My Own Orchestra

Acoustic Piano MIDI Converter with Silent Mechanism

INSTALLATION GUIDE

Model : GENIO Premium / GENIO Basic

MIDMURO CO. LTD.

2013

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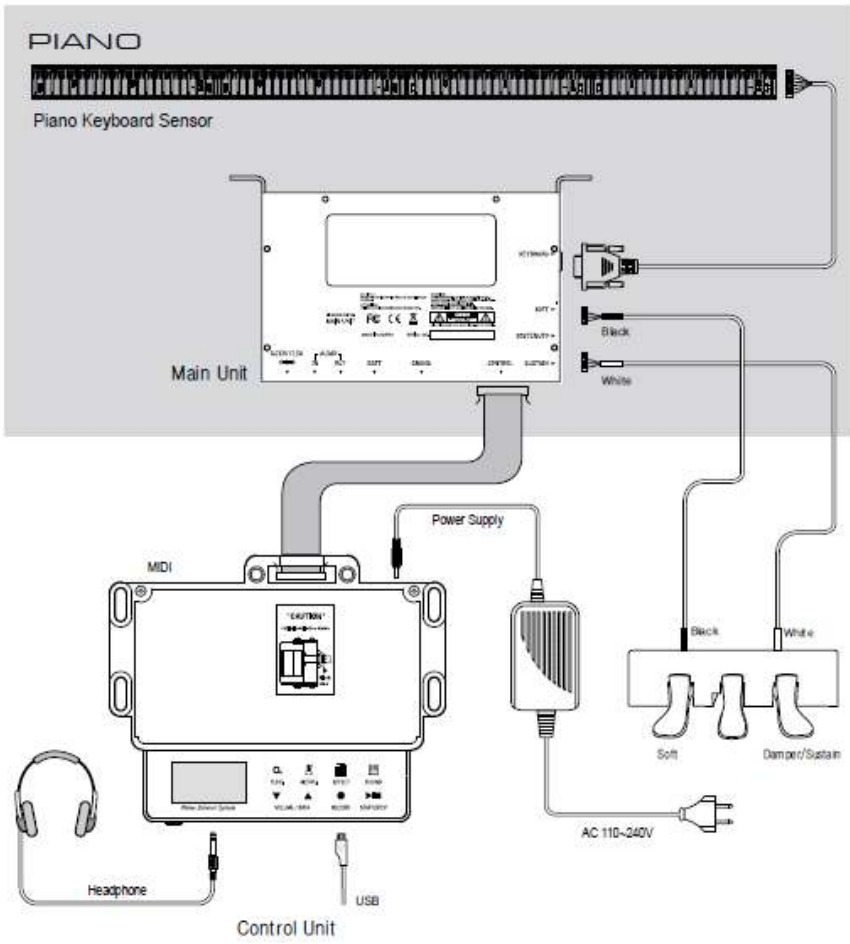
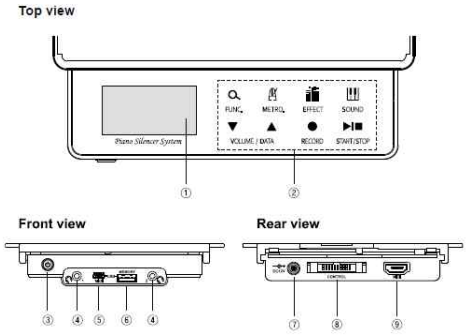
Chapter 1 . System Connection Diagram

