ProRecord and ProScan Installation Procedure for Grand Pianos

With Troubleshooting Guide
March 13, 2014

Installation Procedure:

1. **Disassemble the piano**

   - Remove the action from the piano.
   - Remove the stack and keys from the keyframe.
   - Place the key upside down on a bench supported by two long pieces of wood to level the bottom of the keys.

2. **Placing reflective tape on keys 1 and 88**

NOTE: The following procedure is the same whether a grand or vertical.

- Locate the reflective tape and paper jig in the kit.
- Starting with key 1 and 88, place the template on the front/bottom of the key and attach the reflective tape. Do this on both keys.(See Ill. 1)

Note: Because keys 1 & 88 are wider than other white keys, the reflective tape is place on one side of the key to line up with the optical sensor. (See Ill. 1 and the template)

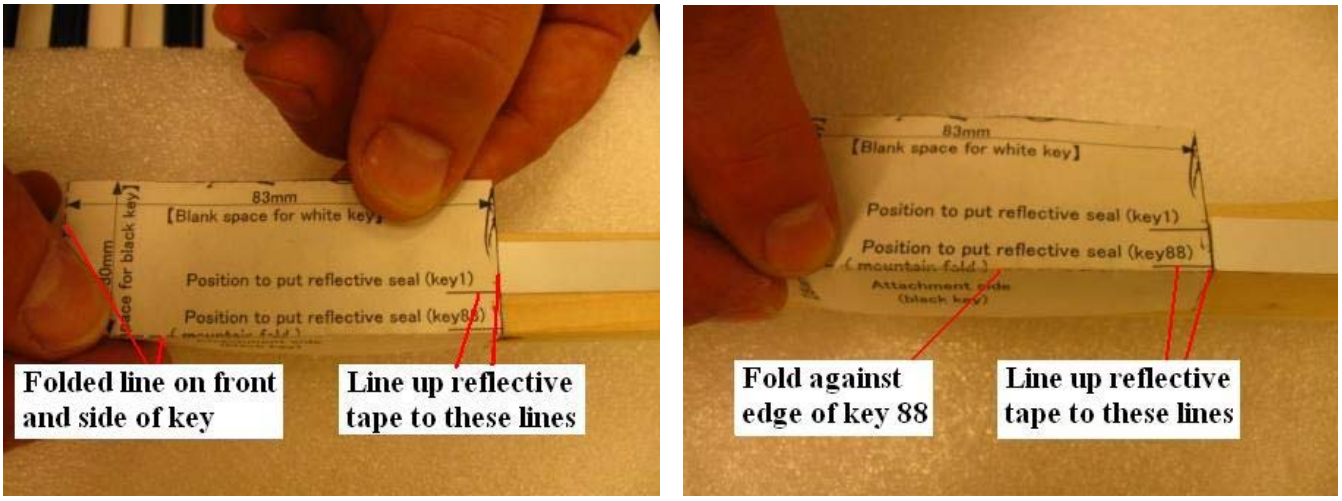
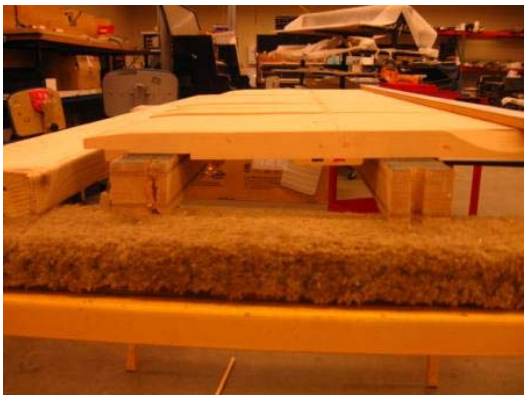


Illustration 1 – Locating reflective tape on keys 1 and 88

3. Marking all keys for reflective tape position

- Place the keys up side down on two pieces of wood to level out keys. (See Ill. 2)
- Place a straight edge across the end of all keys to simulate how the keys will be in the piano. (See Ill. 3)
- Place the ruler across the bottom of the keys, at the front of the reflective tape, and draw a line across all keys. (See Ill. 4)
- Now place the reflective tape on all keys at the line just established.



Ill. 2 – Supporting keys

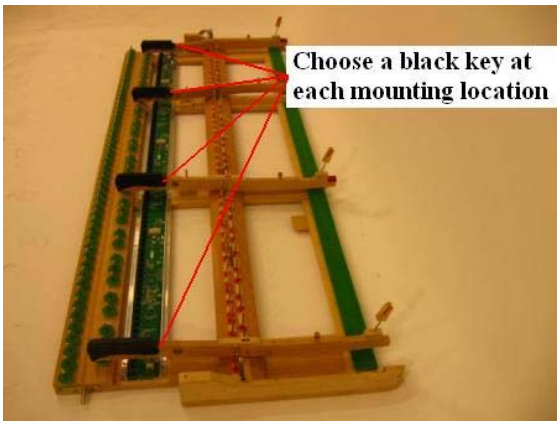
Ill. 3 – Line up keys

Ill. 4 – Marking line from Key 1 to 88

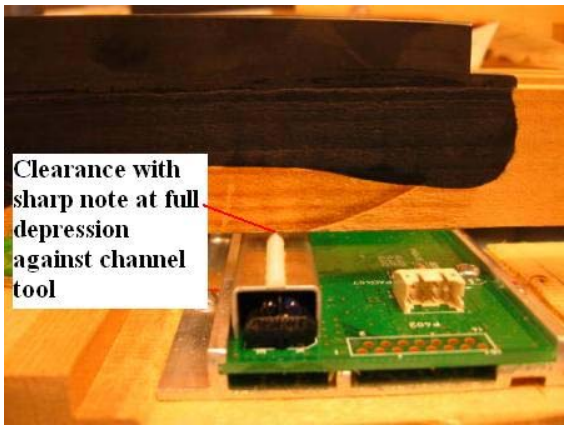
3. Install the sensor strip in the action

- Place the sensor strip on the keyframe near the front rail.
- Place black keys at each mounting location. (See Ill. 5)
- Locate the key spacer in the kit. (It is a "U" shaped channel aluminum.)
- Place the key spacer over the sensor of a sharp note.
- Depress the key and note if there is any clearance between the bottom of the key and the spacer. (see Ill. 6)
- If there is a space between the key and spacing tool, then use front rail punchings to bring the rail up so there is no gap and the tool can slide out without resistance.
- Do this to all mounting locations. (See Ill. 5)
- If the key is being held up by the spacer tool then the keyframe must be cut to lower the sensor strip the required amount. If this is necessary, go to the section – "**Cutting Keyframe**".

