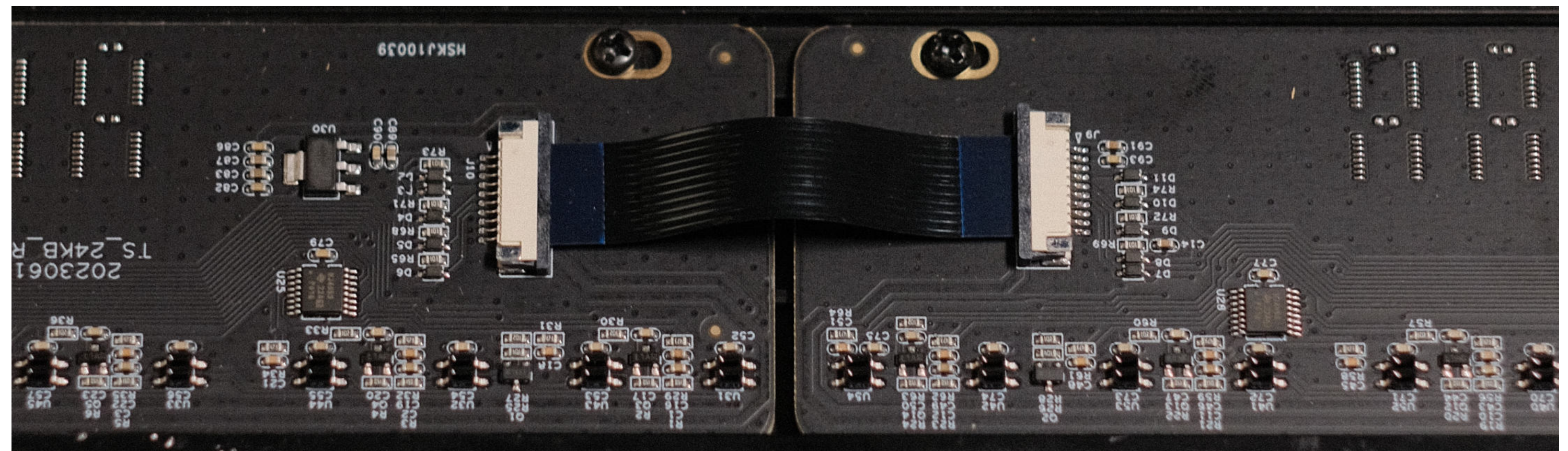


fig. 2.5: Two Philips screws at the top and the flex-cable in the middle.

Vertical position: The goal is to get a 4mm distance between the board surface and the bottom of the pressed down key. For this, screw in the 8 spring screws until the bracket is touching the key bed. Now place the L-shaped measuring tool (fig. 2.7) on the board (not on the sensor!) and push the black key down. Slowly raise the height of the spring screw again until proper distance is met. (fig. 2.6). Check the height of the neighbouring white keys. If they don't have same distance to the sensor as the black keys, the piano needs regulation before you can continue with the initialisation of Kioshi.