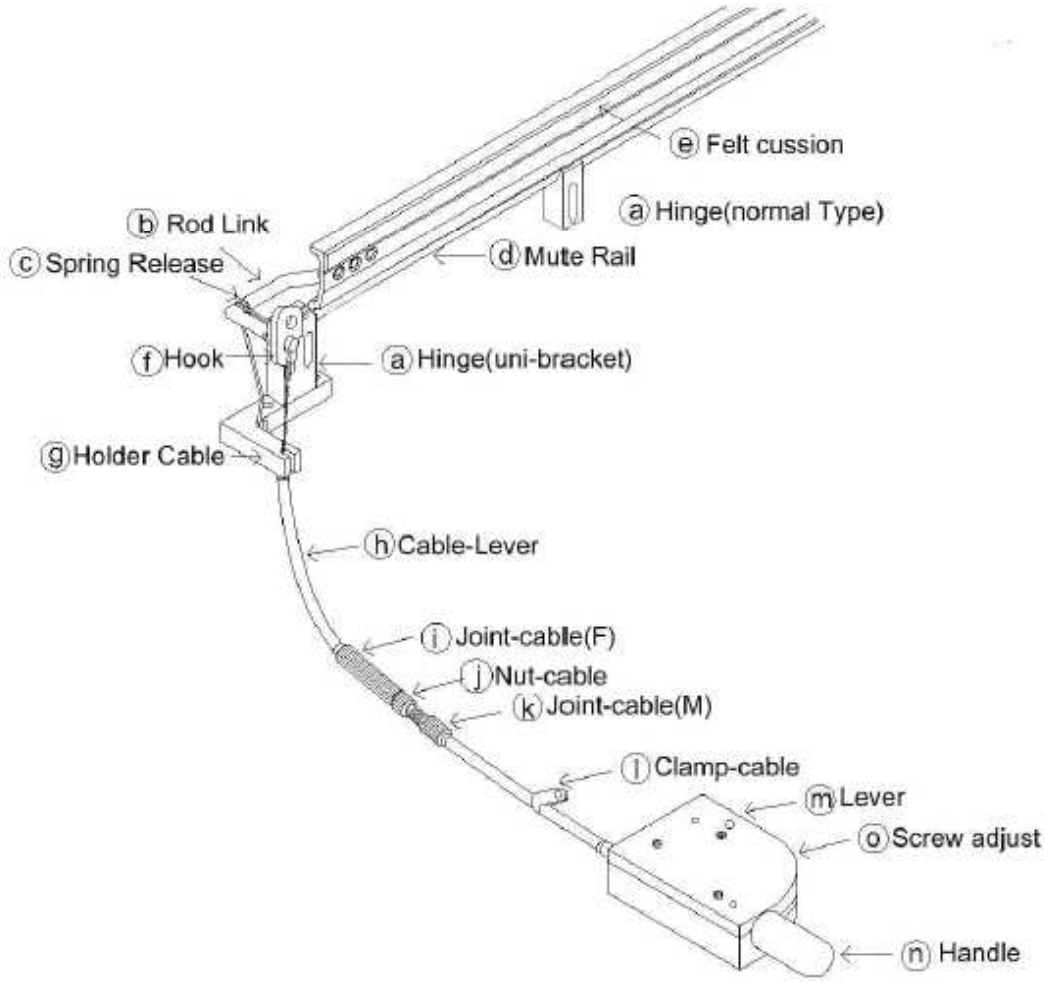
1. System Wiring Diagram





① **DISPLY**: Shows the selected mode and value.
② **TOUCH BUTTONS**: Select Function/ Metronome/ Effect/ Sound/ Volume/ Data/ Record/ Start/ Stop buttons
③ **POWER**: Turns the system on and off
④ **HEADPHONES**: You can monitor the sound by connecting the headphones.
⑤ **USB PORT**: Connects with PC through USB (USB MIDI, System Upgrade)
⑥ **USB HOST**: Connects with USB Memory
⑦ **DC JACK**: System power is provided through use of power adaptor
⑧ **CONTROL**: Connects with Main Unit
⑨ **MIDI**: Connect with external MIDI device through MIDI extension cable (Option).

2 . **General View of Muting Assembly (Upright Piano)**



Mute Rail, Uni-Bracket & Lever A'ssy

Chapter 2. The Flow of Entire Installation

1 . Mute Rail Installation

① Separate the action from the piano and adjust mute rail length suitably for the action bracket not to interfere the mute rail (Cutting the centre bracket's part out)
② STANDARD type mute bar can be cut and adjusted according to the various action styles
③ Separate the piano damper rail
④ Install mute rail to the action
⑤ Install mute rail parallel with the strings without bend ※ Important
⑥ Install spring and E ring at uni bracket
⑦ Install mute lever, adjust mute on and off position

※ Important point : parallel mute rail with the strings -> same distance from every hammer shanks, ensure the damper's moving space when mute off

2 . Sound Source Installation

① Separate the keys from the key bed, and put the sensor rail, and put several black keys upon the key sensors for sensors, to adjust the springs height for correct sensor positioning.
② After setting the springs, install the sensor plate carefully.
③ Connect the main cable tightly to the connector in treble part of the sensor plate. Put the 5 black keys around the screws which shows the standard height of the sensor plate.
④ Adjust the height carefully by adjusting the distance between the bottom of black keys and the top of the sensor rail
⑤ Install the Main Unit under the key bed inside, and connect the main cable.
⑥ Install the Control Unit under the key bed outside(front), and fix the headphones hanger.
⑦ Install pedal sensors.
⑧ Arrange the electric wires and sensor cables

※ Important point : Tidy arrangement of the main cables connected between key & pedal sensors and main unit

3 . Finishing

① Let-Off adjustment for muting position
② Calibration(Initializing) the system
③ Monitor the sounds, and adjust the sensitivity of each key if needed
④ After installation finished, check any noise happening.

※ Important point :
Let-Off : Adjust the hammer shanks take out before touching the mute rail
Check the dampers working properly during acoustic play (mute off).

Chapter 3 Mute Rail Installation

1 . Key points for Installation

It is the most important to install the mute rail at the right position to stop the hammer shanks just before touching the strings for mute play.

If the mute rail installation is not perfect, you can hear the real piano sound during mute on, and the action working is not so harmonious during acoustic mute off play, and it disturbs the basic piano performance.

Notably, securing the damper's working space is very important for acoustic play.

Pay attention to Kawai new models, especially the damper's free moving in middle-end section.

There are tailored mute rails for several popular models and you don't need to cut the mute rails. Just inform your piano model name when placing order.

Y121 (for Yamaha U1, U2 , Old U2 should be cut a little shorter)
Y131 (for Yamaha U3)
K125 (for Kawai 124 ~ 127cm, Since BL)
K132 (for Kawai 132cm, BL61, 71 US50 etc, Since BL)
STANDARD BAR (No Cutting, Need aluminum rail cutting. Old Kawai KU need to be cut from the standard type)

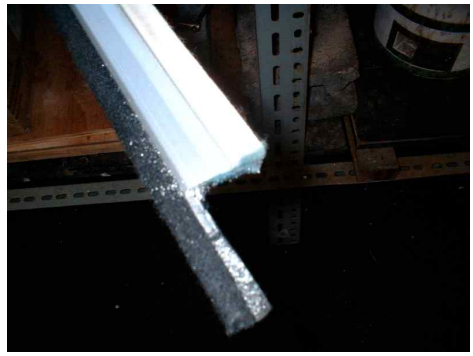
Kawai type middle-end part is already cut for the damper block screw to escape from the interference with mute rail.

2 . **Mute Rail Working (STANDARD Type Mute Bar)**

1) Cut the right edge with hacksaw

2) Keep cutting

3) 45° angle adjustable hacksaw is helpful.



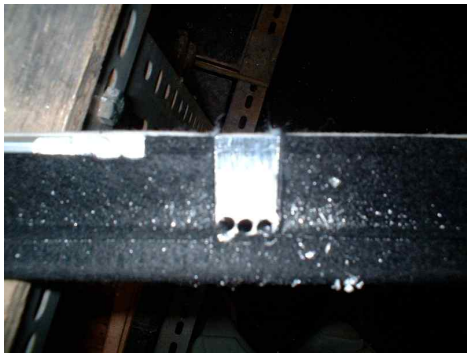
4) Done.

5) Done.

6) Partial Cutting for centre bracket

7) After cutting, drill holes.

8) Drill holes



9) 3 holes done.