NOTE: The spacer should just be able to slide out when the key is at full depression. This will provide the proper clearance for the sensor strip.

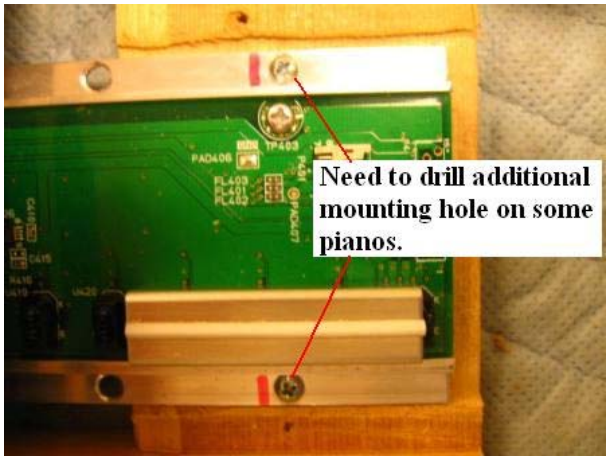


Ill. 5 – Setting sensor strip height



Ill. 6 – Setting height with gage

- Secure the sensor strip to the keyframe with the screws provided. It may be necessary to drill some additional mounting holes in the sensor strip to line up to the keyframe slates. (See Ill. 7)



Ill. 7 – Additional holes drilled to secure strip

- Install the keys checking the alignment of the reflective tape to the optical sensors.

4. Cutting Keyframe for Sensor strip

- Calculate how much wood needs to be removed for the optical sensor strip.
- PianoDisc recommends using a “Drill Press Planer” seen in illustration 8. There are other methods to remove wood but this is easy and precise.
- Here is a link to Wood Workers Supply where it can be purchased. http://woodworker.com/fullpres.asp?PARTNUM=24760&LARGEVIEW=ON

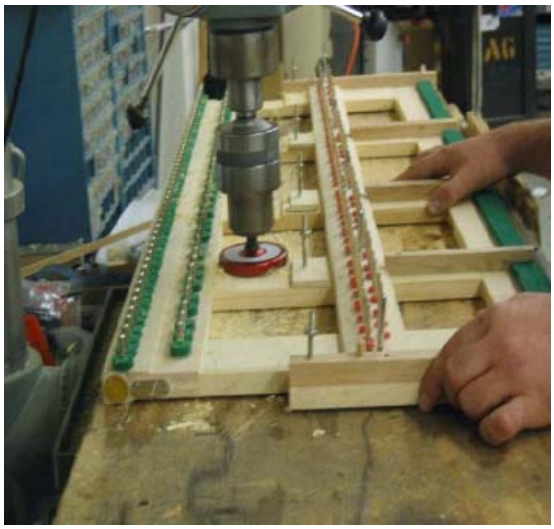


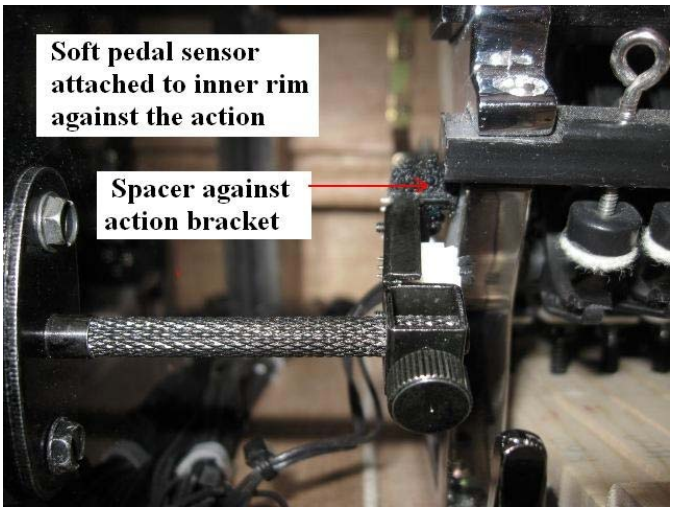
Illustration 8 – Cutting keyframe with drill press planer.

5. Pedal Sensor Installation

The pedal sensors are optical also and sense all three pedals. (See Ill. 9, 10, and 11)

- Locate the pedal sensors in the kit.

- Find the best location for the sensors on each pedal that is out of sight and best place for the least amount of damage.
- Mount each sensor with 2 screws.
- Place a piece of reflective tape under each sensor.
- Adjust the sensor to so the spacer tab just touches the lever.
- Note that the pedal sensors need to be place so the lever **moves away** from the sensor.
- Note that Ill. 9 shows a soft shift sensor that was mounted inside the action cavity. This was done because there was no room to mount on the underside of the keybed.
- Tie up and route the cables to the control unit.