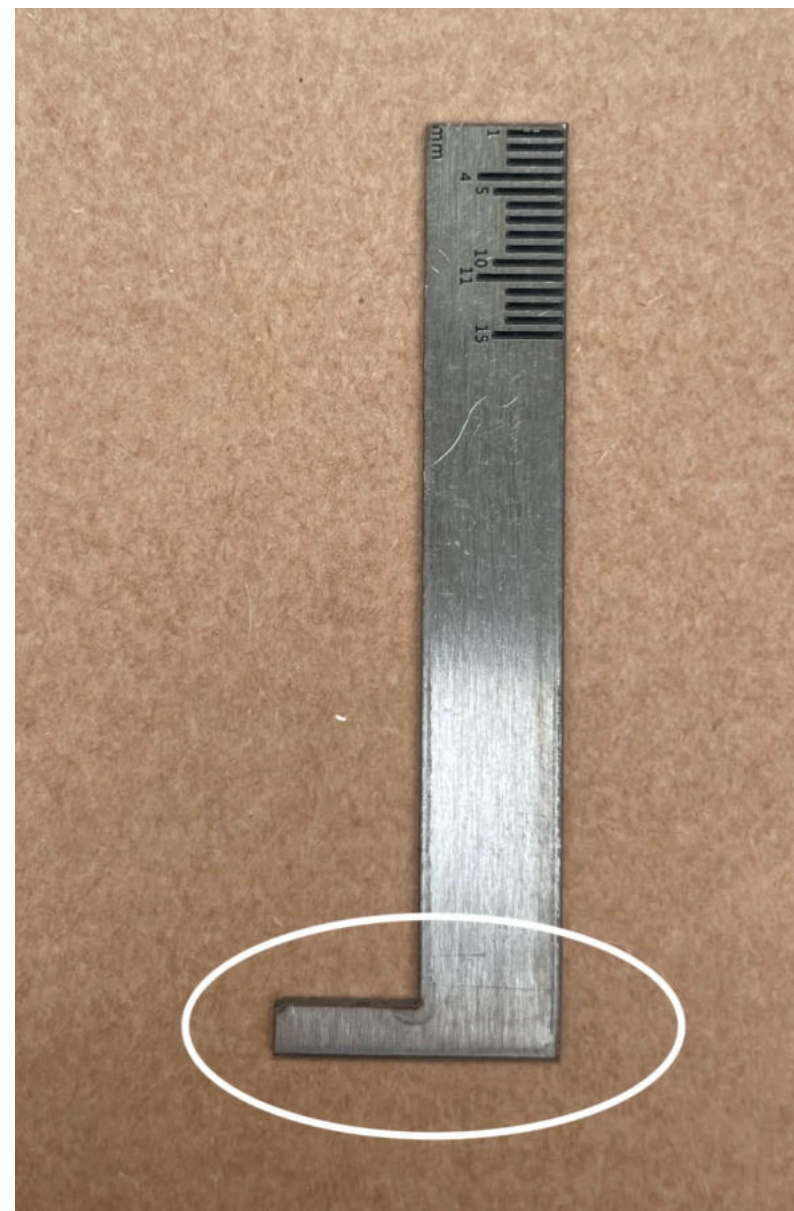


fig. 2.6: Measuring tool for board-key distance



fig. 2.7: Measuring the distance between the board and the key.

STEP 3: ATTACHMENT OF REFLECTIVE STICKERS

The use of reflective stickers under the keys is not strictly necessary. Our newest generation micro-sensors can read the distance to the keys without any stickers on the keys. Though for older/ discoloured keys, we recommend using the reflective stickers to cancel out any chance of failure. If you choose to use the reflective stickers, please follow the next steps.

Take out the two types of silver reflective stickers (thick and thin) (fig. 2.8) and attach them to the underside of the keys (fig. 2.9). Use the thick stickers for the white keys and the thin stickers for the black keys. Make sure the stickers are centred above the sensor LED's (fig. 2.10). Excessive reflective stickers can be put aside for future use.



fig. 2.8: Disassembly of keys in step 1



fig. 2.9: Reflective stickers, thick and thin



fig. 2.10: Position of the reflective stickers

Note:

- 2mm thickened reflective stickers are only used for white keys; the two widest reflective stickers are for key 1 and key 88.
- Make sure that the stickers are smooth, clean and free from wrinkles or stains.

Double check the position of the stickers. Make sure the reflective sticker is positioned and centred right above the sensor LED, and NOT positioned and centred over the sensor rail. Wrong placement of the reflective stickers can result in malfunctioning of keys.