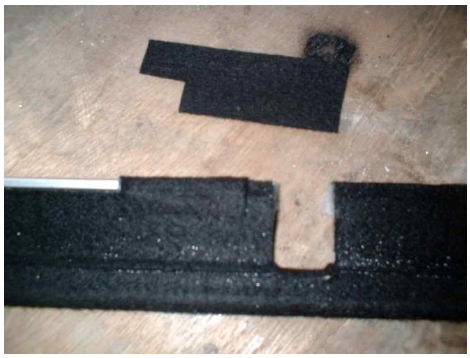
10) Bend with Flyer.

11) Done.

12) Done.(other side)

13) Filing

14) Put black felt with adequate size



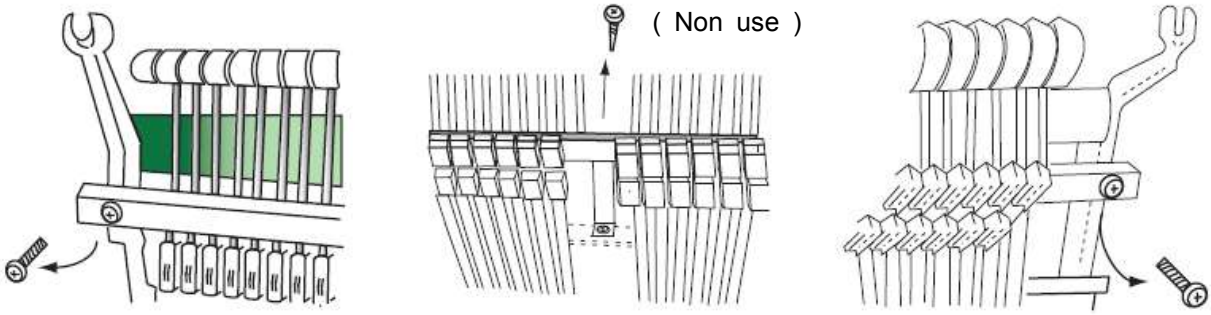
15) Finished

3 . **Mute Rail Installation**

Check the length from the left to the right bracket
If the centre bracket is interfered, refer to the prior 2. Mute rail cutting process.

Separate the damper rail from action . (4 screws)

These screws should be re-used for mute rail installation .



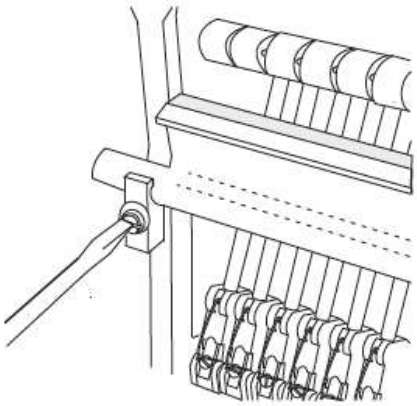
Treble part (This screw is used for mute rail installation)

Second Treble part (This screw is used for mute rail installation)

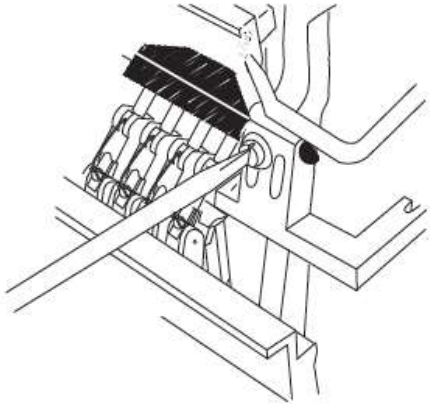
Bass part

In Yamaha pianos, it's own L bracket in second treble part is re-used for mute rail installation.
In Kawai, no need to use it's own Y bracket, replace it to L bracket provided.
If the convex surface of upper side of the center rail where the damper flange is installed should be filed to be flat for L bracket fixing.
For the other brand pianos, you need to decide how to install and exchange the brackets according to the shape and design of the actions.

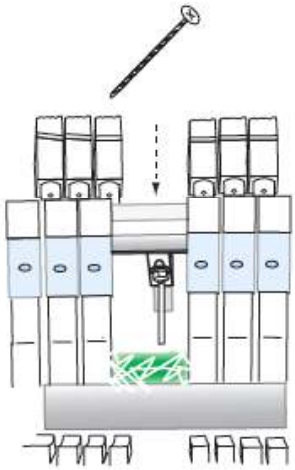
Mute Rail Installation



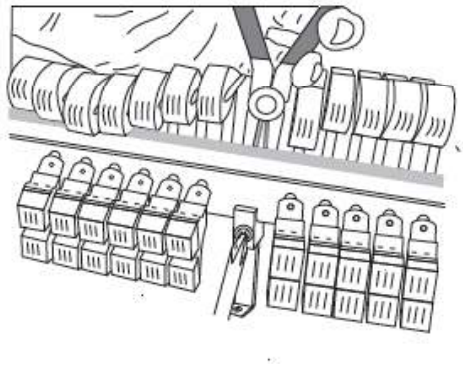
Treble Part



Bass part



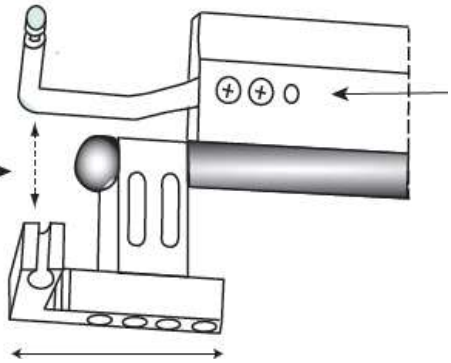
Second Treble Part
(Bolt in damper side, nut in hammer side)



Second Treble Part
(Hold the nut with long-nosed plier)

Fix the uni bracket into the stopper (mute rail)

After install into action, make it almost straight line.



Take out the felt in back side, adjust the screw position.

Screw positions are adjustable

4. Mute Rail Adjustment after Installation (Important)

It's the final process of mute rail installation for all hammers to be stopped at the same distance from the mute rail and from the strings when it's muted. The same distance from the mute rail cause in the same distance of let off for all hammers. If the distance is not even to each hammer, mute rail cannot work perfectly.