Ill. 9 – Soft shift sensor

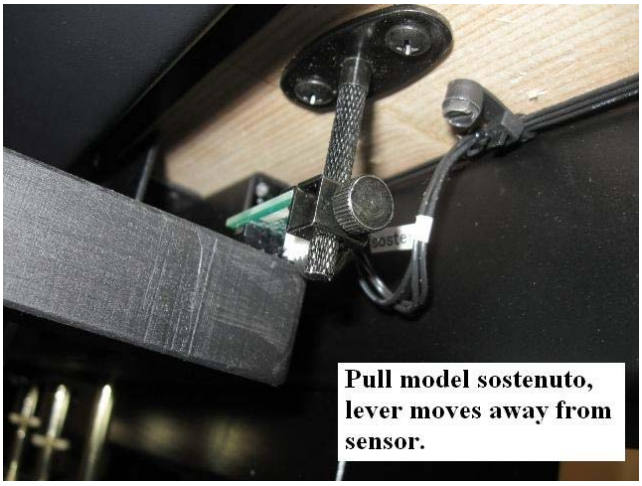


Illustration 10 – Sostenuto pedal sensor

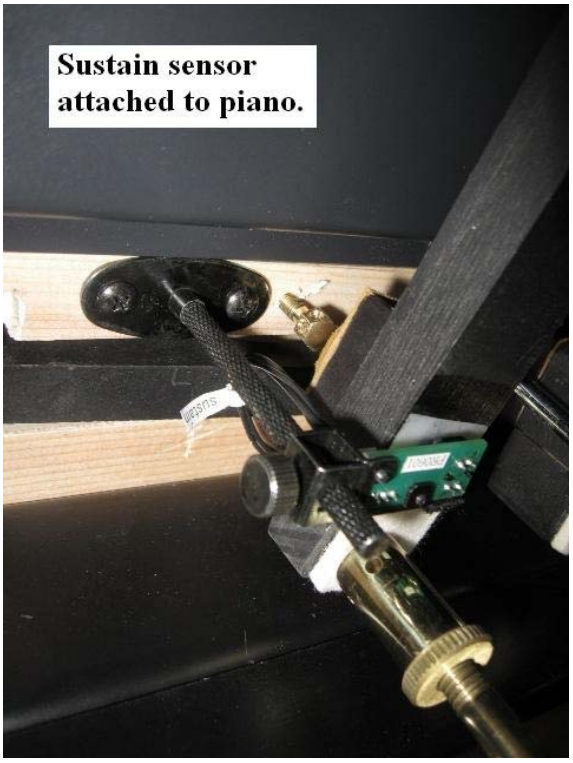
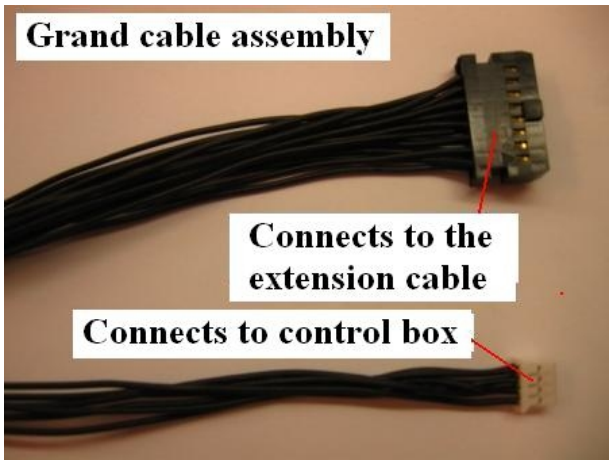
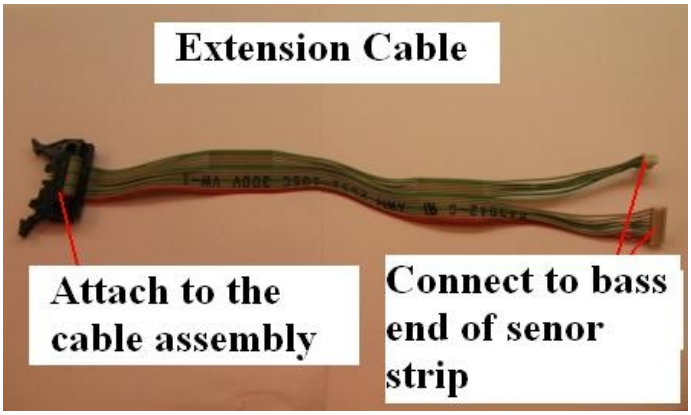
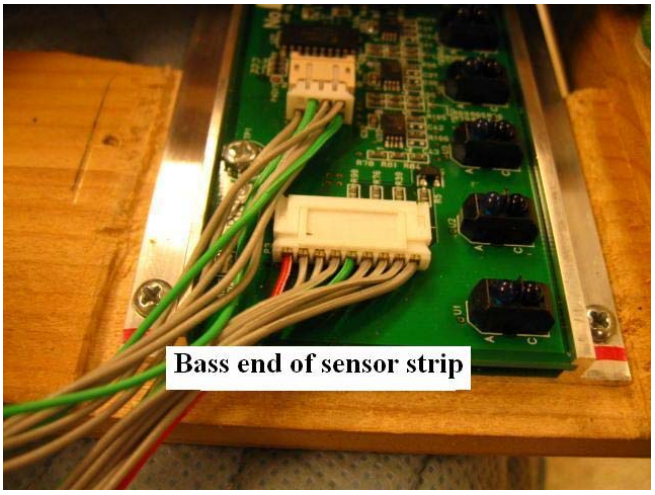