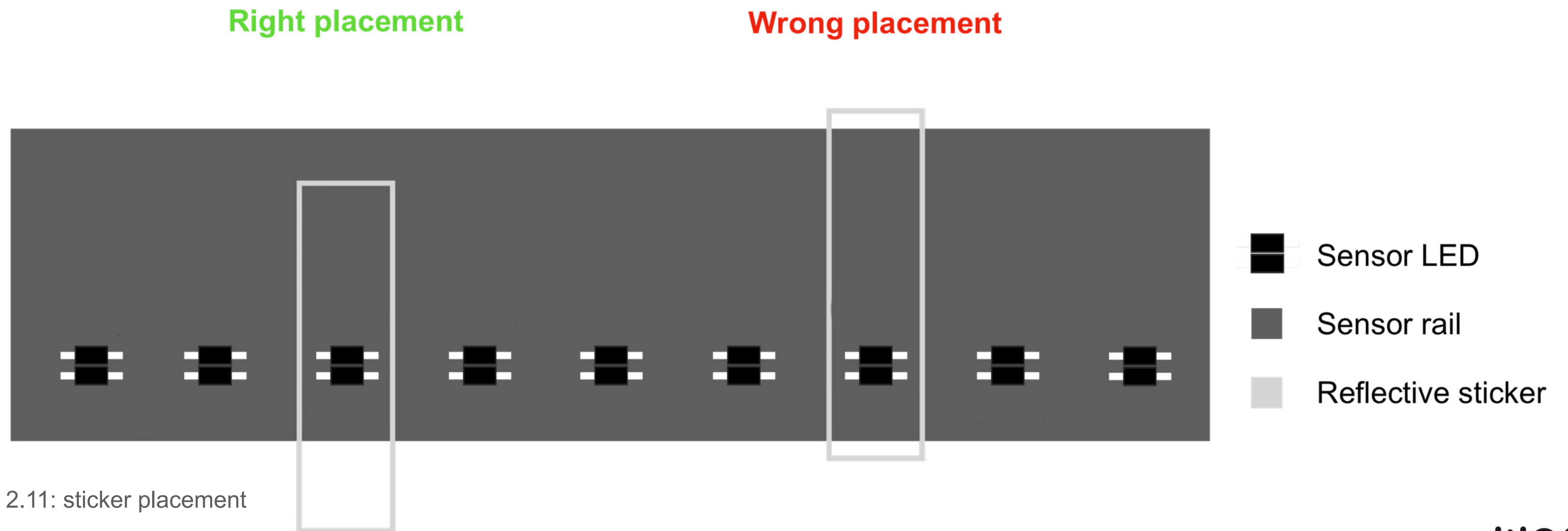


fig. 2.11: sticker placement

STEP 4: INSTALLATION OF PEDAL SENSOR

1. The pedal sensors are activated when the lever is pressed. Therefore the sensors have to be placed closely to the pedal rod. When the pedal rod moves, it presses the lever and the sensor registers the use of the pedal. The pedal sensors can be placed either in the middle of the piano where the pedal rod starts, or on the left side of the piano where the pedal rod ends. (white cable = left pedal, black cable = right pedal).
2. For central placement, slide the sensors on the brackets with the levers facing up. For placement on the left side, position them upside down on the brackets.
3. Make sure that the sensor lever is right above/under the pedal rod. Secure the bracket to the bottom with the supplied wood screws.
4. Now adjust the height of the sensor on the bracket. The sensor lever should not be touching in resting position, and it should be pressed in by the rod when the pedal is used.
5. After the sensors have been locked into place, tidy up the cables with cable ties.



fig. 2.12: Pedal sensors. Lever facing up (left) and down (right).

Control Box installation

STEP 1: INSTALLATION OF CONTROL BOX

1. Insert the signal cable (fig. 3.1) corresponding to the English names indicated on the control box (keyboard signal cable, pedal signal cable).



2. Fix the position of the control box with screws. **Horizontal:** about 8cm from the piano leg.
Front and rear position: Ensure the surface of the control box is flush with the key rail. (fig. 3.2)
3. Tidy up any loose cables with cable ties.



fig. 3.1: Wiring of communication cables of keyboard and pedal



fig. 3.2: Measurement of the position for installing control box

STEP 2: KEY CALIBRATION

1. Before first startup, press and hold the power button and volume button (right round knob) simultaneously for 4 seconds to enter sensor calibration mode. Now start from the treble side of the piano and press every key one by one. Take about half a second for every key and make sure every key is properly pressed. Once you pressed the last key, the control box will confirm the successful calibration. Reboot the control box and give Kioshi a final test by playing the piano.



TROUBLESHOOTING

When the calibration fails or when a key is not responding properly, please check the following:

1. **What is the sensor-key distance?**

The distance between the top of the sensor LED and the bottom of a pressed black key should be ~2mm. Check this distance at multiple black keys over the width of the piano. At any black key, the distance to the sensor LED should be ~2mm.

2. **Is the sticker in the middle of the sensor LED?**

It is very important that you do not center the reflective stickers above the sensor rail. The reflective sticker should be centered above the sensor LED. Please check the image at Installation of Sensor Rail - Step 3: 4.

3. **Is the sensor in the middle of the key?**

Check if the sensor rail is properly centred horizontally. All sensors should be right in the middle of the corresponding keys.

4. **Did you calibrate properly?**

Make sure you pressed every key firmly and clearly in the calibration process. While calibrating you can double check every key.

STEP 3: INSTALLATION OF THE PIANO

1. Put back the piano parts, such as key lid, upper panel, lower panel and top lid. By now the installation has been completed.
2. The Kioshi Interactive Piano Silent System is ready to use!

For more information visit www.kioshi.com





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SYSTEM**

Kioshi B.V. Product