When the hammer head and shank stops too far from the strings, it means the let-off points are too far from the strings too. And then, the whole acoustic piano mechanism would become un-balanced, So, the careful adjustment is required.

Adjusting Process Summery
① After the mute rail installation, install the action back to the piano, and clarify the 4 sections of bass part, middle part, second treble part and treble part.
② Pulling the rail rod in left, put the hammer shank close against the rail cushion, And softly push the hammer heads in 4 sections to be touched to strings one by one.
③ Comparing with the other sections, the first hammer head touching slope is the basic gradient of the mute rail.
(Normally, the second treble part or middle part can be the basic gradient, this basic section doesn't need the spacer put in)
④ After the basic section is decided, keep that hammer head touching, using the other hand, check the other hammer head how far(mm) the distance is from the string.
⑤ Keep this distance in mind, and add the spacer in between the stopper hinge and bracket to adjust the distance.
⑥ Take the action out and add the adequate spacers, and take the action back to the piano... and repeat checking again.
⑦ In every section, when every hammer head reach to the strings (with every hammer shank touches the rail felt), it is proved that the mute rail is perfectly parallel with strings.

Top view of parallel strings and mute rail

Adjustment of Mute Rail Position

① Before separating the action from the piano, measure the distance from the hammer head to the string when mute off position. For easy checking, push the hammer head to the string, and measure the distance between the hammer shank and hammer rail like the bellow picture.

② Measure the above distances from the 4 points of bass, middle, second treble and treble part, and write down the 4 lengths to remember like bellow table.

③ Recommended mute-on position is 5 mm distance between hammer head and string, so write down the length at the next line after deducting 5 mm like bellow table.

④ Take out the action and install the mute rail according to the mute rail installation guide. Install the action into piano again, and measure the mute on distance again, and write down the real mute on distance.

⑤ And you can find the tolerance between the standard and real distance like bellow table

⑥ The biggest tolerance means the closest distance between the hammer head and string, and it becomes the basic section. Now, you can decide where you need to add spacer in order to make the mute rail parallel to the strings. (There are non 0.5 mm spacer, so just ignore +0.5 mm but just keep in mind)

⑦ Even though you adjust the distance with spacer correctly, the real distance can be different. So you need to adjust with spacers, and check it repeatedly until you find the correct position.

(Unit : mm)

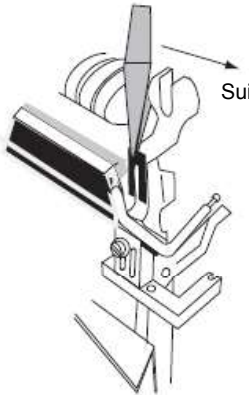
	Bass	Middle	Second Treble	Treble
Mute Off Range	45	45	45.5	46
Standard Mute On distance	40	40	40.5	41
Real Mute On Distance	40	42	43	42
Tolerance	0	+2	+2.5	+1
Difference from basic section	-2	0	+0.5	-1
Add Spacer	1mm x 2			1mm x 1

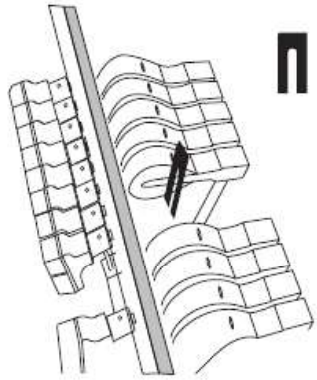
The next page shows how to insert the spacers to adjust the mute rail distance.

Adjustment of Mute Rail Position

Take out the action from piano. release the hinge screw where you need to adjust, insert spacer (3mm or 1mm) for adjusting the distance.

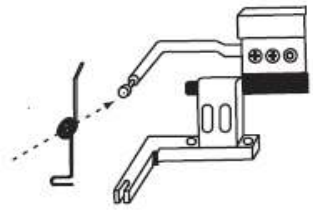
Bass part



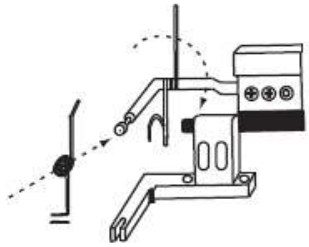


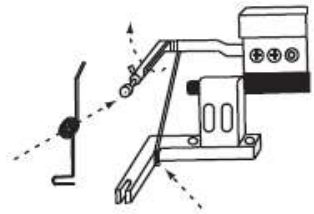
(Normally, tapered spacer is not used. Just in special cases, it is used like when the mute rail should be leaned over more.)

After adjustment of the mute rail position of front and back, set the spring and E ring.



← E ring



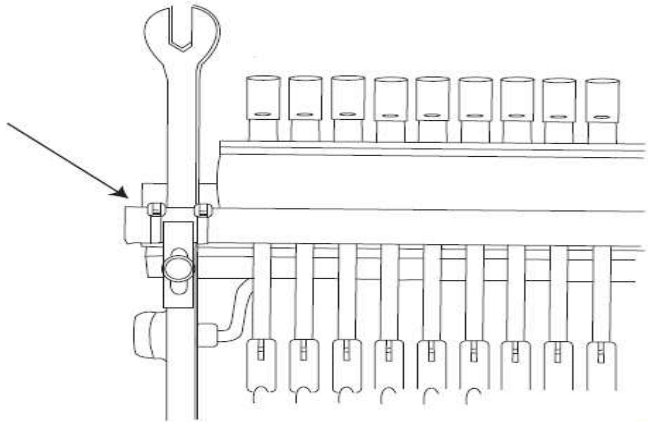


Hook on

After spring set, fix the E ring on the concave part of the rod front.

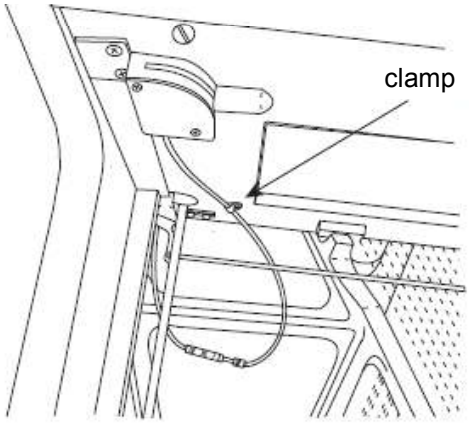
After spring setting, screw the action bracket bolt.