Illustration 11 – Sustain pedal sensor

6. Cable connections



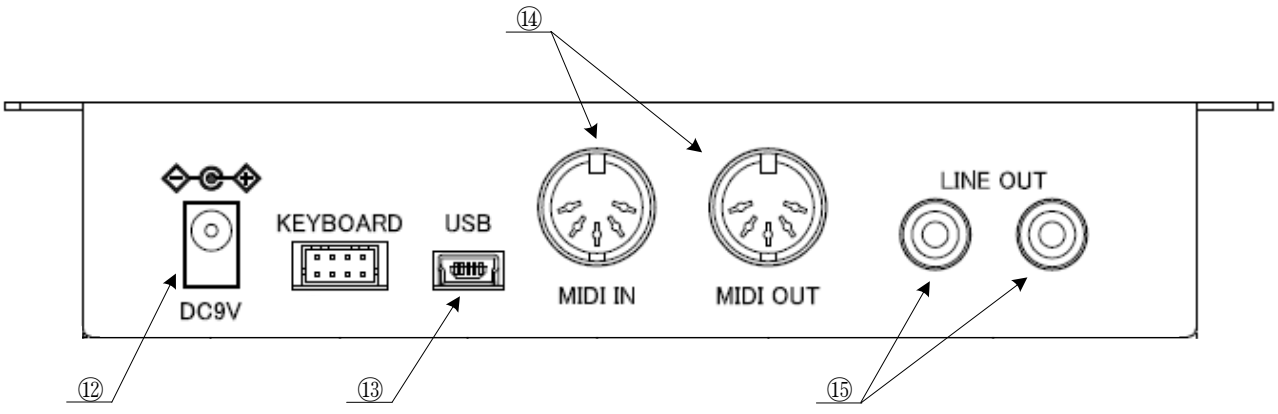




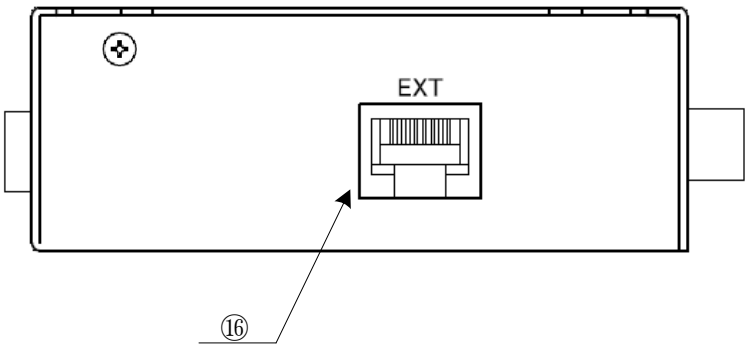
7. Mounting the Control Unit

NOTE: The control unit can be mounted on either side of the piano but the left side is recommended as that is the only side where the grand pedal plug has access.

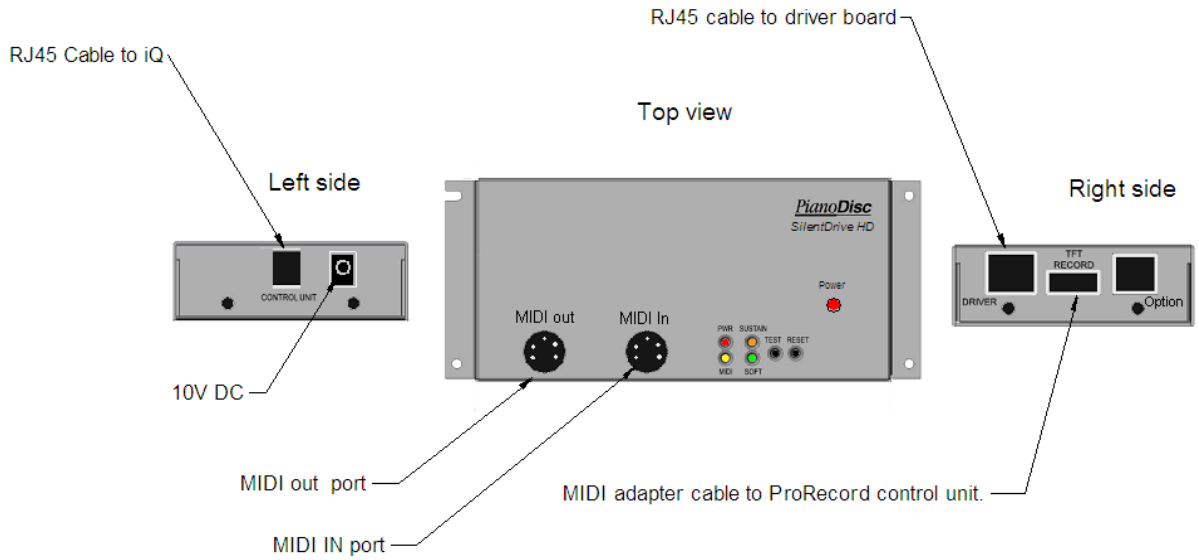
- Locate the control box mounting screws in the kit assy. bag.
- Place the control unit at the selected location slightly recessed from the edge of the keybed.
- Mount the control box to the keybed.
- If a PianoDisc player system is installed, use the PianoDisc / ProRecord cable connected between the TFT Record port of the PianoDisc CPU unit and the EXT port of the ProRecord unit. The EXT port is located on the right side of the ProRecord control unit (see right side drawing on the next page).
- If a PianoDisc is NOT installed, use the 9VAC adapter on the back of the control unit (see rear drawing below).
- Secure all wires with the ties and clamps supplied in the assy. bag.



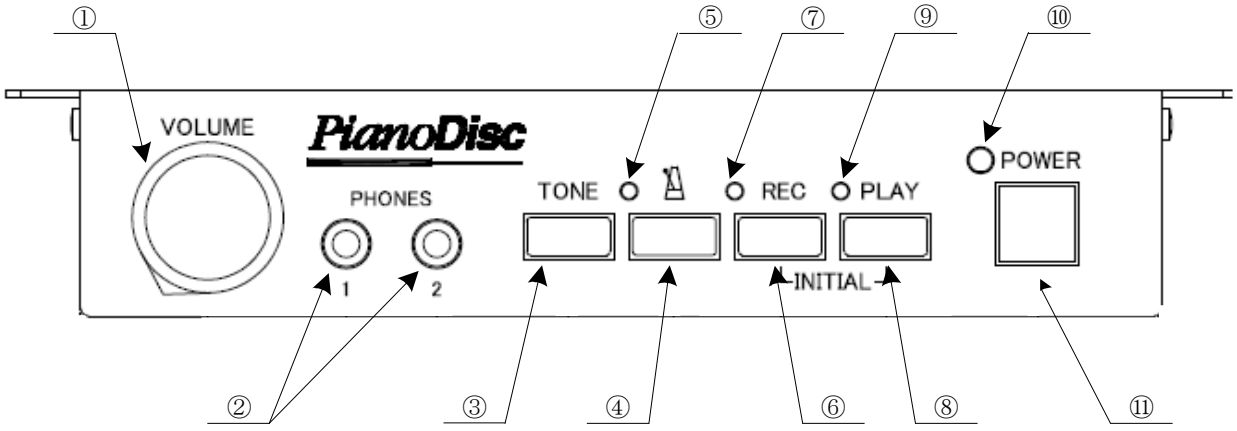
Rear of the Control Unit



Right Side of Control Unit



PianoDisc CPU unit



Front of the Control Unit

8. Initial Set-up

NOTE: If the piano has only 2 pedals, disconnect the cable that is connected to the "Sostenuto" pedal sensors. Do this before powering up the control box.