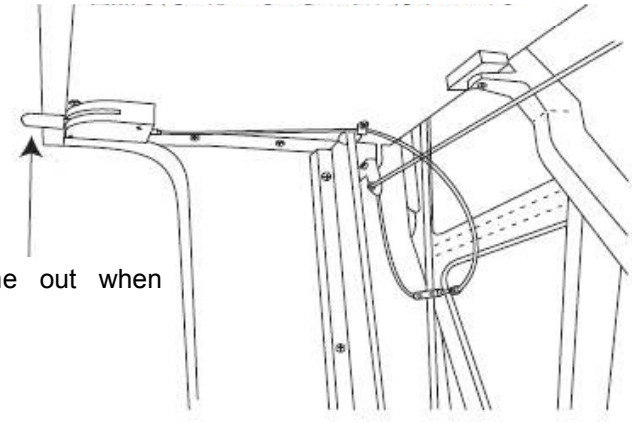
In order to prevent left and right shake of the mute rail, you may tight the [tie cable] in treble and bass parts.



5. Mute Lever Installation

Natural looking wiring is needed for smooth wire movement.

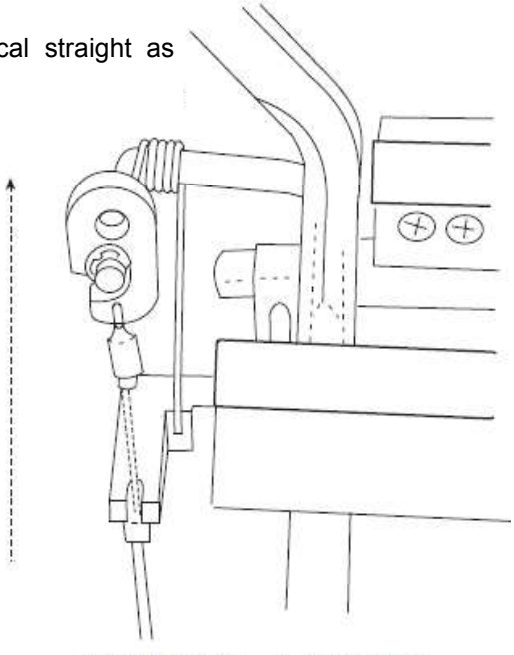


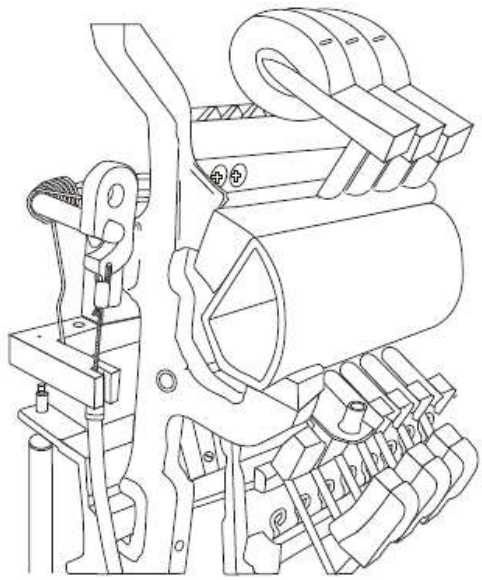


1cm come out when mute ON

* The mute lever is installed in left side under the key bed, The customer can decide front and back position, but it's better to install 1cm come out from the key bed when the lever is ON. And fix the lever wire with clamp.

As vertical straight as possible



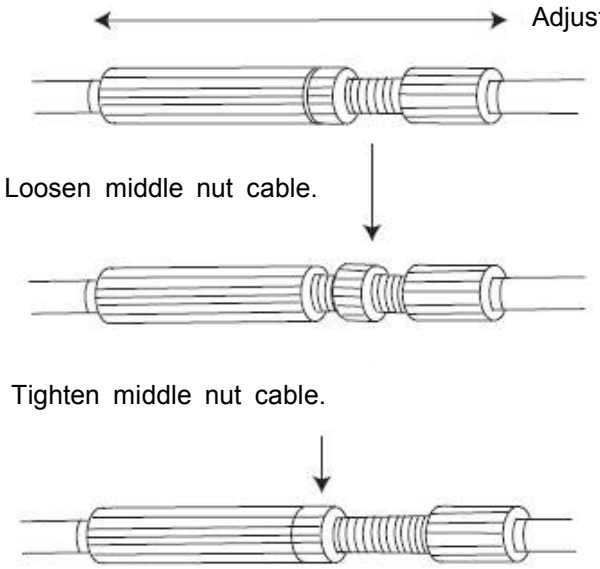


· Hang the hook on the rod lever

Put the ring in front of the rod. Position of uni bracket can be adjusted by the screws behind

Mute Lever Installation

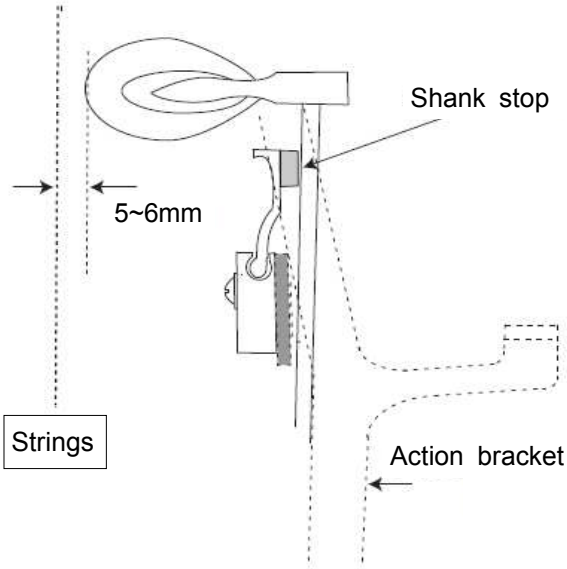
Adjusting the postwar movements of mute rail (Pull Adjustment)



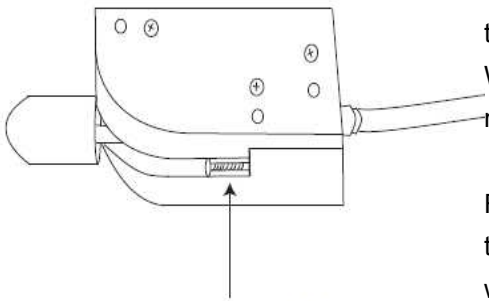
Loosen joint cables, then mute rail tilts forward. Hammer shank stops earlier, and the distance between hammer and string getting far.