- **Power On** - Turn the power on.
- A chime will be heard and the "PLAY" and "REC" lamps will flash alternately indicating that the system is in "Initial Setup Mode"
- Play each note of the keyboard with equal force, making sure each key goes to full depth. When each note is released, the note will sound slightly delayed indicating that each key was calibrated.
- Press each pedal with equal force and full depth. A chime will sound after eah pedal is pressed indicating that the pedal was calibrated. The chime for each pedal will sound at a different pitch.
- Push the "PLAY" button. If the calibration of all keys and pedals was successful, a chime will be heard and the "PLAY" and "REC" lamps will stop flashing.

Notes

- If the system is powered off before the "PLAY" button is pressed, the calibration procedure will not be completed and must be done again.
- It may be helpful to pause a moment between each note to ensure that the note calibrates properly.
- If any key or pedal did not calibrate properly, setup cannot be completed until the keys and/or pedals have been calibrated. The system will play the MIDI note of the keys or pedals that need to be calibrated. Play the keys or pedals again and then push "PLAY". If the problem is with one of the pedals not calibrating, the sensor may be too close to the pedal lever. Try moving the sensor further away from the pedal lever.

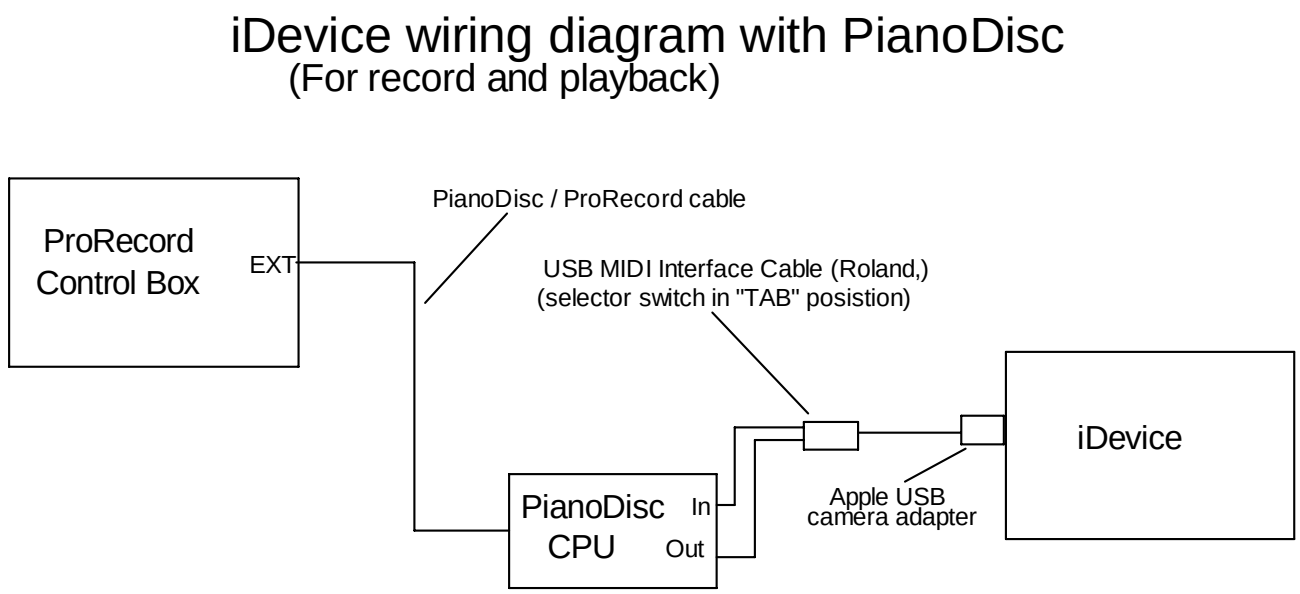
9. Sensor Re-calibration

The sensitivity of the keyboard and pedal sensors can change with time and/or temperature. Periodic adjustments are required to keep your system operating at its optimum performance.

- To Re-Calibrate the system, press "PLAY" and "REC" while turning the power on.
- A chime will be heard and the "PLAY' and "REC" lamps will flash alternately indicating that the system is in set-up mode.
- Press any keys or pedals that need to be re-calibrated. It may not be necessary to play every key and pedal. Only those that need calibration.
- Press the "PLAY" button. If calibration was successful, a chime will be heard and the "PLAY" and "REC" lamps will stop flashing.

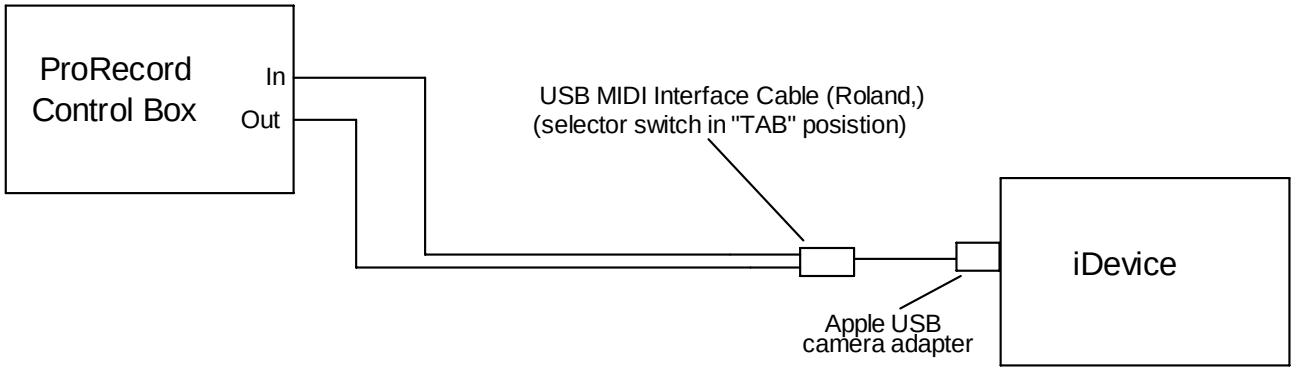
10. Devices to Record to – Wiring Diagrams