Adjust to correct position

Recommended mute position is 5 ~ 6 mm distance between hammer head and string. But it depends on the situation. After joint cable adjusting, tighten the middle nut cable for fixing. The distance can be extended upon the request of piano player.



·(Push Adjustment)



There's a thin screw in right side of the mute lever box. When tightening with + screw driver, mute rail comes more closeer to the damper.

For acoustic piano play, adjust the mute rail not to touch the hammer shank, and not to interfere the damper working.

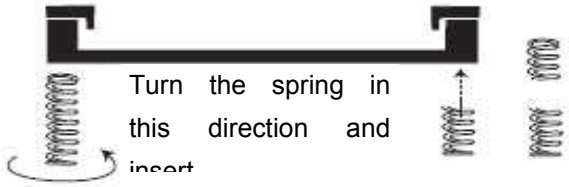
Chapter 4. Sound Source Installation

1. Key Sensor Installation

Take out every key and clean up key bed

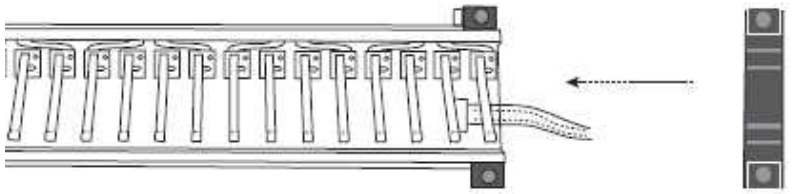
Remove Key sensor packing carefully.

1) Insert springs to the sensor plate.

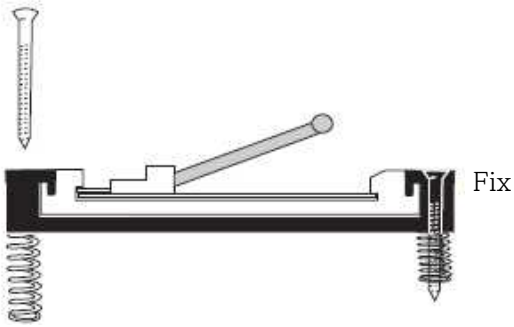


Cut if it's long.
Insert the spring's cross section into the plastic plate(since the cross section is sharp)

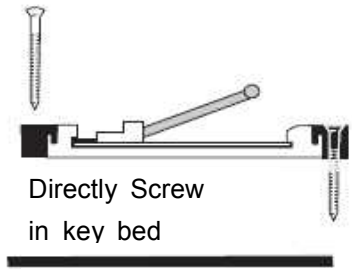
2) 5 sensor rail plates for upright pianos, and 4 ~ 5 plates for grand pianos are needed.



Insert the plates into the sensor rail and fix it.



Set screw in 5 places (upright piano)



Don't use sensor plate.

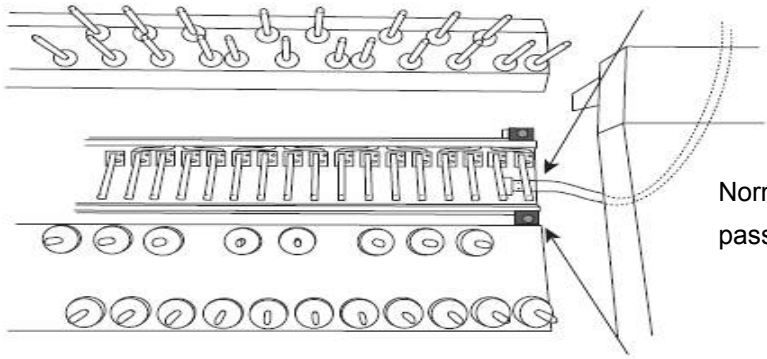
[Old Kawai doesn't need the sensor plate.]

Key sensor rail has 4 boards, so the best positioning of 5 sensor plates are the both bass and treble edges, and the 3 places where 4 boards are separated including the exact centre point. (Just in case of upright pianos)

Key Sensor Installation

3) Install key sensor on key bed.

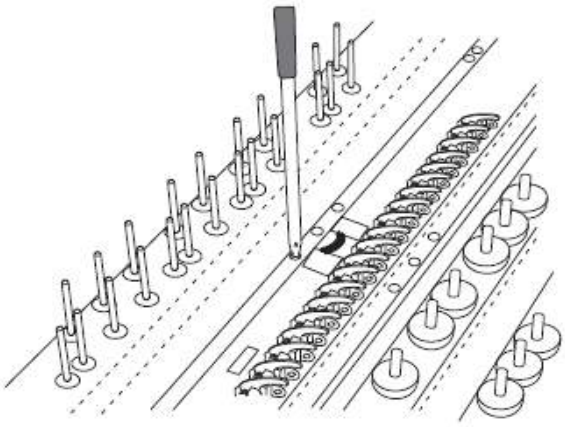
Insert the connector tightly



Normally, the sensor cable can be passed under the key block,

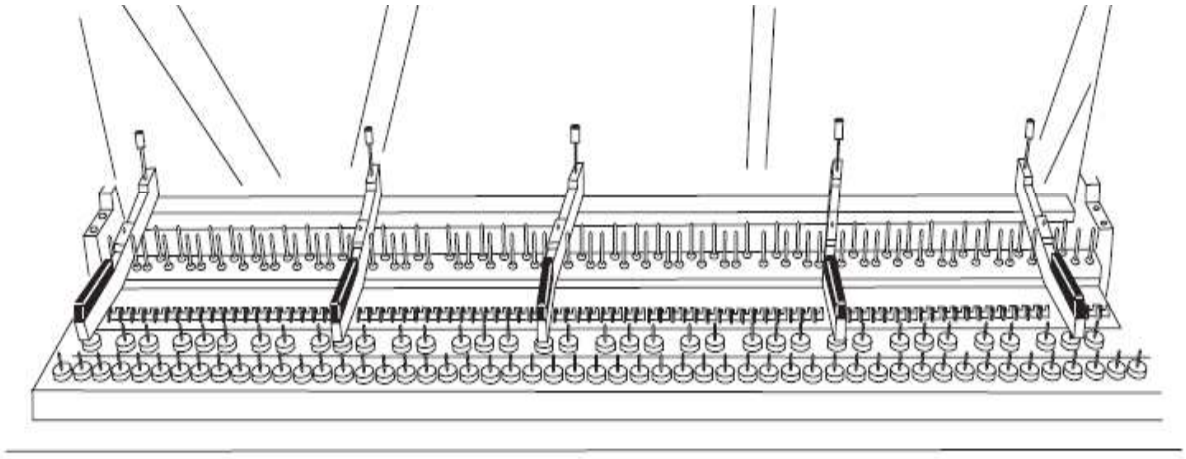
Sensor plate should be positioned to touch the front rail.

4)



Tighten all of the screws a little bit for further adjustment.

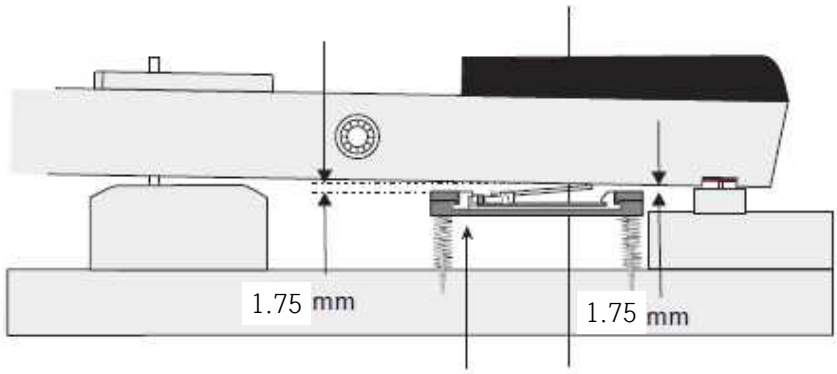
5) Put 4 or 5 black keys close to the screws in order to adjust the key sensor's height .



Key Sensor Installation

Adjust key sensors' height.

Adjust the precise height requirement of 1.75 mm gap between the top of sensor rail and the bottom of black key. Small difference can be adjusted by the Key Initializing Process after installation of the whole kit.



Attention : When pressing the key, do not make it touch with the back of actuator !

2. Main Unit Installation

“Signal Flat” : The flat cable connected between the Control Unit and the Main Unit

1) After connecting the Signal Flat at the bottom of Main Unit, turn it around the Main Unit like bellow picture, and install at the right side of the piano key bed inside

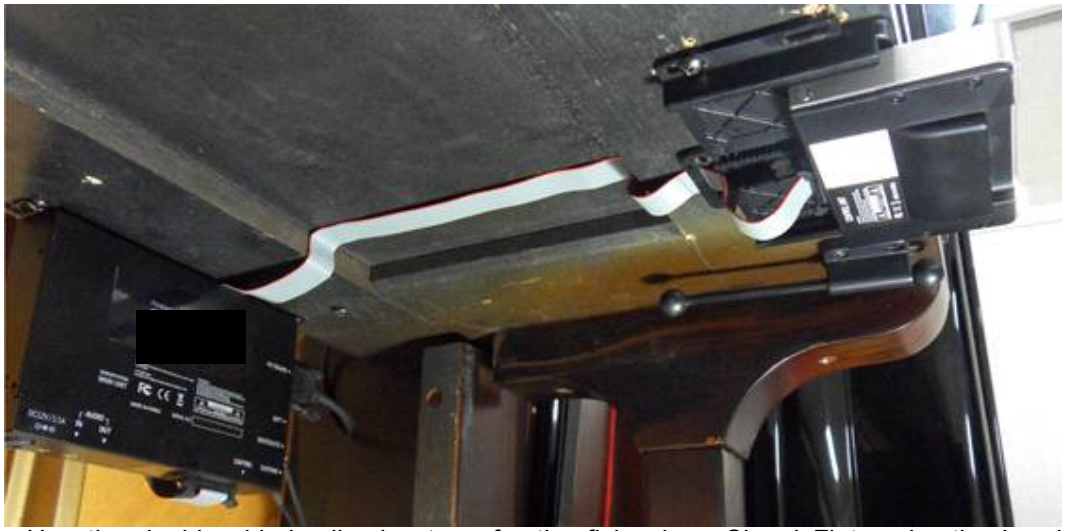
2) Connect the Key Sensors signal cable and Pedal signal cables to the correct jacks in right side of the Main Unit

3. Control Unit Installation

1) Pass the flat cable through the cable guide from the top and connect it with the control unit tightly. There's a black line on the Signal Flat at the opposite side of the Main Unit connection, and this black line should be correctly placed at the back side of the Control Unit's cable guide

2) Install the Control Unit under the right side of the key bed. The loosely fixing of the Signal Flat at the back of cable guide of the Control Unit makes the Control Unit's smooth sliding back and forth

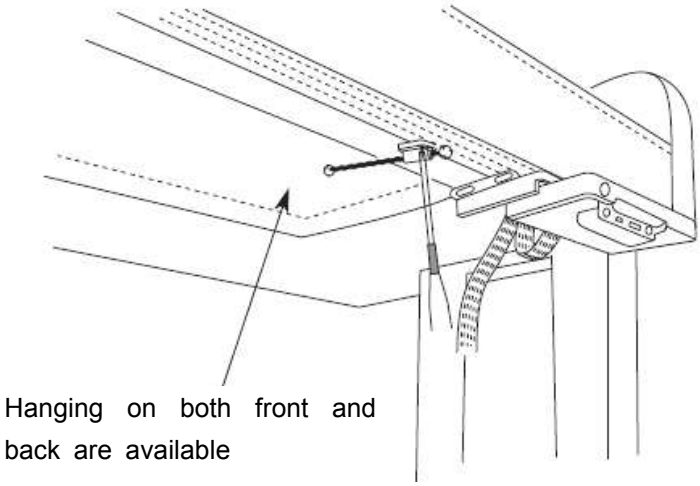
3) Control & Main Unit Connection



- Use the double sided adhesive tape for the fixing long Signal Flat under the key bed.