- Use the following wiring diagram for iDevices with PianoDisc.
- A lightning to 30 pin adapter may be needed depending on the “i” device version.



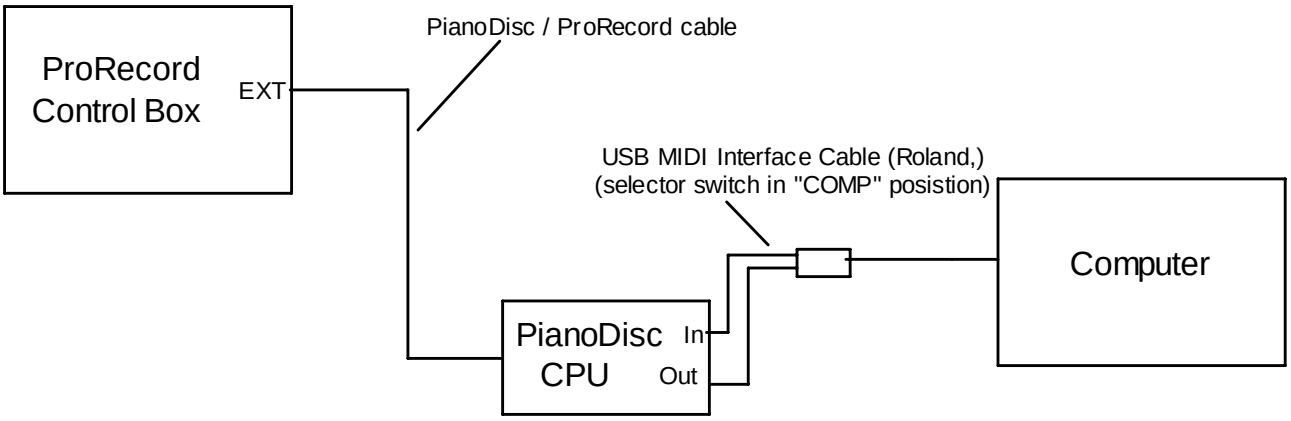
- Use the following wiring diagram for iDevices without PianoDisc.
- A lightning to 30 pin adapter may be needed depending on the “i” device version.

iDevice wiring diagram without PianoDisc
(For record and playback)



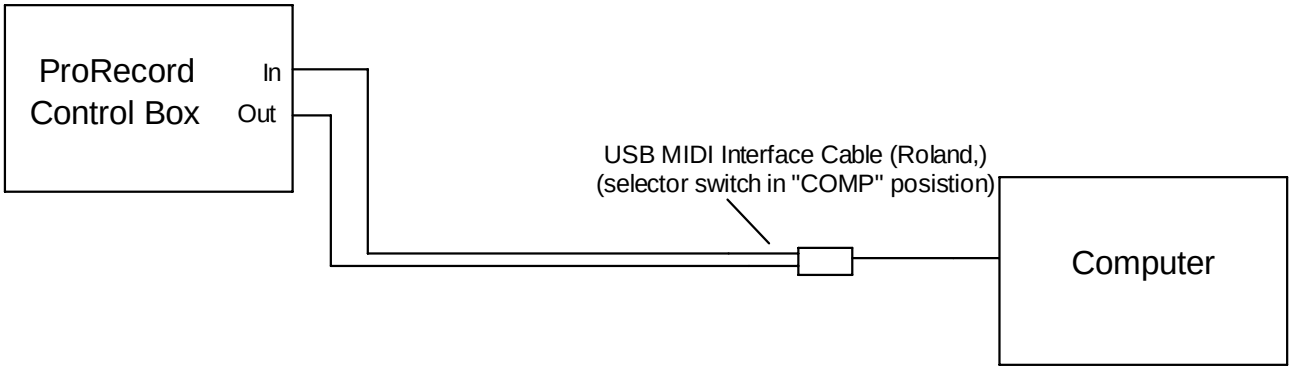
- Use the following wiring diagram for recording to a computer.

Computer wiring diagram with PianoDisc
(For record and playback)



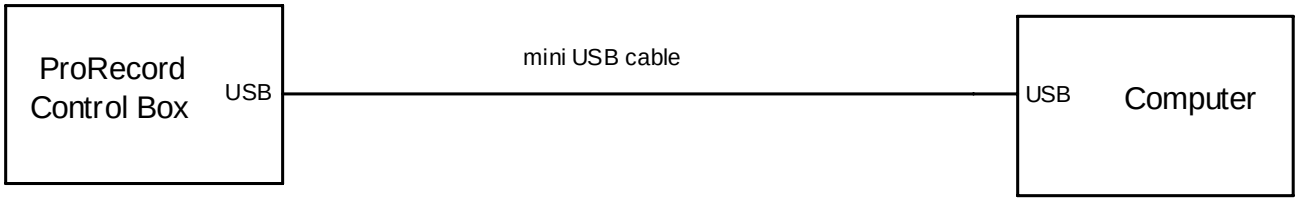
- Use the following wiring diagram to connect a Computer without PianoDisc

Computer wiring diagram without PianoDisc
(For record and playback)



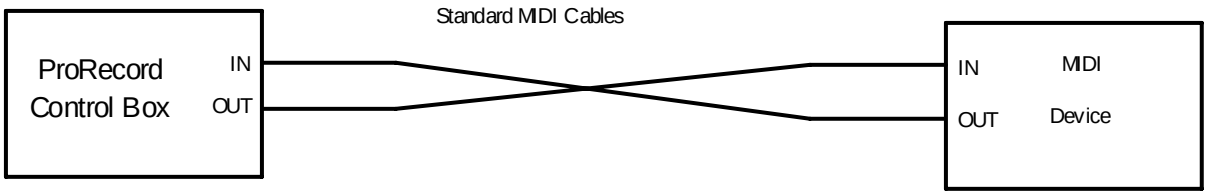
- Use the following diagram to connect to a computer for recording only.