Control Unit Installation

4) Install the headphones hanger at the left or right beside the control unit. You can also hang the headphone at the back of the hanger.
Control unit can be installed under the left side of the key bed, And then, you need to change the location of mute lever and headphones hanger installation

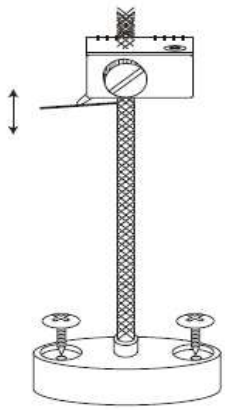


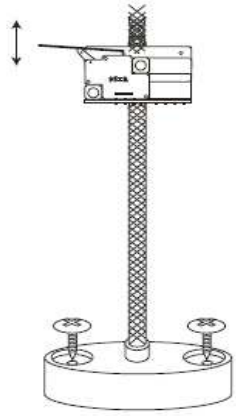
Hanging on both front and back are available

Clean arrangement of the cables connection inside the piano

4. Pedal Sensor Installation

1. There are two pedal sensors, One is for sustaining pedal and the other is for soft pedal. Sensor a'ssy has two parts, one is base for fixing, and the other is sensor module. Pedal sensor can be installed at the top or the bottom of the pedal lever.

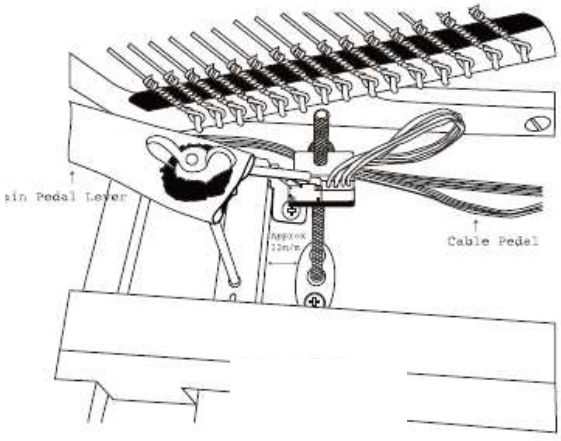


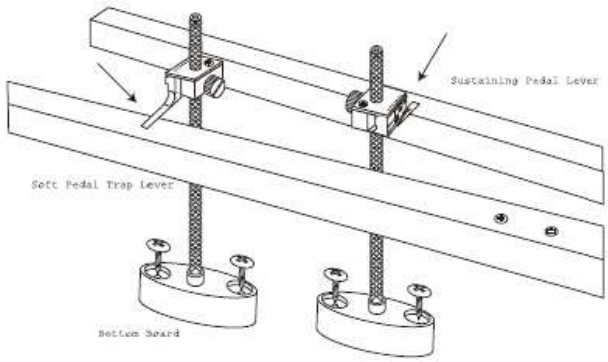


· Decide the location of the pedal sensor's installation after checking the pedal lever's moving and space on the bottom of the piano.
Adjust the switch timing by adjusting the sensor up and down and tightening the screws.

1. Press up type
2. Switch works when pedal lever goes up.

1. Press down type.
2. Switch works when pedal lever goes down.





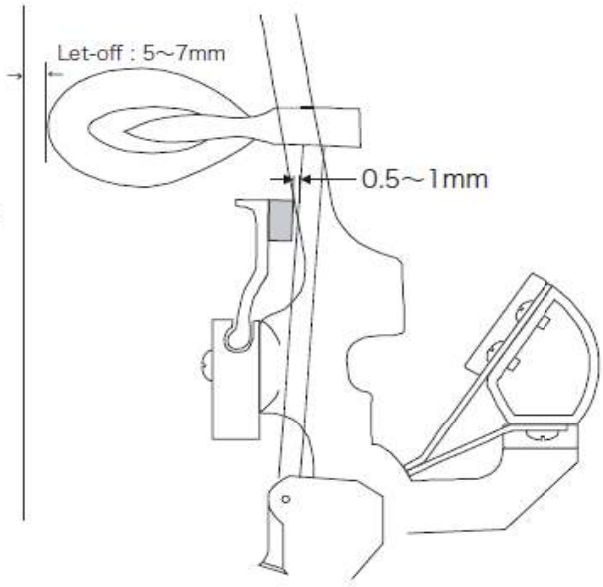
Install close to the pedal lever.

* Pedal lever left side
Install the sensor carefully not to be pressed
Sensors should be parallel with pedal lever.

5. LET-OFF Adjustment

1. It's hammer stop mute system, so the hammer let-off should be a little bit longer (5~7 mm) than acoustic type (2~3 mm).
Let he hammer shank let off 0.5 ~ 1 mm from the stopper(mute rail).

If hammer shanks don't drop down properly for let-off, the key falls down improperly, as a result, the system cannot make the correct sound.



*** Calibration (Initialization) : The way of Initializing the key sensors and pedal sensors**
Right after power on the system, immediately press and hold the [METRO.] button before the system gets ready. Release [METRO.] button when the display shows the ready meaning. And press each of the 88 keys and all pedals. And press the [METRO.] button again to finish the initialization. (Refer to the User's Manual for more detail))

*** Touch Button :** Slightly touch the LETTERS bellow the button's icons

Thank you.