Computer USB connection (record only)

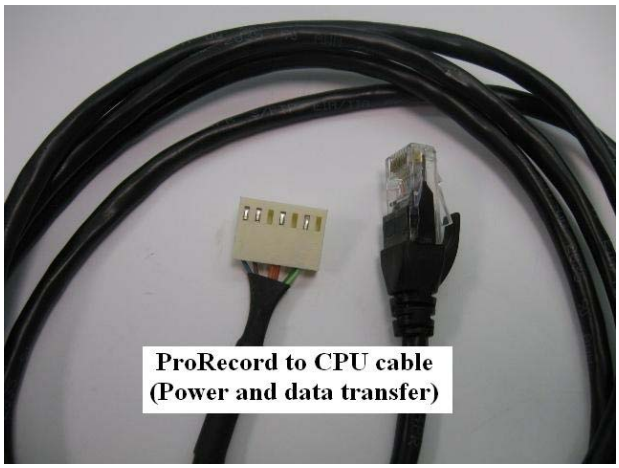


- Use the following connection to connect to a MIDI device (MIDI keyboard or sound generator)

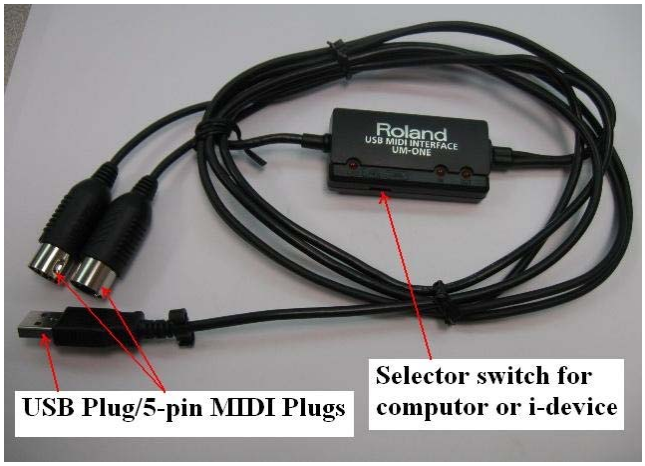
Connecting to MIDI device



Cables



PianoDisc / ProRecord Cable



Roland USB MIDI interface cable

ProRecord and ProScan Trouble Shooting

NOTE: There is a new ProRecord/ProScan app. that allows you to more easily control the user features of ProRecord/ProScan without all the inconvenient key combinations. Download the following app.

https://itunes.apple.com/us/app/id945540700?mt=8

Please note that this requires a cabled USB connection between your iPhone/iPod Touch/iPad and the ProRecord. Use the USB cable supplied in the ProRecord kit. A lightning to USB adapter may also be required (not supplied)

NOTE: When the ProRecord/ProScan is connected to the iQ player system it is important the iQ system is completely calibrated before attempting to do a final calibration on the ProRecord.

Problem: No power to the complete system.

1. Check if power cord is plugged into the wall socket.
2. Check the plug connection to the back of the control unit.
3. Unplug the power cord from the control unit and check for 10 VDC.
4. Unplug the "keyboard" plug from the back of the control unit and power up the control box; this will eliminate any problems of shorting from other parts such as sensor strip, cables and adapter board.
5. There is a possibility that there could be a bad harness cable. To check this you would need to unplug the cable and do a continuity test. See the pin-out diagram below. This will require a volt meter.

Problem: The system will not complete the calibration.

1. Check all plug connections carefully.
2. During calibration, depress each key completely before depressing the next key. If keys overlap it will not calibrate.
3. Make sure the pedal sensors are installed correctly. The pedal lever must move away from the sensor. (See pedal installation procedure)
4. Make sure all key notes are audible thru the headphones and a chime from each pedal. This tells you that each note or pedal is sending data.
5. Check the height and alignment of the key sensor strip to the keys at each mounting location and the pedal levers to the pedal bracket.
6. If a pedal is not calibrating, move the sensor 1/8" (3mm) farther away from the pedal lever and re-calibrate. When you move the sensor, you must shut off the control box and re-enter calibration. Do this by holding down the "record and play" button together, power up and hold the "record and play" buttons until the lights start flashing. Then re-calibrate the note or pedal that needs calibration and press "play" to save.
7. There is a possibility that there could be a bad harness cable. To check this you would need to unplug the cable and do a continuity test. See the pin-out diagram below. This will require a volt meter.

8. Make sure only one output is plugged into the control box. There are three "out ports" on the control box, the "EXT" (on the side of control box), the 5-pin MIDI OUT port, and the "mini USB" (both on the back of the control box)**.**

Problem: One or more notes will not calibrate or play incorrectly.

1. Perform the individual note calibrate of the notes in question.
2. Check the alignment of the sensor strip to the keys.
3. Check the reflective tape for proper placement or debris under the tape.
4. Check the key height of the key or keys in question. Key level and dip should be consistent throughout the keyboard.
5. Check the key clearance (with gauge) at full dip on a sharp (black) note at each mounting locations.
6. Replace the sensor strip section; see next section, "Sensor strip repair".

Problem: ProRecord or ProScan will not play the iQ player system.

1. Make sure the iQ player system is powered up.
2. While playing a recording on the ProRecord, see if the MIDI light is flashing on the CPU.
3. Check the plug connections.
4. Check the CPU update; it must be 13.6 or higher.
    A. How to check the CPU update. Press the "test" button on the CPU and note the lights flashing. The "MIDI" light should blink 3 times, (represents 13) and the "sustain" light should blink 6 times. The software can be loaded by a laptop/iPad to the CPU thru the iQ stereo mini port. Just need to unplug the "Mini" cable from the Airport Express and plug into the laptop/iPad. The software can be send thru e-mail.
5. It is possible to have a bad record cable which goes from the ProRecord control box to the iQ CPU. Try another record cable.
6. To check the output of the ProRecord control box.
    A. Unplug the record cable from the "EXT" port on the ProRecord control box.
    B. Plug a 5 pin MIDI cable into the "MIDI OUT" on the back of the ProRecord control box.
    C. Plug the other end of the 5 pin MIDI cable into the CPU "MIDI IN" port.
    D. Play a note to verify that a sound is generated thru the headphones or speaker. NOTE: For ProScan you need to observe the light flickering when a key is depressed. The key will remain down because of a looping of information to the key solenoid. Be careful not to play too many notes at once.
    E. If there is no sound thru the headphones then the "EXT" port is not out putting information. NOTE: For ProScan you need to observe the light flickering when a key is depressed. Replace the control box.

Problem: ProRecord playback does not playback accurately.

1. Make sure the calibration is complete on the iQ system before testing the ProRecord/ProScan. Especially the learn (low volume setting) and the level.
2. Re-calibrate the ProRecord/ProScan with an even touch across the keyboard.
3. Reset the Factory default setting. Note: This will erase any songs that have been recorded.

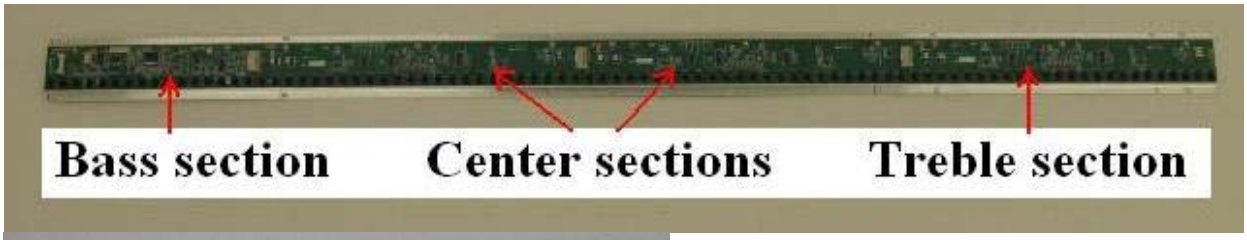
Problem: Pedal or Pedals will not record.

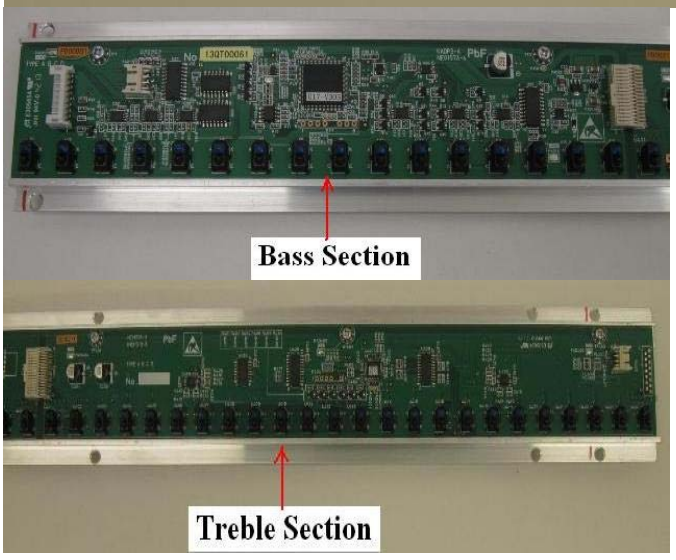
1. Make sure the pedal lever is moving away for the sensor.
2. Check the alignment of the sensor to the lever.
3. Make sure there is reflective tape on the lever and aligned to the sensor.
4. Move the sensor 1/8” away from the lever and re-calibrate.
5. Make sure the sensor cables are on the correct sensor. (For example – sustain cable on sustain lever)
6. Perform pin out continuity check on cable. See below.

ProRecord and ProScan Sensor Strip Repair

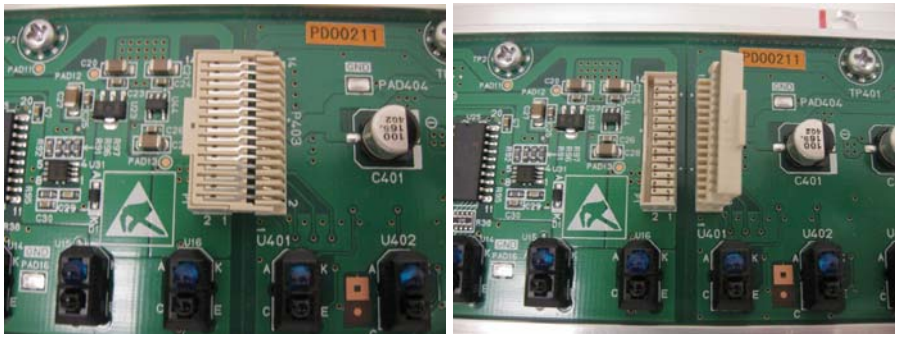
The ProRecord and ProScan sensor strips can be replaced in the field, in most cases.

1. Damaged section
   A. A damaged section can be easily replaced by the technician instead of shipping back the complete strip. This will minimize the potential damage caused by shipping the complete strip.
   B. There are 4 sections to a sensor strip. The two center sections are identical but the two end sections are unique. (See pictures below)





   C. Each section is secured with two screws. There is a plug connection that connects each board to the next. See the pictures below how the plug connection folds over to connect the neighboring board.



ProRecord Data Cable
(Pin out for continuity check)